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# Understanding Knowledge Sharing Motivation in the Public Sector: Application of Self-Determination and Person-Environment Fit Theories

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# Understanding Knowledge Sharing Motivation in the Public Sector : Application of Self-Determination and Person-Environment Fit Theories

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

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"I will exalt you, my God the King;

I will praise your name for ever and ever"

(Psalm 145:1).

Thank you, Lord, for accompanying me on this journey. I dedicate my dissertation to you.

I dedicate this to my parents, Tae Sik Lee and Pall Seon Jang, for their constant prayer and support, and to my wife, Min Sun Kim, for her devoted support, prayer, and sacrifice.

Last but not least, I dedicate this to my sons, Soohyun and Soobin.

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Abstract

**UNDERSTANDING KNOWLEDGE SHARING MOTIVATION IN THE PUBLIC SECTOR: APPLICATION OF SELF-DETERMINATION AND PERSON-ENVIRONMENT THEORIES**

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Knowledge has been recognized as an important resource that should be carefully managed in order to enhance organizational competitiveness. Therefore, it is important to manage knowledge resources that have been learned and stored in organizations. Several scholars in the public administration literature have examined whether public service motivation (PSM) can help employees share their knowledge in ways that contribute to the effective functioning of public organizations. However, the mechanisms by which PSM influences individuals' propensity to share knowledge have not been clarified by past research.

Against this background, at first, this study contributes to understanding the relationship between PSM and knowledge sharing by applying self-determination theory with a logical insight of the intrinsic knowledge sharing motivation process. This study also examined that relationship by testing three competing psychological mechanisms based on person-environment (P-E) fit theory: (1) person-group (P-G) fit, (2) person-job (P-J) fit, and (3) person-supervisor (P-S) fit. The research questions for this study are as follows: Do individuals with higher levels of

PSM have a higher propensity toward knowledge sharing? Does the congruence between employees and their work environment increase employees' knowledge sharing behavior? Do PSM-driven employees have higher willingness to fit in the work environment? Does P-E fit theory help explain the causal relationship between PSM and knowledge sharing?

Based on primary data of 1,094 occupationally diverse employees working in 33 local governments in South Korea, the current study found that caution should be exercised when making claims regarding the effects of PSM on individuals' propensity to share knowledge and that greater emphasis should be placed on ways public sector organizations can foster P-G fit and P-J fit. However, this study also found that the relationship between PSM and knowledge sharing is not mediated by the extent to which employees perceive that their values are congruent with those of their supervisors.

Keywords: public service motivation (PSM), person-environment fit (P-E fit), person-group fit (P-G fit), person-job fit (P-J fit), person-supervisor fit (P-S fit), knowledge sharing

## Chapter Ⅰ. Introduction

Knowledge has been recognized as initial idea generation (Hu, Horng, & Sun, 2009; Wang & Wang, 2012) and as an important resource that should be managed in order to enhance organizational competitiveness (Drucker, 1994). Therefore, it is crucial for organizations to manage knowledge resources. In that sense, organizations need to regard knowledge as the core resource to strengthen their competitiveness and to create added value through sustainable knowledge sharing.

Knowledge sharing is an indispensable prerequisite for the creation and application of intellectual resources in an organization. In recent studies, knowledge sharing has been found to be a key factor having a direct effect on organizational performance (e.g., Carmeli, Gelbard, & Reiter-Palmon, 2003; Kim & Yun, 2015). Specifically, it has resulted in the diffusion of innovative ideas and creativity in an organization (Armbrecht et al., 2001). Knowledge sharing, such as knowledge-centered activities, is a vital resource in an organization because it enables employees to maximize the organization's capability and competitive advantage in the public sector and to generate solutions and efficiencies (Reid, 2003). In contrast, the lack of the knowledge sharing ability has been found to be one of the major barriers to effective knowledge management (Alavi & Leidner, 2001). In the long term, the sustained competitiveness of an organization is related to its ability to create, share, and utilize innovative knowledge.

Despite the importance of knowledge sharing activities, it has not been thoroughly studied in public administration. Most previous studies about knowledge sharing focused on antecedents for improving knowledge sharing activities in the public sector (e.g., Kim & Lee, 2006; Sandhu, Jain, & Ahmad, 2011; Taylor & Wright, 2004; Yao, Kam, & Chan, 2007; Willem

& Buelens, 2007). In recent years, some studies tried to understand the motivation to share knowledge in the public sector (e.g., Chen & Hsieh, 2015; Tuan, 2016). Unlike the private sector, knowledge sharing motivation in the public sector can be understood based on a unique form of intrinsic motivation, public service motivation (PSM). Individual intrinsic innovation is a crucial component of the innovation process. Specifically, intrinsic motivation helps individuals to be flexible, persistent, and goal-oriented (Amabile, 1996) and to perform tasks more skillfully and actively (Cadwallader, Jarvis, Bitner, & Ostrom, 2010; Dulaimi, Ling, & Bajracharya, 2003; Zhang & Bartol, 2010). Since knowledge sharing is on the same string of innovation process (Hu et al., 2009), intrinsic motivation can be discussed with knowledge sharing behavior. Moreover, considering that the previous studies about knowledge sharing motivation in public administration only have focused on the direct relationship between PSM and knowledge sharing (e.g., Chen & Hsieh, 2015; Tuan, 2016), it is still worthwhile to understand the mechanisms by which PSM affects knowledge sharing.

In addition to those two factors, this study considers person-environment (P-E) fit as another main factor which can explain the relationship between PSM and knowledge sharing behavior. Work environment and an organizational culture that promotes knowledge sharing are important factors because knowledge is generated based on social interaction and mutual trust (Nonaka & Takeuchi, 1995). Therefore, knowledge sharing goes beyond individual idea generation. Since P-E fit is defined as the degree of compatibility between an individual and environmental characteristics (Kristof-Brown, Zimmerman, & Johnson, 2005), P-E fit itself involves the concept of the work environment. Therefore, it is meaningful to investigate knowledge sharing through the lens of P-E fit by examining work environment and the

relationship between P-E fit and knowledge sharing. Given the relationships between the main components, which are PSM, P-E fit, and knowledge sharing in the present study, the research questions were formulated as follows: Do individuals with higher levels of PSM have higher propensity toward knowledge sharing? Does the congruence between employees and their work environment increase employees' knowledge sharing behavior? Do PSM-driven employees have higher willingness to fit into the work environment? Does P-E fit theory help explain the causal relationship between PSM and knowledge sharing?

The majority of studies about P-E fit have focused on its effect on various work outcomes (e.g., Kristof-Brown, 1996; Kristof-Brown et al., 2005). Research on P-E fit generally supports the idea that a high level of P-E fit is related to a number of positive individual and organizational outcomes. By and large, P-E fit theory states that workers who feel fitted to an organization will show a higher level of individual outcomes, such as higher job satisfaction and organizational commitment, because they share values, personality, or goals with others (Bretz & Judge, 1994; O'Reilly, Chatman, & Caldwell, 1991). Therefore, in light of the significant effects of P-E fit on organizational outcomes, considering P-E fit in this study enables us to have broad perspectives on understanding the relationship between PSM and knowledge sharing.

Moreover, as a theoretical background, the researcher will apply Ryan and colleagues' (Deci & Ryan, 2000; Gagné & Deci, 2005; Ryan & Deci, 2000a, 2000b) self-determination theory (SDT) as an overarching framework of the current study. Using SDT, this study can gain a deeper understanding of the relationship between PSM and knowledge sharing by understanding special patterns of motivation in the public sector. Therefore, as a backbone to support the theoretical framework, a sufficient understanding of SDT was required prior to beginning the present study.

## 1. Overview of Study

Although knowledge is essential to organizations, the management of knowledge receives little attention in public administration. Only a few scholars in the public administration literature have examined whether PSM, as a motivational base, can help employees share their knowledge in ways that could contribute to the effective functioning of public organizations (e.g., Chen & Hsieh, 2015; Tuan, 2016). In addition, since those studies have focused on the direct relationship between PSM and knowledge sharing, the mechanisms by which PSM influences individuals' propensity toward sharing knowledge have not been clarified. Against this background, this study contributes to the limited understanding of the relationship between PSM and knowledge sharing by testing three competing psychological mechanisms based on Kristof-Brown's (1996) P-E fit theory. This study aims to design better strategies to foster knowledge sharing in public sector organizations.

First, to set up the relationships between the variables mentioned above, this study examines traditional theories, SDT and P-E fit theory, as logical backgrounds. Specifically, this study applies SDT as a way to support the relationship between PSM and knowledge sharing. It also applies P-E fit theory in order to understand the relationship between PSM and P-E fit and between P-E fit and knowledge sharing.

Second, this study identifies PSM, P-E fit, and knowledge sharing and reviews previous studies to find linkages between those variables. A basic presumption regarding the relationship is that when public employees have higher PSM, they will be more likely to engage in prosocial behavior (Podsakoff, MacKenzie, Paine, & Bachrach, 2000), and their perceived fit with a work environment will be higher (Perry & Wise, 1990; Stritch & Christensen, 2014). In addition, when employees perceive a good fit between their preferences and the situation in their workplace,

they are more likely to develop positive prosocial behavior (Kristof-Brown, Zimmerman, & Johnson, 2005). Considering that knowledge sharing is a kind of prosocial behavior (Gagné, 2009), this study can make connections to better understand the relationship between PSM, knowledge sharing, and P-E fit.

Third, this study empirically examines the relationships by using a survey method and advanced statistical analysis. This study was conducted through a field survey of local government employees in South Korea. The survey items were developed with multiple items used in previous studies. A total of 1,420 surveys were distributed, and 1,094 responses were used for the final data analyses. To examine direct or indirect causal relationships between PSM, knowledge sharing, and P-E fit, this study used ordinary least squares (OLS) regression analysis and mediation analysis.

**2. Self-determination Theory**

Self-determination is “the process of utilizing one’s will” (Deci, 1980, p. 26), and self-determined behavior is defined as “the attitudes and abilities required to act as the primary causal agent in one’s life and to make choices regarding one’s actions free from undue external influence or interference" (Wehmeyer, 1992, p, 305). Specifically, self-determined behavior can be understood as the behavior derived from an individual’s beliefs regarding intrinsic value, choice, and decision. Considering how people determine their behaviors, there are different types of bipolar behaviors. One of the behaviors is determined freely, and another one is enforced psychologically or controlled extrinsically. In other words, the presence of self-determined behavior depends on whether individual behavior is initiated autonomously or is pressured by external sources (Deci & Ryan, 1985).

Many previous studies, especially in the 1970s, found that intrinsic and extrinsic motivation are diametrically opposed to each other (e.g., Deci, 1971; Kruglanski, Friedman, & Zeevi, 1971; Lepper, Greene, & Nisbett, 1973). Namely, the more people are motivated extrinsically, the more their intrinsic motivation is reduced. In fact, many researchers found that intrinsic motivation occurs more in people's behaviors when they lack of extrinsic motivation (e.g., Deci, 1971; Lepper et al., 1973). However, these studies have shown the limits of explaining the relationship between motivation and reward and between extrinsic and intrinsic motivation.

Since the 1980s, researchers began to understand that the two motivations are not in opposition and that higher intrinsic motivation can also lead to higher extrinsic motivation (e.g., Deci & Ryan, 1985; Amabile, 1996). Because the proposed opposite natures of extrinsic and intrinsic motivation could not fully explain the positive effect of extrinsic rewards and extrinsic motivation (e.g., Deci, 1971, 1972; Lepper et al., 1973; Lepper & Greene, 1978), another theoretical perspective was necessary to understand self-determined behavior in a broader sense.

In contrast with the previous perspective of the 1970s, updated SDT considers both internal and external factors to motivate human behaviors. It distinguished between two types of motivation depending on the source of an individual's motivation: autonomous and controlled motivation; these are also known as intrinsic and extrinsic motivation, respectively (Deci & Ryan, 1985, 2000, 2008). According to SDT, behavior is inspired by natural driver to satisfy the basic and innate human needs of growth, development, and well-being (Deci & Ryan, 1985, 2000; Ryan & Deci, 2000b).

Self-determination theory was initiated by Deci and Ryan (1985) and has been developed and applied steadily in numerous studies. Deci and Ryan (1985) developed a continuum of intrinsic and extrinsic motivation, and amotivation, depending on the degree of self-determination. It is demonstrated in Figure 1.1.

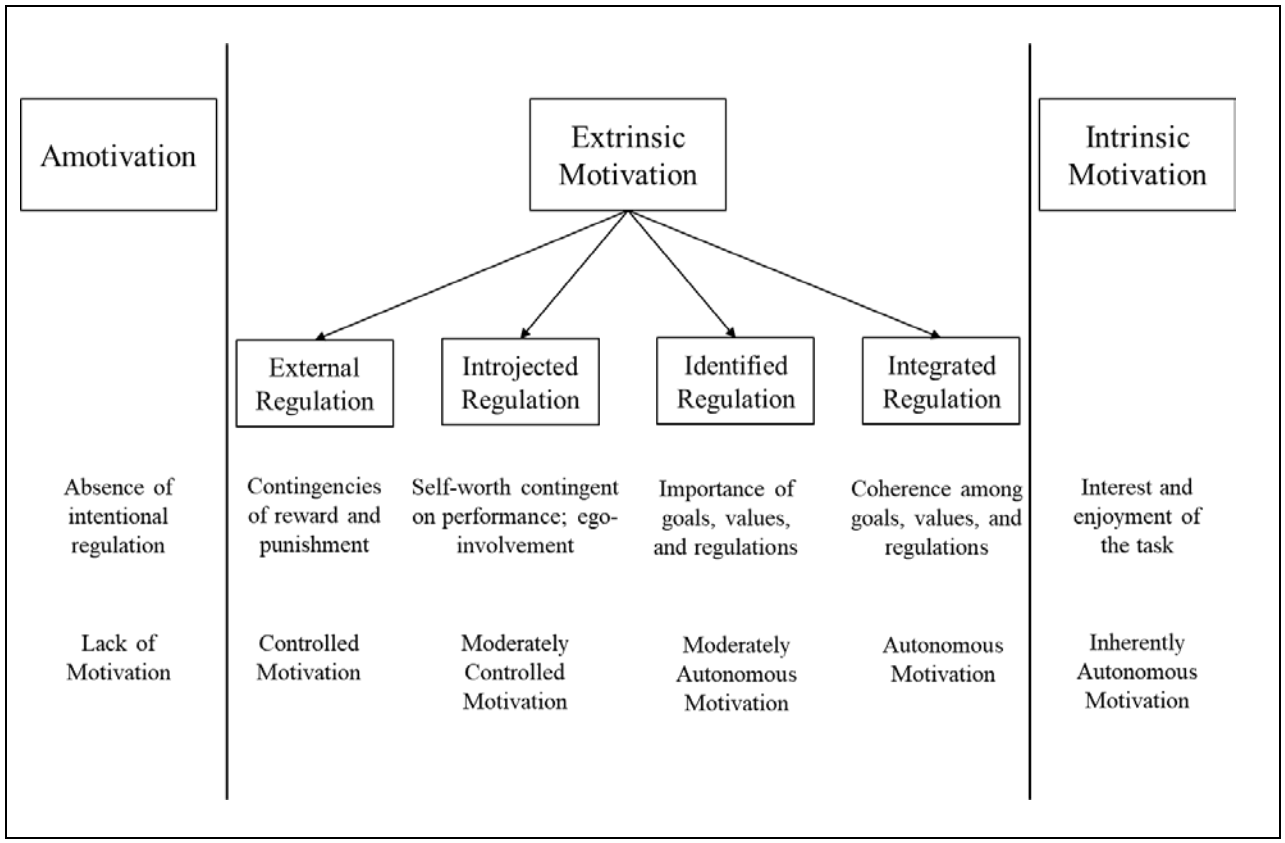


*Figure 1.1* The self-determination continuum (Source: Gagné & Deci, 2005, p.336)

Intrinsic motivation refers to the self-determined drive to pursue an activity simply for its inherent pleasure. Stipek (1998) stated, "humans are born with a disposition to develop skills and engage in learning-related activities; external reinforcement is not necessary because learning inherently is reinforcing" (p.117). Thus, intrinsically motivated activities are self-determined; individuals perform them out of free will and for inherent pleasure. In contrast with intrinsic motivation, amotivation refers to a complete lack of motivation.

Amotivation is located at the opposite end of the motivation continuum from intrinsic motivation and represents an absence of self-determination. It constitutes a refusal to participate because an individual does not believe that his or her behavior will result in a positive outcome. Amotivation may be synonymous with learned helplessness, when a person feels that his or her actions will not influence a particular outcome and thus ceases participation (Seligman, 1998).

Extrinsic motivation refers to behaviors that are performed by a sense of obligation or as a means to an end. Various types of extrinsic motivation have been distinguished depending on the extent to which people have been successful in internalizing the initial external regulation of the behavior (Deci & Ryan, 1985; Ryan & Connell, 1989). Internalization is the "process of taking in a value or regulation, and integration is the process by which individuals more fully transform the regulation into their own so that it will emanate from their sense of self" (Ryan & Deci, 2000a, p. 60).

Deci and Ryan (1985) categorized extrinsic motivation into four different types based on the degree to which individuals seek to achieve greater self-regulation and autonomy. They separated the motivational patterns into regulatory styles. These styles refer to ways of being motivated, not strategies for self-regulation of cognition (Schunk, Pintrich, & Meece, 2008). They are external regulation, introjected regulation, identified regulation and integrated regulation. Motivation, from amotivation to extrinsic motivation to intrinsic motivation, has been conceptualized by Deci and Ryan and their colleagues (Deci & Ryan, 1985; Rigby, Deci, Patrick, & Ryan, 1992; Ryan & Deci, 2000).

These four types of extrinsic motivation vary according to the individual degree of self-determination. The more internalized the behaviors, the greater the self-determination. Thus motivation is associated with more characteristics of intrinsic motivation as one moves along the

extrinsic continuum.

Along that continuum, external regulation is the least self-determined external motivation and is determined by obvious external factors. For example, externally regulated employees in the workplace are the least autonomous, and they are driven by tangible benefits, rewards, and penalties. Introjected regulation is the second type of extrinsic motivation, and the behavior seeks to avoid guilt or shame. In the workplace, introjected regulated employees try to attend regular meetings on time or complete their tasks, but only to avoid feelings of guilt. Introjected motivation represents behavior that is only superficially internalized.

Identified regulation is the third type of extrinsic motivation. Individuals with this kind of motivation consider the goals and values of an organization as a part of themselves and therefore as important. This is true even if the required work behaviors are not fundamentally interesting or enjoyable. Such employees are motivated to work in their organizations when they recognize that their tasks can be positively or directly related to their life.

Integrated regulation is the last type of external motivation and reflects the most self-determined type because it is integrated into the individual. For example, although an employee may have started his or her work because of a high-paying offer, he or she can be happy to work and to make achievements as a member of an organization. This is very similar to intrinsic motivation because the behavior has become almost a natural part of being oneself.

As discussed in the present section, SDT presents a wide understanding of the motivation of employees' behaviors. More specifically, SDT differentiates between three types of motivation on the continuum from amotivation to intrinsic motivation. The theory not only explains the relationship between an individual's motivation and self-determination but also

emphasizes that behaviors are self-determined when an individual is motivated intrinsically (Gagné, 2009).

### 3. Application of Self-determination Theory to PSM and Knowledge Sharing

Self-determination theory provides a broad perspective for understanding the relationship between PSM and employees' knowledge sharing behaviors. Among the types of motivations in SDT (such as amotivation, extrinsic motivation, and intrinsic motivation) the latter is regarded as the most important variable for predicting employees' knowledge sharing behavior. When public employees find meaning in their jobs, their intrinsic motivation can be enhanced. Consequently, public employees who find their intrinsic value from helping others will engage in knowledge sharing behavior. More specifically, intrinsically motivated employees will be more engaged in prosocial behavior, such as knowledge sharing, because it is enjoyable, personally meaningful, and fits their value system (Gagné, 2009). They can maintain their motivation in the workplace without any external sources such as reward or support (Olatokun & Nwafor, 2012).

Public service motivation refers to the motivation of public employees in their workplace, and it is distinguished with a motivation, which is influenced by external and monetary factors (Rainey, 1982). Thus, PSM can be considered as the intrinsic motivation of public employees. Knowledge sharing behavior is less likely to be motivated by external sources because it is considered to be a prosocial behavior based on voluntary contribution (Gagné, 2009). In other words, intrinsic motivation plays a key role in enhancing knowledge sharing behavior in an organization. In light of these characteristics, SDT provides a powerful theoretical linkage to explain the relationship between PSM and knowledge sharing behavior.

## 4. Structure of the Study

Chapter 2 reviews the literature on the main factors: knowledge sharing, PSM, and three sub-dimensions of P-E fit (person-group fit, person-job fit, and person-supervisor fit). At first, these key factors are reviewed separately, and then relationships between them are considered. Chapter 3 presents the research methodology. Specifically, it develops hypotheses based on a research model, and it describes research design, sampling and data procedure, and measurement. The next chapter is the data analysis and interpretation. Chapter 4 provides and interprets the statistical results. It shows the characteristics of the sample, checks the validity of the measurement, and examines the causal relationships between main variables. Finally, chapter 5 includes several discussion sections. It provides implications and considers the contributions of the current study. Additionally, this chapter indicates limitations of the study and presents suggestions for studies in the future.

## 5. Chapter Summary

Based on a brief literature review, this chapter examined limitations of knowledge sharing studies in the public sector and discussed the necessity of the current study. At first, this chapter concisely introduced the main variables—PSM, P-E fit, and knowledge sharing—as valuable for understanding the process of knowledge sharing motivation in the public sector. In addition, it introduced SDT as the theoretical background for this study. Based on SDT, this chapter provided a theoretical insight for understanding the knowledge sharing process, which is driven by intrinsic motivation, and it specifically set up the relationship between PSM and knowledge sharing in the present study. Moreover, this chapter applied the P-E fit perspective to understand the mechanisms by which PSM affects knowledge sharing. The following chapter

will review previous studies on those main variables in depth and will propose research hypotheses with theoretical frameworks.

## Chapter Ⅱ. Literature Review

The purpose of this chapter is to understand the main variables of this study: PSM, P-E fit, and knowledge sharing. It also explains the linkage between PSM and knowledge sharing by applying SDT and P-E fit theory as the theoretical background. First, for the understanding of the main variables, this chapter clarifies the definition of each variable and the significant factors revealed through previous research that are related to each variable. Then, by reviewing previous studies, this chapter theorizes the relationship between PSM, the sub-dimensions of P-E fit, and knowledge sharing. The final section of this chapter describes the conceptual framework, including the direct and indirect effects of those variables, and provides the research hypotheses, which will be tested in the following analytic chapter.

### 1. Knowledge Sharing

#### 1.1 Conceptualization of knowledge sharing

Because researchers have different views regarding the definition of knowledge sharing, no unified definition exists. However, many studies on knowledge management recognize the importance of knowledge sharing (Davenport & Prusak, 1998). Knowledge sharing is defined as the activities by which employees “share their work-related experience, expertise, know-how, and contextual information with other employees through informal and formal interactions within or across teams or work units” (Kim & Lee, 2006, p. 371). Since knowledge sharing provides a frame for the combination and evaluation of information and new experiences (Hansen, 1999), employees can exchange knowledge with other members and convert it into an asset and resource in their organizations (Kuo & Young, 2008).

In addition to considering the purpose of knowledge sharing (i.e., to impart knowledge to others), other studies also recognize that the possession of common knowledge leads to the ability of an entire organization to acquire knowledge. Knowledge sharing can be understood in an organizational context as the provision of task information and the knowledge of how to help and collaborate with others, solve problems, develop new ideas, and implement policies or procedures (e.g., Cummings, 2004; Pulakos, Dorsey, & Borman, 2003). Knowledge sharing also can be viewed as one part of socially interactive culture involving the exchange of employees' knowledge, experiences, and skills throughout a whole department or organization. It is capturing, organizing, and transferring experience-based knowledge that resides within the organization and making that knowledge available to others in an organization (Lin, 2007). In this context, since knowledge sharing is a process among people, it is considered to be mutual understandings among members (Henderson & Clark, 1990; Nonaka & Takeuchi, 1995; Grant, 1996). As reviewed in the previous studies, knowledge sharing is closely associated with employees in the public sector workplace. In other words, knowledge sharing can occur when an employee is willing to share his or her own knowledge with other members in the organization (Kim, Han, Son, & Yun, 2017). Therefore, this study understands knowledge sharing on a personal level by considering employees' perspectives.

Consequently, an organization that knows how to share individual knowledge within itself is more likely to succeed, and employees who share their knowledge and experiences are treated as more valuable members of that organization (Martinez, 1988). Moreover, considering organizational outcomes, knowledge sharing improves employees' performance so that they can accomplish their tasks better, more quickly, or more efficiently (Lin, 2007). It also enables

organizations to enhance innovation performance and to reduce redundant learning efforts (Garcia & Calantone, 2002). In summary, knowledge sharing enhances the innovation of an organization, facilitates information exchange within an organization, improves the quality of individual work, and reduces time required for problem-solving.

### 1.2 Predictors of knowledge sharing

A number of studies have examined organizational factors that affect knowledge sharing: organizational structure (Gupta & Govindarajan, 2000); organizational culture (Davenport, De Long, & Beers, 1998; Bock, Zmud, Kim, & Lee, 2005; Ardichvili, Maurer, Li, Wentling, & Stuedemann, 2006); leadership (Davenport et al., 1998); information systems (Gupta & Govindarajan, 2000); and obligation, trust, and identification (Faraj & Wasko, 2002). Other researchers have identified individual factors that influence knowledge sharing: individual ability (Faraj & Wasko, 2002; Wasko & Faraj, 2005); greed and self-efficacy (Lu, Leung, & Koch, 2006); extrinsic rewards and fear of punishment (Burgess, 2005); expected rewards, associations, and contribution (Bock, 2002); perceived costs, and extrinsic and intrinsic benefits (Kankanhalli, Tan, & Wei, 2005); and anticipated extrinsic rewards, reciprocal relationships, and sense of self-worth (Bock et al., 2005).

In addition to these various factors, motivation is one of the most important predictors of knowledge sharing. Osterloh and Frey (2000) highlighted the importance of intrinsic and extrinsic motivation for knowledge sharing. Their study found that both intrinsic and extrinsic motivation promote employees' knowledge sharing behaviors in an organization. Although knowledge sharing motivation has been studied to some degree, the research on the relationship

between motivation and knowledge sharing is still scant in public administration (e.g., Chen & Hsieh, 2015; Tuan, 2016). Chen and Hsieh (2015) examined the relationship between PSM and knowledge sharing with an empirical study by analyzing data collected from 514 civil servants in Taiwan. Their study found that four dimensions of PSM—compassion, self-sacrifice, commitment to the public interest, and attraction to public policy making—positively influence knowledge sharing. Tuan (2016) examined the mediating effect of PSM between leadership and knowledge sharing based on data from 562 employees and 197 department managers in Vietnamese public organizations. His study found that PSM not only positively influences knowledge sharing but also plays a role as a mediator. While these research studies investigated knowledge sharing motivation in different regions, they did not consider other factors which might influence the relationship between PSM and employees' knowledge sharing intention. Therefore, whereas past empirical studies have found a significant direct relationship between PSM and knowledge sharing, that connection is still worthwhile to investigate.

## 2. Public Service Motivation

### 2.1 Definition of PSM

Public service motivation is a widely studied concept in public administration. It was first used by Rainey (1982) to explain unique motives of employees in the public sector. Specifically, Rainey (1982) tried to understand PSM as an empirical and behavioral concept, not a normative concept, in public administration and emphasized the need for further research and for developing a better conceptualization of PSM. Since then, although the concept of PSM has been dealt with empirically by a number of studies, no clear definition of PSM had been

provided until Perry and Wise (1990) defined it as an “individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations” (p. 368).

While many studies have accepted the Perry and Wise’s (1990) definition of PSM (Moynihan & Pandey, 2007a), others have defined it differently. For example, Brewer and Selden (1998) defined PSM as “the motivating force that makes individuals deliver significant public service" (p. 417). In a different study, Rainey and Steinbauer (1999) attempted to approach PSM by considering public interests and directly mentioned altruism in their definition of PSM: “a general altruistic motivation to serve the interests of a community of people, a state, a nation, or humankind” (p. 23).

From more of a practical perspective, Vandenabeele (2007) recognized the limitations of applying PSM in previous research and insisted that PSM should be redefined differently according to different nations and regions. In his study, PSM is defined as “the belief, values, and attitudes that go beyond self-interest and organizational interest, that concern the interest of a larger political entity and that motivate individuals to act accordingly whenever appropriate” (p. 547).

As reviewed above, PSM has been defined in various ways by different scholars. Nonetheless, those definitions of PSM have a common denominator that focuses on public employees’ intentions and attitudes to contribute to the betterment of society.

## 2.2 Multidimensional conceptualization of PSM

According to Perry and Wise (1990), PSM exists due to affective, normative, and

rational motives. An individual's intrinsic, altruistic, and prosocial value set is closely related to different managerial and organizational outcomes in the public sector (Perry & Wise, 1990; Park & Word, 2012). In other words, PSM is the "belief, values, and attitudes that go beyond self-interest and organizational interest, that concern the interest of a larger political entity and that motivate individuals to act accordingly whenever appropriate" (Vandenabeele, 2007, p. 547).

PSM initially was operationalized in the United States by different measurement tools (Wright, 2008; Desmarais & Gamassou, 2014). For example, Gabris and Simo (1995) focused on stakeholders' reward preferences, and Brewer and Selden (1998) analyzed PSM from the viewpoint of employee behavior (Desmarais & Gamassou, 2014). Furthermore, Perry and Wise (1990) provided a multidimensional structure of PSM based on the definition in their study. In order to measure PSM, Perry (1996) then used an exploratory result to develop a 24-item scale with four dimensions: attraction to policy making, commitment to the public interest, compassion, and self-sacrifice (Perry, 1996; 1997). First, attraction to policy making refers to the motivation that seeks to improve public services through the political system. Second, commitment to the public interest is the desire to serve society based on an organization's values and responsibilities. Third, compassion denotes emotionally based motivation to do good for others on the basis of identification and empathy. Fourth, self-sacrifice measures the willingness to bypass one's own needs to help others and the society (Andersen, Jørgensen, Kjeldsen, Pedersen, & Vrangbæk, 2013).

Attraction to policy making, commitment to the public interest, and compassion correspond to the norm-based, affective, and rational/instrumental foundation of PSM. Self-

sacrifice can be seen as the foundation on which the other dimensions rest (Kim & Vandenabeele, 2010; Andersen et al., 2013) because doing good for others and society in the delivery of public services often requires self-sacrifice: The dimension specifically concerns the willingness to engage in service to others (Perry, 1996; Andersen et al., 2013). In other words, the heart of PSM involves components that are emotional, norm-based, and related to altruism (Desmarais & Gamassou, 2014). These dimensions, whose characterization was simplified by Kim (2009), have provided the basis for many international investigations. However, this measurement tool also has limits, both in its ability to allow cumulative research at international level and in its psychometric properties (Kim et al., 2013; Desmarais & Gamassou, 2014). The measurement issue of PSM is addressed in the next chapter.

## 2.3 Relationship between PSM and work outcomes

A multitude of research studies have found PSM to be a predictor that contributes to various types of employees' behavioral outcomes. Naff and Crum (1999) examined how PSM affects public employees' performance, job satisfaction, retention, and their support for government reform efforts. They surveyed about 10,000 public employees in 23 federal agencies in the United States. Specifically, they measured PSM with six survey questions developed by Perry (1996). Their results demonstrated that federal employees with a higher level of PSM are more likely to perform better in the organization and be more supportive of government reforms. Moreover, although federal employees generally had a higher level of job satisfaction, PSM made a difference in how satisfied they were with their jobs. A higher level of PSM led to not only higher job satisfaction of the federal employees but also to a higher probability of staying

employed in the public sector. With a similar approach, other studies have examined the relationship between PSM and outcome variables. As an independent variable, PSM is significantly related to organizational citizenship behavior (Kim, 2006; Pandey, Wright, & Moynihan, 2008), whistle-blowing, performance, job satisfaction, commitment (Brewer & Selden, 1998), volunteering, donating blood, and political participation (Houston, 2006; Perry et al., 2008; Taylor, 2008).

Overall, researchers have considered PSM to be a unique concept for understanding the characteristics of work environments in the public sector, and it is widely accepted for the prediction of organizational or behavioral outcomes.

## 3. Person-Environment Fit

### 3.1 Conceptualization of P-E fit

Person-environment fit is defined as the compatibility between an individual and a work environment that occurs when their characteristics are well matched (Kristof-Brown et al., 2005). In other words, P-E fit can be understood as the congruence of values, characteristics, and norms between a person and the environment of his or her workplace.

The theory of P-E fit was first formulated according to different theoretical perspectives between the individual difference approach and the situational approach. The former tried to predict a person's behavior by measuring his or her individual personality, while the latter understood a person's behavior by investigating the characteristics of his or her situation (Chatman, 1989). In this regard, behavioral scientists have debated the basic question of which factor has a more significant effect on individual's behavior: personality or environment.

Specifically, personality theorists insist that personal attributes can account for the variation of an individual's behavior more effectively (e.g., Schneider, 1987), while the situational theorists argue that environment can do so better (e.g., Mischel, 1977). In contrast to these perspectives, interactional theorists have emphasized that understanding the interaction between a person and the environment is a more accurate and appropriate way to predict an individual's behavior (Chatman, 1989). Indeed, as many researchers have recognized the importance of the interaction between people and their environment, the interest in the P-E fit paradigm has been growing (e.g., Edwards & Shipp, 2007; Kristof, 1996; Kristof-Brown et al., 2005).

Based on that understanding of the interaction between a person and the environment, scholars have conceptualized the P-E fit paradigm in various ways. Fundamentally, from a theoretical and traditional perspective, it has been categorized into two types of fits: supplementary and complementary (Kristof, 1996; Kristof-Brown et al., 2005; Muchinsky & Monahan, 1987).

First, supplementary fit focuses on the matching or similarity of P-E relationship. It refers to the extent of similarity between an environment and a person's characteristics, such as the content dimensions of values and personality traits. From the perspective of supplementary fit, the relationship between an individual and the environment is congruent when "a person supplements, embellishes, or possesses characteristics which are similar to other individuals in the environment" (Muchinsky & Monahan, 1987, p. 269). For example, people feel more comfortable and productive in the workplace when they work with others who have similar values or tastes (Muchinsky & Monahan, 1987). In fact, empirical studies have found that people

perform better when their values are congruent with those of others in their organizations (e.g., Adkins, Ravlin, & Meglino, 1996; Meglino, Ravlin, & Adkins, 1989).

In contrast, complementary fit understands P-E relationships with the perspective of needs-supplies fit and demands-abilities fit. These two dimensions of complementary fit are distinguished according to whether requirements are provided by the environment or by the person (Edwards & Shipp, 2007; Kristof, 1996). Needs-supplies fit occurs when an individual's needs are met by the supplies in the environment, while the demands-abilities fit occurs when an individual has the abilities to meet the environmental demands. In both cases, complementary fit supports that people fit when they fulfill the needs unsatisfied by others.

Besides the conceptual distinctions between the supplementary and the complementary fit, P-E fit has been categorized differently by considering multidimensionality of environment. From a practical perspective, Schneider, Goldstein, and Smith (1995) asserted that P-E fit could be conceptualized at different levels of analysis in the environment. For example, in a number of studies, P-E fit is considered with various levels of work environment such as person-organization (P-O) fit, person-group (P-G) fit, person-job (P-J) fit, and person-supervisor (P-S) fit.[1]

First, one of the most widely researched types of P-E fit is P-O fit, which focuses on the relationship between a person and an organization. Person-organization fit is defined as "the

[1] In addition to P-O fit, P-J fit, P-G fit, and P-S fit, some research studies consider person-vocation (P-V) fit as one of the various facets. Since P-V fit is overly related to P-J fit (Kristof-Brown et al., 2005), it is not inclusive in this study.

congruence between the norms and values of organizations and the values of persons" (Chatman, 1989). Considering that P-O fit is significantly related to the career decisions (people select organizations when they feel similarity between their personalities and organizations' characteristics) (Cable & Judge, 1994; 1996), it is comprised of a variety of organizational factors, including values, goals, climate, personality traits, needs, and preferences (Adkins et al., 1996; Cable & Judge, 1997; Christiansen, Villanova, & Mikulay, 1997; Meglino et al., 1989; O'Reilly et al., 1991; Vancouver & Schmitt, 1991).

Second, P-G fit deals with the congruence between a person and work groups. Because this kind of fit focuses on sub-organizations, it is similar to P-O fit. However, since P-O fit concentrates on an entire organization rather than the work teams or groups (Kristof-Brown et al., 2005), P-G fit is different from P-O fit (Kristof, 1996). Moreover, considering that the norms and values of work groups may differ from those of an organization, P-G fit can be distinguished from P-O fit. Despite the growing number of work groups in organizations, less attention has been given to P-G fit than to other types of P-E fit (Kristof-Brown et al., 2005).

The third dimension of P-E fit is P-J fit, which concentrates on the compatibility between the abilities of a person and the demands of a job (Kristoff, 1996). More precisely, the fit is associated with the relationship between an individual's ability and the tasks performed. In that sense, P-J fit is defined as the congruity between the person's abilities and the job demands or the person's desires and the job characteristics (Edwards, 1991). Therefore, based on this definition, P-J fit can be clearly distinguished from P-O fit. In fact, P-J fit has been found to have unique effects on work attitudes beyond P-O fit (Kristof-Brown, Jansen, & Colbert, 2002; Saks

& Ashforth, 1997).

Lastly, P-S fit focuses on dyadic interpersonal relationships in a hierarchical organizational structure. It deals with the congruence between subordinates and their supervisors (e.g., Adkins, Russel, & Werbel, 1994; Van Vianen, 2000). Considering that P-S relationships are based on a strict hierarchy, values and goals are the most important factors for understanding P-S fit. Indeed, some scholars have conceptualized P-S fit as the similarity of values, goals, personality traits, leadership behaviors, and preferences between subordinates and supervisors (Chuang & Lin, 2005). Although some studies have emphasized the importance of supervisor-subordinate relationships by considering studies on other types of P-E fit, less study has been conducted on the relationship between P-S fit and work outcomes (Griffeth, Hom, & Gaertner, 2000; Tak, 2011).

As discussed above, a number of studies have conceptualized P-E fit by categorizing it into two fits, which are supplementary and complementary fit. Other studies have divided it into several types of fits in practical ways, such as P-O fit, P-G fit, P-J fit, and P-S fit. Since this study endeavors to predict employees' behavioral outcomes empirically, the latter approach of more specific divisions is more appropriate. In this regard, although previous research has recognized the difference between P-O fit and P-G fit (e.g., Kristof, 1996), it is still difficult to empirically predict the outcomes of these fits. Moreover, considering the rigidity of the public sector based on a strong sense of hierarchy, P-S fit is helpful for understanding the relationship between employees and their supervisors in public sector organizations. Therefore, the current study considers the three sub-dimensions, P-S fit, P-G fit, and P-J fit, in order to represent the

overall P-E fit.

## 3.2 Relationship between P-G fit, P-J fit, P-S fit and work outcomes

### 3.2.1 P-G fit and outcomes

Person-group fit has been considered in light of various outcomes such as satisfaction, organizational commitment, and performance (Kristof-Brown et al., 2005). However, despite a plethora of research concerned with the demographic similarity between coworkers, relatively little research has investigated how the psychological compatibility between coworkers influences outcomes in group settings (Kristof-Brown et al., 2005).

DeRue and Morgeson (2007) examined the relationship between P-G fit and organizational outcomes in a study based on data collected from 205 undergraduate business students and 43 MBA students. They set up person-team (P-T) fit and person-role (P-R) fit as independent variables and the individuals' growth satisfaction and performance as dependent variables. They found that P-T fit is more stable than P-R fit and that the fits are positively related with all the dependent variables. Slocombe and Bluedorn (1999) considered preferred and experienced polychronicity as independent variables and organizational commitment and performance evaluation as dependent variables. With a research sample of 246 business graduates of a large public university, they found that polychronic congruence is significantly related to organizational commitment, performance evaluation, and the perceived level of performance evaluation. Witt, Hilton, and Hochwarter (2001) tried to understand goal congruence in a group setting by analyzing data from 172 senior-level employees of a research, development, and acquisition business unit of an organization in the private sector. In their

research model, member goals and other team member goals were the independent variables, and team satisfaction and effectiveness were the dependent variables. The research showed that member-team goal congruence moderates the relationship between the perceptions of team-level politics and the team relevant outcomes.

Overall, although there has been less research on P-G fit, it is positively related to a number of outcomes, such as employees' performance and satisfaction in the workplace. Nevertheless, there is a handful of empirical studies that have examined the relationship between P-G fit and those outcomes, studies using the direct term of P-G fit especially in public administration are rare. Therefore, it is worthwhile to consider P-G fit as one of the significant contents in this study.

### 3.2.2 P-J fit and outcomes

Person-job fit results in positive attitudes and behaviors in an organization through job engagement and performance. Kristof et al. (2005) showed that P-J fit has a positive effect on job satisfaction and organizational commitment and a negative effect on turnover intention. Moreover, Maslach, Schaufeli, and Leiter (2001) argued that employees' job engagement improved as a result of P-J fit in six areas of work life: sustainable workload, feelings of choice and control, appropriate recognition and award, a supportive work community, fairness and justice, and meaningful and valued work. In other studies, job satisfaction (Cable & DeRue, 2002; Kristof-Brown et al., 2002), job performance (Caldwell & O'Reilly, 1990; Scroggins, 2008), and job satisfaction and contextual performance (Lauver & Kristof-Brown, 2001) were set up as consequences, and those outcomes were affected by P-J fit. Several studies have also further

examined the relationship between P-J fit and job engagement. The results of such studies have demonstrated that a higher P-J fit leads to a higher level of employee engagement. Laschinger, Wong, and Greco (2006) found that 322 staff nurses in Canada experienced increased engagement with their work when there was a P-J match in some or all of six areas of work life.

As reviewed above, P-J fit has been linked with various outcomes in a number of studies, and the fit framework significantly relates to both employees' behavioral and organizational outcomes.

### 3.2.3 P-S fit and outcomes

The positive influence of P-S fit has been discussed by numerous scholars. For example, Meglino, Ravlin, and Adkins (1992) examined the relationship between P-S fit and affective outcomes based on a survey conducted among 174 manufacturing employees. They found that a high level of P-S fit is associated with a low level of role ambiguity and conflict, as well as a high level of organizational commitment, job satisfaction, and job performance. Furthermore, Kristof-Brown et al. (2005) investigated the relationships between various types of P-E fit and outcomes and found that P-S fit is positively correlated with an employee's satisfaction for the supervisor, leader-member exchange (LMX), job satisfaction, and overall performance. In addition, P-S fit is linked with LMX quality (Ashkanasy & O'connor, 1997), trust, loyalty to a supervisor, and performance (Huang & Iun, 2006). Similarly, another study found that P-S fit has a positive correlation with LMX, organizational commitment, and commitment to the supervisor (Van Vianen, Shen, & Chuang, 2011).

Buckingham and Coffman (1999) stated that one's supervisor has a greater influence on

the individual than the organization's culture or policies. This suggestion seems plausible given that a supervisor is a primary part of the organizational environment and that employees encounter their supervisor more directly and frequently than other colleagues. Since most employees meet with or contact their supervisors almost every day, they have a high amount of interaction with their supervisors. Based on the rigidity of hierarchical structures in public organizations, supervisors in such contexts may have a stronger impact on their subordinates than in private sector organizations. Therefore, the congruence between subordinates and supervisors is a crucial factor. Considering such circumstance, this study views P-S fit as a significant contextual variable in its research model.

## 4. Theoretical Frameworks and Research Hypotheses

The purpose of this study is to estimate the mediating effect of the level of compatibility between employees and their work environment in the relationship between the level of the individuals' motives for the public interest and the activities of the employees to share their knowledge in organizations. Specifically, this study treats PSM as the independent variable; knowledge sharing as a dependent variable; and P-G fit, P-J fit, and P-S fit (which are sub-dimensions of P-E fit) as mediator variables. Figure 2.2 is the research model, and it shows the relationship between those variables. The research model includes three direct relationships between PSM and knowledge sharing, PSM and sub-dimensions of P-E fit, and sub-factors of P-E fit and knowledge sharing. It also includes an indirect relationship between PSM, the sub-scales of P-E fit, and knowledge sharing.

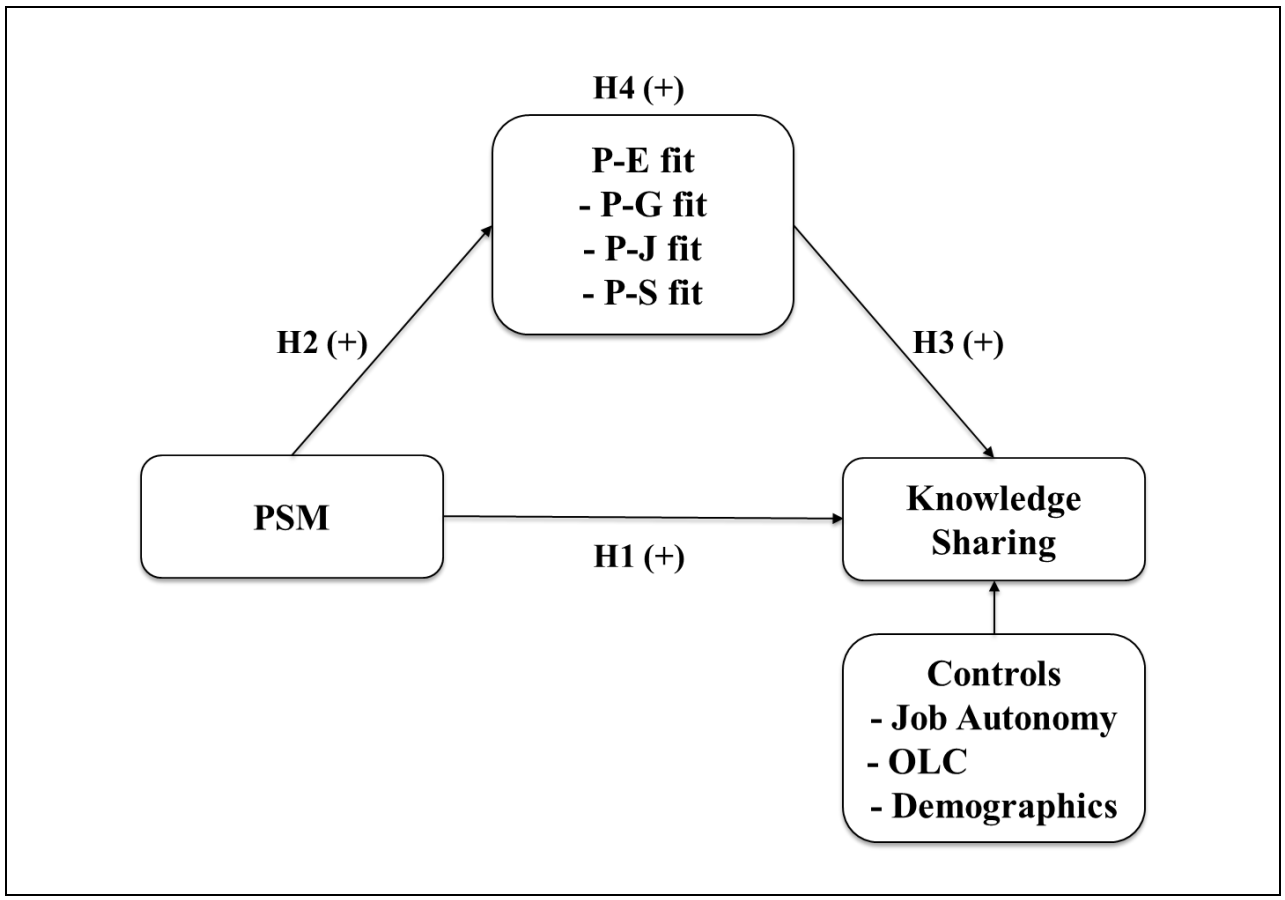


*Figure 2.1* Research model: knowledge sharing motivation in the public sector
*Note.* PSM=public service motivation, P-E fit=person-environment fit, P-G fit=person-group fit, P-J fit=person-job fit, P-S fit=person-supervisor fit, OLC=organizational learning culture

This study is supported by the theories of SDT and PSM and is based on the assumption that knowledge sharing motivation in the public sector requires civil servants to have intrinsic and altruistic motivation. Viewing public service as a calling (Houston & Cartwright, 2007) can lead public employees to share knowledge, thus advancing organizational knowledge and improving public service delivery and the quality of public programs and policies. This study advances the theory of knowledge sharing motivation by considering the special context of the public sector.

In addition, this study accepts the claim that P-E fit can improve performance, job

satisfaction, and commitment and that it can diminish tardiness and intent to leave (e.g., Meglino et al., 1989; Cable & Judge, 1996; Kristof-Brown et al., 2005). In this study, P-E fit plays a role as a mediator on the relationship between PSM and knowledge sharing. Although knowledge sharing motivation is importantly considered and some studies (e.g., Chen & Hsieh, 2015; Tuan, 2016) have examined it, no research has investigated the mechanisms on how PSM affects knowledge sharing. Therefore, it is worthwhile to understand those mechanisms so that better strategies can be designed to foster knowledge sharing activities in public sector organizations.

Based on the general perspective regarding PSM, P-E fit, and knowledge sharing, theoretical linkages between those main variables and the research hypotheses will be proposed in the following sections. Specific measurements of those main variables will be provided in the next chapter.

## 4.1 PSM and knowledge sharing

While PSM has been defined in various ways by different scholars (e.g., Brewer & Selden, 1998; Rainey & Steinbauer, 1999; Vandenabeele, 2007), it generally refers to “an individual’s predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations” (Perry & Wise, 1990, p. 368). Kim and Vandenabeele (2010) emphasized that self-sacrifice plays a core role in enhancing one’s motivation for public service. From their theoretical perspective, people do good for others and for society, and the delivery of public service is based on self-sacrifice. Therefore, people having high levels of PSM are willing to risk tangible personal loss when they work in the public sector.

Public service motivation is more related to intrinsic motivation than to extrinsic

motivation. Intrinsic rewards are derived from the satisfaction achieved by performing meaningful work well. In light of this perspective, public employees place a high value on helping other people, serving the public, and doing good for society. In fact, they are more intrinsically motivated and committed to serving the public than others (Perry, Hondeghem, & Wise, 2010; Perry & Wise, 1990), so PSM has a positive effect on their prosocial behaviors, such as organizational citizenship behavior (Campbell & Im, 2016; Kim, 2006; Podsakoff et al., 2000). Knowledge sharing is considered as one of such prosocial behavior, and intrinsic motivation is positively associated with knowledge sharing (Gagné, 2009; Liu & Fang, 2010). In this logical context, this study can assume that PSM positively influences knowledge sharing, so it encourages people to share their knowledge in their organizations. Thus, the first hypothesis regarding the relationship between PSM and knowledge sharing was developed as follows:

Hypothesis 1: PSM has a direct and positive effect on knowledge sharing.

### 4.2 P-E fit and knowledge sharing

Knowledge is essential to organizations, but the management of knowledge receives little attention in public administration (Chen & Hsieh, 2015). Instead, knowledge management is mostly discussed and studied in information studies and business administration. Knowledge sharing is considered one of the most important activities (Davenport & Prusak, 1998), and many factors affect knowledge sharing, such as leadership, organization structure, and trust (Seba, Rowley, & Lambert, 2012); vision, goals, and social networks (Kim & Lee, 2006); and leadership and information (Taylor & Wright, 2004). All of those factors have been studied as potential ways to increase employees' willingness to share knowledge with other members

within an organization.

Despite the lack of research, a few scholars focused on the importance of P-E fit in knowledge management. For example, Argote, McEvily, and Reagans (2003) recognized the importance of P-E fit in organizations and insisted that P-E fit can influence knowledge management outcomes. They found that “when properties of units, properties of relationships and properties of knowledge fit or are congruent with each other, knowledge retention, and transfer increase” (p. 580). Namely, P-E fit theory dealt with the organizational culture by focusing on the suitability of properties with a work environment that a good match between employees and their work environment increases knowledge sharing. Based on this theory, the author can assume that P-E fit is positively associated with knowledge sharing. However, it only recognized that P-E fit influences knowledge related behaviors from a general perspective, and research on the relationship between P-E fit and knowledge sharing is still relatively rare. Therefore, it is worthwhile to empirically examine the relationship between those two factors.

In this study, P-E fit was categorized into three sub-dimensions: P-G fit, P-J fit, and P-S fit. Person-group fit occurs when an employee is matched well with his or her work group (Kristof-Brown, Zimmerman, & Johnson, 2005). Since P-G fit focuses on interpersonal compatibility with coworkers in a work group (Kristof, 1996; Werbel & Gilliland, 1999), it is distinguished with the concept of a demographic relationship with coworkers (e.g., Riordan, 2000). Therefore, P-G fit is related to multiple factors, such as beliefs, characteristics, and abilities. Knowledge sharing can be sensitive and rare because employees are reluctant to share information they have. However, employees are likely to share knowledge when they think it is

necessary for completing tasks assigned to them in their organizations (Seong & Kristof-Brown, 2012). Furthermore, when employees perceive that they are compatible with their work groups or coworkers and when they need to share abilities in order to achieve common goals, they become willing to share their knowledge with others. Therefore, based on the perspective of P-G fit, when employees feel that their characteristics fit their work groups' task demands, they are willing to share knowledge in those groups.

Person-job fit has been considered to be important factor in knowledge transfer research (Argote, McEvily, & Reagans, 2003) and is the most widely studied type of P-E fit (Werbel & DeMarie, 2005). It focuses on the congruence between an employee's characteristics and his or her job or tasks. Within the context of a career, P-J fit is conceptualized based on two perspectives: demands-abilities fit and needs-supplies fit (Edwards, 1991). The former perspective considers the fit between an employee's abilities, such as knowledge and skills, and job demands (Cable & Judge, 1996). The latter perspective refers to the fit between the needs and desires that an employee has and what is provided by the job (Cable & DeRue, 2002). Considering these perspectives, P-J fit provides a useful measure for determining how satisfied employees are with their tasks and job demands. Indeed, individuals who satisfied with their jobs are more likely to engage in prosocial behaviors, such as organizational citizenship behavior and knowledge sharing (Teh & Sun, 2012).

As discussed in the previous section, a number of P-S fit studies have demonstrated that when subordinates perceive their supervisors as similar in terms of demographics or personalities, it has positive effects on work outcomes (e.g., Ashkanasy & O'connor, 1997; Huang & Iun, 2006;

Kristof-Brown et al. 2005; Meglino et al.,1992; Van Vianen et al., 2011). However, like P-J fit theory, the congruence between subordinates and supervisors has not been extensively discussed in knowledge sharing studies (Kim, Han, Son, & Yun, 2017). Person-supervisor fit is based on employees' perception of similarities with their supervisors and on the quality of the relationship between subordinates and supervisors (Van Vianen et al., 2011). Employees' perception is positively associated with LMX theory, which focuses on dyadic relationship between leaders and followers (Engle & Lord, 1997). Moreover, P-S fit is more interpersonal and less task-oriented than other types of P-E fit. Considering the significant relationship between P-S fit and LMX, mutual respect and trust are important factors for understanding P-S fit. Indeed, the employees' perception of a good fit with their supervisors is related to how much those employees trust and respect them (Van Vianen et al., 2011). Therefore, trust between subordinates and supervisors positively influences employees' knowledge sharing behavior (Wu, Lin, Hsu, & Yeh, 2009). Considering the theoretical linkages for understanding the relationship between the three sub-dimensions of P-E fit and knowledge sharing, the following hypotheses were proposed:

Hypothesis 3a: P-G fit has a direct and positive effect on knowledge sharing.

Hypothesis 3b: P-J fit has a direct and positive effect on knowledge sharing.

Hypothesis 3c: P-S fit has a direct and positive effect on knowledge sharing.

4.3 PSM and P-E fit, and the mediating role of P-E fit on a relationship between PSM and knowledge sharing

Several PSM studies have dealt with P-E fit theory. On the one hand, some scholars have seen P-O fit theory as having a mediating effect on the relationship between PSM and job satisfaction (Wright & Pandey, 2008), between PSM and work attitudes, such as organizational commitment and job satisfaction (Kim, 2012), and between PSM and job performance (Bright, 2007). On the other hand, other researchers have examined the moderating effect of P-J fit and P-O fit on the relationship between PSM and willingness to work in the public sector (Christensen & Wright, 2011). As reviewed above, such researchers have a limited perspective of P-E fit in that they primarily have considered P-O fit and P-J fit. In addition, those studies only focused on P-O fit and P-J fit as playing a mediating or moderating role between PSM and organizational outcomes. Therefore, direct relationships between PSM and those fit frameworks have not been investigated.

Although both theoretical background and empirical research on P-E fit are rare in PSM studies, this study took some cues from previous studies to understand the relationship between PSM and P-E fit. Employees with high levels of PSM regard their values as congruent with the values of the organizations they work for (Perry & Wise, 1990; Stritch & Christensen, 2014). In addition, PSM-driven employees are not only willing to risk personal loss to help others and to work for the public (Kim & Vandenabeele, 2010) but also are more likely to engage in prosocial behaviors (e.g., Campbell & Im, 2016; Kim, 2006; Pandey et al., 2008; Podsakoff et al., 2000), which is based on performers' altruism and generalized compliance. In that sense, although

employees may perceive their fit with their work environment as not suitable, they might try to work actively to match themselves to that work environment. Therefore, based on employees' internal motivation and willingness to fit into the work environment, we can assume that PSM appears to be positively related to P-E fit.

Moreover, considering both SDT and PSM theory, since highly PSM-driven employees in the public sector are not motivated by extrinsic rewards, such as promotion and high monetary rewards, this study considers internal factors, such as relationships or the compatibility of employees and their work environment—as in some previous studies (e.g., Perry & Wise, 1990; Ryu, 2017; Stritch & Christensen, 2014). Indeed, Perry and Wise (1990) insisted that "the greater an individual's public service motivation, the more likely the individual will seek membership in a public organization" (p. 370). Moreover, employees with high levels of PSM are attracted to sharing values with their organization and coworkers (Christensen & Wright, 2011), and they are more likely to be compatible with public sector organizations because they complete their job tasks and achieve better outcomes (Lewis & Frank, 2002; Perry & Porter, 1982; Perry & Wise, 1990). Furthermore, from a broader perspective, as the Perry and Wise's (1990) statement includes sub-factors of the work environment such as coworkers, job tasks, and organizations, PSM-oriented employees will prefer and pursue congruence with their work groups, coworkers, job tasks, and supervisors. In light of this, the author hypothesized a positive relationship between PSM and the sub-dimensions of P-E fit, which are P-G fit, P-J fit, and P-S fit. Employees with higher PSM levels are willing to fit into their organizations and work environments because they put a high value on matching themselves with their organizations and on better organizational outcomes. Although employees might feel that the interests and

characteristics of coworkers, demands and goals of their organizations, and values of supervisors differ from their own, individuals with high levels of PSM are likely to take pains or loss to achieve better compatibility with the different types of objects in the workplace. One way they might do this is by conducting voluntary behavior intended to help others. Considering theoretical frameworks for the direct relationships between PSM and sub-dimensions of P-E fit and for the indirect relationship between PSM, the sub-dimensions of P-E fit, and knowledge sharing, the following hypotheses were developed:

Hypothesis 2a: PSM has a direct and positive effect on P-G fit.

Hypothesis 2b: PSM has a direct and positive effect on P-J fit.

Hypothesis 2c: PSM has a direct and positive effect on P-S fit.

Hypothesis 4a: PSM has an indirect and positive effect on knowledge sharing through a positive influence on P-G fit.

Hypothesis 4b: PSM has an indirect and positive effect on knowledge sharing through a positive influence on P-J fit.

Hypothesis 4c: PSM has an indirect and positive effect on knowledge sharing through a positive influence on P-S fit.

**5. Chapter Summary**

This chapter reviewed each main variable in the current study. It observed carefully how previous studies have defined knowledge sharing and have considered with organizational

outcomes. In addition, relationships between various predictors including PSM and knowledge sharing were reviewed, and it was confirmed that motivation is an important factor for predicting knowledge sharing. This chapter also reviewed PSM, which has been widely researched in public administration studies. It inspected the multiple dimensions of PSM, such as attraction to policy making, commitment to the public interest, compassion, and self-sacrifice. Considering the literature, it is evident that PSM has previously been understood as a special concept of motivation in the public sector. In addition, the present study defined P-E fit as the compatibility between an employee and his or her work environment. It also examined P-E fit more closely and delineated between different types of environments in the workplace: P-G fit, P-J fit, and P-S fit. Furthermore, this study found theoretical linkages between main variables and developed research hypotheses by applying SDT and P-E fit theory. The current study considered the positive and direct relationships between PSM and knowledge sharing, PSM and the sub-dimensions of P-E fit, and P-E fit's sub-scales and knowledge sharing, and the positive and indirect relationships between PSM and knowledge sharing through P-E fit. The next chapter will explain the methods of data collection and measurement items for examining proposed hypotheses. Table 2.1 summarizes the research hypotheses developed in this chapter.

Table 2.1 Variables related and research hypotheses

| Variables | | | Hypothesis |
|---|---|---|---|
| IV | DV | M | |
| PSM | Knowledge sharing | | H1: PSM has a direct and positive effect on knowledge sharing. |
| PSM | P-G fit | | H2a: PSM has a direct and positive effect on P-G fit. |

| | | | |
|---|---|---|---|
| | P-J fit | | H2b: PSM has a direct and positive effect on P-J fit. |
| | P-S fit | | H2c: PSM has a direct and positive effect on P-S fit. |
| P-G fit | Knowledge sharing | | H3a: P-G fit has a direct and positive effect on knowledge sharing. |
| P-J fit | | | H3b: P-J fit has a direct and positive effect on knowledge sharing. |
| P-S fit | | | H3c: P-S fit has a direct and positive effect on knowledge sharing. |
| PSM | Knowledge sharing | P-G fit | H4a: PSM has an indirect and positive effect on knowledge sharing through a positive influence on P-G fit. |
| | | P-J fit | H4b: PSM has an indirect and positive effect on knowledge sharing through a positive influence on P-J fit. |
| | | P-S fit | H4c: PSM has an indirect and positive effect on knowledge sharing through a positive influence on P-S fit. |

*Note.* IV=independent variable, DV=dependent variable, M=Mediating variable, PSM=public service motivation, P-G fit=person-group fit, P-J fit=person-job fit, P-S fit=person-supervisor fit

# Chapter Ⅲ. Methodology

This chapter explains the methodology used for this study. First, this chapter describes which variables were considered in this study, how the survey instrument was developed, and how that instrument measured the variables. It then describes data sources and analytic methodology, which were used for testing the research hypotheses. Most of the measures were adapted from previous studies, and the data for this study were collected from local government agencies in South Korea. This study is based on a non-experimental quantitative research method.

## 1. Research Design

Most studies from the literature review used quantitative and correlational research designs (e.g., Brewer & Selden, 1998; Houston, 2006; Kim, 2006; Naff & Crum, 1999; Pandey et al., 2008; Perry et al., 2008; Taylor, 2008) for examining relationships between variables of interest. These studies primarily collected data through cross-sectional offline surveys.

In line with that trend, this research also used a cross-sectional offline survey method. Cross-sectional research is widely used in social science fields, including public administration. This approach is appropriate for examining the causal effects of one or more independent variables upon a dependent variable of interest at a given point in time, and this design is often used with survey research (Frankfort-Nachmias & Nachmias, 2008). Because the current study examined the relationship between the main variables, PSM, knowledge sharing, and the sub-dimensions of P-E fit, cross-sectional research is appropriate.

This research used a non-experimental quantitative research method. In fields of social

sciences, a number of studies have used non-experimental research designs when it is impossible to control variables or circumstances of interest. For this reason, in this study, any intervention was not provided, and one group post-test only design was used. There was no treatment group or control group in this study. Moreover, although non-experimental designs can suffer from methodological limitations with regard to their internal validity, the design has a high level of external validity that can be generalized to a larger population. Therefore, non-experimental research is applicable because this study generalizes the results of this study based on collected data from public employees in local government agencies through a survey method. Although a qualitative research design can examine issues in depth and provide detailed information, it is not appropriate for this study. This is because the present study collected data from public employees and examines relationships between some variables. Therefore, quantitative research is appropriate for this study.

**2. Sampling and Data Collection**

Data was collected from public employees in 33 local government agencies in South Korea[2]. Initially, 1,420 questionnaires were distributed to those public agencies, and a total of 1,094 of them were returned, yielding a response rate of 77%. Considering missing data or insincere answers of some respondents, 46 were excluded, and 1,048 questionnaires were used for the final analysis.

This research used a self-administered survey method. Although mail survey and online

[2] The researcher sent mails or emails to local government agencies in South Korea and received confirmation of participation from 33 agencies.

survey methods are widely used in the academic field, these survey methods are ineffective in case the respondents may need assistance understanding and responding to the survey questionnaire. Therefore, to increase response rate and validity of the survey, the researcher visited each selected local government agency at the agency's chosen day and conducted a survey to collect data.

Before starting the survey, the researcher explained the survey to respondents and told them that their participation in the survey was completely voluntary and that their responses would be anonymous. The researcher then distributed a survey packet that included an introduction, informed consent, and a survey questionnaire to each participant. The survey was finished on the same day the researcher visited, and all the survey data was gathered into a packet.

**3. Measures**

This section explains the measures used for measuring the independent, dependent, mediating, and control variables in this study. This study utilized established measures which were adopted from previous studies. The survey comprised questions for measuring employees' behaviors and perceptions of their work environments and demographic information. It included measures of variables such as PSM, knowledge sharing, P-E fit, and other work environment factors to be controlled. Except for demographic variables, most variables were measured on a five-point Likert-type scale ranging from 1 to 5, where a value of 1 corresponded with "strongly disagree," and a value of 5 corresponded with "strongly agree." The measure for each variable is described in the following section.

3.1 Independent variable: Public service motivation

As reviewed in the previous chapter, many studies have measured PSM as an independent variable and have examined how to influence various organizational and behavioral outcomes, such as organizational performance, job satisfaction, or organizational commitment (Brewer & Selden, 1998) and prosocial behavior such as organizational citizenship behavior (Kim, 2006; Pandey et al., 2008). Like those studies, the current study also set up PSM as an independent variable to understand the relationship between PSM and knowledge sharing. Based on the related literature, PSM was defined as altruistic motivations encouraging public employee's willingness to provide valuable service for the public interest. In a number of PSM studies, scholars used a 24-item measure which was developed by Perry (1996) to measure PSM (Coursey & Pandey, 2007; Wright, 2008). Perry's (1996) measure includes four sub-dimensions of PSM: attraction to public policymaking, commitment to the public interest/civic duty, compassion, and self-sacrifice. Although the scale has been used in many studies, it was insufficient to be applied broadly in the various contexts of the public sector. For example, because categorization issues occurred due to the scale's application limits, some dimensions were dropped, or more than four dimensions were created (Kim & Vandenabeele, 2010).

Kim et al. (2013) also recognized the limitations of Perry's scale (1996) and insisted that the scale needed to be revised in light of the historical and social characteristics of a given context. To measure PSM, the researcher adopted a 16-item measure which is appropriate for international contexts (Kim et al. 2013). In Kim et al.'s (2013) research, PSM was classified into four sub-dimensions: attraction to public service, commitment to public values, self-sacrifice,

and compassion. The measure was constructed from individuals' responses to these questions,

*Attraction to public service*

I admire people who initiate or are involved in activities to aid my community.

It is important to contribute to activities that tackle social problems.

Meaningful public service is very important to me.

It is important for me to contribute to the common good.

*Commitment to public values*

I think equal opportunities for citizens are very important.

It is important that citizens can rely on the continuous provision of public services.

It is fundamental that the interests of future generations are taken into account when developing public policies.

To act ethically is essential for public servants.

*Compassion*

I feel sympathetic to the plight of the underprivileged.

I empathize with other people who face difficulties.

I get very upset when I see other people being treated unfairly.

Considering the welfare of others is very important.

*Self-sacrifice*

I am prepared to make sacrifices for the good of society.

I believe in putting civic duty before self.

I am willing to risk personal loss to help society.

I would agree to a good plan to make a better life for the poor, even if it costs me money.

While PSM is typically measured by considering sub-dimensions in several studies (e.g., Bright, 2008; Giauque, Ritz, Varone, & Anderfuhren-biget, 2012; Kim, 2010; Kim et al., 2013; Perry, 1996; 1997), it is measured as one factor by calculating the overall PSM score (e.g., Alonso & Lewis, 2001; Esteve, Urbig, Van Witteloostuijn, & Boyne, 2016; Mostafa, Gould-Williams, & Bottomley, 2015). Considering that the latter uses the sum scores of PSM and also gives equivalent results, it is a much simpler way than using all sub-dimensions of PSM (Coursey, Brudney, Littlepage, & Perry, 2011). Therefore, the current study prefers the latter and measures PSM as one dimension without any consideration of sub-dimensions.

## 3.2 Dependent variable: Knowledge sharing

In the current study, knowledge sharing is defined as employees' activities of transferring or sharing their work-related knowledge, such as experience, manuals, methodologies, know-how, and expertise with other employees in their organizations or among other organizations. In order to measure knowledge sharing, this study used four items adapted from Ford and Staples (2010):

I share my work reports and official documents with members of my organization.

I provide my manuals, methodologies, and models for members of my organization.

I share my experience or know-how from work with other organizational members.

I try to share my expertise from my education or training with other organizational members in an effective way.

3.3 Mediating variables: P-G fit, P-J fit, and P-S fit (sub-dimensions of P-E fit)

P-E fit is defined as the congruence between an individual and a work environment that occurs when their characteristics are well matched (Kristof-Brown et al., 2005). For the current study, P-E fit is divided to three sub-dimensions, which are P-G fit, P-J fit, and P-S fit. Each fit is also defined as the compatibility between an employee and coworkers, his or her job demands, and a supervisor respectively. To measure the sub-dimensions of P-E fit, a total of 13 items established in previous studies were used. Specifically, this study measured P-G fit with the five items of Kristof-Brown, Barrick, and Stevens (2005), P-J fit with the four items of Lauver and Kristof-Brown (2001), and P-S fit with the four items of Chuang, Shen, and Judge (2016).

Since only the items derived from Chuang et al. (2016) are provided as an interrogative sentence with the response format from “no match” to “complete match,” for preventing respondents’ any confusion regarding different format of survey questions, we changed the form of these items to a declarative sentence with the same response format as the others, which use a scale from “strongly disagree” to “strongly agree.” For example, one of the items for measuring P-S fit, “How would you describe the match between the things you value in life and the things

your supervisor values?", was changed to "The things I value in life and the things my supervisor values are matched." The scale for measuring P-G fit, P-J fit, and P-S fit was composed of the questions as below.

*P-G fit*

My approach to work fits in with that of my work unit members.

My professional interests are the same as those of my work unit members.

I identify with my work unit members.

I get along well with the people I work with on a day-to-day basis.

I like the people I work with.

*P-J fit*

My abilities fit the demands of this job.

There is a good match between the requirements of this job and my skills.

My personality is a good match for this job.

I am the right type of person for this type of work.

*P-S fit*

The things I value in life and the things my supervisor values are matched.

My personality and my supervisor's personality are matched.

My work style and my supervisor's work style are matched.

My supervisor's leadership style and the leadership style I desire are matched.

3.4 Control variables

This study considered work environment variables such as job autonomy and organizational learning culture and demographic variables as control variables. Previous studies examined the relationships between job autonomy and knowledge sharing and between organizational learning culture and knowledge sharing. In one study, a high level of employees' perception of autonomy had a positive effect on their willingness to share knowledge with coworkers in their organization (Foss, Minbaeva, Pedersen, & Reinholt, 2009). In another, an organizational learning culture had a positive effect on knowledge sharing (Aizpurúa, Saldaña, & Saldaña, 2011). In light of those findings, job autonomy and an organizational learning culture[3] were included as variables in the proposed research model. In order to measure those variables, this study used four items adapted from Beehr (1976) and four items from Marsick and Watkins (2003) and Watkins and Marsick (1993), respectively. In addition, survey respondents were also asked to provide their demographic information, such as age, length of service in the current organization, gender, and annual salary. All the control variables are as below:

*Work environmental controls*

*Job autonomy*

[3] To measure organizational learning culture, three levels of organizational learning, which are individual, team or group, and organization, were considered (Watkins & Marsick, 1993; 1996).

I have a lot of say over what happens on my job.

I have enough authority to do my best.

My job allows me to make a lot of decisions on my own.

I have enough freedom as to how I do my work.

*Organizational learning culture*

In my organization, anyone can be a source of learning and knowledge.

In my organization, individuals are able to freely promote and try new ideas.

My organization creates continuous learning opportunities.

My organization promotes inquiry and dialogue.

*Demographic controls*

Age (in years)

Length of service in the current organization (years)

Gender (male = 0, female = 1)

Annual Salary (1 = less than $10,000; 2 = $10,000-20,000; 3 = $20,000-30,000;

4 = $30,000-40,000, 5 = more than 40,000)

## 4. Chapter Summary

This chapter explained the methodology used in the current study to collect data and

introduced measures for the dependent variable, independent variable, mediating variables, and control variables. The research model includes knowledge sharing as a dependent variable, PSM as an independent variable, sub-dimensions of P-E fit (P-G fit, P-J fit, and P-S fit) as mediating variables, job autonomy and organizational learning culture as work environmental control variables, and age, length of service in the current organization, gender, and annual salary as demographic variables. This study conducted a survey of 33 local government agencies in South Korea and used 1,094 questionnaires for the final analysis. A total of 45 items were included in the survey, most of which were adopted from previous studies. The following chapter will present the results of descriptive statistics, factor analysis, correlations, and regression analysis based on the data collected. Table 3.1 summarizes the measurement items and composition of the survey questionnaire.

Table 3.1 Measurement items and composition of the survey questionnaire

| Variable | Questions (number of items) | Source |
|---|---|---|
| Dependent variable | | |
| Knowledge sharing | Q 38-41 (4) | Ford & Staples (2010) |
| Independent variable | | |
| PSM | Q 22-37 (16) | Kim et al. (2013) |
| Mediating variables | | |
| P-G fit | Q 13-17 (5) | Kristof-Brown, Barrick, & Stevens (2005) |
| P-J fit | Q 18-21 (4) | Lauver & Kristof-Brown (2001) |

| | | |
|---|---|---|
| P-S fit | Q 9-12 (4) | Chuang, Shen, & Judge (2016) |
| Work environmental controls | | |
| Job autonomy | Q 5-8 (4) | Beehr (1976) |
| OLC | Q 1-4 (4) | Marsick & Watkins (2003); Watkins & Marsick (1993) |
| Demographic controls | | |
| Gender | Q 42 (1) | |
| Age | Q 43 (1) | |
| Service years | Q 44 (1) | |
| Annual salary | Q 45 (1) | |

*Note.* PSM=public service motivation, P-G fit=person-group fit, P-J fit=person-job fit, P-S fit=person-supervisor fit, OLC=organizational learning culture

# Chapter Ⅳ. Results

This chapter presents the results and interpretation of the data analyses based on a survey of public employees working in local governments in South Korea. First, this chapter reports the survey respondents' demographic information derived from the descriptive statistics. The second section of this chapter provides the results of factor analysis to check whether the measure was appropriate for this study. The measures for main variables (such as PSM, P-E fit, and knowledge sharing) were adopted from previous studies. They were translated and adjusted from English to Korean by considering the Korean public sector context. Considering the adjustment, the author conducted a confirmatory factor analysis (CFA) to examine the measurement properties and then used rotated factor analysis as exploratory factor analysis (EFA) to identify dimensions of the measure in this study. The last section of this chapter presents the results of the regression analysis to test the research hypotheses of the current study. Ordinary least squares (OLS) regression analysis was used to examine the direct relationships between PSM and knowledge sharing. Statistical results for the analyses were derived through AMOS and SPSS. Moreover, to understand the indirect relationship between these two variables, this study considered the mediating effect of the sub-dimensions of P-E fit (P-G fit, P-J fit, and P-S fit). To test the mediating effect, the bootstrapping method was conducted by using Hayes' PROCESS macro.

## 1. Descriptive Statistics

Table 4.1 shows the demographic characteristics of survey respondents. Considering age of respondents, five groups of age account for from 0.7% to 34.9%. The South Korean

government sets the retirement age of most public employees at 60, except police officers, firefighters, servicemen, and employees in public education. Thus, the group of participants over the age of 60 was the smallest. Those from 30 to 39 years of age were the largest, and individuals from 30 to 49 years of age account for more than 67%. Regarding years of service, more than half of respondents had worked in the public sector less than ten years (68.4%). Others had worked 21 to 30 years (17.1%), 11 to 20 years (12.3%), and 31 to 40 years (2.2%). The number of males (57.8%) was higher than females (42.2%). With reference to annual salary, the largest number of respondents had an annual salary of more than $40,000 (34.0%); followed by $20,001 - $30,000 (26.8%); $30,001 - $40,000 (21.3%); $10,000 - $20,000 (16.3%); and less than $10,000 (1.6%).

Table 4.1 Demographic characteristics of respondents (N=1,048)

| | | Frequency | Percent (%) |
|---|---|---|---|
| Age (years) | | | |
| | 20 - 29 | 97 | 9.3 |
| | 30 - 39 | 366 | 34.9 |
| | 40 - 49 | 345 | 32.9 |
| | 50 - 59 | 233 | 22.2 |
| | 60 - | 7 | 0.7 |
| Service years in the organization | | | |
| | 00 - 10 | 717 | 68.4 |
| | 11 - 20 | 129 | 12.3 |
| | 21 - 30 | 179 | 17.1 |
| | 31 - 40 | 23 | 2.2 |
| Gender | | | |
| | Male | 606 | 57.8 |
| | Female | 442 | 42.2 |
| Annual salary (US$) | | | |
| | less than 10,000 | 17 | 1.6 |
| | $10,000 - $20,000 | 171 | 16.3 |

| | | | |
|---|---|---|---|
| | $20,001 - $30,000 | 281 | 26.8 |
| | $30,001 - $40,000 | 223 | 21.3 |
| | over $40,000 | 356 | 34.0 |

Table 4.2 provides descriptive statistics for the dependent, independent, mediating, and control variables in the current study. The first column of the table presents a mean value of each variable. Except for demographic variables, it shows that all the key and control variables (knowledge sharing, PSM, three sub-dimensions of P-E fit, job autonomy, and organizational learning culture) have mean values, which are above the midpoint of three. Considering mean values of all the variables, PSM has a higher mean value (3.84) than others. When looking at the mean values by categorizing variables, P-G fit has a relatively high level of mean value (3.55) among sub-dimensions of P-E fit: P-S fit (3.31) and P-J fit (3.44). Job autonomy has a lower mean value (3.18) than other variables, and the mean value of organizational learning culture is 3.36.

Table 4.2 Descriptive statistics for the variables in the current study

| | M | SD | Min | Max |
|---|---|---|---|---|
| Dependent variable | | | | |
| Knowledge sharing | 3.53 | 0.61 | 1 | 5 |
| Independent variable | | | | |
| PSM | 3.84 | 0.49 | 1.44 | 5 |
| Mediating variables | | | | |
| P-G fit | 3.55 | 0.58 | 1.80 | 5 |
| P-J fit | 3.44 | 0.63 | 1.25 | 5 |
| P-S fit | 3.31 | 0.72 | 1 | 5 |
| Control variables | | | | |
| Job autonomy | 3.18 | 0.69 | 1 | 5 |
| Organizational learning culture | 3.36 | 0.56 | 1 | 5 |

*Note.* PSM=public service motivation, P-S fit=person-supervisor fit, P-G fit=person-group fit, P-J fit=person-job fit

## 2. Factor Analysis

In the present study, the measures for most variables except for demographic variables which are PSM, P-E fit, knowledge sharing, job autonomy, and organizational learning culture were adopted from various sources. They were then translated from English to create a Korean version of the survey and were adjusted by considering the context of the Korean public sector. In this section, both CFA and EFA were performed to test the measurement, and the author used AMOS and SPSS, respectively, to do so.

### 2.1 Confirmatory factor analysis and model fit diagnostics

The statistical methods of CFA and EFA used in this study are based on multivariate structure (Johnson & Wichern, 1992). In this section, as the first step of the factor analysis, CFA was conducted in order to determine whether the proposed measurement model in this study fits the data collected. It did this by considering a number of goodness of fit indices. While the preferred fit indices vary depending on researchers and their field of studies, some scholars believe particular indices should be reported. For example, Kline (2005) suggests reporting at minimum the following: model chi-square, comparative fit index (CFI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA). Moreover, many social science researchers and methodology scholars call for the non-normed fit index (NNFI) as well (Sharma et al. 2005). To determine goodness of fit, scholars suggest particular cut-off values for the fit index respectively. For a good fit, the p-value must not be statistically significant ($p > .05$) in the chi-square test (Kline, 2005). However, the chi-square statistic is highly sensitive to sample size and is only used as a basis for acceptance or rejection in certain

situations (Bentler & Bonnett, 1980; Schlermelleh-Engel et al. 2003; Vandenberg, 2006). Due to the sensitivity of the chi-square, researchers consider an alternative index, the relative/normed chi-square ($x^2/df$), to assess model fit. The relative/normed chi-square must be less than 5.0 for an acceptable fit (Wheaton et al., 1977). Other relevant values for a good or an acceptable fit are that CFI and NNFI must be larger than .9 (Bentler, 1990; Tucker & Lewis, 1973), that SRMR must be less than .08 (Hu & Bentler, 1999), and that RMSEA must be smaller than 0.08 (Kline, 2005).

As discussed in the previous chapter, Kim et al.'s (2013) original scale of PSM was used in the present study. However, since calculating one dimension of PSM scores leads to simpler and equivalent results (Coursey et al., 2011), the present study considered PSM to be one dimension based on a second-order reflective CFA. To conduct CFA, AMOS statistical package was used.

Table 4.3 Measurement fit indices

| | Whole model | Goodness of fit thresholds |
|---|---|---|
| Chi-square | $x^2(754)= 2785.210$ ($p < .001$) | $p > .05$ |
| $x^2/df$ | 3.694 | < 5.0 |
| CFI | .930 | > .90 |
| NNFI | 0.920 | > 0.90 |
| SRMR | .024 | < .08 |
| RMSEA | 0.050 | < 0.08 |

*Note.* CFI=Comparative Fit Index, NNFI=Non-normed Fit Index, SRMR=Standardized Root Mean Square Residual, RMSEA=Root Mean Square Error of Approximation

The researcher tested data fit for the full model. Considering the thresholds mentioned above and the results of the CFA, values of indices (except for the chi-square test) present a good fit, so the proposed model fits the data well (i.e., $x^2(754) = 2785.210$ ($p < .001$), $x^2/df = 3.694$,

CFI = .930, NNFI = 0.920, SRMR = .024, RMSEA = 0.050). Based on these results, this study confirmed that the measurement model met the desired standards of reliability and validity. Table 4.3 shows the result of the CFA that examines the goodness of fit of the proposed measurement model and the cut-off value for each fit index.

2.2 Exploratory factor analysis and the reliability of measurement scales

While considering that EFA is not necessary to deal with instruments developed or used in previous research, this study used rotated factor analyses to identify dimensions of the measure and obtain conceptual validity. To verify convergent validity, those factor analyses were conducted separately for items related to each variable. In addition, principal component analyses on most variables (except for demographic variables) were implemented, and the Varimax rotation method was selected.

For this analysis, the author applied several standards as follows: First, the standard for factor extraction was set as an eigenvalue of 1.0 or greater for rotated factors or single factors. On the other hand, since the independent variable, PSM, was measured as one factor by following considering the encouragement of Coursey et al. (2011), the cut-off value of eigenvalue was applied, and the variable was fixed as one factor. Items with a factor loading of 0.5 or less from the results were also excluded due to the validity issue. Additionally, items which had a factor loading of 0.5 or higher on two or more factors were determined to be conceptually unclear and to impede differential validity, so those items were not included. This study used Cronbach's alpha to check the reliability of each factor, and the threshold was .6 or higher. Lastly, in addition to factor loadings for items, the current study also considered average

variance extracted (AVE) and composite reliability (CR) to verify convergent validity. For obtaining convergent validity, AVE and CR should be higher than .5 and .6 respectively (Fornell & Larcker, 1981).

Table 4.4 Factor analysis and reliability of knowledge sharing

| Factor | Measured item | Factor loading | AVE | CR |
|---|---|---|---|---|
| Knowledge sharing | Knowledge sharing 1 | .581 | .665 | .885 |
| | Knowledge sharing 2 | .860 | | |
| | Knowledge sharing 3 | .903 | | |
| | Knowledge sharing 4 | .875 | | |
| Eigenvalue | 2.660 | | | |
| Proportion (%) | 66.492 | | | |
| Cumulative (%) | 66.492 | | | |
| Cronbach's α | .780 | | | |

*Note.* Factor extraction method: principal component analysis, Rotation method: Varimax, Proportion=proportion of variance explained, Cumulative=cumulative proportion variance explained, AVE=averaged variance extracted, CR=composite reliability

Table 4.4 presents the results obtained by running the factor analysis and reliability analysis for the dependent variable of knowledge sharing. The number of factors extracted was determined by the number of eigenvalues of the covariance matrix that exceeded one (Kaiser, 1958). As a result, one component was extracted with an eigenvalue of 2.660. As showed in the Table 4.4, the cumulative distribution's explanatory power is 68.308%, which shows that knowledge sharing could be explained by the one factor extracted. The factor loadings of all items on the factor were higher than .5 (.581, .860, .903, and .875 for each item, respectively), and AVE and CR were .665 and .885 respectively (the threshold of AVE was .5, and the threshold of CR was .6), so these results meet the requirement of convergent validity. In addition, Cronbach's alpha for knowledge sharing was .780, which proves internal consistency and points to the reliability of the measured items.

Table 4.5 Factor analysis and reliability of PSM

| Factor | Measured item | Factor loading | AVE | CR |
|---|---|---|---|---|
| PSM | APS 1 | .726 | .513 | .944 |
| | APS 2 | .750 | | |
| | APS 3 | .785 | | |
| | APS 4 | .786 | | |
| | CPV 1 | .744 | | |
| | CPV 2 | .765 | | |
| | CPV 3 | .717 | | |
| | CPV 4 | .679 | | |
| | SS 1 | .751 | | |
| | SS 2 | .737 | | |
| | SS 3 | .676 | | |
| | SS 4 | .748 | | |
| | COM 1 | .638 | | |
| | COM 2 | .657 | | |
| | COM 3 | .586 | | |
| | COM 4 | .680 | | |
| Eigenvalue | 8.205 | | | |
| Proportion (%) | 61.284 | | | |
| Cumulative (%) | 61.284 | | | |
| Cronbach's α | .934 | | | |

*Note.* Factor extraction method: principal component analysis, Rotation method: Varimax, PSM=public service motivation, APS=attraction to public service, CPV=commitment to public value, SS=self-sacrifice, COM=compassion, Proportion=proportion of variance explained, Cumulative=cumulative proportion variance explained, AVE=averaged variance extracted, CR=composite reliability

Table 4.5 shows the results of factor analysis and reliability analysis for the independent variable, PSM. Although Kim et al.'s (2013) research originally considered the 16 sub-dimensions of PSM, this study considers PSM as one factor as in other studies (e.g., Alonso, & Lewis, 2001; Coursey et al., 2011; Esteve et al., 2016; Mostafa et al., 2015). As shown in the Table 4.5, one component was extracted with an eigenvalue of 8.205. The cumulative distribution's explanatory power was 61.284%, which shows that the one factor extracted explains PSM well. The factor weight values of measured items were greater than the cut-off

value of .5 (ranging from .586 to .786). Moreover, AVE and CR with scores of .513 and .944 were higher than their thresholds of .5 and .6, respectively. Thus, these results are sufficient to demonstrate convergent validity. As a result of the reliability analysis, the last row of the Table 4.5 shows a high Cronbach's alpha for PSM (.934), indicating very high internal consistency.

Table 4.6 Factor analysis and reliability of P-E fit

| Factor | Measured item | Factor loading | Eigenvalue | Proportion (Cumulative) | Cronbach's α | AVE | CR |
|---|---|---|---|---|---|---|---|
| P-S fit | P-S fit 1 | .874 | 6.298 | 26.395 | .939 | .776 | .933 |
| | P-S fit 2 | .896 | | (26.395) | | | |
| | P-S fit 3 | .889 | | | | | |
| | P-S fit 4 | .864 | | | | | |
| P-G fit | P-G fit 1 | .734 | 2.086 | 25.816 | .881 | .600 | .882 |
| | P-G fit 2 | .763 | | (52.211) | | | |
| | P-G fit 3 | .837 | | | | | |
| | P-G fit 4 | .791 | | | | | |
| | P-G fit 5 | .742 | | | | | |
| P-J fit | P-J fit 1 | .829 | 1.569 | 24.342 | .906 | .722 | .912 |
| | P-J fit 2 | .877 | | (76.553) | | | |
| | P-J fit 3 | .833 | | | | | |
| | P-J fit 4 | .860 | | | | | |

*Note.* Factor extraction method: principal component analysis, Rotation method: Varimax, P-S fit=person-supervisor fit, P-G fit=person-group fit, P-J fit=person-job fit, Proportion=proportion of variance explained, Cumulative=cumulative proportion variance explained, AVE=averaged variance extracted, CR=composite reliability

Table 4.6 presents the results of a rotated factor analysis on mediating variables and sub-dimensions of P-E fit. From the eigenvalue result, the number of common factors for the variables of P-E fit was selected as 3, and the cumulated proportion of 3 eigenvalues account for about 77% of the total variance of the variables.

As can be seen in Table 4.6, the factor loadings of all items that were weighted on each factor were greater than .7 (P-S fit from .864 to .896, P-G fit from .734 to .837, and P-J fit

from .829 to .877), which is more than the cut-off values of the factor weight value (.5). Moreover, AVE and CR on each factor was higher than the threshold, .5 and .6, respectively (AVE of P-S fit, P-G fit, and P-J fit is .776, .600, and .722, and CR of P-S fit, P-G fit, and P-J fit was .933, .882, and .912 respectively). Thus, the results verify the convergent validity of the measured items. Table 4.6 also shows the results of reliability analyses for each factor—that Cronbach's alpha for the P-S fit, P-G fit, and P-J fit was .939, .881, and .906, respectively. All those scores are more than the threshold (.6). Therefore, this shows the internal consistency and reliability of the items.

Table 4.7 Factor analysis and reliability of job autonomy

| Factor | Measured item | Factor loading | AVE | CR |
|---|---|---|---|---|
| Job autonomy | Job autonomy 1 | .771 | .727 | .914 |
| | Job autonomy 2 | .870 | | |
| | Job autonomy 3 | .896 | | |
| | Job autonomy 4 | .868 | | |
| Eigenvalue | 2.907 | | | |
| Proportion (%) | 72.676 | | | |
| Cumulative (%) | 72.676 | | | |
| Cronbach's α | .874 | | | |

*Note.* Factor Extraction Method: Principal Component Analysis, Rotation Method: Varimax, Proportion=proportion of variance explained, Cumulative=cumulative proportion variance explained, AVE=averaged variance extracted, CR=composite reliability

The results of the factor analysis and reliability analysis on job autonomy are displayed in Table 4.7. As in previous research, there was one factor with an eigenvalue of 2.907. Moreover, the cumulative distribution's explanatory power was found to be 72.676%, which indicates that job autonomy can be explained well by the one factor extracted.

The factor loadings of all items on the factor were higher than the cut-off value of .5 (.771, .870, .896, and .868 for each item, respectively), and AVE and CR were .727 and .914,

respectively (threshold of AVE: .5, threshold of CR: .6). Therefore, these results fulfill the requirement of convergent validity. Also, Cronbach's alpha for job autonomy was .874 which proves internal consistency and points to the reliability of the measured items.

Table 4.8 Factor analysis and reliability of organizational learning culture

| Factor | Measured item | Factor loading | AVE | CR |
|---|---|---|---|---|
| Organizational Learning Culture | OLC 1 | .778 | .648 | .880 |
| | OLC 2 | .848 | | |
| | OLC 3 | .811 | | |
| | OLC 4 | .780 | | |
| Eigenvalue | 2.592 | | | |
| Proportion (%) | 64.812 | | | |
| Cumulative (%) | 64.812 | | | |
| Chronbach's α | .817 | | | |

*Note.* Factor Extraction Method: Principal Component Analysis, Rotation Method: Varimax, OLC=organizational learning culture, Proportion=proportion of variance explained, Cumulative=cumulative proportion variance explained, AVE=averaged variance extracted, CR=composite reliability

Table 4.8 shows the results of factor analysis and reliability analysis for another work environmental control variable, organizational learning culture. As shown in the table, one component was extracted with an eigenvalue of 2.592. The cumulative distribution's explanatory power was 64.812%, which shows that the one factor extracted explains organizational learning culture well. The factor weight values of measured items were greater than the cut-off value of .5 (.778, .848, .811, and .780 for each item, respectively), and AVE and CR were higher than each threshold, .5 and .6, respectively (.648 and .880). Thus, these results are sufficient to demonstrate convergent validity. As a result of the reliability analysis, Table 4.8 shows a high Cronbach's alpha for organizational learning culture (.817), thus revealing high internal consistency between the items.

From the preceding and the present sections verify the reliability and validity of key

variables through both CFA and EFA. Based on the results of those analyses, which prove the validity and reliability of the measured items, the following section reports the results of a correlation analysis to quantify the correlation between all the variables in this study.

**3. Bivariate Correlations**

Table 4.9 presents the bivariate correlations between the dependent variable, independent variable, mediating variables, and control variables used in the current study. The independent variable, PSM, and mediating variables, P-G fit, P-J fit, and P-S fit, have positive and significant correlations with the dependent variable, knowledge sharing. As the researcher proposed in the research hypotheses, the correlation coefficients between PSM and the sub-dimensions of P-E fit are statistically significant. In addition, the independent variable, PSM, and two mediating variables, P-G fit and P-J fit, are positively correlated with job autonomy and organizational learning culture, while P-S fit shows no correlations with job autonomy and organizational learning culture. Among demographic variables, age and length of service are positively correlated with the dependent variable, knowledge sharing, while gender is negatively correlated with knowledge sharing.

Therefore the correlations between the key variables in this section support the research hypotheses. As a result, the researcher tested the direct effects of PSM and the mediating effects of P-G fit, P-J fit, and P-S fit further by running a regression analysis.

In addition, the correlation coefficients make it possible to check the problem of multicollinearity. A serious multicollinearity problem does not exist if the correlation coefficient is less than 0.7 (Tabachnick & Fidell, 2001). In Table 4.9, except for some correlations between

demographic variables, the highest correlation is .548 between organizational learning culture and knowledge sharing. Since the highest correlation is .548 and there is no extreme correlation between any variables, this study is free from the multicollinearity issue.

Table 4.9 Bivariate correlations between variables

| | | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| 1 | Knowledge sharing | 1 | | | | | |
| 2 | PSM | .445** | 1 | | | | |
| 3 | P-G fit | .333** | .333** | 1 | | | |
| 4 | P-J fit | .286** | .341** | .000 | 1 | | |
| 5 | P-S fit | .133** | .138** | .000 | .000 | 1 | |
| 6 | Job autonomy | .312** | .315** | .265** | .271** | .000 | 1 |
| 7 | Organizational learning culture | .548** | .478** | .341** | .344** | .000 | .339** |
| 8 | Age | .210** | .218** | .041 | .167** | -.025 | .069* |
| 9 | Length of service | .170** | .128** | .070* | .085* | -.052 | .019 |
| 10 | Gender (female=1) | -.089** | -.131** | -.019 | -.115** | -.045 | -.113** |
| 11 | Salary | .207 | .172** | .051 | .095** | -.042 | .056 |

| | | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|
| 7 | Organizational learning culture | 1 | | | | |
| 8 | Age | .128** | 1 | | | |
| 9 | Length of service | .082* | .545** | 1 | | |
| 10 | Gender (female=1) | -.039 | -.271** | -.071* | 1 | |
| 11 | Salary | .086** | .714** | .529** | -.220** | 1 |

*p<0.05, **p<0.01

## 4. Regression Analysis with Testing Hypotheses

As the primary analysis, this section provides the results of regressions to check the causal relationships between key variables in the research hypotheses. First, since both hypothesis 1 and hypothesis 2 consider direct relationships between PSM and knowledge sharing and between PSM and P-G fit, P-J fit, and P-S fit, OLS regressions were performed in order to test those hypotheses. Following this, mediation analysis utilizing bootstrapping was conducted to test whether or not P-G fit, P-J fit, and P-S fit plays a role as a mediator between PSM and knowledge sharing.

### 4.1 Testing hypothesis 1: PSM and knowledge sharing

Table 4.10 presents the results of the OLS regression for the relationship between the PSM sub-scales as the independent variables and knowledge sharing as the dependent variable. In addition to these variables, this model also considers work environment variables such as job autonomy and organizational learning culture and four demographic variables: age, length of service, gender, and annual salary.

As can be seen from table 4.10, the model 1 shows a high R-squared value of .373, with an adjusted R-squared value of .367. The coefficients of determination ($R^2$) indicate accuracy for predicting the dependent variables on the basis of the independent variable in the research model (Glantz & Slinker, 1990). The model also checks the multicollinearity issue by providing the variance inflation factor (VIF) for each variable. Since multicollinearity causes large standard errors in independent variables and provides inaccurate coefficients, the resulting regression model would be incomplete and unreliable. The highest value of VIF in the model is 2.572 for

age, and the value for the independent variable is 1.421. Most of them are less than 1.6 except for VIFs for age (2.572) and annual salary (2.375). The most widely used cutoff value of VIF for checking multicollinearity is 10 (e.g., Hair, Anderson, Tatham, & Black, 1995; Kennedy, 1992; Marquardt, 1970; Neter, Wasserman, & Kutner, 1989), and more conservative threshold is 4 (e.g., O'brien, 2007; Pan & Jackson, 2008). In the model, since all VIF values for variables are lower than the both criteria, there is no correlation among the predictors and thus no issue of multicollinearity.

Table 4.10 Model 1: Public service motivation and knowledge sharing

| | Beta | Coefficient | SE | t-value | 95% CI | | VIF |
|---|---|---|---|---|---|---|---|
| | | | | | Lower | Upper | |
| *Independent variable* | | | | | | | |
| PSM | .203*** | .202 | .033 | 6.057 | .137 | .268 | 1.421 |
| *Work environmental controls* | | | | | | | |
| Job autonomy | .095** | .091 | .030 | 3.037 | .032 | .149 | 1.225 |
| OLC | .400*** | .395 | .033 | 12.005 | .330 | .459 | 1.398 |
| *Demographic controls* | | | | | | | |
| Age | .009 | .001 | .005 | .205 | -.009 | .011 | 2.572 |
| Length of service | .048 | .005 | .004 | 1.371 | -.002 | .012 | 1.527 |
| Gender (Female=1) | -.019 | -.038 | .061 | -.628 | -.157 | .081 | 1.126 |
| Annual salary | .097 | .087 | .039 | 2.226 | .010 | .163 | 2.375 |
| Constant | | -.362 | .163 | -2.224 | -.682 | -.043 | |
| N | 1048 | | | | | | |
| $R^2$ | .373 | | | | | | |
| Adj. $R^2$ | .367 | | | | | | |

*Note.* Beta=standardized coefficients, Coefficient=unstandardized coefficients, SE=standard error, 95% CI=95% confidence interval for unstandardized coefficients, VIF=the variance inflation factor, PSM=public service motivation, OLC=organizational learning culture
**$p$ < .01. ***$p$ < .001.

Hypothesis 1 proposed that PSM will have a positive and direct effect on public

employees' knowledge sharing behavior. As Table 4.10 shows, the standardized coefficient of the independent variable, PSM, is 0.203, and it is positively associated with knowledge sharing at $p < .001$ significance level. This result supports hypothesis 1.

Although the control variables were not mentioned formally in hypothesis 1, the result shows that job autonomy and organizational learning culture are significantly related to knowledge sharing. Job autonomy has a positive effect on knowledge sharing ($p < .01$) with a standardized coefficient of 0.095. This result is consistent with previous research that a high level of autonomy influences propensity to share knowledge with other members or colleagues in the workplace (Foss et al., 2009). Moreover, organizational learning culture has a positive relationship with knowledge sharing at a significance level of $p < .001$ with a standardized coefficient of 0.400. This result provides empirical evidence for the positive relationship between organizational learning culture and knowledge sharing (Aizpurúa et al., 2011).

### 4.2 Testing hypothesis 2: PSM and sub-dimensions of P-E fit

To understand the relationship between PSM and P-E fit, three regression models, models 2a, 2b, and 2c, are considered separately. These models include PSM as a common independent variable, and each model sets P-G fit, P-J fit, or P-S fit as the dependent variable. The models also include work environment variables, job autonomy and organizational learning culture, and the demographic variables of age, length of service, gender, and salary as control variables. Table 4.11 shows the results of multiple regression analysis for examining the relationship between independent variables and P-G fit.

Table 4.11 Model 2a: Public service motivation and P-G fit

| | Beta | Coefficient | SE | t-value | 95% CI Lower | 95% CI Upper | VIF |
|---|---|---|---|---|---|---|---|
| *Independent variable* | | | | | | | |
| PSM | .216*** | .216 | .039 | 5.531 | .139 | .292 | 1.430 |
| *Work environmental controls* | | | | | | | |
| Job autonomy | .130*** | .125 | .035 | 3.612 | .057 | .193 | 1.218 |
| OLC | .187*** | .185 | .038 | 4.837 | .110 | .260 | 1.400 |
| *Demographic controls* | | | | | | | |
| Age | -.123* | -.014 | .006 | -2.341 | -.025 | -.002 | 2.600 |
| Length of service | .036 | .004 | .004 | .888 | -.004 | .012 | 1.536 |
| Gender (Female=1) | .010 | .020 | .071 | .278 | -.119 | .159 | 1.128 |
| Annual salary | .083 | .075 | .045 | 1.645 | -.014 | .163 | 2.372 |
| Constant | | .271 | .190 | 1.425 | -.102 | .644 | |
| N | 1048 | | | | | | |
| $R^2$ | .273 | | | | | | |
| Adj. $R^2$ | .266 | | | | | | |

*Note.* Beta=standardized coefficients, Coefficient=unstandardized coefficients, SE=standard error, 95% CI=95% confidence interval for unstandardized coefficients, VIF=the variance inflation factor, PSM=public service motivation, OLC=organizational learning culture
*$p < .05$. ***$p < .001$.

As Table 4.11 shows, model 2a has an R-squared value of .273 and an adjusted R-squared value of .266, which are moderate. The highest value of VIF in the model is 2.600 for age, and the value for the independent variable, PSM, is 1.430. Most of variables in model 2a are less than 1.6 except for VIFs for age (2.600) and annual salary (2.372). Considering the multicollinearity threshold of VIF (conventional value: 10; conservative value: 4), there is no high correlation between the independent variable and the control variables in this model. Thus, model 2a is free from the multicollinearity issue.

Hypothesis 2a proposed that PSM would be positively related to P-G fit. As can be seen in Table 2, the standardized coefficient of PSM is 0.216, and the relationship between the

independent variable and P-G fit is statistically significant ($p < .001$). Therefore, hypothesis 2a is confirmed.

The model for hypothesis 2b includes PSM as the independent variables and P-J fit as the dependent variable. Table 4.12 below provides the results of OLS regression for examining the relationship between them.

Table 4.12 Model 2b: Public service motivation and P-J fit

| | Beta | Coefficient | SE | t-value | 95% CI Lower | 95% CI Upper | VIF |
|---|---|---|---|---|---|---|---|
| *Independent variable* | | | | | | | |
| PSM | .186*** | .187 | .038 | 4.914 | .112 | .262 | 1.430 |
| *Work environmental controls* | | | | | | | |
| Job autonomy | .114** | .110 | .034 | 3.273 | .044 | .177 | 1.218 |
| OLC | .246*** | .245 | .037 | 6.562 | .172 | .318 | 1.400 |
| *Demographic controls* | | | | | | | |
| Age | .094 | .011 | .006 | 1.847 | -.001 | .022 | 2.600 |
| Length of service | -.022 | -.002 | .004 | -.562 | -.010 | .006 | 1.536 |
| Gender (Female=1) | -.027 | -.055 | .069 | -.797 | -.190 | .081 | 1.128 |
| Annual salary | .025 | .022 | .044 | .506 | -.064 | .109 | 2.372 |
| Constant | | -.473 | .185 | -2.548 | -.837 | -.109 | |
| N | 1048 | | | | | | |
| $R^2$ | .220 | | | | | | |
| Adj. $R^2$ | .213 | | | | | | |

*Note.* Beta=standardized coefficients, Coefficient=unstandardized coefficients, SE=standard error, 95% CI=95% confidence interval for unstandardized coefficients, VIF=the variance inflation factor, PSM=public service motivation, OLC=organizational learning culture
**$p < .01$. ***$p < .001$.

As shown in the table, model 2b has moderate R-squared (.220) and adjusted R-squared (.213) values that are lower than model 2a. Since model 2b set the same independent variables as the model for testing hypothesis 2a, model 2a and 2b have the same VIF results, and the predictor variables in these models are not highly correlated (The highest value of VIF is 2.600

for age.). Thus, no multicollinearity issue exists in model 2b. The standardized coefficient of PSM is 0.186, and the independent variable is positively associated with P-J fit at a statistically significant level ($p < .001$). These results support hypothesis 2b: Each dimension of PSM has a direct and positive effect on P-J fit.

Model 2c includes PSM as the independent variable and P-S fit as the dependent variable. This model also controls work environment and demographic variables in order to check whether the control variables are related to the dependent variable. Table 4.13 shows the results of OLS regression for examining the relationship between these variables.

Table 4.13 Model 2c: Public service motivation and P-S fit

| | Beta | Coefficient | SE | t-value | 95% CI | | VIF |
|---|---|---|---|---|---|---|---|
| | | | | | Lower | Upper | |
| *Independent variable* | | | | | | | |
| PSM | -.050 | -.050 | .039 | -1.287 | -.127 | .026 | 1.430 |
| *Work environmental controls* | | | | | | | |
| Job autonomy | .395*** | .384 | .035 | 11.076 | .316 | .452 | 1.218 |
| OLC | .091* | .092 | .038 | 2.395 | .017 | .167 | 1.400 |
| *Demographic controls* | | | | | | | |
| Age | -.017 | -.002 | .006 | -.325 | -.013 | .010 | 2.600 |
| Length of service | -.034 | -.004 | .004 | -.850 | -.012 | .005 | 1.536 |
| Gender (Female=1) | -.068 | -.141 | .071 | -1.982 | -.280 | -.001 | 1.128 |
| Annual salary | -.073 | -.066 | .045 | -1.464 | -.156 | .023 | 2.372 |
| Constant | | .427 | .191 | | .053 | .801 | |
| N | 1048 | | | | | | |
| $R^2$ | .189 | | | | | | |
| Adj. $R^2$ | .182 | | | | | | |

*Note.* Beta=standardized coefficients, Coefficient=unstandardized coefficients, SE=standard error, 95% CI=95% confidence interval for unstandardized coefficients, VIF=the variance inflation factor, PSM=public service motivation, OLC=organizational learning culture
*$p < .05$, ***$p < .001$.

As can be seen in the table, the coefficients of determination in model 2c are relatively

weak ($R^2$ = .189; Adj. $R^2$ = .182). An R-squared value represents how good a model is at predicting the dependent variable. However, it is not the absolute criterion to determine accuracy of the research model's predictions. In fact, a high R-squared value represents only a small prediction error, but it does not always imply a good model nor indicate any causal effect (Moksony, 1999). Therefore, although an R-squared value is an index to determine the accuracy of this model, it might be implausible to deny all the results derived from a regression analysis based on a low R-squared value.

Since each independent variable in model 2c has a low variance inflation factor (The highest value of VIF is 2.600 for age in this model.), the model has little concern regarding the multicollinearity issue as in the previous models.

Hypothesis 2c proposed that PSM would be positively related to P-S fit. As can be seen in Table 4.13, the standardized coefficient of PSM is -0.050, and the relationship between the independent variable and P-S fit is not statistically significant. Unlike the relationships between PSM and P-G fit and between PSM and P-J fit, this result does not support the proposed hypothesis about the relationship between PSM and P-S fit, and hypothesis 2c is, therefore, rejected.

## 4.3 Testing Hypothesis 3: Sub-dimensions of P-E fit and knowledge sharing

Models 3a, 3b, and 3c include P-G fit, P-J fit, and P-S fit as the independent variable, respectively, and knowledge sharing as the dependent variable. Table 4.14 presents the results of OLS regression for the relationship between P-E fit sub-scales and knowledge sharing. In addition to these variables, this model also considers work environment variables such as job

autonomy, organizational learning culture, and the four demographic variables of age, length of service, gender, and annual salary.

Table 4.14 Model 3: P-G fit, P-J fit, P-S fit, and knowledge sharing

| | Beta | Coefficient | SE | t-value | 95% CI Lower | 95% CI Upper | VIF |
|---|---|---|---|---|---|---|---|
| *Independent variable* | | | | | | | |
| P-G fit | .236*** | .233 | .030 | 7.660 | .174 | .293 | 1.245 |
| P-J fit | .141*** | .139 | .032 | 4.412 | .077 | .201 | 1.340 |
| P-S fit | .047 | .046 | .031 | 1.463 | -.016 | .107 | 1.340 |
| *Work environmental controls* | | | | | | | |
| Job autonomy | .053* | .050 | .033 | 1.546 | .014 | .114 | 1.535 |
| OLC | .370*** | .364 | .033 | 11.030 | .300 | .429 | 1.475 |
| *Demographic controls* | | | | | | | |
| Age | .048 | .005 | .005 | 1.091 | -.004 | .015 | 2.591 |
| Length of service | .042 | .004 | .004 | 1.245 | -.003 | .011 | 1.523 |
| Gender (Female=1) | -.025 | -.051 | .060 | -.848 | -.168 | .067 | 1.130 |
| Annual salary | .077 | .069 | .038 | 1.812 | -.006 | .144 | 2.384 |
| Constant | | -.470 | .160 | -2.934 | -.785 | -.156 | |
| N | 1048 | | | | | | |
| $R^2$ | .400 | | | | | | |
| Adj. $R^2$ | .394 | | | | | | |

*Note.* Beta=standardized coefficients, Coefficient=unstandardized coefficients, SE=standard error, 95% CI=95% confidence interval for unstandardized coefficients, VIF=the variance inflation factor, P-G fit=person-group fit, P-J fit=person-job fit, P-S fit=person-supervisor fit, OLC=organizational learning culture
*$p$ < .05, ***$p$ < .001.

As can be seen from Table 4.14, model 3 shows a high R-squared value of .400, with an adjusted R-squared value of .394. The coefficients of determination ($R^2$) indicate accuracy for predicting the dependent variables on the basis of the independent variable in the research model (Glantz & Slinker, 1990). The table also provides VIF for checking the multicollinearity of the model. Relatively high values of VIF in the model are 2.591 for age and 2.384 for annual salary,

and the values for each independent variable, P-G fit, P-J fit, and P-S fit, are 1.245, 1.340, and 1.340, respectively. Most of variables in model 3 are less than 1.6 except for VIFs for age (2.591) and annual salary (2.384). Considering the threshold of VIF regarding multicollinearity (conventional value: 10; conservative value: 4), there is no high correlation between the independent variables and control variables in this model. Thus, model 3 is free from the multicollinearity issue.

Hypotheses 3a, 3b, and 3c proposed that P-G fit, P-J fit, and P-S fit would have a positive and direct effect on employees' propensity to share knowledge within the organization. As Table 4.14 shows, the standardized coefficients of P-G fit and P-J fit are 0.236 and 0.141, respectively, and each is positively related to knowledge sharing at $p < .001$ significance level. Thus, hypotheses 3a and 3b are confirmed. On the other hand, the standardized coefficient of P-S fit is 0.047, and the relationship between P-S fit and knowledge sharing is not statistically significant. This result does not support the proposed hypothesis about the relationship between P-S fit and knowledge sharing, and hypothesis 3c is, therefore, dismissed.

## 4.4 Testing Hypothesis 4: PSM, sub-dimensions of P-E fit, and knowledge sharing

In the previous sections, while OLS regression was conducted to test hypotheses 1, 2a, 2b, and 2c, it is not sufficient to check the comprehensive mediation effect of each sub-dimension of P-E fit between PSM and knowledge sharing. Generally, the approaches to statistically infer an indirect effect are the Sobel test and bootstrapping. The Sobel test is one of the statistical methods widely used to examine a mediating effect. However, it is not appropriate to test a mediating relationship because it relies on an assumption of a normal sampling

distribution (Hayes, 2013). Moreover, the Sobel test works well only in large samples (Preacher & Leonardelli, 2018) because the sampling distribution is generally not normal except in very large samples.

Bootstrapping is an alternative method that can overcome the weaknesses of the Sobel test. Since it does not make the same problematic assumptions, it can be applied to non-normal data sets and produces a better inferential test (Hayes, 2013). Therefore, considering the distributional assumption issue of the Sobel test, this study conducted bootstrapping to examine the effects of the mediating variables in the proposed model.

Hypothesis 4 focused on the indirect effect of the independent variable, PSM, namely, the mediating roles of P-E fit sub-scales on the relationship between PSM and knowledge sharing. To test the hypothesis, the researcher used the PROCESS macro (Hayes, 2013), which utilizes the bootstrapping method to calculate the mediation effect.

Table 4.15 Indirect effect of PSM on knowledge sharing through sub-dimensions of P-E fit

| IV | MV | DV | IE | Boot SE | Boot LLCI | Boot ULCI |
|---|---|---|---|---|---|---|
| PSM | P-G fit | Knowledge | .040 | .011 | .022 | .065 |
| | P-J fit | Sharing | .018 | .007 | .006 | .034 |
| | P-S fit | | -.001 | .003 | -.010 | .002 |

*Note.* Number of bootstrap samples for bias corrected bootstrap confidence intervals=10,000. Work environment variables (i.e., job autonomy and organizational learning culture) and demographic variables (i.e., age, length of service, gender, and annual salary) were controlled. IV=independent variable, MV=mediating variable, DV=dependent variable, IE=indirect effect, Boot SE=bootstrap standard error, Boot LLCI=bootstrap lower limit confidence interval, Boot ULCI=bootstrap upper limit confidence interval, PSM=public service motivation, P-G fit=person-group fit, P-J fit=person-job fit, P-S fit=person-supervisor fit

Table 4.15 shows the indirect effect of PSM on knowledge sharing through the sub-dimensions of P-E fit. Specifically, the table provides unstandardized observed coefficients for

estimating the indirect effect, bootstrap standard error, and bias-correlated confidence intervals based on 10,000 bootstrap samples. Regarding the indirect effect of PSM on knowledge sharing through P-G fit and P-J fit, two individuals that differ by one unit on PSM are estimated to differ by .040 and .018 on knowledge sharing as a result of the effect of PSM on P-G fit and P-J fit, in turn, affects knowledge sharing respectively. The columns of the bootstrap confidence intervals make it possible to check an indirect effect of PSM on knowledge sharing by considering each mediator based on the statistical significance between variables at $p < .05$. Overall, since the confidence intervals for the indirect effect of PSM on knowledge sharing through P-G fit and P-J fit are entirely above zero ([0.022, 0.065] and [0.006, 0.034] respectively), it is clear that the relationship between PSM and knowledge sharing is mediated by P-G fit and P-J fit. Unlike P-G fit and P-J fit, the confidence intervals for the indirect effect of PSM on knowledge sharing through P-S fit include zero ([-0.010, 0.002]). Namely, the relationship between PSM and knowledge sharing is not mediated by P-S fit. Therefore, given the results, hypotheses 4a and 4b are accepted while hypothesis 4c is rejected.

More detailed results of the mediation analysis for PSM, the sub-dimensions of P-E fit, and knowledge sharing are presented in Figure 4.1. The figure shows all the relationships between key variables. As discussed above, except for P-S fit, the results shows that PSM has a positive effect on P-G fit ($b^4 = 0.205$, SE = 0.035, $p < .001$) and P-J fit ($b = 0.191$, SE = 0.035, $p < .001$) and on knowledge sharing ($b = 0.141$, SE = 0.032, $p < .001$), controlling for work

[4] b=unstandardized coefficient. Hayes' PROCESS macro provides unstandardized coefficients. Bootstrap confidence intervals for the indirect effect in PROCESS should not be interpreted as confidence intervals for the standardized effects (Hayes, 2013).

environment variables (i.e., job autonomy and organizational learning culture) and demographic variables (i.e., age, length of service, gender, and annual salary). Moreover, P-G fit (b = 0.196, SE = 0.030, p < .001) and P-J fit (b = 0.092, SE =0.030, p < .01) also has a positive effect on knowledge sharing.

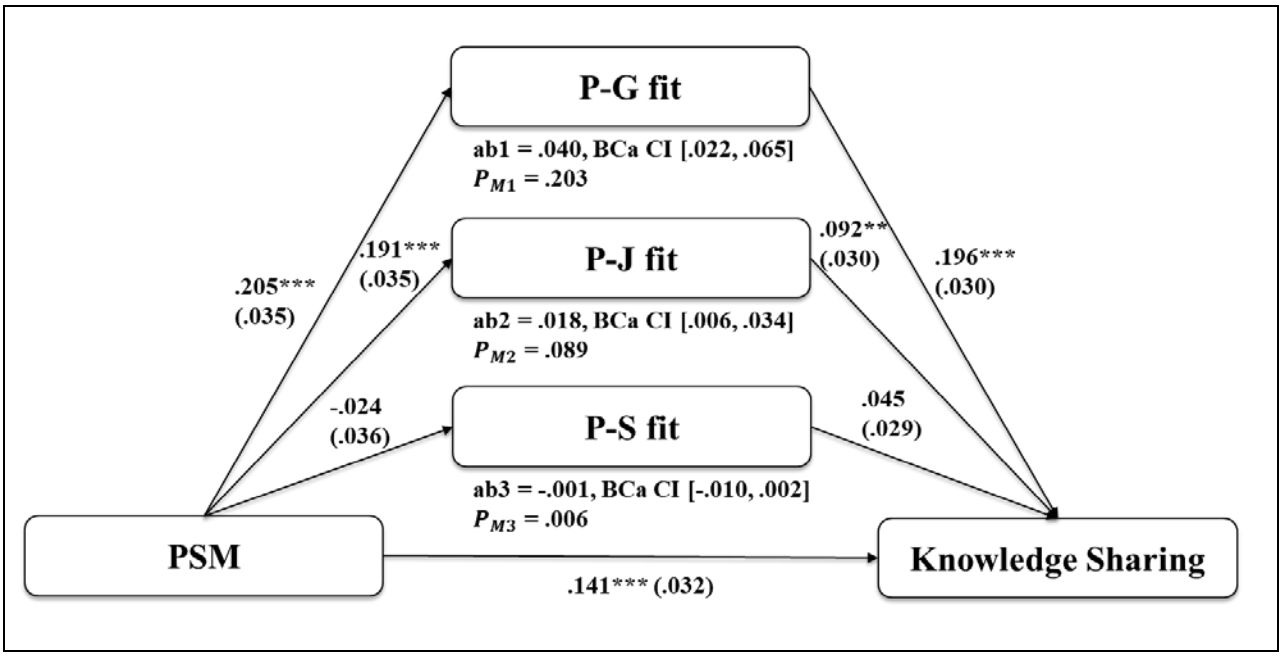


*Figure 4.1* The mediation model of PSM, sub-dimensions of P-E fit, and knowledge sharing
*Note*. Standard error in parentheses. Work environment variables (i.e., job autonomy and organizational learning culture) and demographic variables (i.e., age, length of service, gender, and annual salary) were controlled. ab=indirect effect of organizational learning culture on innovative behavior through knowledge sharing, BCa CI=bias corrected and accelerated confidence interval, $\boldsymbol{P_M}$=ratio of indirect to total effect
**$p$ < .01, ***$p$ < .001

In addition, Figure 4.1 provides the ratio of indirect effect of each mediator to the total effect of PSM on knowledge sharing ($P_M$). In the proposed model, considering $P_M$ through P-G fit ($P_{M1}$= 0.203) and P-J fit ($P_{M2}$= 0.089), total indirect effects account for almost 30% of the total effect of PSM on knowledge sharing. Finally, $P_M$ through P-S fit ($P_{M3}$= 0.006) is relatively

smaller than P-G fit and P-J fit because P-S fit does not mediate the relationship between PSM and knowledge sharing.

**5. Chapter Summary**

This chapter presented the results of data analyses. It first explains the demographic characteristics of survey respondents based on descriptive statistics. In addition, because survey measures were translated from English to Korean, this study conducted both CFA and EFA. Values of measurement fit indices, which were derived from CFA, demonstrated that the proposed research model fits the data well. Also, since the results of EFA showed that a factor loading and Cronbach's alpha for each variable was higher than 0.5 and .6, respectively, there was no validity or reliability issue.

This study examined the relationships between the main variables based on the results of OLS regression analyses and mediation analyses utilizing bootstrapping. Public service motivation has a positive and direct effect on knowledge sharing (model 1), P-G fit (model 2a), and P-J fit (model 2b). Considering the relationships between the sub-dimensions of P-E fit and knowledge sharing, P-G fit (model 3a) and P-J fit (model 3b) both have a positive and direct effect on knowledge sharing. Lastly, considering the indirect effect of PSM on knowledge sharing, P-G fit (model 4a) and P-J fit (model 4b) mediated the relationship between PSM and knowledge sharing.

Based on the results of primary analyses provided above, this chapter explained how the research hypotheses were tested. As a result, proposed hypotheses about the relationships that included P-G fit and P-J fit were supported, while other hypotheses considering P-S fit in the

proposed model were not accepted. Table 4.16 shows the results of testing the research hypotheses. The next chapter will summarize the overall findings of this study, theoretical and managerial implications. It then will provide suggestions for future research and limitations of the current study.

Table 4.16 Testing research hypothesis

| Hypothesis | Acceptance or rejection |
|---|---|
| H1: PSM has a direct and positive effect on knowledge sharing. | Accepted |
| H2a: PSM has a direct and positive effect on P-G fit. | Accepted |
| H2b: PSM has a direct and positive effect on P-J fit. | Accepted |
| H2c: PSM has a direct and positive effect on P-S fit. | Rejected |
| H3a: P-G fit has a direct and positive effect on knowledge sharing. | Accepted |
| H3b: P-J fit has a direct and positive effect on knowledge sharing. | Accepted |
| H3c: P-S fit has a direct and positive effect on knowledge sharing. | Rejected |
| H4a: PSM has an indirect and positive effect on knowledge sharing through a positive influence on P-G fit. | Accepted |
| H4b: PSM has an indirect and positive effect on knowledge sharing through a positive influence on P-J fit. | Accepted |
| H4c: PSM has an indirect and positive effect on knowledge sharing through a positive influence on P-S fit. | Rejected |

*Note.* PSM=public service motivation, P-G fit=person-group fit, P-J fit=person-job fit, P-S fit=person-supervisor fit

## Chapter Ⅴ. Discussion and Conclusion

This chapter concludes this study. After summarizing the principal findings, it discusses the implications from both theoretical and practical perspectives. Finally, this chapter describes limitations of the study and presents suggestions for the future research.

### 1. Summary of the Principal Findings

This study investigated knowledge sharing motivation in the public sector by analyzing survey data collected from local governments in South Korea. It examined the relationship between PSM and knowledge sharing based on theoretical discussions by applying SDT, and it identified empirical links among key variables by using P-E fit theory.

Based on literature review, this study identified PSM, P-E fit, and knowledge sharing as key variables. Thereafter, PSM was categorized into four sub-factors—attraction to public service, commitment to public value, self-sacrifice, and compassion—and P-E fit was divided to three sub-dimensions—P-G fit, P-J fit, and P-S fit. Although the original scale that was adopted to measure PSM was composed of four sub-scales and thus included sixteen items, this study accepted Coursey et al.'s (2011) encouragement and regarded PSM as one factor. Since the measures of the main variables were adjusted by translating items for the Korean context, both CFA and EFA were used, and there were no validity or reliability issues with the measurements.

Although previous studies have not revealed directly connections between key variables investigated in this study, the author also found cues regarding a direct relationship between PSM and knowledge sharing, direct relationships between PSM and the sub-dimensions of P-E fit, and indirect relationships between PSM and knowledge sharing through the sub-dimensions

of P-E fit by reviewing the management literature. As a result of bivariate correlation analyses, the main variables correlate with each other. Thus, this study tested the direct effects of PSM and the mediating effects of P-G fit, P-J fit, and P-S fit further by running regression analyses.

However, some of the proposed hypotheses associated with these variables and linkages were not supported. The relationship between PSM and knowledge sharing was statistically significant, supporting hypothesis 1. Public service motivation was positively related to P-G fit and P-J fit, but it was not significantly related to P-S fit. Thus, hypotheses 2a and 2b were confirmed while hypothesis 2c was refuted. Based on the results of regression analysis for model 3, P-G fit and P-J fit had a positive effect on knowledge sharing. Meanwhile, P-S fit was not significantly associated with knowledge sharing. Therefore, hypotheses 3a and 3b were also accepted, whereas hypothesis 3c was not accepted. Lastly, the results of mediation analyses supported hypotheses 4a and 4b, revealing that the relationship between PSM and knowledge sharing was mediated by P-G fit and P-J fit. However, the relationship between PSM and knowledge sharing was not mediated by P-S fit, and hypothesis 4c was, therefore, rejected.

**2. Theoretical Implications and Discussion**

The current study has significant implications in a theoretical perspective. First, this study considered multiple dimensions of P-E fit relating to several different facets, such as coworkers, job demands, and supervisors in the work environment. While previous studies have typically depicted P-E fit as a singular concept (e.g., Giauque, Resenterra, & Siggen, 2014; Groeneveld, 2011; Pedersen, 2014; Ryu, 2017; Steijn, 2008) or have dealt with only one dimension of P-E fit (e.g., Bright, 2008; Carpenter, Doverspike, & Miguel, 2012; Kim, 2012; Liu,

Liu, & Hu, 2010; Moynihan & Pandey, 2007b), the current study examined the differential effects relating to three dimensions of P-E fit: P-G fit, P-J fit, and P-S fit. In addition, considering that very few studies in public administration have discussed P-S fit (e.g., Sun, Peng, & Pandey, 2014), the empirical evidence provided by this study regarding P-S fit in the public sector context is worthwhile.

Second, this study applied particular theories to understand work environments in the public sector. Specifically, it tried not only to understand the knowledge sharing motivation process in the public sector but also to examine the relationships between PSM, the sub-dimensions of P-E fit, and knowledge sharing by applying both SDT and P-E fit theory as theoretical backgrounds. Considering the naturally high intrinsic motivation of public employees to serve the public (Perry et al., 2010; Perry & Wise, 1990), SDT was helpful for understanding the relationship between intrinsic motivation and employees' prosocial behavior. Also considering that work environment and organizational culture promotes knowledge sharing (Nonaka & Takeuchi, 1995), and P-E fit itself involves the concept of the work environment, P-E fit perspective was valuable to explain the knowledge sharing motivation mechanism by focusing on compatibility between an employee and their work environment.

Third, this is the first study that applied P-E fit theory to the knowledge sharing motivation process in the public sector. Although some studies have investigated the relationship between PSM and knowledge sharing behavior in public sector organizations (e.g., Chen & Hsieh, 2015; Tuan, 2016), they were limited to examine a direct relationship and did not explain how PSM affects knowledge sharing. Specifically, the present study disentangled the relationship based on P-E fit theory. Furthermore, considering sub-dimensions of P-E fit, this

study provided theoretical insights into individual and organizational mechanisms to determine how and why PSM leads to knowledge sharing.

Fourth, although prior to this study a direct connection between PSM, knowledge sharing, and sub-dimensions of P-E fit had not been considered in public administration, the current study fills that research gap by developing a logical framework based on the literature review and by examining the relationships empirically. However, unlike the expectation of the current study regarding the research hypotheses proposed, some of them were not supported by the results of the statistical analyses. Specifically, research models based on predictions regarding P-S fit were not accepted, while other models considering P-G fit and P-J fit were supported. As this study looked over a different facet of P-S fit with other dimensions of P-E fit, some points need to be discussed here.

The literature review reveals PSM is positively related to P-E fit (e.g., Perry & Wise, 1990; Stritch & Christensen, 2014), and P-E fit plays a significant mediating role (e.g., Bright, 2007; Kim, 2012; Wright & Pandey, 2008). Indeed, employees with high levels of PSM are more likely to be compatible with their organizations, causing them to be more likely to complete their tasks and to achieve better outcomes (Lewis & Frank, 2002; Perry & Porter, 1982; Perry & Wise, 1990). Therefore, this study assumed that PSM-oriented employees would pursue congruence with their work groups, coworkers, job tasks, and supervisors. However, P-S fit should be distinguished from other types of P-E fit, and the relationship between PSM and P-S fit should be understood differently.

P-E fit theory states that workers who feel fitted to an organization will show a higher

level of individual outcomes, such as higher job satisfaction and organizational commitment, because they share values, personality, or goals with others (Bretz & Judge, 1994; O'Reilly et al., 1991). However, building or maintaining high congruence between subordinates and their supervisors differs with other types of P-E fit. In other words, subordinates and leaders do not have to be similar in their personality, personal values, and goals, and they do not have to share those factors, although they still want to achieve better performance (Kroll & Vogel, 2014) because they can complement each other when necessary (Kristof, 1996). Moreover, because P-S fit is based on interpersonal relationships (Choi & Yoo, 2005), it can be directly derived from mutual relationships between subordinates and their supervisors, and PSM may not be a reliable factor for predicting P-S fit because. Therefore, unlike other types of P-E fit, although public employees have high levels of PSM, it does not influence P-S fit.

It is interesting to note that this study used data collected in South Korea, whose culture is primarily based on Confucianism. Confucianism emphasizes hierarchical order in human relationships (Yang, 2006), a belief which may increase the rigidity of organizations. Therefore, this belief system could hinder active exchange and communication between subordinates and supervisors and also result in subordinates blindly obeying authority (Oh, 2003). Considering the top-down culture of Confucianism, the subordinate-supervisor relationship can be formed with a different mechanism. Therefore, P-S fit in the Korean context can be distinguished from other types of P-E fit. This feature of P-S fit was proved empirically by the primary analyses, which revealed that PSM did not predict P-S fit.

### 3. Practical Implications

From a practical perspective, the current study provides several implications for managers in the public sector that how to enhance employees' behaviors to share knowledge within their organizations. Since knowledge sharing is understood as a prosocial behavior (Gagné, 2009), it cannot be cannot be mandated or required by external force. Therefore, organizations should hire people who meet the organizational requirements and support current employees steadily for promoting knowledge sharing.

First, given the positive and direct relationship between PSM and knowledge sharing, this study recommends that managers focus on employees' PSM levels as the crucial factor for increasing knowledge sharing. Government agencies or managers need to hire employees who have high levels of PSM. Specifically, they can assess the PSM levels of job applicants through in-depth interviews or tests that use the scale developed in PSM studies. In addition, managers also need to conduct strategic and tactical actions such as appropriate training for enhancing public employees' PSM levels.

Second, based on the results indicating a relationship between P-G fit and P-J fit and knowledge sharing, organizations should focus on work group and job compatibility to promote employees' knowledge sharing intentions. To do so, organizations need to assess the degree to which job candidates are compatible with values or norms of a particular group and with the job demands. Moreover, since knowledge sharing can be enhanced by improving employees' perception of compatibility with their group and job tasks, managers should strive to increase employees' satisfaction with their work groups and to meet other job-related needs.

Third, in addition to appropriate training and education for promoting employees' PSM

levels, managers should provide them with additional opportunities, such as informal events and workshops, to improve their identification with their organization. Employees with high levels of PSM believe their values are more likely to be compatible with the public organization for achieving organizational outcomes (Lewis & Frank, 2002; Perry & Porter, 1982; Perry & Wise, 1990). In line with those findings, managers need to support public employees' identification with their organizations by creating work environments conducive to compatibility so that employees are more likely to engage in knowledge sharing.

## 4. Limitations and Future Research

While the empirical nature of this study results in strong theoretical and practical implications, it also has several limitations to be considered. First, since the data were collected by a self-report measure, this study is not free from the common method bias (CMB). Since CMB is associated with single-source and survey-based research, it is a major issue in organizational behavior research (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Although the researcher conducted Harman's single factor test[5] and found no CMB issue, it can be difficult to judge the existence of CMB based on the test (Podsakoff et al., 2003). Therefore, it is possible that relationships between the variables might be inflated. In light of this limitation, future research should use a different data source for variables. Specifically, the dependent variable of this study, knowledge sharing, can be measured by surveying managers or supervisors while

[5] This study conducted Harman's single factor test to check the common method variance (CMV) issue. Based on a result of an exploratory factor analysis including all measures in a study, the test is to see whether one single factor accounts for the majority of the covariance between the measures (Podsakoff & Organ, 1986). If not, according to the test, the results support that CMV is not a main concern (Podsakoff & Organ, 1986). In the current study, the results of the test presented that no single factor accounted for the majority of the variance in the variables.

other variables can be reported by employees themselves.

Second, while the data were collected from local government agencies across wide areas, many respondents were in junior roles and not in managerial positions. Although this study controlled the influence of service years in the organization for the primary analyses, it might be impossible to control all respondents' characteristics relating to rank and service years. Therefore, the respondents might not represent the propensity and work behaviors of senior-level local government employees.

Third, this is a cross-sectional study, and data were collected at a given point in time to examine the relationships between main variables. Although cross-sectional research is normally connected and matched with survey research (Frankfort-Nachmias & Nachmias, 2008), it has an inherent limitation in that the results of data analyses might be changed with time, thus becoming uncertain (Mathieu & Taylor, 2006). Considering the necessity of collecting data at multiple time points, a longitudinal study would be an alternative way to verify whether the relationships between variables in this study are maintained over time.

Fourth, this study controlled a relatively small number of variables relating to work environment, such as job autonomy and organizational learning culture. Despite the close relationship between P-S fit and LMX (Engle & Lord, 1997), the author did not consider it in the proposed research model. In addition to the main variables of this study, future research should investigate how other variables (e.g., voluntary learning behavior and fairness perception) might influence knowledge sharing based on a more in-depth literature review.

Lastly, this study considered PSM as an intrinsic motivational factor that can improve knowledge sharing behavior in organizations. Although public employees have higher levels of

PSM than private sector workers (Perry & Wise, 1990; Stejin, 2008) and are more intrinsically motivated and committed to serving the public (Perry et al., 2010; Perry & Wise, 1990), extrinsic motivational factors still do exist in the public sector workplace. Considering that extrinsic motivation significantly influences knowledge sharing behavior (Bock et al., 2005; Lin, 2007; Osterloh & Frey, 2000), future research should include extrinsic motivational factors to understand knowledge sharing motivation in the public sector.

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**Appendix A: IRB Result**

Office of Research and Innovation

**Office of Research and Innovation**
Office of Research Subjects Protection
BioTechnology Research Park
800 East Leigh Street, Suite 3000
Box 980568
Richmond, Virginia 23298-0568

(804) 828-0868
Fax: (804) 827-1448

TO: Myung Jin
Jaeyong Lee
CC:

FROM: VCU IRB Panel A
RE: Myung Jin ; IRB HM20008599 Korean government employee survey

On 11/9/2016 the referenced research study ***qualified for exemption*** according to 45 CFR 46.101(b), category 2.

- The information found in the electronic version of this study's smart form and uploaded documents now represents the currently approved study, documents, and HIPAA pathway (if applicable). You may access this information by clicking the Study Number above.

If you have any questions, please contact the Office of Research Subjects Protection (ORSP) or the IRB reviewer(s) assigned to this study.

The reviewer(s) assigned to your study will be listed in the History tab and on the study workspace. Click on their name to see their contact information.

**Attachment – Conditions of Exempt Approval**
***Conditions of Exempt Approval:***

In order to comply with federal regulations, industry standards, and the terms of this approval, the investigator must (as applicable):

1. Conduct the research as described in and required by the Protocol.

2. Provide non-English speaking patients with a translation of the approved Consent Form in the research participant's first language. The Panel must approve the translation.

3. The following changes to the protocol **must be** submitted to the IRB panel for review and approval before the changes are instituted. Changes that do not meet these criteria do not have to be submitted to the IRB. If there is a question about whether a change must be sent to the IRB please call the ORSP for clarification.

**THESE CHANGES MUST BE SUBMITTED:**
- Change in principal investigator
- Any change that increases the risk to the participant
- Addition of children, wards of the state, or prisoner participants
- Changes in survey or interview questions (addition or deletion of questions or wording) that change the level of risk or adds questions related to sexual activity, abuse, past or present illicit drug use, illegal activities, questions reasonably expected to provoke psychological anxiety, or would make participants vulnerable, or subject them to financial, psychological or medical risk
- Changes that change the category of exemption or add additional exemption categories
- Changes that add procedures or activities not covered by the exempt category(ies) under which the study was originally determined to be exempt
- Changes requiring additional participant identifiers that could impact the exempt category or determination
- Change in inclusion dates for retrospective record reviews if the new date is after the original approval date for the exempt study. (ex: The approval date for the study is 9/24/10 and the original inclusion dates were 01/01/08-06/30/10. This could be changed to 01/01/06 to 09/24/10 but not to end on 09/25/10 or later. )
- Addition of a new recruitment strategy
- Increase in the planned compensation to participants

4. Monitor all problems (anticipated and unanticipated) associated with risk to research participants or others.

5. Report Unanticipated Problems (UPs), following the VCU IRB requirements and timelines detailed in VCU IRB WPP VIII-7).

6. Promptly report and/or respond to all inquiries by the VCU IRB concerning the conduct of the approved research when so requested.

7. The VCU IRBs operate under the regulatory authorities as described within:
- U.S. Department of Health and Human Services Title 45 CFR 46, Subparts A, B,

C, and D (for all research, regardless of source of funding) and related guidance documents.
- U.S. Food and Drug Administration Chapter I of Title 21 CFR 50 and 56 (for FDA regulated research only) and related guidance documents.
- Commonwealth of Virginia Code of Virginia 32.1 Chapter 5.1 Human Research (for all research).

## Appendix B: Information Sheet (English)

Title of Research: Understanding Knowledge Sharing Motivation in the Public Sector

Jaeyong Lee, Ph.D. Candidate in Public Policy and Administration, Virginia Commonwealth University, (804) 678-8953, leej96@vcu.edu

Myung H. Jin, Ph.D., Faculty Advisor, (804) 828-8812, mhjin@vcu.edu

You have the option to participate in this research that has been reviewed by an Institutional Review Board at Virginia Commonwealth University (VCU) (VCU IRB NO.: HM20008599). You may ask the researcher any question about this research. You are encouraged to take your time in making a decision. This survey should take about 10 to 15 minutes to complete.

You should also know that participation in research is entirely voluntary. Even after you agree to participate in the research, you may decide to leave the study at any time without penalty or loss of benefits to which you may otherwise have been entitled. You should also be aware that the investigator may withdraw you from participation at his/her professional discretion.

Your answers and personal information are appreciated and will be held in strict confidence. Access to the information is prohibited for everyone except qualified researchers. You will be given a copy of this document for your records.

If you have any questions, complaints, or concerns about your participation in this research, please contact Jaeyong Lee at (804) 678-8953 or leej96@vcu.edu, or Dr. Myung H. Jin at (804) 828-8812 or mhjin@vcu.edu. If you have any questions about your rights as a research participant, you may contact Office of Research, VCU at (804) 827-2157.

Thank you for taking the time to assist me in my educational endeavors.

## Appendix C: Survey Items (English)

Thank you for participating in our survey. The questionnaires below describe employee behaviors and opinions in the workplace. Please read carefully before answering them. There is no right or wrong answer. Your honest answers and answering all items below are very important. Thank you.

1. The next several items describe your job and workplace characteristics. Please indicate the answer category that best reflects your opinion.

| Organizational Learning Culture | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| In my organization, anyone can be a source of learning and knowledge. | | | | | |
| In my organization, individuals are able to freely promote and try new ideas. | | | | | |
| My organization creates continuous learning opportunities. | | | | | |
| My organization promotes inquiry and dialogue. | | | | | |

| Job Autonomy | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| I have a lot of say over what happens on my job. | | | | | |
| I have enough authority to do my best. | | | | | |
| My job allows me to make a lot of decisions on my own. | | | | | |
| I have enough freedom as to how I do my work. | | | | | |

| Person-supervisor Fit | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| How would you describe the match between the things you value in life and the things your supervisor values? | | | | | |
| How would you describe the match between your personality and your supervisor's personality? | | | | | |
| How would you describe the match between your work style and your supervisor's work style? | | | | | |
| How would you describe the match between your supervisor's leadership style and the leadership style you desire? | | | | | |

| Person-group Fit | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| My approach to work fits in with that of my work unit members | | | | | |
| My professional interests are the same as those of my work unit members | | | | | |
| I identify with my work unit members. | | | | | |
| I get along well with the people I work with on a day-to-day basis. | | | | | |
| I like the people I work with. | | | | | |

| Person-job Fit | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| My abilities fit the demands of this job. | | | | | |
| There is a good match between the requirements of this job and my skills. | | | | | |
| My personality is a good match for this job. | | | | | |
| I am the right type of person for this type of work. | | | | | |

2. The next several items are related to your motivation to serve in government. Please indicate the answer that best reflects your opinion.

| Public Service Motivation | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| I admire people who initiate or are involved in activities to aid my community. | | | | | |
| It is important to contribute to activities that tackle social problems. | | | | | |
| Meaningful public service is very important to me. | | | | | |
| It is important for me to contribute to the common good. | | | | | |
| I think equal opportunities for citizens are very important. | | | | | |
| It is important that citizens can rely on the continuous provision of public services. | | | | | |
| It is fundamental that the interests of future generations are taken into account when developing public policies. | | | | | |
| To act ethically is essential for public servants. | | | | | |
| I feel sympathetic to the plight of the underprivileged. | | | | | |
| I empathize with other people who face difficulties. | | | | | |
| I get very upset when I see other people being treated unfairly. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Considering the welfare of others is very important. | | | | | |
| I am prepared to make sacrifices for the good of society. | | | | | |
| I believe in putting civic duty before self. | | | | | |
| I am willing to risk personal loss to help society. | | | | | |
| I would agree to a good plan to make a better life for the poor, even if it costs me money. | | | | | |

3. The next items are related to how you feel about your job tasks. Please indicate the answer that best reflects your opinion.

| Knowledge Sharing | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| I share my work reports and official documents with members of my organization. | | | | | |
| I provide my manuals, methodologies and models for members of my organization. | | | | | |
| I share my experience or know-how from work with other organizational members. | | | | | |
| I try to share my expertise from my education or training with other organizational members in an effective way. | | | | | |

4. The final items below are about you. Please answer or indicate your response accurately. Again, your information below will be kept confidential and will not be identified anywhere.

1) Gender ① Male ② Female

2) Age ( )

3) Service years

(in the current organization: , in the public sector: )

4) Salary

① less than $10,000 ② $10,000 - $20,000 ③ $20,001 - $30,000

④ $30,001 - $40,000 ⑤ over $40,000

Thank you again for your honest answers and participation in this survey.

## Appendix D: Information Sheet (Korean)

연구제목: 공공부문의 지식공유 동기에 관한 연구

연구자: 이재용, 버지니아 연방 주립대학교 행정학 박사과정, 1-804-678-8953, leej96@vcu.edu

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귀하는 버지니아 연방 주립대학교 (Virginia Commonwealth University)의 생명윤리심의위원회 (Institutional Review Board)에 의해서 승인된 연구에 참여하고자 합니다 (승인번호: HM20008599). 본 연구와 관련하여 질문이 있으시면 말씀해 주시기 바랍니다. 충분한 시간을 갖고 설문 참여 여부를 결정해 주시기 바랍니다. 본 설문은 10~15분 정도 소요됩니다.

귀하는 자발적으로 본 연구에 참여하는 것을 결정하실 수 있습니다. 귀하는 설문 참여에 동의 후, 설문에 참여하는 중이더라도 언제든지 어떠한 종류의 불이익이나 손실없이 설문을 그만 두실 수 있습니다. 연구자도 귀하가 설문에 참여하시기 부적절하다고 생각될 경우 귀하의 설문 참여를 취소할 수 있음을 유념해 주시기 바랍니다.

귀하의 응답과 개인 정보는 엄격하게 기밀로 관리될 것입니다. 또한 정보의 열람은 자격이 부여된 연구자에게만 허락될 것입니다. 귀하께는 연구 동의서로 보관하실 수 있도록 본 장의 복사본이 제공될 것입니다.

본 실험을 통해 불편이 발생하거나 문의사항이 있는 경우에는 이재용 박사과정 (전화: 1-804-678-8953, 이메일: leej96@vcu.edu) 또는 Dr. Myung H. Jin 교수 (전화: 1-804-828-8812, 이메일: mhjin@vcu.edu) 에게로 연락을 주시기 바랍니다. 본 실험에 참여하는 과정에서 귀하의 권리나 인권에 관한 문의가 있는 경우에는 버지니아 연방 주립대학교 생명윤리심의위원회 (1-804-827-2157)로 연락을 주시기 바랍니다.

협조해 주셔서 감사합니다.

## Appendix E: Survey Items (Korean)

설문에 참여해 주셔서 다시 한번 감사합니다. 다음 문항들은 귀하의 행동이나 의견을 설명하는 항목들로 구성되어 있습니다. 항목들을 주의 깊게 읽으시고 귀하의 생각과 가장 가까운 정도에√표 해 주시기 바랍니다. 여기에는 어떠한 정답이나 오답도 없음을 다시 한번 알려드립니다. 부디 빠짐없이 답변해 주시기를 부탁드립니다.

1. 다음 문항들은 조직 내에서 현재 수행하고 있는 업무환경에 관한 것입니다.

| 조 직 학 습 문 화 | 매우 아니다 | 아니다 | 보통 | 그렇다 | 매우 그렇다 |
|---|---|---|---|---|---|
| 우리 조직 내 누구든지 배움과 지식의 원천이 될 수 있다. | | | | | |
| 우리 조직의 구성원들은 자유롭게 새로운 아이디어를 창출하고 시도할 수 있다. | | | | | |
| 우리 조직은 지속적으로 학습 기회를 창출한다. | | | | | |
| 우리 조직은 구성원들 간의 질문과 대화를 장려한다. | | | | | |

| 권 한 | 매우 아니다 | 아니다 | 보통 | 그렇다 | 매우 그렇다 |
|---|---|---|---|---|---|
| 나는 내 업무수행 시 발생하는 일에 대해 많은 의견을 낼 수 있다. | | | | | |
| 나는 최선의 업무수행을 위해 필요한 충분한 권한을 가지고 있다. | | | | | |
| 나는 업무수행 시 내 스스로 많은 결정들을 내릴 수 있다. | | | | | |
| 나는 업무를 어떤 방식으로 수행할 것인지를 자유롭게 결정할 수 있다. | | | | | |

| 상사와의 적합도 | 매우 아니다 | 아니다 | 보통 | 그렇다 | 매우 그렇다 |
|---|---|---|---|---|---|
| 나와 내 상사의 가치관은 서로 잘 맞는다. | | | | | |
| 나와 내 상사의 성격은 서로 잘 맞는다. | | | | | |
| 나와 내 상사의 업무 스타일은 잘 맞는다. | | | | | |
| 내 상사의 리더십 스타일과 내가 원하는 리더십 스타일은 비슷하다. | | | | | |

| 조직과의 적합도 | 매우 아니다 | 아니다 | 보통 | 그렇다 | 매우 그렇다 |
|---|---|---|---|---|---|
| 나와 부서 직원들의 업무방식은 서로 잘 맞는다. | | | | | |
| 나와 부서 직원들의 업무상 관심사는 같다. | | | | | |
| 나는 부서 직원들과 동질감을 느낀다. | | | | | |
| 나는 조직 구성원들과 매일매일 잘 어울려 지낸다. | | | | | |
| 나는 나와 함께 일하는 사람들을 좋아한다. | | | | | |

| 업무 적합도 | 매우 아니다 | 아니다 | 보통 | 그렇다 | 매우 그렇다 |
|---|---|---|---|---|---|
| 내 능력은 내 업무수행에 필요한 사항에 적합하다. | | | | | |
| 내 업무수행에 필요한 사항과 내 기량은 잘 맞는다. | | | | | |
| 내 성격은 내 업무와 잘 맞는다. | | | | | |
| 나는 내 업무를 수행하기에 적합한 사람이다. | | | | | |

2. 다음 문항들은 귀하의 업무동기에 관한 것입니다.

| 공 공 봉 사 동 기 | 매우 아니다 | 아니다 | 보통 | 그렇다 | 매우 그렇다 |
|---|---|---|---|---|---|
| 지역사회에 도움을 주는 활동에 참여하는 사람들을 존경한다. | | | | | |
| 사회문제를 해결하려는 활동에 동참하는 것은 중요하다. | | | | | |
| 의미있는 공공(행정)서비스는 나에게 매우 중요하다. | | | | | |
| 공익에 기여한다는 것은 나에게 있어서 중요하다. | | | | | |
| 시민들에게 균등한 기회를 제공하는 것은 매우 중요하다. | | | | | |
| 시민들이 공공(행정)서비스가 지속적으로 제공될 것이라고 신뢰하는 것은 중요하다. | | | | | |
| 정책을 개발할 때, 미래세대의 이익을 고려하는 것은 매우 중요하다. | | | | | |
| 공무원들이 윤리적으로 행동하는 것은 매우 중요하다. | | | | | |
| 사회적 약자의 어려운 처지를 보면 동정심을 느낀다. | | | | | |
| 어려움에 직면한 사람들을 보면 안타까운 마음이 든다. | | | | | |
| 다른 사람들이 부당한 대우를 받는 것을 보면 매우 화가 난다. | | | | | |
| 다른 사람들의 복지를 고려하는 것은 매우 중요하다. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 나는 사회를 위해 희생할 준비가 되어 있다. | | | | | |
| 나 자신보다 시민으로서의 의무를 우선시해야 한다. | | | | | |
| 나는 사회를 위해 개인적인 손실을 감수할 수 있다. | | | | | |
| 비록 내가 비용을 지불하게 되더라도, 가난한 사람들을 돕기 위해 만든 좋은 계획에 동의할 것이다. | | | | | |

3. 다음 문항들은 귀하께서 업무와 관련하여 느끼시는 바에 관한 것입니다.

| 지 식 공 유 | 매우 아니다 | 아니다 | 보통 | 그렇다 | 매우 그렇다 |
|---|---|---|---|---|---|
| 나는 나의 업무보고서 또는 공문을 조직 내 직원들과 공유한다. | | | | | |
| 나는 나만의 업무 매뉴얼 또는 방식을 조직 내 직원들에게 제공한다. | | | | | |
| 나는 업무를 통해 습득한 나만의 경험 또는 노하우를 조직 내 직원들과 공유한다. | | | | | |
| 나는 교육이나 훈련을 통해 습득한 나의 전문지식을 다른 직원들과 공유하기 위해 노력한다. | | | | | |

4. 마지막으로 다음은 귀하에 대한 질문들입니다. 해당되는 내용에 정확히 √표 또는 답변을 해 주시기 바랍니다. 귀하께서 응답해주신 설문 답변과 개인 관련 정보는 최종 논문 어디에도 개재되지 않습니다. 또한 수집된 모든 정보는 연구목적 이외에는 활용되지 않으며, 개개인을 구분할 수 있는 정보를 포함하지 않음을 다시 한번 알려드립니다.

1) 성별 ① 남성 ② 여성

2) 나이 만 ( ) 세

3) 근속연수 (조직을 옮겼을 경우 정부조직에서의 총 근속연수를 적어주시기 바랍니다.)

(현재조직: 년, 총 근속연수: 년)

4) 연봉

① 1200만원 이하 ② 1200~2400만원 ③ 2400~3600만원

④ 3600~4800만원 ⑤ 4800만원 이상

성실한 답변에 감사드립니다.