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**Feedback and Innovative Work Behavior among Local Government Employees in Korea:
The Roles of Trust in Supervisor, Affective Commitment, and Risk-Taking Climate**

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

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ABSTRACT

Today, government at all levels is struggling to enhance individual and organizational performance. In this situation, most public organizations focus on employees' innovative work behavior because it is considered as a vital factor for organizational survival, which leads to sustainable development. However, little is known about antecedents influencing innovative work behavior in the public sector. To be specific, relatively little empirical research has examined the role of feedback from supervisor on innovative work behavior and the effect of feedback from supervisor on innovative work behavior is veiled. In addition, there has been little discussion about the mediating roles of trust in supervisor and affective commitment regarding the antecedents—innovative work behavior relationship. Moreover, far too little attention has been paid to the moderating role of risk-taking climate on the affective commitment—innovative work behavior relationship.

Considering the research gap in the field of public management and human resource development in terms of innovative work behavior, there is a need to clarify how useful job resources, positive work attitudes, psychological attachment, and positive organizational climate influence innovative work behavior in the public sector. The purpose of this study is to explore the mechanisms of how feedback from supervisor affects innovative work behavior among local government employees in Korea. Another purpose of this study is to explore the mediating roles of trust in supervisor and affective commitment, and the moderating role of risk-taking climate, using various theories, such as organizational support theory, social exchange theory, intrinsic motivation theory, and psychological climate theory.

The results from a cross-sectional study based on a sample of 1,699 local government employees from 65 local governments find that feedback from supervisor has a significant direct

effect on innovative work behavior. Trust in supervisor and affective commitment significantly mediate the relationship between feedback from supervisor and innovative work behavior. Feedback from supervisor has an indirect effect on innovative work behavior through its influence on trust in supervisor and affective commitment in serial. Risk-taking climate significantly moderates the relationship between affective commitment and innovative work behavior. Lastly, the results of moderated mediation model find that the conditional effects are significant at high levels of the moderator (at one standard deviation above the mean) and at the mean, while the conditional effect was not significant at low levels of moderator (at one standard deviation below the mean) for both two indirect effect paths (feedback from supervisor → affective commitment → innovative work behavior, and feedback from supervisor → trust in supervisor → affective commitment → innovative work behavior).

Several theoretical implications emerge from this study. First, this study is expected to advance understanding of the feedback—innovative work behavior relationship by testing the serial multiple mediation and moderated mediation models in the Korean local government context. To be specific, this study contributes to the expansion of literature that reveals the critical roles of trust in supervisor and affective commitment as a motivating mechanism of the relationship between feedback and innovative work behavior. In keeping with the call for empirically rarely explored moderators of the relationship, this study contributes to the emerging literature that focuses on the important role of a risk-taking climate in boosting innovative work behavior in the workplace.

This study also provides practical implications for supervisors and managers regarding facilitating employees' innovative work behavior through effective feedback delivery and cultivating risk-taking climate. To be specific, supervisors should deliver feedback that enables

subordinates to (1) identify causes of problems, (2) learn subordinates' responsibilities and the purposes of the work they do, (3) develop their own problem-solving ability, and (4) be more aware of the ultimate goals and values of their organization for developing innovative work behavior in the long term. In addition, in order to cultivate risk-taking climate, it is recommended that local governments should (1) not reprimand their employees as a result of minor errors or setbacks due to innovative work behavior, (2) omit any negative remarks during a performance evaluation or show any disadvantages to the employees regarding the minor errors or setbacks, (3) praise and recognize employees who achieve individual and organizational performance goals through risk-taking behaviors or innovative work behavior, and (4) promote successful cases of innovative work behavior or risk-taking behaviors.

CHAPTER1

INTRODUCTION

Background of the Study

There has been increasing interest in innovative work behavior among both scholars and practitioners. Innovative work behavior refers to an employee's behaviors to improve individual and/or organizational work outcomes by generating, promoting, implement, and realizing new ideas. Recently, government at all levels is struggling to enhance productivity and individual performance. In order to adapt and thrive in an environment of continuous change, organizational innovation is required. In addition, societal changes are expected for team members to have creative thinking and innovative work behaviors. Creative and innovative employees are rising as important assets of organizations, because main agents of making efforts for the organizational development are individuals (Robbins, 2005). In this situation, most organizations focus on employees' innovative work behavior, because each employee's innovative work behavior is considered as a vital factor for organizational survival, which leads to sustainable development (Choi, Kim, Ullah, & Kang, 2016; Scott & Bruce, 1994).

Public management and human resource development (HRD) researchers suggest that the performance improvement requires innovative work behavior in the public sector (Amabile, 1998; Cameli, Meitar, & Weisberg, 2006; De Jong, 2006; Janssen, 2000; Lee, 2008). Employees improve individual and organizational performance through innovative work behavior (e.g., fixing errors in service delivery, learning from processes for identifying and correcting the errors, and generating creative ideas for work processes) (Fernandez and Moldogaziev 2013).

Researchers also contend that innovative work behavior contributes to the improvement of service delivery and problem-solving abilities (De Vries, Bekkers and Tummers 2016).

New Public Management (NPM) reforms undertaken in the U.S., United Kingdom, Australia, Canada, France, Norway, Korea, and elsewhere have stressed innovation or innovative work behavior as a way to improve performance, effectiveness, and efficiency in the public sector. A myriad of government policies have been designed and implemented by NPM, and those policies under the perspective of NPM have focused on improving innovative work behavior among public employees (Fernandez & Moldogaziev, 2013; Hansen, 2011; Kettl, 2005; Osborne & Gaebler, 1992; Rhodes, 1999).

NPM was also adopted to bring innovativeness into the Korean central government and local governments in the 1990s (Kettle, 2005; Osborne & Gaebler, 1992; Rhodes, 1999). Under pressure from globalization, the competitiveness of governments against the private sector, and citizen's growing expectations, government at all levels has implemented a variety of programs and policies for innovativeness. Korean central and local governments have made efforts to change behaviors of public employees to enhance the quality of administrative service innovatively through public service reform (e.g., adopting the Citizen's Charter and utilization of the public customer satisfaction index). In addition, administrative culture transformation has been attempted to convert the old administrative culture, based on hierarchical bureaucracy, to the innovative administrative culture (e.g., behaviors of taking risks and being innovative) (Im et al., 2013; Kim, 2000).

In 2017, Korean President Moon Jae-in introduced 'Government 3.0.' Government 3.0 refers to "the utilization of Information and Communication Technologies and neighboring scientific and technological domains, towards societal problem solving, resource optimization

and citizen well-being, through civic and enterprise collaboration at the local and international level” (Ministry of the Interior and Safety, n. d.). President Moon said that one of the important factors for ‘Government 3.0’ is innovative public employees.

Statement of the Problem

Korea has been selected as one of the most innovative countries in the world due to a number of policies and programs designed to encourage innovativeness under the perspective of NPM (Bloomberg, 2018; Florida, Mellander, & King, 2015). According to the Bloomberg Global Innovation Index (2018), Korea has been the best innovative country in the world out of over 200 nations for five straight years since 2014. In addition, according to the UN World Rankings, Korea has the best e-government in the world (UN E-Government Knowledge Database, 2018). On the contrary, Korean public employees are still regarded as less innovative than those in Western countries (Lee, 2008; Im, Campbell, & Jeong, 2016). Furthermore, researchers point out that the effects of policies for the innovativeness of public employees are more marginal among local government employees because of the characteristics of decentralization of policy and lack of resources of local governments in Korea (Hassink, 2001; Kim, 2000; Kim & Lee, 2009).

This study focuses on innovative work behavior among Korean local government public employees. Although innovative work behavior is also important for public employees working in the central government, it is more important for local government employees for the following reasons. The main purpose of government policy for public service reform, innovativeness, and government innovation is to meet citizen’s growing expectations. Local governments are composed of a number of street-level bureaucrats who meet citizens more frequently on a daily

basis. The street-level bureaucrats have characteristics that they often face a variety of complaints from clients and exercise indispensable discretion (Lipsky, 1980). Although street-level bureaucrats have discretion regarding service delivery, Kim (2017) suggests that employees may not facilitate their discretion due to risk aversion in Korea. Public employees with risk aversion prefer working with guidance and clear rules and are less likely to take unknown risks (Bozeman & Kingsley, 1998; Chen & Kingsley, 2012; García-Granero, Llopis, Fernández-Mesa, & Alegre, 2015; Kim, 2017). Based on the unique characteristics and circumstances of local government employees, this study focuses on local government employees in Korea.

According to De Vries et al. (2014), the number of studies on innovative work behavior or innovation in the public sector has increased since 1990 because innovative work behavior and innovation have received growing attention from public administration researchers and practitioners since the late 1980s. However, most previous studies on innovative work behavior have been conducted in a western context through qualitative methods, such as the case study approach. There has been few empirical research on innovative work behavior in an Asian context. Little is known about innovative work behavior in an Asian context and it is not clear what factors influence innovative work behavior.

Researchers have indicated that employees who receive feedback from their supervisors are likely to display positive attitudinal and behavioral outcomes, such as organizational commitment (Eisenberger & Stinglhamber, 2011), trust (Nyhan, 2000), organizational citizenship behavior (OCB) (Peng & Chiu, 2010), job satisfaction (Jong, 2016), and performance improvement (Favero, Meier, & O'Toole Jr., 2016). However, relatively little empirical research has examined the role of feedback on innovative work behavior and the effect of feedback on innovative work behavior is veiled. This is rather surprising given that useful job resources, such

as feedback, are closely related to employees' attitudinal and behavioral outcomes (Favero et al., 2016; Zhou, 2003).

Although previous studies found that positive work attitudes and psychological states, such as trust in supervisor and affective commitment, mediate the relationship between positive work behaviors or outcomes (e.g., increased performance, job satisfaction, involvement, and decreased turnover intentions) and antecedents (Brooke, Russell, & Price, 1988; Cho & Lee, 2012; Colquitt et al., 2007; Im, Campbell, & Jeong, 2016; Moynihan & Pandey, 2007; Nyhan, 1994), there has been little discussion about the mediating role of trust in supervisor and affective commitment regarding the antecedents—innovative work behavior relationship.

Investigators have reported that a risk-taking climate or behavior is significantly related to employees' positive work outcomes (Ambrose, Schminke, & Mayer, 2013; Jin & McDonald, 2017; James et al., 2008). However, there has been relatively little research on the moderating role of risk-taking climate in the literature. Particularly, far too little attention has been paid to the moderating role of risk-taking climate on the affective commitment—innovative work behavior relationship.

Purpose of the Study

Considering the research gap in the field of the study discussed in the statement of problem section, there is a need to clarify how useful job resources, positive work attitudes, psychological attachment, and positive organizational climate influence innovative work behavior in the public sector, specifically in the local government context.

The purpose of this study was to explore the mechanisms of how feedback from supervisor affects innovative work behavior among local government employees in Korea. A second purpose was to explore the mediating roles of trust in supervisor and affective commitment between feedback from supervisor and innovative work behavior. Thirdly, this study determined whether feedback from supervisor has an indirect, positive effect on innovative work behavior through its influence on trust in supervisors and affective commitment in serial. Fourthly, this study examined the moderating role of risk-taking climate between affective commitment and innovative work behavior. Finally, this study determined whether risk-taking climate conditionally influences the strength of the indirect relationship between feedback from supervisor and innovative work behavior through affective commitment, and trust in supervisor and affective commitment in serial.

Research Questions (Hypotheses)

The major question guiding this study is to explore the effects of feedback from supervisor on innovative work behavior among Korean local government employees. The eight specific research questions addressed are:

Research Question 1: Does feedback from supervisor affect innovative work behavior directly?

Research Question 2: Does feedback from supervisor affect innovative work behavior indirectly through its influence on trust in supervisor?

Research Question 3: Does feedback from supervisor affect innovative work behavior indirectly through its influence on affective commitment?

Research Question 4: Does feedback from supervisor have an indirect effect on innovative work behavior through trust in supervisor and affective commitment in serial?

Research Question 5: What is the supervisors' role in facilitating employees' innovative work behavior?

Research Question 6: How can local governments foster their employees' innovative work behavior?

Research Question 7: Does risk-taking climate play a vital role in facilitating employees' innovative work behavior in the public sector? Do employees increase innovative work behavior in an organization, where the risk-taking climate is well-developed?

Research Question 8: Does risk-taking climate conditionally influence the strength of the indirect effect of feedback from supervisor on innovative work behavior through mediators, trust in supervisor and affective commitment?

In order to answer the research questions, the following hypotheses were tested.

Hypothesis 1: Feedback from supervisor is positively related to innovative work behavior.

Hypothesis 2: Feedback from supervisor is positively related to trust in supervisor.

Hypothesis 3: Trust in supervisor is positively related to innovative work behavior.

Hypothesis 4: Trust in supervisor mediates the relationship between feedback from supervisor and innovative work behavior.

Hypothesis 5: Feedback from supervisor is positively related to affective commitment.

Hypothesis 6: Affective commitment is positively related to innovative work behavior.

Hypothesis 7: Affective commitment mediates the relationship between feedback from supervisor and innovative work behavior.

Hypothesis 8: Feedback from supervisor has an indirect, positive effect on innovative work behavior through its influence on trust in supervisor and affective commitment in serial.

Hypothesis 9: Risk-taking climate moderates the relationship between affective commitment and innovative work behavior.

Hypothesis 10: The indirect effect of feedback from supervisor on innovative work behavior through affective commitment will be moderated by risk-taking climate.

Hypothesis 11: The indirect effect of feedback from supervisor on innovative work behavior through trust in supervisor and affective commitment in serial will be moderated by risk-taking climate.

Significance of the Study

Significance of this study is paramount as it contributes to theory in the field of public administration and management and to practical implications for practitioners. First, this study has theoretical and practical contributions regarding the relationship between innovative work behavior and its antecedents in the local government context. Due to the positive potential outcomes of innovative work behavior, a number of companies have been interested in the

invigoration of innovative work behavior in the workplace (De Jong & Den Hartog, 2010). Under pressure from globalization, the competitiveness of governments against the private sector, and citizens' growing expectations, innovative work behavior also has been in the limelight in the public sector. In addition, researchers point out that the effects of policies for the innovativeness of public employees are more marginal among local government employees because of the characteristics of decentralization of policy and lack of resources of local governments in Korea (Hassink, 2001; Kim & Lee, 2009). Under these circumstances, this study is expected to advance understanding of the feedback—innovative work behavior relationship by testing the serial multiple mediation and moderated mediation models in the Korean local government context.

Second, the findings of this study suggest several strategies to enhance employees' innovative work behavior that local governments may take into account. Today, government at all levels is trying to facilitate innovative work behavior and innovation. This study could give practical implications for supervisors and managers regarding facilitating employees' innovative work behavior, behavior change, useful feedback delivery, and performance improvement. In addition, the findings of this study reveal the important roles of feedback delivery, affective commitment, and trust in supervisor on innovative work behavior in terms of the subordinate-supervisor relationship. According to organizational support theory, a supervisor is viewed as an agent who acts on behalf of the organization (Jin & McDonald, 2016). It is expected that innovative work behavior within the public organization depends on the quality of subordinate-relationship. Thus, this study is capable of benefiting local governments with an interest in enhancing employees' innovative work behavior and performance.

Fourth, this study is to test a mechanism that explains the relationship between performance feedback and innovative work behavior. Consistent with the call for the better understanding of the role of job resources as important antecedents of innovative work behavior, this study explores the role of feedback from supervisor as an individual motivational factor of the intrinsically motivated behavior, innovative work behavior. Given that the increasing importance and interest of feedback and innovative work behavior in the workplace, exploring the mechanisms of feedback from supervisors and innovative work behavior may enrich the feedback, job resources, and innovative work behavior literature.

Fifth, in keeping with the call for empirically testing rarely explored mediators of the motivational job resources—innovative work behavior relationship (Li & Hsu, 2016), two key mediators, trust in supervisors and affective commitment, are included to help to understand the underlying mechanisms through which feedback from supervisors influences innovative work behavior in the workplace. The contribution of this study is to test a serial multiple mediation model using the two mediators. Drawing from organizational support theory and social exchange theory, I hypothesize that employees who receive performance feedback from their supervisors are more likely to trust their supervisors because employees may improve performance or learn skills through supervisory performance feedback and believe in their supervisor's that they are competent and reliable (Mihara, 1996). Trust in their supervisor, in turn, results in higher emotional or affective commitment to the organization because employees view their supervisors as a representative of the organization. Thus, positive attitudes or emotional bonds toward their supervisors are linked to emotional ties with their organization. This increased affective commitment leads to proactive or extra-role behaviors, such as innovative work behavior, because employees with high levels of affective commitment are likely to repay the organization

and contribute to the organization's well-being through the positive behavior (Tremblay et al., 2010).

Sixth, consistent with the call for the better understanding of potential moderators between psychological attachment (i.e., affective commitment) and workplace outcomes (i.e., innovative work behavior), the final contribution of this study is to explore whether the effect of affective commitment on innovative work behavior is moderated by risk-taking climate, using psychological climate theory. In addition, using a moderated mediation model, this study examines whether the indirect effect of feedback from supervisor on innovative work behavior (via affective commitment, and trust in supervisor and affective commitment in serial) is moderated by risk-taking climate. This study contributes to the emerging literature that focuses on the important role of risk-taking climate to boost innovative work behavior in the workplace.

Definition of Terms

Innovative Work Behavior

Innovation processes not only include the implementation, but also it encompasses the development of new and creative ideas, idea promotion, idea championing, idea realization, and idea application (Dorenbosch, Engen, & Veragen, 2005). Innovative work behavior is defined as an employee's voluntary willingness to: (a) search out new methods, processes, techniques, and instruments, (b) generate creative ideas, (c) promote and champion ideas, (d) implement new ideas in this study.

Feedback from Supervisor

Feedback is known as one of the most potent elements of behavior change or behavior modification (Pinder, 2008; Prue & Fairbank, 1981). Employees may receive feedback from various sources: (a) supervisors or managers, (b) coworkers, (c) clients or customers, (d) self-generated, and (e) experts (Alvero, Bucklin, & Austin, 2008). In this study, only feedback from supervisors was considered. Thus, feedback is defined as information that is given to the responder about their job performance from supervisors.

Trust in Supervisor

Trust is a consequence of mutual interactions. Trust can be classified into several types: horizontal (between coworkers), vertical (between employees and supervisors), and institutional (between employees and organizations) (Krot & Lewicka, 2012). This study focuses on vertical trust between employees and supervisors. Trust in supervisors is defined as an individual's belief or confidence that their supervisor is open, reliable, and helpful overall, even in uncertain, risky situations.

Affective Commitment

Organizational commitment refers to a form of loyalty to an organization (Meyer & Allen, 1991, 1997). Several researchers suggest that there are three components of organizational commitment: affective, continuance, and normative. Researchers argue that affective commitment is the most vital explanatory variable among the three components. According to previous studies, affective commitment has been more closely and significantly related to outcome variables (e.g., performance, job satisfaction, and creativity) than the other two

components. For this reason, a number of researchers have viewed affective commitment as representative of organizational commitment (De Witte & Buitendach, 2005; Vandenberghe & Bentein, 2009). Thus, this study also focuses on affective commitment as the core of organizational commitment. Affective commitment is defined as “an affective or emotional attachment to the organization such that the strongly committed individual identifies, is involved in, and enjoys membership in the organization” (Allen & Meyer, 1990: 2).

Risk-Taking Climate

Risk-taking is defined as involving in behaviors that place employees at risk of making mistakes or possible negative outcomes. Organizational climate is viewed as the aggregation of individual employee’s perception of their work environment (James et al., 2008). Thus, risk-taking climate refers to an employee’s perception of the degree to which their organizational environment is favorable to risk-taking behaviors.

Organization of the Study

This dissertation proposal is presented in five chapters.

Chapter One includes the background of the study, statement of the problem, the purpose of the study, research questions and hypotheses, significance of the study, and the definition of terms of the study.

Chapter Two presents the theoretical framework and a review of the literature, which includes theories (organizational support theory, social exchange theory, intrinsic motivation theory, and psychological climate theory) and variables (feedback from supervisor, trust in

supervisor, affective commitment, risk-taking climate, and innovative work behavior), and hypotheses.

Chapter Three describes data and methodology. It includes the selection of participants (who participated in the study and how the participants were selected), research design, data collection (how the data were collected and how many participated in the study), instrumentation (how variables were measured), and data analysis (how data were analyzed).

Chapter Four provides the findings of this study, including participants' characteristics (i.e., demographic information), analyzing the measurement model with confirmatory factor analysis (CFA), and testing the research questions and hypotheses using Structural Equation Modeling (SEM) and PROCESS macro.

Chapter Five presents a summary of this study, discussion of the findings, theoretical implications, practical implications, recommendations for future research, and conclusion.

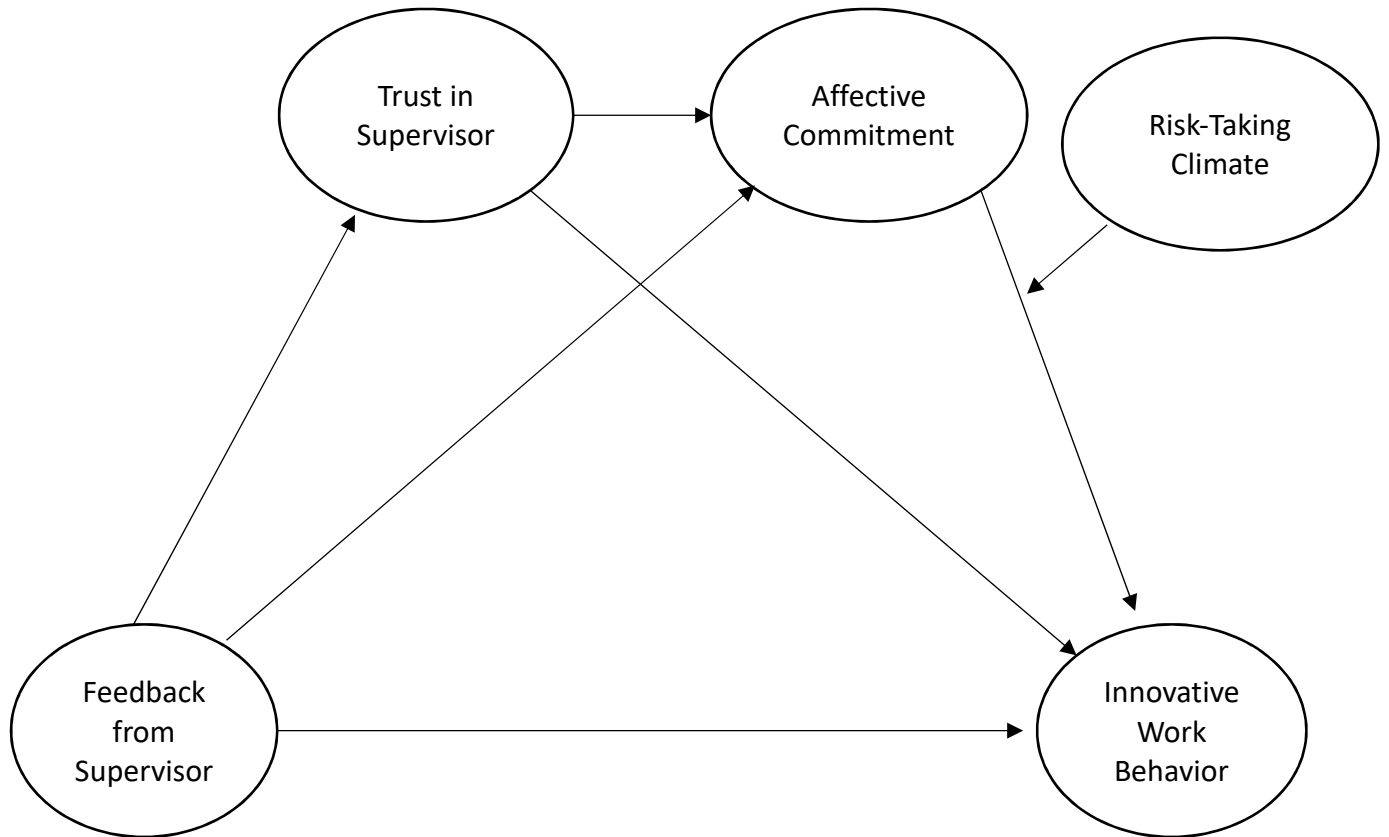
CHAPTER 2

RESEARCH FRAMEWORKS AND LITERATURE REVIEW

The main theme of this study is to explore the relationship between feedback and innovative work behavior. To be specific, this study is to (a) explore the direct effect of feedback from supervisor on innovative work behavior, (b) examine the moderating roles of trust in supervisor and affective commitment between feedback from supervisor and innovative work behavior, (c) determine whether feedback from supervisor has an indirect, positive effect on innovative work behavior through its influence on trust in supervisors and affective commitment in serial, (d) explore the moderating role of risk-taking climate between affective commitment and innovative work behavior, and (e) determine whether risk-taking climate conditionally influences the strength of the indirect relationship between feedback from supervisor and innovative work behavior through affective commitment, and trust in supervisor and affective commitment in serial. Figure 1 explains the main framework of this study.

The main logic of the framework is that feedback results in innovative work behavior through mediators and a moderator. This study focuses on the mechanism of the relationship between feedback and innovative work behavior. In order to determine these relationships, the relevant theories and previous studies are reviewed in this chapter.

Figure 1. Framework for the Relationships of Innovative Work Behavior



Innovative Work Behavior

Overview of Innovative Work Behavior

Innovative work behavior has received growing attention among public management and human resource development researchers. According to Scott and Bruce (1994), innovative work behavior includes three different tasks: idea generation, idea promotion, and idea realization (Janssen, 2000). Idea generation refers to the generation of solutions or ideas, either novel or adopted (i.e., searching out new working methods, instruments, or techniques) (Janssen, 2000; Scott & Bruce, 1994). The key point of idea generation is the combination and reorganization of information and ideas for improving performance or for solving problems (De Jong & Den

Hartog, 2008). Idea promotion refers to seeking sponsorship for an idea and making an effort to gain support for it (i.e., securing the funding and resources needed to implement innovations) (De Jong & Den Hartog, 2008; Janssen, 2000; Scott & Bruce, 1994). Idea realization refers to the application of innovative ideas into the work environment (i.e., adapting innovative ideas into useful applications) (Janssen, 2000). Dorenbosch, Engen, and Veragen (2005) also suggest that innovation processes not only include the implementation, but it also encompasses the development of new and creative ideas, idea promotion, idea championing, idea realization, and idea application (Dorenbosch, Engen, & Veragen, 2005).

Definitions of Innovative Work Behavior

A variety of definitions of innovative work behavior have been provided in the academic literature. Janssen (2000) defines innovative work behavior as “the intentional creation, introduction, and application of new ideas within a work role, group or organization, in order to benefit role performance, the group, or the organization” (Janssen, 2000:288). Dorenbosch, van Engen, and Verhagen (2005) define innovative work behavior as “the voluntary willingness by individual employees to constitute on-the-job innovations. For example, the upgrading of ways of working, communication with direct colleagues, the use of computers, or the development of new services or products” (p. 129). Cho and Lee (2007) assert that innovative work behavior is “an employee’s willingness to seek for better ways to improve the level of productivity in an organization” (p. 28). Giebels, de Reuver, Rispens, & Ufkes, 2016) define as innovative work behavior as “the intertwined and discontinuous combination of intentional idea generation, idea promotion, and idea implementation to benefit performance within a work role, workgroup, or organization” (p. 322). Taken together, innovative work behavior refers to employees’ role

behaviors to improve organizational and individual work outcomes by generating, promoting, implementing, applying, and realizing novel ideas (Cho & Lee, 2007; Dorenbosch et al., 2005; Giebels et al. 2016; Janssen, 2000; Lee, 2008; Scott & Bruce, 1994). Thus, innovative work behavior is defined as an employee's voluntary willingness to: (a) search out new methods, processes, techniques, and instruments, (b) generate creative ideas, (c) promote and champion ideas, (d) implement new ideas in this study.

Antecedents of Innovative Work Behavior

It has been known that innovative work behavior is linked to feedback (Battistelli, Montani, & Odoardi, 2013; Binnewies & Gromer, 2012; De Stobbeleir, Ashford, & Buyens; 2011; Janssen, 2000; Locke, Shaw, Saari, & Latham, 1981; Noefer, Stegmaier, Molter, & Sonntag, 2009; Scott & Bruce, 1994; Schaffer, Kearney, Voelper, & Koester, 2012; Shalley, 1991; Thurlings, Evers, & Vermeulen, 2015; Zhou, 1998, 2003; Zhou & George, 2001), organizational commitment (Eisenberger, Fasolo, Davis-LaMastro, & Schmitt, 1990; Farnese & Livi, 2016; Krog & Govender, 2015), trust (Afsar, Badir, & Khan, 2015; Agarwal, 2014; Berraies, Chaher, & Ben Yahia, 2014; Clegg, Unsworth, Epitropaki, & Parker, 2002; Ellonen, Blomqvist, & Puumalainen, 2008; Krog & Govender, 2015), work engagement (Park, Song, Yoon, & Kim, 2013), empowerment (Agarwal, 2014; Berraies, Chaher, & Ben Yahia, 2014; Çakar & Ertürk, 2010; Krog & Govender, 2015; Spreitzer, 1995), person-organization fit (Afsar, Badir, & Khan, 2015; Afsar & Badir, 2016), and performance (Leong & Rasli, 2014; Shanker, Berraies, Chaher, & Ben Yahia, 2014; Bhanugopan, Van Der Heijden, & Farrell, 2017).

Antecedents of innovative work behavior are dealt with in previous studies. Based on previous studies on innovative work behavior, antecedents of innovative work behavior can be classified as follows:

1. Demographic Factors: gender, age, income, years in organization, level of education, tenure, race, marital status, position, and supervisory position
2. Individual Factors: curiosity, openness, trait, attitudes, beliefs, perception of problem, professional identity, intrinsic motivation, desire to learn, desire to absorb new experiences, desire to acquire new knowledge, learning goal orientation, self-efficacy, self-confidence, job satisfaction, competence, and need for career development
3. Organizational Factors: feedback from supervisor, feedback from coworker, organizational commitment (affective commitment, continuance commitment, and normative commitment), trust in supervisor, trust in coworker, empowerment, public service motivation (PSM), participation, person-organization fit, person-environment fit, person-job fit, job involvement, job engagement, interaction with colleagues, communication, networking, supervisor support, coworker support, administrative support, lack of support, learning opportunity, training, knowledge sharing, and organizational culture
4. Job Demands and Job Resources: task variety, task identity, task significance, autonomy, workload, job autonomy, and role ambiguity

A content analysis was conducted to determine the distribution of antecedents of innovative work behavior. Table 1 presents the results of the content analysis in terms of antecedents of innovative work behavior from twenty-three previous studies. As shown in Table 1, organizational factors and job characteristics were primarily used as antecedents of innovative

work behavior and demographic factors were usually used as control variables in the literature of innovative work behavior. Among antecedents of innovative work behavior, feedback was used as an independent variable and organizational commitment and trust are used as mediators, and demographic variables were used as control variables in this study. Using organizational support theory and social exchange theory, the mechanisms and relationships between feedback, organizational commitment, trust, and innovative work behavior are discussed below.

Table 1. Antecedents of Innovative Work Behavior

Study	Factors	Sample
Scott and Bruce (1994)	Leader-member exchange, leader role expectations, team-member exchange, intuitive problem-solving style, systematic problem-solving style, support for innovation, resource supply	172 engineers, scientists, and technicians in R&D facilities
Janssen (2000)	Job demands, effort-reward fairness	170 non-management employees and 110 supervisors from a Dutch industrial organization
Lee (2008)	Internal attribution of good performance, external attribution of poor performance, competency, trust in supervisor, commitment	763 local government employees in Korea
Cho and Lee (2007)	Organizational commitment, commitment to gender policy,	186 government employees in Korea
Giebels et al. (2016)	Proactive personality, job autonomy, task conflict, relationship conflict	166 local government in the Netherlands
Carmeli, Meitar, & Weisberg (2006)	Self-leadership skills (behavior-focused strategies, natural reward strategies, constructive thought patterns), job tenure, income	175 employees in two public sector organizations and four firms
Noefer et al. (2009)	Skill variety, time pressure, feedback from supervisors	81 respondents in Germany
Xerri and Brunetto (2013)	Affective commitment, organizational citizenship behavior (individual, organization)	210 nursing employees

Miao et al. (2017)	Public service motivation, entrepreneurial leadership, empowerment	156 bureau directors in China
Orth and Volmer (2017)	Job autonomy, work engagement, self-efficacy	123 employees from different organizations
Dorenbosch, van Engen, and Verhagen (2005)	Commitment-oriented HRM activities, redundancy, production ownership, multi-functionality	450 local government employees in the Netherlands
De Spiegelaere et al. (2015)	Autonomy, time pressure, job insecurity, creativity as a job requirement,	3098 employees from 76 companies
Singh and Sarkar (2012)	Meaning, competence, impact, self-determination, non-work domain control, job involvement	401 teachers in India
Pieterse et al. (2010)	Transformational leadership, transactional leadership, empowerment	425 public employees working in Dutch government agencies
Fernandez and Moldogaziev (2012)	Empowerment, Job satisfaction, performance, knowledge sharing, trust in leader, sufficient resources	189,856 U. S. federal government employees
Werleman (2016)	Task variety, task identity, task significance, autonomy, feedback, affective commitment, transformational leadership	292 employees from different organizations in the Netherlands
Argawal (2013)	Trust, work engagement, procedural justice, interactional justice, psychological contract fulfillment	323 managers working in manufacturing and pharmaceutical organizations in India
Basu and Green (1997)	Commitment, transformational leadership, exchange quality, support, autonomy	225 employees and 58 supervisors in a manufacturing plant
Scott and Bruce (1998)	Problem-solving style, leader-member exchange,	110 employees in an R&D facility
Krause (2004)	Susceptibility to change, need for change, support for innovation, openness in a decision-making process, autonomy, expert knowledge	399 middle managers from different German organizations
Zhou and George (2001)	Feedback, organizational commitment, perceived organizational support, coworker support, job dissatisfaction	149 employees working in a petroleum equipment firm
Schaffer et al. (2012)	Feedback, age	256 employees in a German IT company
Battistelli, Montani, and Odoardi (2013)	Feedback, task autonomy, dispositional resistance to change	270 public employees in Italy

Overview of Feedback

Definitions of Feedback

Various definitions of feedback have emerged in the literature. Hattie and Timperley (2007) defined feedback as “information provided by an agent (e.g., supervisor, peer, and self) regarding aspects of one’s performance or understanding” (p.81). Sulzer-Azaroff and Mayer (1991) define feedback as “information transmitted back to the responder following a particular performance: seeing or hearing about specific features of the results” (p.590). Miltenberger (2001) defines feedback as “delivering praise for successful performance in a behavioral rehearsal and instruction on ways to improve the performance in the future” (p.492). Catania (1998) defines feedback as “a stimulus or stimulus property correlated with or produced by the organism’s own behavior. The stimulus may in turn change the behavior” (p.390). Roscoe et al. (2006) define feedback as “the delivery of information about correct or incorrect information” (p.64). Table 2 shows the definitions of feedback from the literature. As shown in Table 2, although there is no consensus of definitions of feedback, most definitions indicate that feedback affects employee’s behaviors or work outcomes. In this study, feedback is defined as information that is given to the responder about their job performance.

Table 2. Definitions of Feedback

Author(s)	Definition
Catania (1998)	A stimulus or stimulus property correlated with or produced by the organism's own behavior. The stimulus may in turn change the behavior
Daniels (1994)	Information about performance that allows an individual to adjust his or her performance
Hattie and Timperley (2007)	Information provided by an agent (e.g., supervisor, peer, self) regarding aspects of one's performance or understanding
Miltenberger (2001)	Delivering praise for successful performance in a behavioral rehearsal and instruction on ways to improve the performance in the future
Prue and Fairbank (1981)	Information that is given to persons regarding the quantity or quality of their past performance
Roscoe et al. (2006)	The delivery of information about correct or incorrect information
Rummler and Brrache (1995)	Information that tells performers what and how well they are doing
Sulzer-Azaroff and Mayer (1991)	Information transmitted back to the responder following a particular performance: seeing or hearing about specific features of the results

Characteristics of Feedback: Types of Feedback and Feedback Source

There are two types of feedback: positive and negative. Both types affect individual behaviors. To be specific, most previous studies show that positive feedback is significantly related to individual performance or behavioral consequences (e.g., job satisfaction, organizational commitment, work engagement, job involvement, turnover intentions, burnout, and innovative work behavior) (De Stobbeleir et al., 2011; Joo & Park, 2009; Nelson, 2013; Noefer et al., 2009; Nyhan, 1994, 2000; Scott & Bruce, 1994; Zhou, 2003; Zhou & George, 2001). On the contrary, the effect of negative feedback is not explored much, because researchers

usually focus on the usefulness of feedback. Thus, only positive feedback was dealt with in this study.

Feedback source refers to the individual that provides feedback to the responder. Employees receive feedback from various sources: (a) supervisors or managers, (b) coworkers, (c) clients or customers, (d) self-generated, and (e) experts (Alvero, Bucklin, & Austin, 2008). In this study, only feedback from supervisors was considered. Most previous studies focus on the effect of feedback from supervisors. According to Alvero et al. (2008), more than half of the studies (42/64, 66%) about feedback conducted in 1985-1998 dealt with supervisors as the source of feedback. In addition, most studies about feedback from supervisors (86%) showed consistent effects of feedback on outcomes of feedback (e.g., individual performance and group performance). Feedback from supervisors refers to the extent to which supervisors provide their subordinates with valuable or helpful information that enables employees to develop, learn, adjust, and make improvements on the job (Zhou, 2003).

Effects of Feedback from Supervisor on Innovative Work Behavior

Feedback is known as one of the most potent elements of behavior change or behavior modification (Pinder, 2008; Prue & Fairbank, 1981). In addition, Pinder (2008) argues that feedback is one of the most inexpensive and easiest ways of behavior change.

Expectancy Theory

Expectancy theory suggests that feedback increases employee's performance or outcomes. According to expectancy theory, people are motivated to behave in certain ways dependent on the belief that drives people to achieve specific outcomes (Caulfield, 2007; Rosen, Levy, & Hall, 2006; Vroom, 1964). According to Nelson (2013), feedback employees receive is one of the motivational forces that drive employees to have innovative work behavior in order to improve their performance. As employees receive feedback from their supervisors, they are more likely to have innovative work behaviors to enhance their performance. In addition, some researchers argue that feedback has characteristics as a motivational function that provides incentives and reinforces specific behaviors (Ilgen, Fisher, & Taylor, 1979; Vroom, 1964).

Organizational Support Theory

One predominant theory that emphasizes the importance of perceived organizational support (POS) through feedback from supervisors is organizational support theory (OST). According to organizational support theory (OST), in order to meet their socio-emotional needs, employees develop global beliefs and perceptions of organizational support concerning the extent to which the organization values their contribution and cares about their well-being (perceived organizational support, or POS) (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Rhoades & Eisenberger, 2002). POS depends on employee's attributions regarding their receipt of favorable or unfavorable treatment by their organization. OST posits that employees trade effort and loyalty to their organization for social resources and tangible benefits. POS would increase the employees' expectancy that their organization would reward them when they meet

organizational goals and improve performance (Eisenberger et al., 1986; Kurtessis, Eisenberger, Ford, Buffardi, Stewart, & Adis, 2015). Thus, employees who perceive organizational support are more likely to make efforts and to be obligated to reciprocate toward their organization.

According to OST, employees consider supervisor support as a representative acting on behalf of their organization (Jin & McDonald, 2016). Rhoades and Eisenberger (2002) found that supervisor support is strongly related to employees' perception of support. Feedback from supervisors is one of the important components of supervisor support. Following the logic of OST, when employees receive feedback from their supervisors, they are more likely to perceive organizational support. This, in turn, encourages employees to meet the organizational goals or improve their performance by displaying innovative work behavior, because the employees are willing to repay their supervisors' favor by demonstrating positive work behaviors or attitudes (Eisenberger et al. 1986). This perception of organizational support for innovative work behavior has been known as a direct antecedent of employee's innovative work behavior. In a study of 456 supervisor-subordinate dyads, De Stobbeleir et al. (2011) found that supportive organizational contexts influence employee's behaviors toward creativity and these contextual conditions affect employee's performance via their effects on employee's motivation for innovative work behavior. In addition, several researchers demonstrated that supportive organizational contexts, such as useful feedback from supervisors, play a vital role in facilitating employee's innovative work behavior or performance (Locke, Shaw, Saari, & Latham, 1981; Scott & Bruce, 1994; Shalley, 1991; Zhou & George, 2001). For example, Zhou (2003) found that useful feedback from supervisors enables their subordinates to improve creative behaviors and creative performance. In addition, it was found that feedback from supervisors played a significant role in enabling employees to have intrinsic motivation for innovative behavior or creative performance.

This suggests that individuals who received feedback from supervisors are more likely to make efforts on possible ways to improve individual or organizational performance. In this perspective, it also implies that feedback motivates employee's innovative work behavior in terms of possible ways to promote performance. For example, supervisors can give their employees feedback that; sets goals for performance improvement; enables employees to change; let employees know possible outcomes; makes goals clear; encourages employee's intrinsic motivation for innovative work behavior; tells employees what and how well they are doing; informs employees of quality of their performance; and corrects employee's errors (Prue & Fairbank, 1981; Rummler & Brrache, 1995; Zhou, 2003). With a sample of 210 participants in a laboratory setting, Zhou (1998) found that employees who receive positive feedback and informational feedback simultaneously enhance creative performance. These results demonstrate that employees who receive positive feedback are more facilitative to behave something innovative or creative. She also provides that employees who receive negative feedback lower their innovative work behaviors more so than those who do not receive any feedback. This shows that only positive feedback has a positive effect on innovative work behavior.

There are several studies about feedback from supervisors on sub-dimensions of innovative work behavior: idea generation, idea promotion, idea implementation, and idea realization. Binnewies and Gromer (2012) conducted a longitudinal study to determine the role of supervisor support on innovative work behavior using a sample of eighty-nine teachers. They found that supervisor support such as supervisor feedback has a significant effect on idea generation and idea promotion. Noefer, Stegmaier, Molter, and Sonntag (2009) found that feedback from supervisors deals with the recognition that supervisors provide to their subordinates and the feedback from supervisors positively influences idea generation among

teachers. This study finds that teachers who received positive feedback implemented creative ideas more and teachers who have skill variety reported that feedback from supervisors has a significant effect on idea implementation. In a systematic review of the teacher's innovative behavior by Thurlings, Evers, and Vermeulen (2015), they found that guidance and support from their organization and supervisor are needed to innovate. Moreover, feedback from supervisors and sharing it with others is vital to innovate because supervisors and colleagues significantly influence teachers' innovative work behavior.

According to intrinsic motivation theory, feedback from supervisors also plays a significant role in enabling employees to have intrinsic motivation for innovative work behavior (Zhou 2003). Previous studies reveal that feedback from supervisors leads to innovative work behavior in the workplace because informational supervisory behaviors, such as feedback, result in employees' higher intrinsic motivation and intrinsically motivated followers are more likely to consider new approaches to problems that need to be solved (Amabile 1996; Shin and Zhou 2003; Sosik et al. 1998; Zhou 1998). Supportive organizational contexts, such as feedback-friendly culture, influence employees' behaviors toward innovative work behavior by enhancing intrinsic motivation, while unsupportive organizational contexts with external constraints (e.g., time pressure, lack of communication, and competition) hinder innovative work behavior by reducing intrinsic motivation (Zhou 1998). Based on the theories and empirical evidence in the literature, I propose the following hypothesis:

Hypothesis 1: Feedback is positively related to innovative work behavior.

Although empirical evidence suggests that performance feedback may be associated with

innovative work behavior, it is not clear on the psychological mechanism that connects the dot between feedback and innovative work behavior. Using organizational support theory and social exchange theory, this study explores the roles of trust in supervisor and affective commitment as mediators and discuss their contribution.

Trust in Supervisor

Definitions of Trust

Trust has been received much attention from researchers and practitioners in terms of employee's behavior, work outcomes, and motivation. Accordingly, trust is conceptualized in a variety of ways from the literature.

Trust is defined as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other part” (Mayer, Davis, & Schoorman, 1995: 712) or “one party's willingness to be vulnerable to another party based on the belief that the latter party is open, concerned, and reliable” (Mishra, 1996: 265). According to Culbert and McDonough (1986), “trust pertains to whether or not one individual is able to value what another is up to and demonstrate respect for him or her particularly when the individual's need and those of the person taking the action momentarily complete” (p.175). Rousseau, Sitkin, Burt, & Camerer (1998) synthesized the understandings of trust and define trust as “a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another” (p.1998). Matthai (1989) contends that trust is the employee's feelings of confidence that their organization would be helpful when employees face a risky or uncertain situation. Taken together, in this study, trust is defined as an

individual's belief or confidence that their organization or supervisor is open, reliable, and helpful overall, even in uncertain, risky situations.

Table 3. Definitions of Trust

Author(s)	Definition
Mayer, Davis, and Schoorman (1995)	The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other part
Culbert and McDonough (1986)	Trust pertains to whether or not one individual is able to value what another is up to and demonstrate respect for him or her particularly when the individual's need and those of the person taking the action momentarily complete
Rousseau et al. (1998)	A psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another
Matthai (1989)	Employee's feelings of confidence that, when faced with an uncertain or risky situation, the organization's words and behaviors are consistent, and are meant to be helpful
Griffin (1967)	The reliance upon the characteristics of an object, or the occurrence of an event, or the behavior of a person in order to achieve a desired but uncertain in a risky situation
Mishra (1996)	One party's willingness to be vulnerable to another party based on the belief that the latter party is competent, open, concerned, and reliable

Types of Trust

Trust is basically interpersonal that is the consequence from mutual interactions. Therefore, trust can be classified into several types of relationships: horizontal (between coworkers), vertical (between employees and supervisors), and institutional (between employees and organizations) (Krot & Lewicka, 2012).

Horizontal trust between coworkers has received attention from researchers and

practitioners due to trends in the public sector, such as decentralization, cooperation, and collaborative governance (Griffinn, Neal, & Parker, 2007). However, empirical studies on horizontal trust are rarely explored (Krot & Lewika, 2012; Wells & Kipinis, 2001).

On the contrary, empirical studies have shown the effects of vertical trust between employees and supervisors. According to Rempel, Holmes, and Zenna (1985), vertical trust is developed from the relationship between subordinates and supervisors based on reliability, confidence, and security. In addition, subordinates who trust their supervisors are more likely to increase work performance and make efforts to maintain the relationship with the organization (Brower, Lester, Korsgaard, & Dineen, 2009; Colquitt, Scott, & Le fine, 2007; Nyhan, 2000; Wang & Clegg, 2002). The daily interaction with supervisors is a vital factor in affecting and motivating subordinate's behaviors such as innovative behavior, performance (Atuahene-Gima & Li, 2002; Cho & Lee, 2012; Colquitt et al., 2007; Nyhan, 1994), organizational commitment (Cho & Park, 2011; Lee, 2008; Neves & Caetano, 2006; Nyhan, 1994, 2000, Perry, 2004), and job satisfaction (Cho & Lee, 2011; Cho & Park, 2011).

Supervisors have a significant impact on employees because supervisors have the authority to make a decision, deliver feedback, allocate resources, and evaluate subordinate's performance. Based on the hierarchical culture of the public sector in Korea, Korean public employees tend to conform to the supervisor's command. In addition, the Korean bureaucracy is derived from Confucianism. Confucianism focuses on the relationship between: supervisors and subordinates, seniors and juniors, and government and people. Among the three types of trust, this study focuses on trust in supervisors (vertical trust) between employees and supervisors.

The Mediating Role of Trust in Supervisor

According to OST, a supervisor is viewed as a face-to-face representative of the organization in the public sector because employees experience their organization directly through the supervisor's actions and decisions. The development of trust between a trustee and a trustor has characteristics of reciprocity that individuals trust someone who offers growth possibilities, reduces uncertainty, provides useful resources, and gives information about performance (Carnevale & Wechsler, 1992). In addition, based on the norm of reciprocity, it is posited that employees who perceive supervisor support through useful feedback feel more obligated to reciprocate toward their supervisors (Jin & McDonald, 2016; Rhoades & Eisenberger, 2002). Feedback from supervisors may act as a vehicle for the building of trust between employees and supervisors in an organization (Peterson & Behfar, 2003). It can, therefore, be argued that employees who receive feedback from their supervisors are more likely than others to have trust in their supervisors in the public organization. To be specific, employees who receive positive feedback from their supervisors, rather than negative feedback, are more likely to trust their supervisors.

The sense of trust in supervisor is positively related to the development of innovative work behavior among employees. Although several researchers contend that public servants working in a pervasive hierarchical culture are prone to avoid uncertainty or unknown risks (i.e., uncertainty avoidance and risk aversion) and are likely to work with guidance and clear rules (Hofstede, Hofstede and Minkov 2010; Kim 2017), previous studies suggest that trust in supervisors or leaders is an important proximal predictor of risk-taking behaviors, such as innovative work behavior (Colquitt et al. 2007; Dirks and Ferrin 2002). Risk refers to 'as the extent to which there is uncertainty about whether potentially significant and/or disappointing

outcomes of a decision will be realized' (Sitkin and Pablo 2012, 10). Several researchers contend that innovative work behavior or creativity is risky because innovative work behavior has uncertainty and unpredictability over the outcomes and there could be the aftermath of the failure of innovative work behavior (Dew 2007; Sitkin and Pablo 2012). However, trust in supervisor plays a vital role in taking risky behaviors. In other words, when employees trust in their supervisors, they are more likely to perform innovative work behaviors because they believe that their supervisors are reliable or competent enough to back them up in a risky situation in terms of innovative work behavior. In addition, the risk-taking behavior (i.e., innovative work behavior) is affected by a contextual factor (Rodrigues and Veloso 2013). Employees are more likely to attempt innovative work behavior in an organization where employees trust in their supervisors

According to attribution theory, trust in supervisor plays a role in provoking innovative work behavior. For example, when employees believe that his supervisor is reliable or competent enough to back him up in a risky situation, their intent to have innovative work behavior is likely to be maximized. Lee (2008) emphasizes the importance of creating an atmosphere that the trustee and the trustor are tied with positive stereotypical beliefs that can encourage innovative work behavior in the local government organization. In a similar vein, Carmeli and Spreitzer (2009) argue that trust plays a role in cultivating an open space that employees can exchange ideas and generate and implement creative ideas.

It has been known that feedback has a positive effect on its outcomes, such as productivity, performance, and innovative work behavior through its influence on trust. Nyhan (2000), using McGregor's (1960) theory Y and theory Z by Ouchi (1981), suggests how interpersonal transactions between employees and supervisors affect outcomes in the public

sector. He found that feedback affects interpersonal trust between employees and supervisors, in turn, leads to increased productivity. He also argues that trust is related to innovative behavior and this is vital for better problem solving and increased productivity. Human resource development literature has shown that feedback enables employees to do better, to correct their mistakes, and to learn new methods, processes, and techniques at work, and trust in their supervisors is also likely to enable them to learn more and to generate something creative (Battistelli, Montani, & Oboardi, 2013; Fischer & Rohde, 2013; Galindo & Méndez, 2014). Scott and Bruce (1994) argue that subordinates who reported having high levels of trust in their supervisors are more likely to be supportive of innovative work behavior. It can be assumed that feedback is connected to employee's innovative work behavior at the innovative friendly environment or climate trust cultivated. Public employees who receive positive and useful feedback from supervisors build a high level of trust relationship with supervisors they work with and this relationship motivates employees to generate new ideas and to generate creative solutions to problems.

Thus far, I have contended that feedback from supervisor leads to trust in supervisor, which in turn, contributes to innovative work behavior. In addition, this study adopted a logic of testing a mediation model by Baron and Kenny (1986) that (a) the independent variable (feedback from supervisor) should affect the mediator (trust in supervisor), (b) the independent variable should affect the dependent variable (innovative work behavior), and (c) the mediator should affect the dependent variable. Therefore, following that logic, I hypothesize as follows:

Hypothesis 2: Feedback from supervisor is positively related to trust in supervisor.

Hypothesis 3: Trust in supervisor is positively related to innovative work behavior.

Hypothesis 4: Trust in supervisor mediates the relationship between feedback from supervisor and innovative work behavior.

Affective Commitment

Organizational commitment has drawn much attention among public management and human resource development researchers. Researchers in the field of public administration argue that the high level of organizational commitment is beneficial for both employees and organizations because the high level of organizational commitment provides intrinsic and extrinsic motivation. In addition, commitment can play a role in security, identity, and comfort in an organization (Mowday et al., 1982; Pinder, 2008). Empirical research demonstrates the importance that organizational commitment is significantly related to performance (Camilleri & Van Der Heijden, 2007; Im, Campbell, & Jeong, 2016; Mowday, Porter, & Dublin, 1974; Steers, 1977; Nyhan, 1994; Vandenabeele, 2009), job satisfaction (Callier, 2012; Chordiya, Sabharwal, & Goodman, 2017; Mathieu & Farr, 1991; Moynihan & Pandey, 2007; Scotter, 2000), turnover intentions (Mowday et al., 1982; Price & Mueller, 1981; Scotter, 2000), and job involvement (Brooke, Russell, & Price, 1988; Moynihan & Pandey, 2007).

Definitions of Organizational Commitment

Organization commitment is conceptualized in a variety of ways. According to Price (1997), organizational commitment is loyalty to an organization. Organizational commitment is defined as: (a) “the relative strength of an individual identification with and involvement in a particular organization” (Mowday & Steers, 1979: 226), (b) “a psychological state that characterizes the employee’s relationship with the organization and has implications for the

decision to continue or discontinue membership in the organization” (Meyer, Allen, & Smith, 1993: 539), (c) “willingness to devote effort to the organization, identification with the values of the organization, and seeking to maintain affiliation with the organization” (Kallerberg et al., 1996: 302).

Three Components of Organizational Commitment

Mowday, Steers, and Porter (1979) suggest that organizational commitment is divided into two components: attitudinal and calculative. Meyer and Allen (1984) provided two forms of organizational commitment: affective and continuance. Allen and Meyer (1990) later introduced the third component of organizational commitment, normative commitment (Meyer, Stanley, Herscovitch, and Topolnytsky, 2002; Pinder, 2008). After Allen and Meyer (1990) tested aspects of a three-dimension model of organizational commitment, many researchers view organizational commitment as a multi-dimensional construct: affective, continuance, and normative commitment (Kallerberg et al., 1996; Ko, Price, & Mueller, 1997; Meyer & Allen, 1990, 1991, 1997; Meyer et al., 2002; Park, Park, & Ryu, 2013; Powell & Meyer, 2004; Price, 1997).

Normative commitment refers to commitment based on obligation or a moral belief (Ko, Price, & Mueller, 1997; Weiner, 1982). Meyer and Allen (1991) suggest that normative commitment refers to “a feeling of obligation to continue employment” (p. 67). According to Weiner (1982), normative commitment consists of “the totality of internalized normative pressures to act in a way that meets organizational goals and interests” (p. 421). Researchers argue that employees who are normatively committed to their organization are more likely to remain with the organization because it is the right thing (Meyer & Allen, 1991, 1997; Meyer et al., 2002; Weiner, 1982).

Continuance commitment is concerned with an awareness of costs associated with leaving the organization (Meyer & Allen, 1991, 1997; Pinder, 2008). Thus, this component is also called calculative commitment. The costs associated with leaving the organization are about side-bets or investments over time (e.g., pension plans, seniority rights, specific skills). Based on continuance commitment, employees are committed to their organization because the costs associated with leaving the organization are too high (Meyer & Allen, 1991, 1997).

Affective commitment refers to the employee's emotional attachment to the organization (Meyer & Allen, 1991, 1997). Allen and Meyer (1990) define affective commitment as "an affective or emotional attachment to the organization such that the strongly committed individual identifies, is involved in, and enjoys membership in the organization" (p. 2). Employees are affectively committed to their organization because they want to be (Meyer & Allen, 1991).

In this study, only affective commitment is considered among three components of organizational commitment. Researchers argue that affective commitment is the most vital explanatory variable among the three components. According to OST, several researchers argue that employees who perceived organizational support increase their performance and productivity and decrease bad outcomes in the workplace, such as actual turnover and turnover intentions, via affective commitment (Eisenberger et al., 1986; Rhoades, Eisenberger, & Armeli, 2001; Meyer & Allen, 1991). In addition, Arzen's (1985, 1987) Theory of Planned Behavior (TpB) tells that affective commitment is associated with employee's innovative work behavior. Using TpB, Michelis, Stegmaier, & Soontag (2009) found that affective commitment has a significant influence on innovation implementation behavior (i.e., intent to use innovative ways in their work). In addition, researchers contend that affective commitment has been more closely and significantly related to outcome variables than other two components, normative

commitment and continuance commitment (De Witte & Buitendach, 2005; Eby et al., 1999; Vandenberghe & Bentein, 2009). For this reason, a number of researchers have viewed affective commitment as representative of organizational commitment. Thus, this study also focuses on affective commitment as the core of organizational commitment (De Witte & Buitendach, 2005: 29).

The Mediating Role of Affective Commitment

Feedback has been identified as an antecedent to organizational commitment. Receiving positive feedback with competence and reliability from supervisors leads to the development of organizational commitment (Fornes & Rocco, 2004; Luthans, 1998). Joo and Park (2009) contend that positive feedback from supervisors leads to a higher level of AC because when supervisors give employees behaviorally relevant information (i.e., feedback), the feedback helps employees to have positive psychological states toward their supervisors and organizations. To be specific, when employees perceive positive feedback, they are likely to experience a higher level of affective commitment.

Several researchers argue that the relationship between feedback and organizational commitment can be understood using social exchange theory. The concept of reciprocation by Levinson (1965) suggests that employees view their supervisor's action as representative of the organization itself. Thus, the concept of reciprocation is by itself a vital driving force for creating and motivating employee's behavior for sustainability of their organization (Eisenberger et al., 1986; Hutchitson & Garstka, 1996). When a supervisor gives employees performance feedback about how they are performing, employees perceive the feedback as representative of their organization's concern and support for their development, contributions, and well-being. Thus,

feedback would increase AC by exchanging loyalty and affective attachment for their perceived organizational support (Eisenberger and Stinglhamber 2011; Hutchitson and Garstka 1996).

Affective or emotional attachment to the organization is positively related to the adoption or development of innovative work behavior. Researchers contend that employees who are affectively committed to the organization are increasingly engaged in their organization and are willing to pursue the organization's goals (Eisenberger and Stinglhamber 2011; Meyer and Allen 1991). In addition, highly affectively committed employees are more likely to take risks and thrive on challenges to be helpful to the organization than those who have low levels of AC. Today, a number of organizations set a vision and goals of improving organizational performance and effectiveness by facilitating employees' innovative work behavior and creativity. In order to thrive organizations should cope with the difficulties and progressive changes in tumultuous times, employees' innovative work behavior is required. Accordingly, employees who show the high levels of AC are more likely to exhibit innovative work behavior to achieve the organization's goals and increase overall performance for the organizational sustainable development. Although there is a lack of empirical research on the relationship between affective commitment and innovative work behavior, some empirical studies have shown that affective commitment is linked to innovative work behavior. In a study of employee's behavioral outcomes among Australian nurses, Xerri and Bunetto (2013) suggest that affective commitment is an important predictor of innovative work behavior because employees who are affectively committed to the organization are willing to improve organizational outcomes by displaying innovative work behavior.

It has been known that feedback has a positive indirect effect on its outcomes, such as productivity, performance, and innovative work behavior, through its influence on affective

commitment. According to social exchange theory, when employees receive useful feedback from supervisors, they would be willing to devote more effort to the organization as in reciprocation for organizational support, this, in turn, encourages employees to have innovative work behavior (Jiang, Wang, & Zhao, 2012). In a survey conducted among 619 companies in Spain, Camelo-Ordaz, Garcia-Cruz, Sousa-Ginel, and Velle-Cabrera (2011) found that HRM practices, such as developmental feedback delivery, have a positive and indirect effect on performance through its influence on employee's affective commitment. This study also shows that feedback delivery does not affect performance directly, but it has a positive effect when affective commitment mediates the relationship. Given the theoretical and empirical evidence, it is posited that feedback from supervisors about employee's performance enables them to show higher affective commitment, this, in turn, fosters employees' innovative work behaviors through learning new methods, processes, techniques, and generating creative solutions to problems (Joo & Park, 2009; Michaelis, Stegmaier, & Sonntag, 2009; Zhou, 2003).

According to social exchange theory, when employees receive performance feedback from supervisors, they would be willing to devote more effort to the organization as in reciprocation for organizational support, this, in turn, encourages employees to have innovative work behavior. Given the theoretical and empirical evidence, it is posited that feedback from supervisors about employee's performance enables employees to show higher affective commitment, this, in turn, fosters employee's innovative work behavior through learning new methods, processes, techniques, and generating creative solutions to problems. Thus, I hypothesize as follows:

Hypothesis 5: Feedback from supervisor is positively related to affective commitment.

Hypothesis 6: Affective commitment is positively related to innovative work behavior.

Hypothesis 7: Affective commitment mediates the relationship between feedback from supervisor and innovative work behavior.

Trust in Supervisor and Affective Commitment: A Causal Mechanism

The theoretical frameworks discussed through from Hypothesis 1 to 7 lead us to two key questions: (a) do trust in supervisor and affective commitment mediate the relationship between feedback and innovative work behavior in isolation?, (b) does one mediator affect the other? (Jin, McDonald, & Park, 2018). Trust in supervisor and its effects on attitudinal outcomes depend on the supervisor's attitudes and behaviors toward subordinates (Burke et al., 2007; Xiong et al., 2016). For example, when a supervisor gives their subordinates performance feedback, subordinates are more likely to trust their supervisor, this, in turn, enables subordinates to increase affective commitment to the organization. On the contrary, when a supervisor is lack of positive attitudes or behaviors toward their subordinates, subordinates may perceive their supervisor as unreliable and are less likely to be affectively attached to the organization. According to Albrecht and Travaglione (2000), trust mediates the relationship between the antecedents of trust and affective commitment. The antecedents of trust (e.g., feedback) is perceived as good treatment by their supervisor. This perceived supervisory support motivates employees to trust in their supervisor, this, in turn, fosters affective commitment. It also has been known that trust in supervisor has positive behavioral outcomes, such as performance, organizational citizenship behavior, and innovative work behavior, through its influence on affective commitment. When employees trust in their supervisor, they will be more likely to

increase affective commitment, which affective commitment, in turn, leads to innovative work behavior. This is because employees with a high level of affective commitment are willing to place themselves at risk to contribute to the organization's well-being and repay the perceived supervisor or organizational support through proactive behavior or extra-role (Eisenberger and Stinglhamber 2011; Tremblay et al. 2010). According to Tremblay et al. (2010), trust was found to increase employees' in-role and extra-role behaviors through its influence on employees' emotional or affective attachment to the organization. Given the theoretical and empirical evidence, I hypothesize as follows:

Hypothesis 8: Feedback from supervisor has an indirect, positive effect on innovative work behavior through its influence on trust in supervisor and affective commitment in serial.

Risk-Taking Climate

A growing body of research on risk related-behaviors has been empirically examined in the private sector. Since the advent of New Public Management (NPM), public sector leaders and management researchers also have shown an increased interest in risk-taking because they have recognized that risk-taking is an important factor in the success of public service reforms (Chen & Bozeman, 2012; Moon & deLeon, 2001; Osborne & Gaebler, 1992). In addition, several researchers suggest that risk-taking is essential for innovative management and public entrepreneurship because risk-taking plays an important role in cultivating a competitive work environment in the public sector (Berman & West, 1998; Kim, 2010; Moon, 1999; Moon & deLeon, 2001). Although a growing body of research on risk related-behaviors has been

empirically examined in the private sector, research on risk related-behaviors of individuals in the public sector has received little attention among researchers (Bozeman & Kingsley, 1998; Chen & Bozeman, 2012).

Definitions of Risk-Taking

Risk refers to “the exposure to the chance of loss from one’s actions or decisions” (Bozeman & Kingsley, 1998: 110). Thus, risk-taking is defined as: (a) “the motive, experience of control, and reflectivity which characterize different ways that people take risks” (Zinn, 2019: 2), (b) “an activity in which individuals engage, is perceived by them to be in some sense risky, but is undertaken deliberately and from choice” (Tullouch & Lupton, 2003: 10-11), (c) “engaging in behaviors (sharing ideas and attempting to do new things) that place the actor at risk of making mistakes” (Beghetto, 2009: 210), (d) “involving actions in which some significant likelihood of negative outcomes could occur from an action” (Chen & Bozeman, 2012: 380), and (e) “the willingness of an organization to support projects where the outcomes are unknown” (Kör, 2016:3). Taken together, in this study, risk-taking is defined as involving in behaviors that place employees at risk of making mistakes or possible negative outcomes. Organizational climate is viewed as the aggregation of individual employee’s perception of their work environment (James et al., 2008). Thus, risk-taking climate refers to an employee’s perception of the degree to which their organizational environment is favorable to risk-taking behaviors.

The Moderating Role of Risk-Taking Climate

As discussed earlier, trust in supervisor and affective commitment are critical in influencing innovative work behavior. However, it is predicted that these relationships are

moderated by the psychological climate that employees engage in risk-taking behaviors in the workplace. Drawing on psychological climate theory, psychological climate refers to “the individual employee’s perception of the psychological impact of the work environment on his or her own well-being” (James et al., 2008: 20). Psychological climate is an individual employee’s cognition of their work environment or organizational culture that affects their attitudes and behaviors. Organizational climate is an extension of psychological climate. To be specific, organizational climate is viewed as the aggregation of an individual employee’s perception of their work environment (James et al., 2008). Previous studies have shown that organizational climate is closely linked to individual and organizational outcomes (García-Granero, Llopis, Fernández-Mesa, & Alegre, 2015; James et al., 1990, 1998; James & Jones, 1994).

This study assumes that a risk-taking climate, as a form of organizational climate, plays a vital role in reinforcing the relationship between affective commitment and innovative work behavior. Innovative work behavior is closely related to risk-taking because innovation or innovative work behavior involves some degree of risk. Koellinger (2008) suggests that innovative work behavior is more risky and uncertain than a daily routine and imitation. Researchers who conducted research on risk aversion contend that employees’ tendency to avoid risk reflects the defensive or self-protective mechanism (Chen & Bozeman, 2012; Sitkin & Pablo, 1992; Yuan & Woodman, 2010). The levels of risk aversion vary by organizational characteristics (e.g., culture, climate, values, goals, and mission). Risk aversion climate is formed by the aggregation of individual employee’s perception of risk aversion. To be specific, risk aversion climate is cultivated in organizations with hierarchical structure because hierarchical culture focuses on people, stability, control, structure, regulations, rules, and management of information and communication (Moynihan & Pandey, 2007; Wood & Park, 2009). Thus,

employees in a hierarchical culture are more likely to conform to formal rules and guidance and less likely to take risks. Bridges, Doyle, and Mahan (1968) suggest that hierarchical structures hinder risk-taking behaviors among employees. Using a sample of local government employees in the U.S., Moon (1999) found that hierarchical cultures are negatively related to risk-taking among top managers and ordinary members in the public sector.

On the contrary, I propose that the effect of psychological attachment (i.e., affective commitment) on individual positive behaviors (i.e., innovative work behavior) is stronger in a risk-taking climate. Involving innovative work behavior requires employees not to be fearful of taking a risk or be aware of a certain risk (García-Granero et al., 2015). According to the social-political perspective, an organizational climate enables employees to change their attitudes and behaviors by giving messages regarding organizational mission and values to employees. The climate that is beneficial to individuals enables employees to determine the actions that will result in desired work outcomes. If a pro-innovation climate exists in an organization, the climate encourages innovative work behavior among employees because employees feel psychological safety regarding engaging in innovative work behavior in the climate (Amabile, 1988; Ashford, Rothbard, Piderit, & Dutton, 1998; Yuan & Woodman, 2010). Thus, it is posited that employees are more likely to engage in innovative work behavior when they perceive there is a risk-taking climate in their organization because risk-taking climate gives employees messages that employees are able to act proactively and take risks for innovation and innovative work behavior (Kör, 2016).

Employees who are affectively committed to the organization are willing to involve in innovative work behavior to enhance organizational effectiveness and performance. This positive relationship varies with an organizational climate. Highly affectively committed employees are

more likely to take risks to perform innovative work behavior, where a risk-taking climate is cultivated well because there is a significant consensus in terms of engaging in a certain behavior among their top management and employees. On the contrary, the relationship between affective commitment and innovative work behavior would be weaker where a risk-taking climate is developed poorly, because employees may encounter barriers (e.g., conflicts with their top management or supervisors) to their innovative work behavior (García-Granero et al., 2015). Previous studies found that organizational climate is related to employees' behaviors, perceptions, and attitudes. In addition, organizational climate plays an important role between positive work attitudes/psychological states (e.g., organizational commitment and job satisfaction) and individual and organizational work outcomes (e.g., job performance, withdrawal, and psychological well-being) (Carr, Schmit, Ford, & DeShon, 2003; James et al., 2008; Parker et al., 2003). With a sample of owners and operators of small businesses, Brockman, Jones, and Bechrer (2012) found that the positive effect of work attitudes (i.e., customer orientation) on job performance strengthens as risk-taking increases in organizations. In addition, Teoh and Foo's (1997) study revealed that risk-taking moderates the relationship between psychological state (role conflict) and perceived performance among Singaporean entrepreneurs. Considering theoretical and practical evidence, I hypothesize that:

Hypothesis 9: The relationship between affective commitment and innovative work behavior is moderated by risk-taking climate such that the relationship will be stronger when a risk-taking climate is more cultivated.

Until this point, I have argued that affective commitment influences innovative work

behavior and feedback from supervisor has a positive impact on innovative work behavior through its influence on both affective commitment and trust in supervisor and affective commitment in serial. Yet, public management and organizational behavior researchers suggest that the indirect effect of feedback from supervisor on employees' work outcomes, such as innovative work behavior, varies depending on organizational climate or psychological climate, such as risk-taking climate (Ambrose, Schminke, & Mayer, 2013; Jin & McDonald, 2017; James et al., 2008). In addition, Hayes (2013) contends that the mediation model is likely contingent and hence moderated, in that the indirect effects can be different for people in different circumstances, climates, or contexts. Baron and Kenny (1986) also suggest that the indirect effects could be contingent on a moderator. Indirect effects in the mediation model can be contingent upon how local government employees perceive their work climate as risk-taking or not risk-taking.

Hypotheses 5, 6, 7, and 8 present the multiple mediation model between feedback from supervisor and innovative work behavior through two mediators, trust in supervisor and affective commitment. Hypothesis 9 suggests the impact of affective commitment on innovative work behavior will be moderated by risk-taking climate. Researchers contend that the relationships through Hypotheses 5, 6, 7, 8, and 9 are a configuration as moderated mediation models (Ambrose et al., 2013; Hayes, 2013; Preacher, Rucker, & Hayes, 2007). Considering Hypotheses 5, 6, 7, 8, and 9, it is also posited that risk-taking climate may conditionally influence the strength of the indirect relationship between feedback from supervisor and innovative work behavior through its influence on affective commitment, and trust in supervisor and affective commitment in serial. Thus, I develop the following hypotheses:

Hypothesis 10: The indirect effect of feedback from supervisor on innovative work behavior through affective commitment will be moderated by risk-taking climate.

Hypothesis 11: The indirect effect of feedback from supervisor on innovative work behavior through trust in supervisor and affective commitment in serial will be moderated by risk-taking climate.

CHAPTER 3

METHODOLOGY

Introduction

The primary goal of this study is to explore the relationship between feedback from supervisor and innovative work behavior. The methodology to test the research questions and hypotheses is provided in this chapter. This chapter is divided into four sections: (a) selection of participants, identifying participants and samples of participants, (b) instrumentation, instruments used to collect data, (c) data collection, and (d) data analysis (Lunenberg & Irby, 2008; Terrel, 2016).

Research Design

This study is quantitative research design and the time dimension is cross-sectional. The cross-sectional study was being undertaken across South Korea. The cross-sectional study is suitable for estimating the prevalence of behaviors and phenomena in the target population. This can enable researchers to examine the relationship between independent variables and dependent variables more easily. This study measured the independent variable, the dependent variable, and mediators at one point in time. Therefore, this cross-sectional study is cost-effective and time-efficient compared to a longitudinal study (Namgung, 2011). In addition, a cross-sectional design increased the external validity of the current study by utilizing a probability sampling method (Frank-Nachmias & Nachmias, 2008).

Sample and Selection of participants

The Korean civilian workforce is divided into two levels: national and local. In this study, the target population is local government employees in Korea. Firefighters, police officers, school teachers, revenue officers, and public transportation workers were excluded from the target population.

In order to conduct a study for the target population, the probability sampling method was used. Specifically, a multistage cluster sampling approach was used to guarantee representativeness of the target population. The primary purpose of the use of multistage cluster sampling was to avoid problems of simple random sampling approach from a large population. Multistage cluster sampling approach is a way to reduce the population by cutting it into the smaller groups (Verial, n.d.). Through this process, multistage cluster sampling has statistical properties that are similar to simple random sampling (Henry, 1990). This sampling approach gives researchers flexibility, because researchers are able to break down groups into smaller groups until reaching the suitable size of the type of groups (Verial, n.d.). In addition, this is more accurate than a normal cluster sampling method for the same sample size (Multistage sampling, n.d.).

Explanation of the Korean local government system is firstly required. Local governments in South Korea are divided into high-level and low-level local governments. As shown in Table 4, South Korea is composed of seventeen high-level governments: one special city (teukbyeolsi), six metropolitan cities (gwangyeoksi), one special self-governing city (teukbyeol-jachisi), one special self-governing province, and eight provinces (do) and low-level governments: 77 cities (si), 82 counties (gun), and 69 districts (gu) (KOREA.net, n. d.). High-level governments are referred to as first-tier administrative divisions and low-level governments

are called second-tier administrative divisions. In addition, there are town (eup), township (myeon), and neighborhood (dong) as the third-tier administrative divisions (National Geographic Information Institute, 2015).

Table 4. Types of Local Governments in South Korea

	Type	Number	Name
High-Level	Special city (Teukbyeolsi)	1	Seoul special city
	Metropolitan city (Gwangyeoksi)	6	Busan metropolitan city
			Daegu metropolitan city
			Incheon metropolitan city
			Gwangju metropolitan city
			Daejeon metropolitan city
			Ulsan metropolitan city
Special self-governing city (Teukbyeol-jachisi)	1	Sejong special self-governing city	
Special self-governing province (Teukbyeol-jachido)	1	Jeju special self-governing province	
	Province (Do)	8	Gyeonggi province
			Gangwon province
			North Chungcheong province
			South Chungcheong province
			North Jeolla province
			South Jeolla province
			North Gyeongsang province

			South Gyeongsang province
Low-level	City (Si)	77	Ex) Suwon si
	County (Gun)	82	Ex) Pyeongchang county
	District (Gu)	69	Ex) Gangnam gu
N/A	Town (Eup)	216	Ex) Haenam eup
	Township (Myeon)	1198	Ex) Dongtan myeon
	Neighborhood (Dong)	2073	Ex) Apgujeong dong

Note. Data for types of local governments in Korea from the National Geographic Information Institute (2015).

The procedures of multistage sampling were as follows: (1) first stage: some special city, metropolitan cities, and provinces were selected randomly among first-tier administrative divisions, (2) second stage: some cities, counties, and districts were selected randomly among the chosen special city, metropolitan cities, and provinces in the first stage, (3) third stage: some towns, townships, and neighborhoods were be selected among the chosen cities, counties, and districts in the second stage. After towns, townships, and neighborhoods were selected, local government employees working for the town, township, and neighborhood offices were selected randomly.

Multistage cluster sampling is suitable in this study because the technique is efficient and useful when clusters are naturally occurring grouping as seen in local governments and school districts. In addition, this approach is useful when a complete list of all members of the population does not exist and is inappropriate (Frank-Nachmias & Nachmias, 2008). The multi-stage sampling technique is not only simpler than simple random sampling, but it also guarantees

representativeness of the population similar to simple random sampling. A final justification for using a multi-stage sampling technique is cost-efficient and time-efficient (Bryman, 2012; Frank-Nachmias & Nachmias, 2008).

According to the Ministry of the Interior and Safety (n.d.), the number of local government employees is 307,313. Statistical researchers suggest that a sample size over 1,500 represents the total population (Bryman, 2012; Frank-Nachmias & Nachmias, 2008; Issac & Michael, 1997). To consider the probability of low response rate, the questionnaires were distributed to 2,100 Korean local government employees on the sampling frame. A total of 1,724 questionnaires were returned, yielding an overall response rate of 82.1 percent. However, unreliable responses of 55 questionnaires were excluded, and a total of valid 1,699 questionnaires were analyzed.

Instrumentation

One of the most important factors of research design is the selection of appropriate survey instruments (Nyhan, 1994). This study used measures that have been validated in the literature. All items, except demographic factors, were measured using a 7-point Likert scale ranging from 1 = 'strongly disagree' to 7 = 'strongly agree'. The questionnaire was originally developed in English and then translated into Korean to enhance participants' understanding. In order to ensure accuracy and equivalency of the two versions of the questionnaire, forward and back translation techniques were applied.

Feedback from Supervisor

Feedback from supervisor was measured through the Feedback Environment Scale (FES) by Steelman, Levy, and Snell (2004). They developed and validated the scale to provide and diagnose the feedback process in an organization (Steelman et al. 2004). This scale focuses on measuring the relationship between feedback and work outcomes, such as motivation and work performance (Rosen, Levy, & Hall, 2006). It is a multi-faceted instrument made of seven facets: source credibility, feedback delivery, feedback quality, favorable feedback, unfavorable feedback, source availability, and promoting feedback seeking (Steelman et al. 2004). Internal consistency reliability for the FES scores is .82 to .92. In addition, the FES achieves sufficient discriminant validity.

Among survey items by Steelman et al. (2004), five items included in this study are about feedback quality, feedback delivery, favorable feedback, and unfavorable feedback, because those five items represent characteristics of positive and useful feedback well, which this study is interested in. Feedback quality refers to the usefulness of feedback, his or her liking of the feedback target, and value of feedback (Steelman et al., 2004). Feedback delivery refers to a way or manners of delivering feedback. Favorable feedback refers to “the perceived frequency of positive feedback from the feedback recipient’s view” (Steelman et al., 2004:168). Unfavorable feedback refers to “the perceived frequency of negative feedback such as expressions of dissatisfaction and criticism from supervisors from the feedback recipient’s view” (Steelman et al., 2004:168). Frequency scale ranges from 1 (strongly disagree) to 7 (strongly agree). Table 5 displays a list of questions to measure feedback in this study. The Cronbach’s alpha was 0.93.

Table 5. Feedback Instrument Items

-
1. My supervisor gives me useful feedback about my job performance
 2. The performance feedback I receive from my supervisor is helpful
 3. The feedback I receive from my supervisor helps me do my job
 4. When I do a good job at work, my supervisor praises my performance
 5. On those occasions when I make a mistake at work, my supervisor tells me
-

Trust in Supervisor

Trust in supervisor was measured with five items from the Trust Instrument (TI) by Nyhan and Marlowe (1997). Nyhan and Marlowe (1997) developed the fourteen items' TI to measure an individual's level of trust in their supervisor and in their organization based on the Employee Perception Questionnaire (EPQ) and the Organizational Trust Inventory (OTI) (Cummings & Bromiley, 1996; Nyhan, 2000; Nyhan & Marlowe, 1997). Researchers reported that the TI forms a single factor with high reliability (Nyhan, 1994, 2000; Nyhan & Marlowe, 1997). The OTI and EPQ focused on measuring interpersonal trust among employees. Nyhan and Marlowe (1994) developed the TI based on the EPQ and OTI to measure an individual's level of trust in their supervisor (Nyhan, 1994; Nyhan & Marlowe, 1997). TI is composed of fourteen questions, eight questions to the supervisor and six questions to the organization. The TI achieved good results of the internal reliability ($\alpha=.95$) and the convergent validity from the Confirmatory Factor Analysis (CFA). Frequency scale ranges from 1 (strongly disagree) to 7

(strongly agree). Table 4 displays the list of questions to measure trust in supervisor in this study. The Cronbach's alpha was 0.93.

Table 6. Trust in Supervisor Instrument Items

1. I have confidence that my supervisor is technically competent at the critical elements of his/her job
2. I have confidence that my supervisor will make well-thought-out decisions about his/her job
3. When my supervisor tells me something, I can rely on what s/he tells me
4. My supervisor will back me up in a pinch

Affective Commitment

Several researchers divide organizational commitment into three facets: affective, continuous, and normative commitment (Allen & Meyer, 1990; Meyer & Allen, 1991; Ko, Price, & Mueller, 1997; Park, Park, & Ryu, 2013; Powell & Meyer, 2004). Organizational commitment was considered as affective commitment in this study. Researchers argue that affective commitment is the most vital explanatory variable among the three components. According to previous studies, affective commitment has been more closely and significantly related to outcome variables (e.g., performance, job satisfaction, and creativity) than other two components (De Witte and Buitendach 2005; Eby et al. 1999; Vandenberghe and Bentein 2009). In addition, affective commitment is more important than continuous or normative commitment in the public sector (Kim, 2012; Liou & Nyhan, 1994). Liou and Nyhan (1994) suggest that affective commitment has more powerful explanations in public employee's commitment to their organization. Employee's affective commitment is significantly related to years of service in an

organization. Romzek (1990) suggests that public employee commitment is based on affective commitment to their organization. She suggests that “affective commitment is associated with organizational culture, socialization processes, and ability to fulfill employees’ expectations about work” (Romzek, 1990: 377). Furthermore, several previous studies show that affective commitment are significantly related to feedback and innovative work behavior (Camelo-Ordaz, Farnese, Fida, & Livi, 2016; Garcia-Cruz, Sousa-Ginel, and Velle-Cabrera, 2011; Joo & Park, 2009; Michaelis, Stegmaier, & Sonntag, 2009; Werleman, 2016; Zhou, 2003). For these reasons, a number of researchers have viewed affective commitment as representative of organizational commitment. Therefore, I also focus on affective commitment as the core of organizational commitment in this study.

In this study, affective commitment is defined as “an affective or emotional attachment to the organization such that the strongly committed individual identifies, is involved in, and enjoys membership in the organization” (Allen & Meyer, 1990:2). Six items from Allen and Meyer’s (1990) three-component model of commitment were used to assess affective commitment. Researchers have reported that the affective commitment scale shows acceptable internal consistency reliability and discriminant validity (Allen & Meyer, 1990; Hackett, Bycio, & Hausdorf, 1994; Meyer & Allen, 1991; Rhoades et al., 2001). Frequency scale ranges from 1 (strongly disagree) to 7 (strongly agree). Table 3 displays the list of questions to measure affective commitment in this study. The Cronbach’s alpha was 0.94.

Table 7. Affective Commitment Instrument Items

-
1. I really feel as if my organization's problems are my own
 2. This organization has a great deal of personal meaning to me
 3. I do not feel like part of the family at my organization
 4. I do not feel a strong sense of belonging to my organization
 5. I do not feel emotionally attached to my organization
 6. I would be very happy to spend the rest of my career with my organization
-

Innovative Work Behavior

Innovative work behavior was measured with five items from Scott and Bruce's (1994) six items' Innovative Behavior Measure and with one item from Janssen (2000). However, there is some overlap between the Innovative Behavior Measure and Janssen's innovative work behavior items, because Janssen's innovative work behavior items are developed based on Scott and Bruce's (1994) scale (Janssen, 2000). Respondents were asked to indicate the extent to which they express their willingness to seek ways to improve the level of productivity in an organization. The Innovative Behavior Measure achieved the good results of reliability ($\alpha=.89$).

In addition, they measured "consisted of the total number of invention disclosure filed by and individual divided by his or her organizational tenure in years to confirm the validity of the scale" (Scott & Bruce, 1994: 590). As a result, the validity of the scale was good. Cronbach's alpha of Janssen's innovative work behavior items was also high ($\alpha=.95$). Frequency scale ranges from 1 (strongly disagree) to 7 (strongly agree). Table 8 displays a list of questions to measure innovative work behavior in this study. The Cronbach's alpha was 0.95.

Table 8. Innovative Work Behavior Instrument Items

-
1. I search out new working methods, processes, techniques, and/or instruments
 2. I try to generate creative ideas
 3. I promote and champion idea to others
 4. I develop adequate plans and schedules for the implementation of new ideas
 5. I try to secure the funding and resources needed to implement innovations
 6. I try to generate creative solutions to problems
-

Risk-Taking Climate

Risk-taking climate was measured with organizational climate employees and top management perceive using two items from the National Administrative Studies Project (NASP) surveys. The NASP surveys were conducted to explore work environment, organizational rules and procedures, values, job history, motivation, and work attitudes among government and nonprofit managers in Georgia, Illinois, and New York (Terry, Rainey, & Feeney, 2011). The NASP surveys data have been used to investigate the mechanisms of public and nonprofit employees' work outcomes and behaviors by several public administration and management researchers (Bozeman & Kangsley, 1998; Chen, 2012; Chen & Bozeman, 2012; Park & Word, 2012; Terry, Rainey, & Feeney, 2011; Word & Park, 2015).

Respondents were asked to indicate their level of agreement in terms of perceived risk-taking climate using a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). Representative items were "Employees in this organization are afraid to take risks" and "Top

management in this organization is afraid to take risks.” To measure the risk-taking climate, those two items were reverse-coded. The Cronbach’s alpha was 0.82.

Control Variables

I controlled for confounding variables that correlate with both the independent variable and the dependent variable. The confounding variables may create a spurious relationship between the independent variable and the dependent variable (Pourhoseingholi, Baghestani, & Vahedi, 2012). Therefore, I controlled for demographic variables as follows:

- Gender
(0 = male, 1 = female)
- Marital status
(0 = single, 1 = married)
- Educational level
(1 = less than high school, 2 = high school graduate, 3 = some college, 4 = bachelor’s degree, 5 = master’s degree, and 6 = doctorate degree)
- Age
(1 = 20-29, 2 = 30-39, 3 = 40-49, 4 = over 50)
- Tenure
(1 = less than 5 years, 2 = 6-10 years, 3 = 11-15 years, 4 = 16-20 years, 5 = 21-25 years, and 6 = over 26 years).
- Rank¹
(1 = rank 9, 2 = rank 8, 3 = rank 7, 4 = rank 6, 5 = rank 5, and 6 = over rank 4)

¹ The rank of each respondent was asked with the following question: “What is your rank?” Classification of Korean civil servants is based on grades. There are nine grades, from rank 1 (the highest rank) to rank 9 (the lowest rank). Rank was coded with the characteristics of classification of Korean civil servants that is typically visualized as a pyramid. There are fewer people as the rank goes up. Therefore, rank 9 was coded as 1, rank 8 was coded as 2, rank 7 was coded as 3, rank 6 was coded as 4, rank 5 was coded as 5, and rank over 4 was coded as 6.

Data collection

The questionnaire was pre-tested with a sample of thirty experts, professors, and local government employees. Pre-testing is an essential step in survey research. The primary goal of pretesting is to increase the reliability and validity of the survey research to detect ambiguities, misunderstandings, and difficulties participants may encounter with survey questions (Gao, 2009; Perneger, Courvoisier, Hudelson, & Gayet-Ageron, 2015). In addition, researchers “want to ensure that respondents interpret and answer questions in the way in which their research intended” (GAO, 2009:1). Procedures of pretesting were as follows: (1) pretesting was conducted among thirty people composed of experts and professors in a field of public management and local government employees, subsample of the sample population (Sage Publications, Inc., 2016)², (2) measured how much time it takes to complete the questionnaire, (3) observed how respondents complete the questionnaire, (4) debriefed the respondents, and (5) revised the questionnaire based on the results of pre-testing (Bryman, 2012; Frank-Nachmias & Nachmias, 2008; Gao, 2009).

A pilot study was also conducted prior to the actual survey administration. A pilot study is a rehearsal that increases the likelihood of success for the main research (Sage Publications, Inc., 2016). A pilot study plays a role in ensuring the survey questions operate well and that the research instrument functions well (Bryman, 2012; Frank-Nachmias & Nachmias, 2008). There are many advantages of a pilot study. First, researchers can develop and test the adequacy of research instruments. Second, researchers can assess the feasibility of the survey. Third,

² According to Perneger et al. (2015), most researchers use the small sample sizes (5 to 15 people) when conducting a pre-test. However, they suggest that pretesting with the small sample sizes may not identify problems associated with the questionnaire. Thus, they argue that researchers should have a sample size over 20 respondents when conducting a pre-test.

researchers can identify whether the sampling frame and technique are effective. Fourth, researchers can estimate variability in outcomes to help to determine the sample size. Fifth, researchers can develop research questions and research plans (Van Teijlingen, Rennie, Hundley, & Graham, 2001). Procedures of a pilot study were as follows: (1) fifty participants were obtained, (2) questionnaires were distributed and collected exactly the same as I did in practice, (3) after respondents completed the survey, the data were coded and analyzed, and (4) questions that were not appropriate were discarded or revised (Bryman, 2012; Frank-Nachmias & Nachmias, 2008; Sage Publications, Inc., 2016).

Data for the main study were collected from January 1, 2017, through February 14, 2017. Group-administered and self-administered questionnaires were used as data collection techniques. The data used in this study were collected from 65 local governments, including provinces, metropolitan cities, cities, counties, districts, towns, townships, and neighborhoods government offices, in South Korea. The participants were asked to complete a questionnaire during working hours. Participants were informed about the nature of the survey and of their right to decline participation. In addition, purposes of the study, assurances of confidentiality of data, and personal anonymity, were explained by a researcher and trained proctors. This information was also written in the cover letter.

A total of 1,724 questionnaires were returned, yielding an overall response rate of 82.1 percent. However, unreliable responses of 55 questionnaires were excluded, and a total of valid 1,699 questionnaires were analyzed. Table 10 provides a socio-demographic profile of the respondents. Of the total respondents, 52.4 percent were men and 47.6 percent were women. In terms of age, 8.4 percent were aged 20 to 29 years, 36.8 percent were aged 30 to 39, 32.2 percent were aged 40 to 49, and 22.5 percent were aged 50 to 60. In the education background, 82.8

percent had at least a bachelor’s degree, while 7.2 percent only had a high school diploma. The majority of the respondents (44.1 percent) fell in the 1-10 years’ tenure of service.

Table 9. Data Collection Schedule

Task	Activities	Timeline
Pre-Test	<ul style="list-style-type: none"> • Distributing questionnaires • Measuring how much time it takes to complete the questionnaire • Observing how respondents complete the questionnaire • Debriefing • Revising the questionnaire based on the results of pre-testing 	January 1, 2017 – January 3, 2017
Pilot Study	<ul style="list-style-type: none"> • Distributing questionnaires • Coding and analyzing the pilot study data • Revising or discarding questions that are not appropriate 	January 3, 2017 – January 5, 2017
Field Data Collection	<ul style="list-style-type: none"> • Obtaining permission from government agencies and offices • Training proctors • Distributing questionnaires • Informing the nature and purpose of the survey • Receiving feedback • Personal interview 	January 1, 2017 – February 14, 2017

Table 10. A Socio-Demographic Profile of Respondents

		n	%
Gender	Male	874	52.4
	Female	795	47.6
Age	20-29	141	8.4
	30-39	614	36.8
	40-49	538	32.2
	Over 50	376	22.5
Tenure	1-5	437	26.2

	6-10	299	17.9
	11-15	238	14.3
	16-20	162	9.7
	21-25	234	14.0
	Over 25	299	17.9
Rank	Over 4	6	0.4
	5	88	5.3
	6	369	22.1
	7	632	37.9
	8	307	18.4
	9	267	16.0
Marital Status	Single	476	28.5
	Married	1193	71.5
Education	High school diploma or equivalent	121	7.2
	Some college	167	10.0
	Bachelor's degree	1255	75.2
	Master's degree	114	6.9
	Doctoral degree	12	0.7

Note. n = 1699; response rate = 82.1%

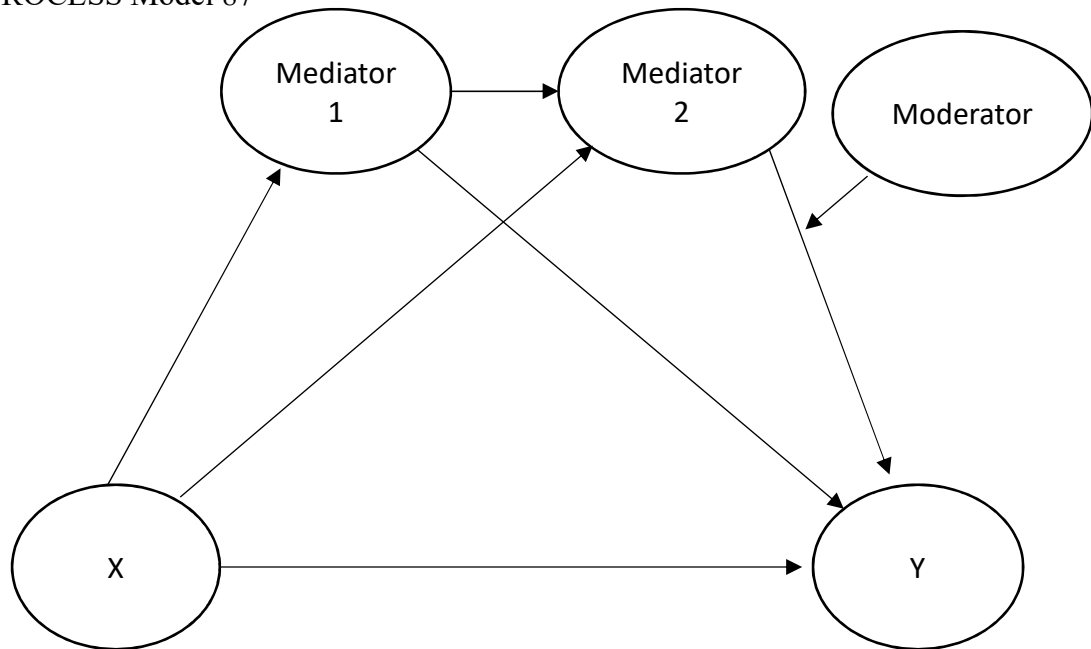
Data analysis

The study employed a quantitative methodology of data analysis. Quantitative analysis was conducted based on data from the survey.

Data were coded and analyzed by using the SPSS 25.0 and AMOS (Analysis of Moment Structures) 25.0. First, the percentage and frequency of responses to the demographic information questions were displayed by using descriptive statistics. Second, Pearson's r was used to measure intercorrelations between variables. Third, Structural Equation Modeling (SEM) was used for the mediation analysis. SEM is a statistical method that integrated confirmatory factor analysis (CFA) and path analysis (Bryne, 2010). There is an advantage to use SEM that "it has the ability to estimate the relationship between variables by adjusting for standard errors" (Brown, 2006:50). Before estimating the hypothesized model, confirmatory factor analysis was conducted to test whether the data fit a hypothesized measurement model and to examine each

construct's validity (Blunch, 2013; Brown, 2006). In addition, confirmatory factor analysis was used to test whether measures of a construct are consistent with my understanding of the nature of that construct. To test the mediation effect of trust in supervisor and affective commitment between feedback from supervisor and innovative work behavior, SEM analysis was conducted. The maximum likelihood method was used to overcome restrictions of the non-normality of data because the maximum likelihood is based on a normality assumption (Ferron & Hess, 2007; Walker, Damanpour, & Devece, 2011). This study employs a wide array of fit indices, such as Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA), to measure a model fit. Fourth, the moderation effect and conditional indirect effect were examined using PROCESS macro (Hayes, 2013, 2017). PROCESS macro is a tool for moderation, mediation, and their integration in the form of a conditional process model, such as moderated mediation, mediated moderation, and moderated moderation model. Among various PROCESS models, PROCESS model 87 was chosen for analyzing a moderated mediation. Figure 2 presents the moderated mediation model using PROCESS model 87.

Figure 2. PROCESS Model 87



Note. Adapted from *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach (2nd edition)*(p. 610), by Andrew F. Hayes, 2017, New York, NY: Guilford Press.

Summary of Methodology

This chapter provided a research design, selection of participants, instrumentation, data collection, and data analysis. This study was a quantitative research design and the time dimension was cross-sectional. The cross-sectional study was undertaken across South Korea. The participation was chosen through a multistage sampling approach among local government employees in Korea. Main variables used in this study were measured with relatively valid and reliable items. In addition, a pre-test and a pilot test were conducted to develop and test the adequacy of research instruments. Group-administered and self-administered questionnaires were used as a data collection method. To analyze data used in this study, structural equation

modeling (SEM) and moderated mediation model were conducted. Clear and comprehensive results of the data analysis for the stated research questions and hypotheses are presented in the following chapter.

CHAPTER 4

RESULTS

This study intended to investigate a mechanism that explains the relationship between feedback from supervisor and innovative work behavior using two key mediators, trust in supervisor and affective commitment, and it intended to explore risk-taking climate that moderated the effect of affective commitment on innovative work behavior. This chapter presents the results of the study using cross-sectional data from Korean local government employees. To be specific, results of descriptive statistics, bivariate correlation analysis, exploratory factor analysis (EFA), confirmatory factor analysis, mediation analysis, moderation analysis, and moderated mediation analysis are presented. I used several statistical programs, such as SPSS 25.0, AMOS 25.0, and PROCESS macro, for data analysis.

Descriptive Statistics

Table 11 presents means, standard deviations, reliabilities, and bivariate correlations of the variables. The independent variable, mediators, the moderator, and the dependent variable used in this study were measured using a seven-point Likert scale. Considering that this study used seven-point Likert scale, the respondents of the study, Korean local government employees, reported high levels of feedback from supervisor (mean = 5.23, SD = 1.03), trust in supervisor (mean = 4.60, SD = 1.02), affective commitment (mean = 4.70, SD = 1.03), risk-taking climate (mean = 4.85, SD = 1.10), and innovative work behavior (mean = 4.55, SD = 0.97).

The Cronbach's alpha coefficient was 0.931 for feedback from supervisor, 0.930 for trust in supervisor, 0.943 for affective commitment, 0.816 for risk-taking climate, and 0.945 for

innovative work behavior. All variables showed acceptable values of Cronbach's alpha, which is higher than the cut-off value of 0.7. Cronbach's alpha coefficient ranges in value from 0 to 1. The higher the Cronbach's alpha coefficient, the more reliable the generated scale is. Nunnally (1978) has indicated .7 to be an acceptable reliability coefficient (Santos, 1999). Cronbach's alpha over .9 is considered as an excellent reliability (Kline, 2000).

The correlation analysis between the independent variable, mediating variables, the moderating variable, the dependent variable, and control variables was examined. The correlation matrix for all the variables is presented in Table 11. Most bivariate correlations among the independent variable, mediators, the moderating variable, and the dependent variable were statistically significant.

Gender was positively correlated with feedback from supervisor ($r = 0.055$, $p = 0.025$) and negatively correlated with innovative work behavior ($r = -0.111$, $p = 0.000$). However, gender did not significantly correlate with trust in supervisor ($r = -0.041$, $p = 0.095$), affective commitment ($r = -0.046$, $p = 0.058$), and risk-taking climate ($r = -0.045$, $p = 0.066$). Age had a significant positive correlation with feedback from supervisor ($r = 0.066$, $p = 0.007$). However, the results showed that age negatively correlated with trust in supervisor, affective commitment, and innovative work behavior. Rank was positively correlated with trust in supervisor, affective commitment, risk-taking climate, and innovative work behavior. That is, employees with higher positions show more positive responses to those variables. However, rank was negatively correlated with feedback from supervisor and not significant ($r = -0.034$, $p = 0.163$). Marital status was also positively correlated with trust in supervisor, affective commitment, risk-taking climate, and innovative work behavior, similar to the results of rank. Considering that single was coded as 0 and married was coded as 1, married employees had positive correlations with those

positive work attitude and outcome variables. Tenure was positively correlated with trust in supervisor, affective commitment, and innovative work behavior. That is, there is a positive correlation between longer job experience and positive attitudinal and behavioral outcomes. Interestingly, education was not significantly correlated with most main variables except innovative work behavior ($r = 0.082$, $p = 0.001$).

Multicollinearity test was examined to confirm whether there is any multicollinearity issue because there were a number of significant correlations among the variables. All variables were less than 3 in Variance inflation factors (VIF) and greater than 0.2. Thus, the multicollinearity issue did not exist among variables in this study. According to one rule of thumb in multicollinearity, a VIF exceeding 5 or 10, and/or tolerance less than 0.2 indicates a multicollinearity problem (O'Brien, 2007).

Factor Analysis

Factor analysis was conducted to discover patterns and common factors among a set of observed variables. Factor analysis is useful for studies using a number of variables and items from questionnaires (Yong & Pearce, 2013). Two-factor analysis techniques were used: Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). EFA attempted to discover complex patterns by exploring the dataset and CFA tried to confirm hypotheses and conduct path analysis (Blunch, 2013; Yong & Pearce, 2013).

Table 11. Means, Standard Deviations, Reliabilities, and Correlations

	M	SD	Reliabilities	1	2	3	4	5	6	7	8	9	10
1 Gender	0.47	0.50											
2 Age	4.73	1.31		.138**									
3 Rank	2.83	1.12		-.272**	-.505**								
4 Marital	0.71	0.45		-.219**	-.418**	.524**							
5 Education	3.84	0.68		.083**	.102**	-.002	-.053*						
6 Tenure	3.47	1.96		-.158**	-.535**	.661**	.422**	-.119**					
7 Feedback	5.23	1.03	0.931	.055*	.066**	-.034	.021	.008	-.046				
8 Trust	4.60	1.02	0.930	-.041	-.058*	.081**	.083**	.027	.072**	.406**			
9 AC	4.70	1.03	0.943	-.046	-.120**	.149**	.123**	.000	.150**	.410**	.683**		
10 Risk	4.85	1.10	0.816	.007	.023	.062*	.051*	.027	.030	.580**	.501**	.474**	
11 IWB	4.55	0.97	0.945	-.111**	-.132**	.188**	.177**	.082**	.127**	.349**	.568**	.498**	.505**

Note. n = 1669; *p < 0.05. **p < 0.01. Feedback = feedback from supervisor; Trust = trust in supervisor; AC = affective commitment; Risk = risk-taking climate; IWB = innovative work behavior. Gender: 0 = male, 1 = female; age: 1 = 20-29, 2 = 30-39, 3 = 40-49, 4 = over 50; rank: 1 = rank 9, 2 = rank 8, 3 = rank 7, 4 = rank 6, 5 = rank 5, 6 = over rank 4; marital status: 0 = single, 1 = married; education: 1 = less than high school, 2 = high school diploma or equivalent, 3 = some college, 4 = bachelor's degree, 5 = master's degree, 6 = doctoral degree; tenure: 1 = less than 5 years, 2 = 6-10 years, 3 = 11-15 years, 4 = 16-20 years, 5 = 21-25 years, 6 = over 26 years.

Exploratory factor analysis. I run exploratory factor analysis by using SPSS 25.0. As shown in Table 12, Kaiser-Meyer-Olkin (KMO) was 0.941, over the cut-off value of 0.50. This means that reliable and distinct variables were produced. Table 13, Total Variance Explained, represents the number of significant factors. There were five components and the first component extracts 44.7% of the variance, which is less than the 50% recommended as a rule of thumb (Blunch, 2016). In addition, the extracted five components explained nearly 79% of the total variance. As shown in Table 14, the factor loadings are desirable with at least two variables per factors that are above 0.65, which is higher than the cut-off value of 0.4 (Yong & Pearce, 2013).

Table 12. Results of Kaiser-Meyer-Olkin (KMO) and Bartlett’s Tests

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.941
Bartlett's Test of Sphericity	Approx. Chi-Square	34465.102
	df	253
	Sig.	.000

Table 13. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared Loadings		
	Total	% of	Cumulative %	Total	% of	Cumulative %	Total	% of	Cumulative %
		Variance			Variance			Variance	
1	10.288	44.731	44.731	10.288	44.731	44.731	4.938	21.468	21.468
2	2.769	12.038	56.769	2.769	12.038	56.769	4.852	21.096	42.564
3	2.391	10.398	67.167	2.391	10.398	67.167	3.971	17.266	59.829
4	1.534	6.668	73.835	1.534	6.668	73.835	2.839	12.343	72.173
5	1.156	5.028	78.863	1.156	5.028	78.863	1.539	6.690	78.863
6	.521	2.266	81.128						
7	.497	2.160	83.288						
8	.466	2.028	85.316						
9	.394	1.715	87.031						
10	.322	1.402	88.433						
11	.320	1.390	89.823						
12	.316	1.376	91.198						

13	.281	1.222	92.420
14	.237	1.030	93.450
15	.219	.953	94.402
16	.214	.932	95.334
17	.198	.862	96.196
18	.188	.817	97.013
19	.178	.773	97.786
20	.161	.701	98.487
21	.136	.589	99.076
22	.110	.480	99.556
23	.102	.444	100.000

Note. Extraction Method: Principal Component Analysis.

Table 14. Rotated Component Matrix

	Component				
	1	2	3	4	5
AC4	.870				
AC5	.866				
AC3	.842				
AC2	.819				
AC6	.760				
AC1	.740				
IWB4		.865			
IWB6		.863			
IWB2		.860			
IWB5		.856			
IWB3		.818			
IWB1		.751			
Feedback2			.897		
Feedback3			.893		
Feedback1			.855		
Feedback4			.818		
Feedback5			.740		
Trust2				.816	
Trust 3				.812	
Trust1				.770	
Trust4				.646	
Climate3					.877
Climate5					.867

Note. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. AC = affective commitment; IWB = innovative work behavior; Feedback = feedback from supervisor; Trust = trust in supervisor; Climate = risk-taking climate

Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) was used to test “how well the measured variables represent the number of constructs” (Lani, 2017: 1). Confirmatory factor analysis is a theory-driven statistical technique to explore patterns in the data. Researchers have used confirmatory factor analysis to specify the number of factors in the data and discover which measured data is linked to which latent variable (Lani, 2017; Schreiber, Nora, Stage, Barlow, & King, 2006). Confirmatory factor analysis was conducted using AMOS 25.0 software.

The measurement model was shown in Figure 3. The measurement model provided a good fit to the data as follows: Goodness-of-fit index (GFI) was 0.926, comparative fit index (CFI) was 0.965, Tucker-Lewis index (TLI) was 0.959, and Normed-Fit Index (NFI) was 0.959, all exceeded the cut-off value of 0.90. Standardized root mean square residual (SRMR) was 0.040 lower than the threshold (0.08) generally considered as the satisfactory model fit. Root mean square error of approximation (RMSEA) was 0.059 lower than the cut-off value (0.08) used to suggest the good model fit (Brown, 2006; Hair et al., 2010; Hu & Bentler, 1999). As shown in Table 16, the measurement model with five factors provided a better fit than other alternative models. According to the result of the CFA for constructs, the measurement model showed that a good model fit, and therefore construct validity was guaranteed.

Table 15. Overall Fit Indices of Measurement

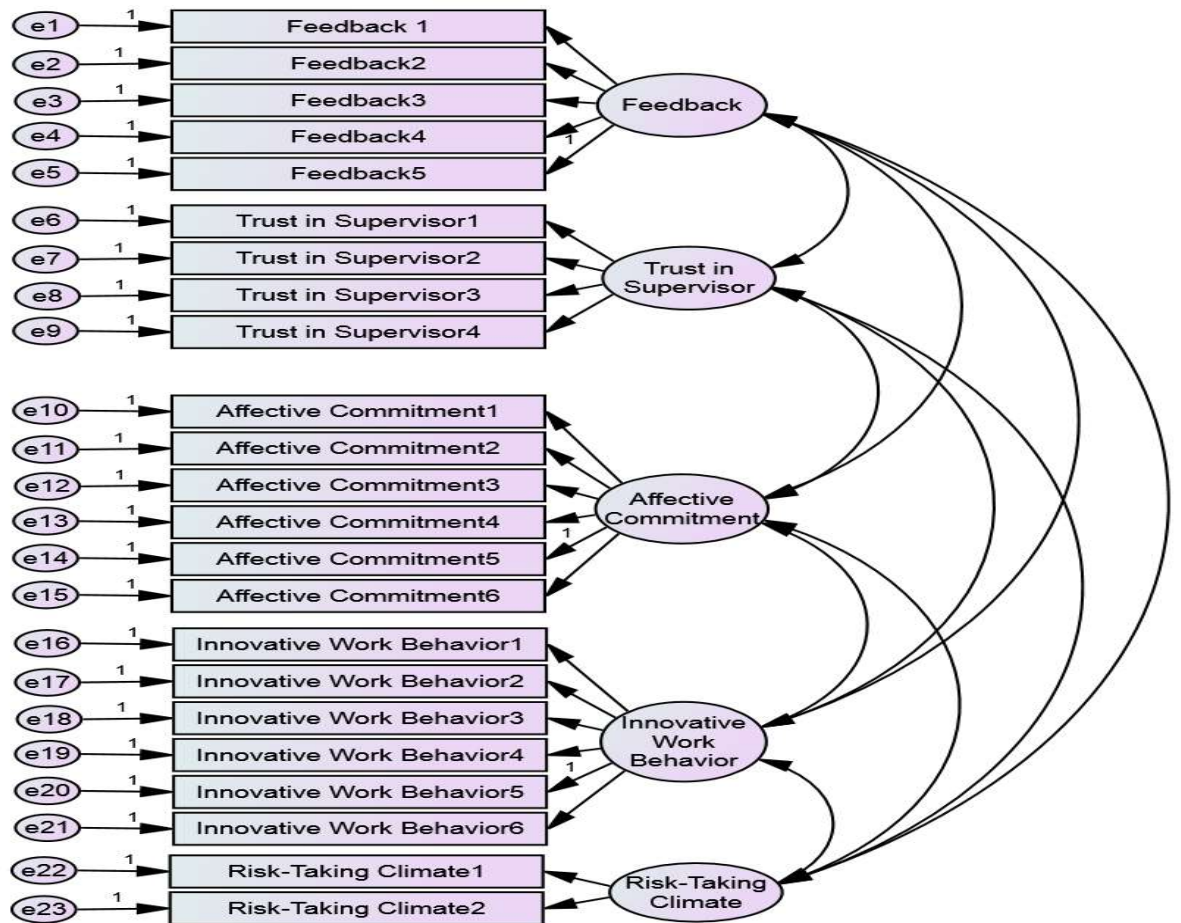
Index	df	χ^2	GFI	CFI	TLI	NFI	RMSEA	SRMR
Value	199	1373.150	0.926	0.965	0.959	0.959	0.059	0.040

Table 16. Assessment of the Measurement Model

	χ^2	df	CFI	GFI	NFI	TLI	RMSEA
5-factor model (FB; TR; AC; RC; IWB)	199	1373.150	0.965	0.926	0.959	0.959	0.059
4-factor model (FB; TR + AC; RC; IWB)	203	4531.560	0.876	0.750	0.871	0.859	0.113
3-factor model (FB; TR + AC + RC; IWB)	206	5712.448	0.843	0.702	0.838	0.823	0.127
2-factor model (FB + TR + AC + RC; IWB)	208	10575.816	0.704	0.555	0.700	0.671	0.173
1-factor model (FB + TR + AC + RC + IWB)	209	16318.325	0.540	0.411	0.537	0.491	0.215

Note. FB = feedback from supervisor; TR = trust in supervisor; AC= affective commitment; RC = risk-taking climate; IWB = innovative work behavior.

Figure 3. The Measurement Model



Validity Test

Reliability and Validity tests were conducted using confirmatory factor analysis.

Reliability is the degree of consistency of an instrument. Validity refers to whether the test measures what it is supposed to measure. Reliability and validity are important when conducting a study using a survey method because it is related to the results of the study. In this study, several techniques were used to estimate the reliability and validity of the measurement model.

Convergent Validity. To test the convergent validity, Average Variance Extracted (AVE) and construct reliability (CR) of each construct was calculated. AVE refers to “a measure of the amount of variance that is captured by a construct in relation to the amount of variance due to measurement error” (Fornell & Larcker, 1981: 45). The value of AVE should be greater or equal to 0.5 to achieve convergent validity. The formula to calculate the value of AVE is as follows:

$$\text{AVE} = \frac{\text{Sum of squared factor loading}}{\text{Sum of squared factor loading} + \text{sum of measurement errors}}$$

As shown in Table 17, all AVE values were over 0.5. In addition, all CR values were over 0.7, greater than the suggested cut-off value of 0.7. Therefore, the convergent validity of the measurement model was guaranteed.

Table 17. Average Variance Extracted (AVE) and Construct Reliability (CR) of Constructs

Constructs	AVE	CR
Feedback from Supervisor	0.73	0.92
Trust in Supervisor	0.73	0.92
Affective Commitment	0.68	0.93
Risk-Taking Climate	0.61	0.76
Innovative Work behavior	0.71	0.94

Discriminant Validity. Two ways were used to estimate the discriminant validity.

- $AVE > (\text{inter-correlations})^2$
- $((\text{Inter-correlations} \pm 2) \times \text{standard error}) \neq 1$

AVE of each construct was greater than squared inter-correlations. In addition, $(\text{Inter-correlations} \pm 2) \times \text{standard error}$ was not equal to 1. Thus, the discriminant validity of the measurement model was also guaranteed.

Test of Common Method Bias (CMB)

Most researchers argue that common method bias is a potential problem when conducting a self-administered survey at the same point in time. Common method bias is a problem in terms of response biases, which threatens the validity of the conclusions about the relationships between measures (Jin et al. 2018; Podsakoff et al. 2003). To address the potential problem for common method bias, two tests were conducted: Harman's single-factor test and confirmatory factor analysis (CFA). First, a Harman's single-factor test was conducted to see whether a single factor accounts for a majority of the covariance (Jin and McDonald 2016). All items from each of the constructs entered into an exploratory factor analysis with varimax rotation. The results of the principal component analysis showed that the eigenvalues of the five factors were greater than 1.0. In addition, the five factors together accounted for 79 percent of the total variance, whereas the first (largest) factor accounted for only 44 percent of the total variance, which is below the suggested threshold of 50 percent (Podsakoff et al., 2003). Second, CFA showed that the single-factor model had a poor fit, with $\chi^2(209) = 16318.325$, GFI = 0.441, CFI = 0.540, NFI

= 0.537, TLI = 0.491, and RMSEA = 0.215. The results of the two analyses show that data in this study is unlikely to have the possibility of common method biases.

Hypotheses Testing - Main and Mediation Effects

Hypotheses were tested using structural equation modeling (SEM) with AMOS 25.0. As predicted in Hypothesis 1, feedback from supervisor was positively related to innovative work behavior ($\beta = 0.13$, $p < 0.001$). Feedback from supervisor was also positively related to trust in supervisor and affective commitment ($\beta = 0.47$, $p < 0.001$, $\beta = 0.16$, $p < 0.001$, respectively), which supports Hypotheses 2 and 5, and trust in supervisor and affective commitment further led to increased innovative work behavior ($\beta = 0.43$, $p < 0.001$, $\beta = 0.18$, $p < 0.001$, respectively), supporting Hypotheses 3 and 6. Thus, all direct effects were significant in this study.

This study contains three indirect effects. First, trust in supervisor significantly mediated the relationship between feedback from supervisor and innovative work behavior, supporting Hypothesis 4. The indirect effect of feedback from supervisor on innovative work behavior through its influence on trust in supervisor was 0.20 ($p < 0.001$). Second, affective commitment mediated the relationship between feedback from supervisor and innovative work behavior. The indirect effect of feedback from supervisor on innovative work behavior through its influence on affective commitment was 0.03 ($p < 0.001$), supporting Hypothesis 7. The third indirect effect revealed that feedback from supervisor had a positive impact on innovative work behavior through its influence on trust in supervisor and affective commitment in serial and the indirect effect was 0.04 ($p < 0.001$), which supports Hypothesis 8.

I also tested the significance of indirect effects with 95% bias-corrected bootstrap confidence intervals using 10,000 samples. When the 95% bias-corrected bootstrap confidence intervals do not contain zero, the indirect effect can be interpreted as significant. As seen in Table 18, all indirect effects were significant as any bootstrap confidence interval does not contain zero. The total indirect effect, as the sum of all the indirect effect, was 0.27 (= 0.20 + 0.03 + 0.04) and significant (95% confidence interval = [0.18, 0.24]).

Table 18. Results of Mediation Test

	Path coefficients			Indirect effects	
	to Trust	to AC	to IWB	Estimate	Bias-corrected bootstrap 95% CI
Feedback	0.47 ***	0.16***	0.13***		
Trust		.50***	0.43***		
AC			0.18***		
Total				0.27	[0.18, 0.24]
Feedback→Trust→IWB				0.20	[0.12, 0.18]
Feedback→AC→IWB				0.03	[0.01, 0.03]
Feedback→Trust→AC→IWB				0.04	[0.02, 0.05]
<i>R</i> ²	0.19	0.50	0.39		

Source. Adapted from “Does Public Service Motivation Matter in Public Higher Education? Testing the Theories of Person-Organization Fit and Organizational Commitment Through a Serial Multiple Mediation Model,” by Jin M, McDonald B, and Park J, 2018, *American Journal of Public Administration* 48(1), 82-97.

Note. 95% bias-corrected bootstrap confidence intervals are based on 10,000 bootstrap samples. Trust = trust in supervisor; AC = affective commitment; IWB = IWB; CI = confidence interval.

p* < 0.05. *p* < 0.01. ****p* < 0.001

Hypotheses Testing - Moderation Effect

This study examined the moderating effect of risk-taking climate on the relationship between affective commitment and innovative work behavior. As table 19 shows, the interaction of affective commitment and risk-taking climate was significant ($\beta = 0.42$, $p < 0.01$). I generated a plot of the interaction to show what happened in the moderation model. As shown in Figure 4, the positive relationship between affective commitment and innovative work behavior was more pronounced among employees who work in a more risk-taking climate, compared to those with a less risk-taking climate. Thus, Hypothesis 9 was supported.

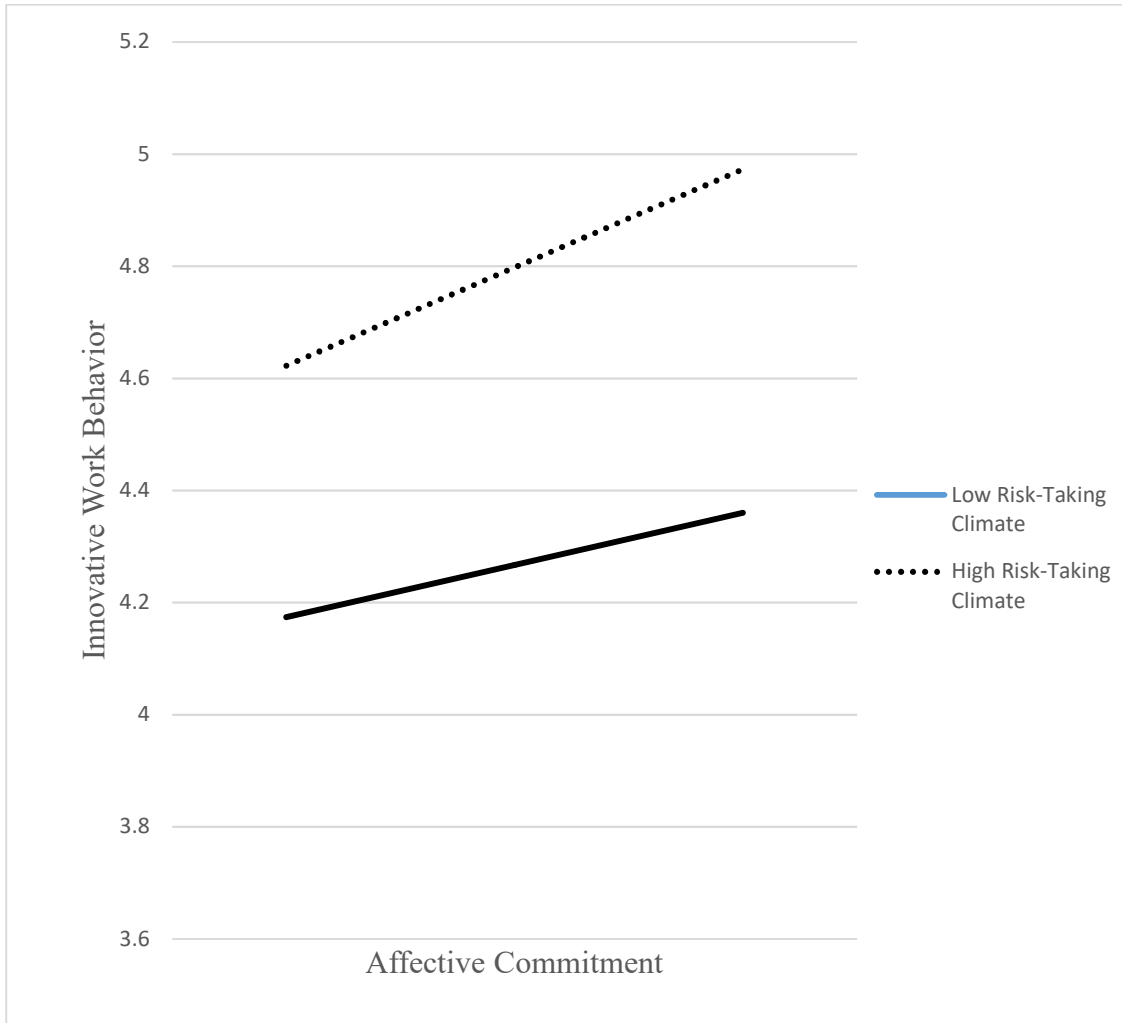
Table 19. Results of the Moderation Model

Variables	Innovative work behavior		
	Step 1	Step 2	Step 3
Constant	3.48	0.889	3.744
Gender	-0.123*	-0.142***	-0.139**
Age	0.008	0.004	0.004
Rank	-0.016	-0.075	-0.014
Marital status	0.173**	0.135**	0.145**
Education	0.164***	0.138***	0.134***
Tenure	0.07	0.005	0.004
Affective commitment		0.288***	0.284****
Risk-taking climate		0.313***	0.315***
Affective commitment x Risk-taking climate			0.042**
R ²	0.061	0.373	0.375
Adjusted R ²	0.058	0.370	0.372
R ² change	0.061	0.311	0.003

Note. Moderator was mean centered prior to analysis.

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Figure 4. A Visual Representation of the Moderating Effect of Risk-Taking Climate on the Relationship between Affective Commitment and Innovative Work Behavior.



Moderated Mediation Effect

The PROCESS macro developed by Hayes (2013, 2017) was used to test the moderated mediation effect (also called conditional indirect effect). PROCESS is a tool for moderation, mediation, and their integration in the form of a conditional process model, such as moderated

mediation, mediated moderation, and moderated moderation model. Among various PROCESS models, PROCESS model 87 was chosen for analyzing a moderated mediation model.

The purpose of using the moderated mediation model is to examine whether risk-taking climate conditionally influences the strength of the indirect relationship between feedback from supervisor and innovative work behavior (through affective commitment, trust in supervisor and affective commitment in serial). I used two methods to assess the significance of conditional indirect effects. First, I examined the magnitude of the conditional indirect effect of feedback from supervisor (the independent variable) on innovative work behavior (the dependent variable) via mediators at one standard above the mean, at the mean, and at one standard below the mean. Second, the bootstrapping method was used to generate confidence intervals for magnitude and significance of the conditional indirect effects (Ambrose, Schminke, & Mayer, 2013; Hayes, 2017; Preacher, Rucker, & Hayes, 2007).

The results for both methods were shown in Table 20. Two indirect effect paths were examined: (a) feedback from supervisor → affective commitment → innovative work behavior, and (b) feedback from supervisor → trust in supervisor → affective commitment → innovative work behavior. In the first indirect effect path, the conditional effects were significant at high levels of the moderator (at one standard deviation above the mean) and at the mean, while the conditional effect was not significant at low levels of the moderator (at one standard deviation below the mean). In the second indirect effect path, the conditional indirect effects were also not significant at low levels of the moderator and significant at the mean of the moderator and at high levels of the moderator.

Table 20 presents 95% confidence intervals for the conditional indirect effects produced by the bootstrapping technique. For both indirect effect paths, confidence interval values of the

indirect effects at one standard deviation below the mean of the moderator did not include zero. These results also confirm that the conditional indirect effects were significant at the mean and at one standard deviation above the mean.

Results from two methods provided good support for the moderated mediation model and the existence of the conditional indirect effects for moderate and high levels of risk-taking climate in terms of the effect of feedback from supervisor on innovative work behavior in this study.

Table 20. Conditional Indirect Effects at a Range of Values of the Moderator

Indirect Effect Path	Level	Conditional Indirect Effect	SE	95% CI
FB → AC → IWB	-1 SD	0.011	0.007	[-0.004, 0.025]
	Mean	0.018	0.005	[0.007, 0.030]
	+1 SD	0.025	0.007	[0.011, 0.039]
	-1 SD	0.015	0.010	[-0.006, 0.035]
FB → Trust → AC → IWB	Mean	0.025	0.007	[0.010, 0.040]
	+1 SD	0.035	0.010	[0.016, 0.056]

Note. Bootstrap confidence intervals were constructed using 10,000 resamples. Moderators were mean centered prior to analysis. CI = confidence interval; SD = standard deviation. Trust = trust in supervisor; AC = affective commitment; IWB = IWB;

Summary of Hypotheses

Table 21. Summary of Hypothesis Testing

	Hypothesis	Result
H1	Feedback from supervisor is positively related to innovative work behavior	Supported
H2	Feedback from supervisor is positively related to trust in supervisor	Supported
H3	Trust in supervisor is positively related to innovative work behavior	Supported
H4	Trust in supervisor mediates the relationship between feedback from supervisor and innovative work behavior	Supported
H5	Feedback from supervisor is positively related to affective commitment	Supported
H6	Affective commitment is positively related to innovative work behavior	Supported
H7	Affective commitment mediates the relationship between feedback from supervisor and innovative work behavior	Supported
H8	Feedback from supervisor has an indirect, positive effect on innovative work behavior through its influence on trust in supervisor and affective commitment in serial.	Supported
H9	Risk-taking climate moderates the relationship between affective commitment and innovative work behavior	Supported
H10	The indirect effect of feedback from supervisor on innovative work behavior through affective commitment will be moderated by risk-taking climate.	Supported
H11	The indirect effect of feedback from supervisor on innovative work behavior through trust in supervisor and affective commitment in serial will be moderated by risk-taking climate.	Supported

CHAPTER 5

DISCUSSION AND CONCLUSION

Introduction

In the preceding chapter, the analysis of data was reported. Chapter five presents a summary of the study, theoretical implications, practical implications, recommendations for future research, and conclusions.

Summary of the Study

Innovative work behavior and its determinants, feedback from supervisor, trust in supervisor, and affective commitment, have gained an increased interest from researchers and practitioners in the public sector. Due to relatively few studies regarding the mechanism through which feedback from supervisor influences innovative work behavior, a number of unaddressed questions still remained. Drawing from organizational support theory, social exchange theory, and intrinsic motivation theory, this study proposed and tested serial multiple mediation and moderated mediation models to remove the veil about a mechanism of feedback from supervisor on innovative work behavior, including two mediators among Korean local government employees.

The purpose of this study was to explore how feedback from supervisor affects innovative work behavior, to examine the mediating role of trust in supervisor and affective commitment, and to examine the moderating role of risk-taking climate between the feedback from supervisor – innovative work behavior relationship across South Korea through quantitative research.

Table 21 summarizes the results of hypothesis testing. In the table, Hypothesis 1 was

confirmed that feedback from supervisor has a significant direct effect on innovative work behavior. The second and fifth hypotheses were confirmed findings that feedback from supervisor is positively related to trust in supervisor and affective commitment. The third and sixth hypotheses were supported in that both trust in supervisor and affective commitment are positively related to innovative work behavior. Considering Hypotheses 1, 2, 3, 5, and 6, trust in supervisor and affective commitment mediate the relationship between feedback from supervisor and innovative work behavior. In addition, this study found that feedback from supervisor has a positive indirect effect on innovative work behavior through its influence on trust in supervisor and affective commitment in serial.

In terms of moderation and moderated mediation models, this study suggests that risk-taking climate moderates the relationship between affective commitment and innovative work behavior. In addition, this study explored whether risk-taking climate conditionally influence the strength of the indirect relationship between feedback from supervisor and innovative work behavior (through affective commitment, and trust in supervisor and affective commitment in serial), by examining the magnitude of the conditional indirect effect and generating confidence intervals for the magnitude of the conditional indirect effects. The results of the moderated mediation model find that the conditional effects are significant at high levels of the moderator (at one standard deviation above the mean) and at the mean, while the conditional effect was not significant at low levels of the moderator (at one standard deviation below the mean) for both two indirect effect paths (feedback from supervisor → affective commitment → innovative work behavior, and feedback from supervisor → trust in supervisor → affective commitment → innovative work behavior).

Theoretical Implications

Five theoretical implications emerge from this study. First, drawing from organizational support theory (OST) and intrinsic theory, this study demonstrates that feedback from supervisor has a positive direct effect on innovative work behavior. Although human resource development and public management researchers contend that feedback from supervisor is linked to behavioral and attitudinal outcomes, such as performance (Favero et al., 2016), the relationship between feedback from supervisor and innovative work behavior has rarely been explored to any significant degree. In addition, previous studies viewed various feedback (e.g., feedback from supervisor, feedback from coworker, feedback from top management, and feedback from clients or customers) as a moderator in the antecedents – innovative work behavior relationship, with various samples including public university employees in Italy (Battistelli, Montani, & Odoardi, 2011) and Germany (Noefer et al., 2009), and employees at a high-tech company in Germany (Schaffer et al., 2012). These previous studies revealed that feedback moderated the relationship between innovative work behavior and its antecedents, whereby the relationship was stronger when employees received high levels of feedback. By demonstrating the direct effect of feedback on innovative work behavior with several theories, this study contributes to the emerging literature that focuses on the critical role of feedback as an important antecedent of innovative work behavior.

Second, this study finds that Korean local government employees who receive performance feedback from their supervisors help to develop trust in their supervisors, and consequently, leads to innovative work behavior. The model tested in this study suggests that trust in supervisor plays a significant role in mediating the relationship between feedback from supervisor and innovative work behavior in the Korean context, which is consistent with Shim

and Jung's (2007) study with a sample of street-level bureaucrats in Korea. The current study demonstrates the importance of trust in the innovative work behavior development process in an organization. It has been known that trust is supervisor associated with feedback leads to positive outcomes such as productivity (Nyhan, 2000), organizational commitment (Nyhan, 2000), and performance (Earley, 1986; Favero et al., 2016), whereas innovative work behavior has not been thoroughly explored regarding the mechanism of feedback to outcomes through trust. Per the results of Hypothesis 4, innovative work behavior is a possible outcome from the mechanism. In addition, previous studies found that feedback has an indirect, positive effect on performance through its influence on trust (Earley, 1986; Favero et al., 2016) and that innovative work behavior is positively associated with performance in government (De Jong & Den Hartog, 2008; Fernandez & Moldogaziev, 2012). Fernandez and Moldogaziev's (2012) study using the Federal Human Capital Survey (FHCS) among U.S. government employees suggests that the impact of innovative behavior on performance in the public sector is positive in the long term. Thus, we may add performance to this model and postulate that feedback has an indirect effect on performance through its effect on trust and innovative work behavior as a causal chain. This could open a new chapter for the innovative work behavior – performance literature.

Third, this study reveals that the relationship between feedback from supervisor and innovative work behavior is mediated by affective commitment in the public sector, using social exchange theory. According to previous studies, when employees receive feedback from their supervisors, which reduces uncertainty in the workplace and supports subordinates to perform better, they are emotionally attached to their organization. Employees perceive feedback as valuable organizational support and feel that their organization is concerned about their well-being. These feelings, in turn, motivate employees to exhibit affective commitment to the

organization (Hutchinson & Gartka, 1996; Joo & Park, 2009). In addition, employees who are emotionally attached to their organization are more likely to perform innovative work behavior (Farnese et al., 2016). Previous studies have dealt with affective commitment as a dependent variable or a possible outcome associated with feedback (Hutchison & Gartka, 1996; Nyhan, 1994, 2000). There were not many attempts to use innovative work behavior as an outcome variable of the mechanism of feedback to affective commitment. In addition, the mechanism of the relationship between feedback and innovative work behavior through its influence on affective commitment has received little attention both in the private sector and the public sector. However, the results of this study show the importance of affective commitment in the relationship between feedback and innovative work behavior, and the mechanism of feedback to affective commitment can be expanded to innovative work behavior. Thus, this study contributes to the expansion of literature that reveals the critical role of affective commitment as a motivating mechanism of the relationship between feedback and innovative work behavior.

Fourth, this study tested the serial multiple mediation model posited that feedback from supervisor affects innovative indirectly through its influence on trust in supervisor and affective commitment in the causal chain (Jin et al., 2018). As previous studies examined the causal model (e.g., Scott & Bruce, 1994), there are complex causal structure and paths, with the antecedents (i.e., feedback delivery practices) affecting innovative work behavior both directly and indirectly. According to Jin et al. (2018), when there are several variables that mediate the relationship between the antecedents and the outcome variable, one mediator alone may not mediate the relationship the antecedents and the outcome variable, and the mediators may be correlated. The findings of this study reveal that performance feedback from supervisors affects innovative work behavior through its influence on trust in supervisor, which, in turn, increases affective

attachment to the organization, and consequently results in the generation, adoption, and realization of new and novel ideas. Although trust – affective commitment – behavioral outcomes is a plausible causal pathway, only a limited number of studies have investigated the intricacies. This study thus contributes to the literature by providing a better understanding of the complicated relationships between innovative work behavior and its antecedents, through the serial multiple mediation model.

Fifth, using psychological climate theory, this study examined whether the indirect effect of feedback from supervisor, in terms of increasing employees' innovative work behavior through its effect on affective commitment, and trust in supervisor and affective commitment in serial, is influenced by risk-taking climate. Specifically, findings of the study indicated that risk-taking climate moderated the relationship between affective commitment and innovative work behavior, and that the indirect effect of feedback from supervisor on innovative work behavior through trust in supervisor and affective commitment was stronger among employees who reported having a more risk-taking climate in their organization. Although previous studies suggest that risk-taking climate relates to employees' behaviors, perceptions, and attitudes, there is little research on the moderating role of a risk-taking climate on the relationship between innovative work behavior and its antecedents. In keeping with the call for empirically rarely explored moderators of the relationship, this study contributes to the emerging literature that focuses on the important role of a risk-taking climate in boosting innovative work behavior in the workplace. In addition, this study may be the first approach to examining the conditional indirect effects using a serial multiple mediation model. Previous studies regarding a moderated mediation model usually tested the model using a simple mediation model with a mediator. Thus, this study contributes to introducing a new approach to statistical analysis.

Practical Implications

Findings of this study provide several practical implications for supervisors, public sector leaders, practitioners, and human resources managers, particularly those who are interested in enhancing employees' innovative work behavior for performance improvement and organizational development.

The results of this study suggest that feedback from supervisor is ineffective when it is used alone; however, it is positively and significantly related to innovative work behavior through its effect on trust in supervisor and affective commitment, which in turn, affect innovative work behavior. Following the logic of organizational support theory, supervisors in the local government should provide subordinates feedback with care and concern that makes them feel more obligated to reciprocate with greater innovative work behavior. In addition, feedback delivery is effective when supervisors give feedback with the candidness that they believe is helpful for recipients' (i.e., subordinates) development, motivation, and success. Effective feedback delivery encourages subordinates to exhibit greater trust in their supervisors and to become emotionally attached to the organization. In addition, supervisors should give subordinates feedback that enables them to achieve better performance. If the feedback is not important to improve their performance, they may express their doubt on the usefulness of the feedback. According to London (2003), feedback delivery changes the focus of attention and results in behavior change. If the feedback supervisors deliver is not effective in improving performance, subordinates may not trust their supervisors. In turn, this makes it difficult to exhibit innovative work behavior because of poor feedback, which cannot lead to performance improvement, making it hard to change the behaviors among subordinates (London, 2003). Thus, local governments are required to: (a) realize the importance of feedback as a bridgehead for

building trust in supervisor, affective commitment, and innovative work behavior, (b) train supervisors to learn how to provide feedback effectively, and (c) encourage supervisors to use various skills of feedback delivery (e.g., clear, concise communication and timely, regular feedback).

Considering that respondents agreed that their supervisors praise their performance when they do a good job and the positive correlation between feedback in the form of praise and innovative work behavior, supervisors and managers should consider delivering feedback in the form of compliments or praise. Nelson and Schunn (2009) suggest that feedback in the form of praises increase one's agreement with another following feedback and a better understanding of feedback. In addition, when employees receive feedback in the form of praises at the right time, they are more likely to perform better; put more effort into their job; and become emotionally attached to their organization (Nelson & Schunn, 2009). It is also important to provide feedback relating to the organization's visions, goals, and values. Norris-Watts and Levy (2004) found that if supervisors share the organization's goal and values through feedback, employees are more likely to show greater affective commitment. This, in turn, leads to behavioral changes for individual and organizational commitment. These behavioral changes are often performed by innovative work behavior, such as the application of new ideas, task revision, and correction of faulty procedures (Crant, 2000).

According to feedback and comments with survey respondents, unimportant feedback is often delivered to solve a minor problem at work. When employees solve the problem with feedback from their supervisor, they are more likely to trust their supervisor. However, this kind of feedback has characteristics that pass on know-how for the minor problem and may not enable their subordinates to generate creative solutions to problems. Although this adaptation to

circumstances in problem-solving with the feedback may be helpful to their performance improvement in the short term, these tactics appear to have a negative effect on developing employees' innovative work behavior. In order to promote innovative work behavior among employees, supervisors should deliver feedback that enables subordinates to (1) identify the causes of problems, (2) learn subordinates' responsibilities and the purposes of the work they do, (3) develop their own problem-solving ability, and (4) be more aware of the ultimate goals and values of their organization for developing innovative work behavior in the long term.

According to organizational support theory and social exchange theory, supervisors are viewed as agents who act on behalf of the organization (Jin & McDonald, 2017). Thus, trust, affective commitment, and innovative work behavior within the organization depend on the quality of the subordinate-supervisor relationship. It is vital to creating a work climate where supervisors deliver feedback frequently and authentically, with an understanding of subordinates' needs and demands in mind. In addition, public organizations should invest in creating a culture where open communication is active between supervisors and subordinates. In Korea, communication between supervisors and subordinates has not been developed because of the hierarchical culture derived from Confucianism, where subordinates follow their supervisor's directions and instructions. This strict and uncomfortable communication atmosphere hampers feedback exchange and creative idea exchange in an organization. Earlier studies of the Korean government culture found that Korean public employees working in hierarchical culture are less likely to be affectively committed to the organization where it is difficult to express their opinions (Lee, 2008; Park, Park, & Ryu, 2013). In addition, Korean local government employees working in strict cultures are less likely to communicate with their supervisors. This strict top-down culture is negatively related to trust in supervisor and affective commitment (Lee, 2008).

Thus, it is suggested that Korean local governments should create an organizational culture in which free communication, cooperation, and frequent feedback between subordinates and supervisors are invigorated. I expect that this organizational culture would improve trust, affective commitment, and innovative work behavior among Korean local government employees.

The findings of this study provide insights into the psychological and organizational climate that public organizations could foster. As results indicated, the indirect effect of feedback from supervisor on innovative work behavior via affective commitment and trust in supervisor and affective commitment in serial was more pronounced among employees who reported working in an organization where the risk-taking climate is more cultivated. This suggests that the risk-taking climate plays a vital role in fostering positive work behavior, such as innovative work behavior. Thus, local governments and agencies should cultivate the risk-taking climate that enables employees to feel free to engage in risky behaviors, such as innovative work behavior. In order to cultivate the risk-taking climate, it is recommended that local governments should not reprimand their employees as a result of minor errors or setbacks due to innovative work behavior. In addition, it is important to omit any negative remarks during a performance evaluation or show any disadvantages to the employees regarding minor errors or setbacks. Monetary compensation or promotional opportunities may enable employees to involve in risk-taking behaviors or innovative work behavior. Moreover, employees who achieve individual and organizational performance goals through risk-taking behaviors or innovative work behavior should be praised and recognized. By promoting successful cases of innovative work behavior or risk-taking behaviors, employees are likely to be motivated to take more risks and promote innovative work behavior.

Recommendations for Future Research

Several significant findings emerged from the examination of the data using a sample of Korean local government employees. However, the findings of this study should be interpreted with caution as this study has some limitations. The first limitation is that the use of the cross-sectional data may not allow us to draw causality between the variables used in this study. Although I used several statistical techniques to address the causality issue regarding the use of cross-sectional data, future research should be conducted by using the longitudinal data to confirm causal order among variables as longitudinal data enable researchers to understand whether variables are related in certain ways and how changes in the independent variable precedes changes in the presumed outcomes over time (Taris & Kompier, 2014).

Secondly, this study included self-reported data. The use of self-reported data may raise the possibility of the common method bias or social desirability bias. Common method bias and social desirability bias are one of the common biases that affect the validity of survey research findings (Nederhof, 1985). Common method bias is “the spurious variance that is attributable to the measurement method rather than to the constructs the measures are assumed to represent” (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003: 879). Social desirability bias occurs because respondents mark answers that are socially acceptable values or make them look good (Van de Mortel, 2008). For example, although participants of the survey were informed about their anonymity, participants might answer a question that they want to be viewed by others as how public servants implement innovative work behavior. Common method bias or social desirability bias derived from self-reported data may inflate or deflate relationships between variables used in this study. Although I included survey questions regarding social desirability bias and conducted a pre-test and a pilot test to reduce the possibility of the biases, it is difficult to

discount the biases completely. Thus, it is recommended to design a questionnaire more precisely to increase validity and reliability and decrease the possibility of common method bias and social desirability bias in future research.

Thirdly, it is required to recognize the lack of generalizability that the findings may not be applicable to other groups or populations. I collected data from various local government types to guarantee the representativeness of the target population. However, the characteristics, culture, and climate of local governments may vary based on their location, size, budget, resources, and scope of services (Jin et al., 2018). In particular, the data used in this study may limit the generalizability of findings to central government employees because there are heterogeneous characteristics between the central and local governments. Local government employees take responsibility for a wide range of functions and have broad discretion at work compared to central government employees (Park, 2016). In addition, the findings of this study may not be applicable to other Asian countries or Western countries. This study was conducted in Korea, where collectivism prevails. In collectivist countries (e.g., Korea, China, and Japan), people try to undertake their obligation and display loyalty toward their organization or country. People are also likely to exhibit behaviors and attitudes that are good for their own organizations (Kim 2017). Thus, employees are more likely to increase levels of trust or affective commitment through feedback from supervisors in collectivist cultures. The mechanism of feedback from supervisors on innovative work behavior may vary in individualist cultures. It is recommended that future research explores the mechanisms through which feedback relates to innovative work behavior across different countries considering diverse effects in different cultural contexts.

Surprisingly, Korea has distinct characteristics that Confucianism and individualism coexist. To be specific, traditional Confucian values have been encountering conflicts with

alternative values (i.e., individualism) that prevail in the younger generation in Korea (Zhang, Lin, Nonaka, & Beom, 2005). Due to rapid economic development, urbanization, and increased opportunities for higher education, some researchers contend that the younger generation in Korea is more individualistic than its predecessors (Chang 1993; Zhang, Lin, Nonaka, & Beom, 2005). As individualism and self-development have been prevalent among the younger generation, they tend to take actions that optimize their utility and well-being (Bak, 2019). Researchers suggest that collectivism derived from Confucianism and individualism have different effects on individual outcomes, such as public service motivation, organizational commitment, trust, organizational citizenship behavior (OCB), and performance, among Korean public servants (Kim, 2017; Park, Park, & Ryu, 2012). Thus, future research should examine the mechanisms of how conflicting cultures, Confucianism and individualism, affect individual attitudes and outcomes, and organizational outcomes.

Although respondents of this study responded that they receive performance feedback from their supervisors, it is necessary to know that not all supervisors know how to give feedback to their subordinates effectively. Therefore, it is important to provide supervisors education and training in terms of feedback delivery. For example, it is predicted that supervisors who receive training to develop their feedback delivery skills are more likely to motivate their subordinates to have positive work attitudes and outcomes. Previous studies suggest that training plays a vital role in developing employees' abilities and skills, such as problem-solving, leadership, and communication (Shraeder, Tears, & Jordan, 2005; Stummer & Zuchi, 2010). Thus, future research examines the role of training for supervisors in the job resources (e.g., feedback from supervisor)-work attitudes (e.g., trust in supervisor, trust in organization, and affective commitment) and work outcomes (e.g., innovative work behavior, organizational

citizenship behavior (OCB), and performance) relationships.

Conclusion

The findings of this dissertation expanded the literature in the area of public administration and management. Fostering innovative work behavior is considered as one of the most important missions for performance improvement and organizational development. By utilizing theories of organizational support theory, social exchange theory, intrinsic motivation theory, expectancy theory, and psychological climate theory, this dissertation explored the effects of feedback from supervisors on innovative work behavior and examined the roles of trust in supervisor, affective commitment, and risk-taking climate.

Using a sample of 1,699 Korean local government employees from 65 local governments, including provinces, metropolitan cities, cities, counties, districts, towns, townships, and neighborhoods government offices, in South Korea, the findings of this dissertation found that feedback from supervisor had a significant direct effect on innovative work behavior. Trust in supervisor and affective commitment significantly mediated the relationship between feedback from supervisor and innovative work behavior. This study also showed a serial multiple mediation model that feedback from supervisor had an indirect effect on innovative work behavior through its influence on trust in supervisor and affective commitment in serial. Risk-taking climate played an important role in moderating the relationship between affective commitment and innovative work behavior. In addition, risk-taking climate conditionally influences the strength of the indirect relationship between feedback from supervisor and innovative work behavior through affective commitment and trust in supervisor and affective commitment in serial.

This dissertation demonstrated the importance of feedback from supervisor, trust in supervisor, affective commitment, and risk-taking climate associated with employees' innovative work behavior in the local government context. In order to facilitate innovative work behavior in the public sector, public organizations and public sector leaders should go the extra mile for effective feedback delivery, building trust, improving the quality of the subordinate-supervisor relationship, creating an innovative work behavior-friendly organizational culture, and cultivating risk-taking climate. These practical implications shed light on organizational strategies regarding improving innovative work behavior and performance

The findings of this dissertation indicated that research on feedback from supervisor, trust in supervisor, affective commitment, and risk-taking climate, which have been received little attention among researchers in terms of innovative work behavior, could open a new chapter for public management and innovative work behavior literature. More future research on innovative work behavior, using various antecedents, theories, and data, will be followed to contribute to the literature and a better understanding of the causal mechanisms of employees' intentions to engage in innovative work behavior.

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APPENDIX A

Constructs and Items

Feedback from Supervisor (five items)

(Cronbach's Alpha = 0.93)

- a. My supervisor gives me useful feedback about my job performance
- b. The performance feedback I receive from my supervisor is helpful
- c. The feedback I receive from my supervisor helps me do my job
- d. When I do a good job at work, my supervisor praises my performance
- e. On those occasions when I make a mistake at work, my supervisor tells me

Trust in Supervisor (four items)

(Cronbach's Alpha = 0.93)

- a. I have confidence that my supervisor is technically competent at the critical elements of his/her job
- b. I have confidence that my supervisor will make well-thought-out decisions about his/her job
- c. When my supervisor tells me something, I can rely on what s/he tells me
- d. My supervisor will back me up in a pinch

Affective Commitment (six items)

(Cronbach's Alpha = 0.94)

- a. I really feel as if my organization's problems are my own
- b. This organization has a great deal of personal meaning to me
- c. I do not feel like part of the family at my organization (r)
- d. I do not feel a strong sense of belonging to my organization (r)

- e. I do not feel emotionally attached to my organization (r)
- f. I would be very happy to spend the rest of my career with my organization

Risk-Taking Climate (two items)

(Cronbach's Alpha = 0.82)

- a. Employees in this organization are afraid to take risks (r)
- b. Top management in this organization is afraid to take risks (r)

Innovative Work Behavior (six items)

(Cronbach's Alpha = 0.95)

- a. I search out new working methods, processes, techniques, and/or instruments
- b. I try to generate creative ideas
- c. I promote and champion idea to others
- d. I develop adequate plans and schedules for the implementation of new ideas
- e. I try to secure the funding and resources needed to implement innovations
- f. I try to generate creative solutions to problems

Demographic Variables

a. What is your gender?

1) Male

2) Female

b. How old are you?

c. How many years have you worked in your current organization?

d. What is your ranking?

- 1) Lv 1
- 2) Lv 2
- 3) Lv 3
- 4) Lv 4
- 5) Lv 5
- 6) Lv 6
- 7) Lv 7
- 8) Lv 8
- 9) Lv 9

e. What is your current marital status?

- 1) Single
- 2) Married

f. What is your highest level of completed education?

- 1) Less than high school
- 2) High school graduate or G.E.D
- 3) Some college
- 4) Bachelor's degree
- 5) Master's degree
- 6) Doctorate degree

APPENDIX B

Survey Instructions

Thank you for taking the time to participate in this survey.

The purpose of this study is to investigate the role of empowerment, feedback, participation, and trust, job characteristics, job resources, and organizational culture on individual work behavior within Korean local governments.

The information collected will be used for research purposes only, and neither your name nor information which could identify you will be used in any publication or presentation of the study results. All information collected for the study will be kept **CONFIDENTIAL**.

The questionnaire takes about 20-25 minutes to complete. If you have any questions about the survey, please feel free to ask me. If you have further questions or comments, please contact me at **bakhu@vcu.edu** or at **010.4766.8181** (Korea).

Thank you once again.

Sincerely,

HyeonUk Bak
Researcher