공공조직 구성원의 긍정심리자본이 창의적 행동에 미치는 영향력 연구: 혁신지향조직문화의 조절효과를 중심으로*

김 화 연 (성균관대학교 국정전문대학원 박사수료)
오 현 규 (국가공무원인재개발원 전문경력관)
이 숙 종† (성균관대학교 행정학과/ 국정전문대학원 교수)

초문

최근 공공조직 내부의 혁신과 공무원들의 창의적 행동에 대한 요구가 커지고 있다. 공공조직은 특성상 외부환경변화에 민감하지 않고, 조직 내 위계적, 집단주의적 문화가 강하기 때문에 개인 차원의 창의적 아이디어를 제시하거나 행동을 취하기가 어렵다. 하지만 급변하는 행정환경 속에서 공무원들의 창의적 행동은 효율적인 공공서비스 제공을 위해 매우 중요한 요소이다. 때문에 많은 연구에서는 공무원들이 업무를 수행함에 있어 보다 창의적 행동을 이끌어내기 위한 전략들을 제시하고 있다. 본 연구는 조직구성원들이 가지고 있는 하나의 자본으로서 긍정심리자본과 조직문화적 요소로서 혁신지향문화가 창의적 행동에 미치는 영향을 살펴보고자 하였다. 이에 책임운영기관에서 알하고 있는 공무원 1,064명을 대상으로 설문문서를 실시하였다. 분석결과 상호, 나이, 직위에 따라 공공조직 구성원들의 창의적 행동이 달라지는 것을 확인하였다. 또한, 자기효능감, 낙관주의는 창의적 행동에 긍정적인 영향을 미치는 반면, 회복탄력성은 창의적 행동에 부정적인 영향을 미치는 것으로 확인되었다. 선행 연구에 따르면, 혁신지향 조직문화는 자기효능감, 회복탄력성, 낙관주의가 창의적 행동에 미치는 영향력을 조절하였다. 본 연구는 이러한 연구결과를 바탕으로 공무원들의 창의적 행동을 이끌어내기 위해 인적자원개발 및 관리 차원에서 개인의 심리자본을 관리하고 조직의 문화적 요소를 함께 고려해야함을 제시하였다.

주요어: 긍정심리자본, 혁신지향문화, 창의적 행동

* 이 논문은 2016년 교육부와 한국연구재단의 지원을 받아 수행된 연구임 (NRF-2016S1A3A292432).
† 교신저자: 이숙종 (email: sjleepaik@gmail.com)
The Effects of Positive Psychological Capital on the Creative Behavior of Employees in Korean Public Organizations: Focusing on the Moderating Role of Innovation-Oriented Culture

Hwa Yeon Kim (Graduate School of Governance, Sungkyunkwan University)
Hyun Gyu Oh (National Human Resources Development Institute)
Sook Jong Lee† (Graduate School of Governance, Sungkyunkwan University)

< Abstract >

Despite much emphasis on the innovation within public organizations, Korean public officials tend not to get motivated to behave creatively and innovatively. Considering positive psychological capital is the key to motivate public officials, this paper examines its relationship with innovation-oriented culture and creative behavior of the Korean public sector employees. The results show that the subcomponents of positive psychological capital impact on creative behaviors in part and the influence is moderated according by innovation-oriented culture. This study provides a research implication that comprehensive access to both the psychological factors in an individual level and the cultural factors in an organizational level are needed in order to improve systematic national human resources development and management in public organizations in Korea where Confucian values are deeply embedded.

Key words: positive psychological capital, self-efficacy, hope, resilience, optimism, innovation-oriented culture, creative behavior

* This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2016S1A3A2924832).
† Corresponding author: Sook Jong Lee (email: sjleepaik@gmail.com)
I. Introduction

There have been many efforts to elicit the desirable work attitudes of public officials (Choi, 2004; Kim, 2012; Park, Rehg, & Lee, 2005). In particular, despite the introduction of various innovative systems, Korea’s public organizations still suffer from the maladies of authoritarianism, easy going attitude, and seniority (Joo, Park, & Oh, 2013; Kim, 2001; Kim & Moon, 2002; Park et al., 2005). These problems have constantly made an atmosphere that discourages creative behavior among public organization members. The creative behavior of the public organization members is a driving force of the governmental innovation at the national level, which is closely tied to the quality of nation convenience and living.

Given that now public officials’ attitudes and behavior have been subjects of public discontent, it is very important to study for guiding the creative behavior of public officials. What can drive out innovative and active roles from them? Recently, many scholars focus on the positive psychological capital as a factor that helps them to take progressive thoughts and actions, which improves their performances, by utilizing positive psychological strength that comes from the environment of members of the organization (Avey, Luthans, & Youssef, 2010; Avey et al., 2011; Larson & Luthans, 2006; Luthans et al., 2007; Shahnawaz & Jafri, 2009). Based on the idea, this study examines how an individual’s positive psychological capital affects public officials’ creative behavior, which become more significant today. In addition, it increases the need to examine synergies of the innovative organizational culture (e.g., a high acceptance of new ideas) which can induce individual creative behavior because the community and organization value have a profound effect on the attitudes and behavior of the members especially in South Korea, which has a tendency toward collectivism. Developing and managing culture of a particular society or organization have an important role as crucial challenge and mission that lead the behavior of its members positively (Barney, 1986; Kramer, 2011; O’Reilly, Chatman, & Caldwell, 1991). Especially, since the supportive climate for innovation can have a significant impact on individual members of the organization (Sarros, Cooper, & Santora, 2008; Stock, Six, & Zacharias, 2013), this study considered innovation-oriented culture as a major moderating variable.
This study can be expected to provide a huge meaning in the structural approaches and the consequential implications through these two following points: examining the implicit psychological state of individuals and the shared culture of organization at the same time, and trying to guide creative behavior in the Korean public sector, which is mainly reluctant for public officials to take any proactive actions.

In order to investigate the relationship between positive psychological capital, innovation-oriented culture, and creative behavior of the Korean Public sector, the study presented the following research questions. First, how does individual’s positive psychological capital affect public officers’ creative behavior? Second, how does innovation-oriented culture show interaction as a result of relationship between positive psychological capital and creative behavior? Based on the findings of the analysis, the research findings propose fruitful implications for research and management of public organizations and induce policy proposals based on the specificity of Korean public offices.

II. Review of Literature

1. Positive Psychological Capital

It has not been long since positive psychology appeared on research fields. Psychologist Martin Seligman started to study positive psychology and he especially mentioned three pillars of positive psychology in his book, which is (a) study of positive emotion, (b) study of the positive traits, (c) study of the positive institutions (Seligman, 2004). Drawn from positive psychology, positive psychological capital is regarded as another level of capitals, with economic capital, human capital, and social capital (Luthans, Luthans, & Luthans, 2004). Positive psychological capital can be understood as a positive psychological state of an organizational member (Luthans & Youssef, 2007), it makes individuals use positive psychological strengths to improve their performance by taking advantage of positive psychological strengths and behavior
According to Luthans and colleagues (2004), positive psychological capital can be divided into four types: (a) self-efficacy, (b) hope, (c) resilience, and (d) optimism. Many studies (e.g., Larson & Luthans, 2006; Luthans et al., 2007; Youssef & Luthans, 2007; Avey et al., 2010) have shown that each component or combined concept has positive and lasting effects on the task attitudes. Furthermore, it can influence the improvement of job performance. Specific details of these concepts are as follows.

First, self-efficacy is defined as “individual belief about his or her capabilities to execute a specific task within a given context” (Stajkovic & Luthans, 1979: 130). It is similar to confidence that one will be able to solve tasks and accomplish their goals with their own ability. Because self-efficacy has a considerable influence on behavior process, it is one of the most important factors in social cognitive theory (Benight & Bandura, 2004; Stajkovic & Luthans, 1979). In an organizational view, self-efficacy is deeply related to work motivation and performances such as personal creativity and organizational commitment (Bandura, 1977; Goldsmith et al., 1997; Jung et al., 2013; Lee et al., 2013; Luthans, Avey, & Patera, 2008).

Second, Snyder and colleagues (1991) formally defined hope as a cognitive set that is based on a reciprocally derived sense of successful (a) agency (energy for achieving goals) and (b) pathways (planning to achieve goals). Hope makes people be able to do something well in the future. Luthans and colleagues (2008) set the elements of hope as agency, pathways, and goals. Those three elements of hope play a role together for achieving goals or tasks which are set up harmoniously; whereas it is not ample and sufficient to operate with only one or two elements of them (Luthans et al., 2008; Snyder et al., 1991). Because these elements can be understood as positive motivational states, hope is expected to play an important role in the behavior of organizational members.

Third, resilience is defined as “individuals’ capacity for adapting successfully and functioning competently despite experiencing chronic stress or adversity, or following exposure to prolonged or severe trauma” (Cicchetti & Rogosch, 1997). Resilience has been also described as surviving capacity for the employees in organization (Doherty, Bank, & Vinnicombe, 1996). In terms of organization, Vogus and Sutcliffe (2007) make
an explanation for resilience as maintaining a positive adjustment even if there have been changing or challenging circumstances. Because resilience is the ability to react positively to the problem and stand up again to maintain a psychological balance in their organization, it is regarded as a useful concept in terms of human resources management in the organization.

Finally, optimism is directly linked to the concept of positive psychological capital comparing to the other elements of positive psychological capital (Luthans et al., 2004). Basically, optimism can be understood as positive thoughts and emotions believing that they will not be frustrated in the future, but will be better in the future (Avey et al., 2011; Luthans et al., 2004; Luthans et al., 2007). Optimism also can be explained as keeping relatively stable mind and attribution by focusing on positive and bright sides of given situations, such as achievement of goal (Luthans et al., 2008). Given that the employees who have optimistic mind see negative situations as temporary things and accept them as changeable things (Avey et al., 2011; Luthans et al., 2007; Scheier, Carver, & Bridges, 2001; Seligman, 2011), it makes it possible for members of the organization to act as a positive force to positively change the circumstances in the organization.

Although it is not possible to conclude that these four components entirely represent all the aspects of a positive psychological capital, many studies on this subject have been conducted to synthetically examine those four concepts previously mentioned. Most studies (e.g., Avey et al., 2010; Luthans et al., 2007; Luthans et al., 2008) have focused on identifying the relationship between the individual performance and working attitude, in accordance with such four concepts. Especially, it is highly expected that a positive psychological capital will produce significant meaning and importance, even in the field of human resource managements for the public domain, as it is not an innate talent being acquired through the status of “trait-like”, rather can be changed by learning or training through the status of “state-like” (Luthans et al., 2007). With taking such discussions into account, this study will explore a positive psychological capital, defined as the positive and developmental state of an individual, specifically focusing on composed characteristics including self-efficacy, hope, resilience and optimism.
2. Creative Behavior

The concept of creativity has been dealt with in various sectors (Kletke et al., 2001; Sadler-Smith, 2015). Especially, creativity has been encouraged to positively contribute to the survival and competitiveness of the organization in a rapidly changing modern society (Amabile, 1996). Creative behavior is focused on the resulting and behavioral aspect of creativity. Shalley (1991) viewed creative behavior as an action that develops appropriate and new solutions about work-related issues within an organization.

On the other hand, some studies consider creative behavior as a type of innovative behavior. Because those two concepts share similarities on producing new ideas for their organizational performance (Woodman, Sawyer, & Griffin, 1993; Yuan & Woodman, 2010). However, Joo and colleagues (2013) explained that the concepts of creativity and innovation are not interchangeable, though they are overlapping. Innovation is primarily about trying to apply new ideas or processes to an organization at an organizational level, but, on the other hand, creativity is the way individuals produce new ideas. Therefore, she explains that creativity is a necessary condition of driving force for innovation but not a sufficient condition for innovation. For this reason, a previous study also has been interested in how to use and apply creative ideas to make an important impact on the innovation in the organizations (Amabile, 1988). This study considers creative behavior as personal efforts to think about new ideas or apply new work methods while performing work.

A creative behavior of the organizational members actively tries to improve the situation and crisis, along with a strong responsibility to create new ideas and processes, which completes crucial importance in the perspective of managing organization (Oldham & Cummings, 1996; Woodman et al., 1993). Such creative behavior are not only expected to effectively cope with various environmental situations, but also highlighted as the requisite to capture competitive advantages.

More importantly, it cannot be more crucial for the public organizations to pursue a creative behavior, where the organization has a responsibility to cope with various complex pressures that require publicity and efficiency at the same time. A creative
behavior has been selected as the core result variable of this study, as it is a key concept that determines the innovation of domestic public organizations at this point of time, where the problems in the roles and attitudes of the members of public organization continue to emerge with emphasis on needs to make reforms and innovations for the human resource managements.

3. Innovation-Oriented Culture

Innovation-oriented culture is based on the efforts to accepting new ideas for the organizational innovation (Nieboer & Strating, 2012; Wynen et al., 2014). Innovation-oriented culture is the concept of organizational culture encompassed risk taking and creativity (Nieboer & Strating, 2012). When the organization can provide the active and innovative culture, it helps worker create new ideas and accept various challenging environments for their organization (Ferlie & Shortwell, 2001).

Innovative-oriented culture can be explained as multiple dimensions (Dobhi, 2008; Laegreid, Roness, & Verhoest, 2011). For example, Dobhi (2008) divided innovative culture into four dimensions: intention for innovation, infrastructure for innovation, market orientation for innovation, and implementation context for innovation. Laegreid (2011) also divided into four dimensions, which are different from Dobhi’s, structural-instrumental features, cultural-institutional features, task-related features, and environmental-institutional features. Although the two scholars’ components are different based on particular perspective, they have a lot in common. Innovative-oriented culture is closely associated with a variety of environmental factors surrounding individuals and organizations, and is a key organizational environmental concept towards organizational changes.

Many scholars have been commonly mentioning that the Confucian values such as collectivism and hierarchical culture prevailing in Korean society are what prevent the proactive attitudes of the organizational members in making positive contributions and creating new ideas (Bochner, 1994; Lee et al., 2013; Morris & Peng, 1994; Oh et al., 2018). In fact, the members of public organizations in Korea are apparently reluctant to make new attempts or to behave creatively due to the customs and practices derived
from Confucian values. For example, in Korea, when junior officers have different ideas from senior officers, they tend not to express their own opinions because juniors are afraid of being considered as rude. In addition, as members of public organizations are less autonomous in their works and tend to follow hierarchical culture, it is difficult for subordinates to suggest their new ideas and do noticeable creative behaviors because of strong collectivist culture (Lee et al., 2013; Oh et al., 2018). Hence it is significantly worthwhile to explore the synergy effects of innovative organizational cultures, to carry out a creative behavior, especially at this time period of having emphasis on the reforms and innovations for the organizational members.

4. Positive Psychological Capital, Innovative-Oriented Culture, and Creative Behavior

As research trend of positive psychology is combined with organizational management field, there are movements in the organizational management field that try to understand attitudes and behavior of organizational members from the new perspective (Seligman, 2004). An individual who is in positive psychological condition sets challenging goals, endures hardships and makes efforts to achieve goals, properly reacts when facing difficulties and maintains motive power, which enables them to have strong motivation through positive thinking and interpretation (Luthans et al., 2007; Luthans & Youssef, 2007; Seligman, 2002; Youssef & Luthans, 2007). As a result, they contribute to improvement of organizational performance extensively (Avey et al., 2011; Luthans et al., 2005). Especially, Luthans and colleagues (2005) argued that a person who has high level of positive psychological capital implements their works confidently and voluntarily, increases motivation through pleasure and sense of accomplishment from the work itself, and produces high performance through concentration on work. In the empirical study of Youssef and Luthans (2007), it is also revealed that positive psychological capital has a positive effect on job satisfaction, work happiness, and organizational commitment.

Similar results can be shown in recent studies conducted in Korea. Ahn and Ahn (2015) examined the influence of positive psychological capital on job competence and
job performance for local government officials. As a result, they found that the higher the positive psychological capital of public officials had, the more job competence and job performance were improved. In addition, the study by Jung (2017), which conducted empirical analysis on public officials, found that positive psychological capital promoted innovative behavior related to creative behavior and the study by Choi (2018) also showed a positive relationship between positive psychological capital and innovative behavior. Moreover, Lee et al (2013) found that positive psychological capital had a positive relationship with individual creativity.

Particularly, ‘self-efficacy’ is considered as a crucial factor that has huge influence to improvement of performance because it is an important psychological resource which evaluates the possibility of achieving goal through certain behavior (Bandura, 1997; Bandura & Locke, 2003; Stajkovic & Luthans, 1998). ‘Hope’ also has been suggested as an inexpressible factor of duty result and active attitude for organization members as showing decisive power toward the direction of goal with taking initiative and firm will (Peterson & Luthans, 2003; Snyder et al., 2000; Youssef & Luthans, 2007). ‘Resilience’ is also can bring positive results under the diverse situations through the energy which is helpful in restoring quick from psychological shock which organization members experience (Luthans, Vogelgesang, & Lester, 2006; Masten, 2001; Staudinger, Marsiske, & Baltes, 1993). ‘Optimism’ is addressed due to its role to promote the improvement of performance as providing more positive motivation to individuals of organization (Luthans, 2002; Seligman, 2002; Youssef & Luthans, 2007).

According to the Broaden-and-Build Theory, positive emotions can make individuals’ thinking more flexible, allowing them to explore new things and accumulate intellectual resources. In other words, positive emotions determine an individual’s behavior and the resulting behavior may be different depending on the emotions they feel even though they have the same ability. In particular, these positive emotions are told to have long-lasting effects (Fredrickson, 1998, 2001). Isen (1987) also showed that students with positive emotions have high problem-solving abilities with creativity. The positive psychological capital covered in this study accounts for positive emotions with which people are confident in the performance of their work, hopeful and positive in difficult situations and not frustrated with failure. Thus, if an individual has a high level of
positive psychological capital, he or she will be more likely to explore new ideas, think creatively, and take risks. Based on these discussion, we established the following hypothesis.

**Hypothesis 1:** Self-efficacy will positively impact on creative behavior.
**Hypothesis 2:** Hope will positively impact on creative behavior.
**Hypothesis 3:** Resilience will positively impact on creative behavior.
**Hypothesis 4:** Optimism will positively impact on creative behavior.

Given that the attitudes and behavior of an organization's members is varied by the ongoing interactions between individuals and environments, when identifying the behavior of members of the organization, the organization's context consideration is essential. Luthans (2002) mentioned that positive psychological capital can be different according to the environment or situational context with which individual faces and the level of positive psychological capital also would be different depending on the diverse intervention at the organizational level. Empirical study of Avey, Wernsing, and Luthans (2008) found that positive psychological capital of organizational members could be influenced by the attitude and behavior of other members regarding to the changes of the organization. Based on these researches this study aims to reveal that cultural perspective of organization has the possibility to control the influence of positive psychological capital. As it can be found in the perspective of social learning theory (Bandura & Walters, 1977), we can expect 'the moderating effect' at the level of organizational culture which this study focuses on through the argument that the psychological character of individual is learnt from social process, especially personal relations. According to social learning theory, human behavior, personality, and characteristics are formed within the interaction with other people. Therefore, rewarded behavior within an organization is encouraged and non-rewarded behavior is reduced. In addition, the theory explains that members in an organization modify their behavior and values by modeling through observational learning and imitation (Bandura, 1977; Frayne & Latham, 1987; Latham & Saari, 1979). In the organizational culture, when innovative and creative thinking are emphasized and encouraged, employees with strong positive
psychological capital will accrue experience of recognition and encouragement for innovative behavior and they will try to apply more proactive and active ideas to the workplace (Bandura, 1997; Bandura et al., 2003). Indirect experience through interaction with others within the organization will maximize the effectiveness of positive psychology (Bandura, 1982), and the effects of that can be different by verbal or non-verbal influence based on shared emotions in the organization (Bandura et al., 2003).

More specifically, individuals with a high level of self-efficacy have high confidence in their work and their ability. Thus, when an organizational culture is oriented toward innovation, they will be able to express their own ideas actively and show creative ways of working through modeling as explained in SLT. In addition, in a climate that encourages organizations to take risks and challenge new things will help people to interact with the resilience of individuals and present new ideas without fearing failure. Finally, an innovation-oriented culture regards the responsiveness of members to the external environment as an important value and the hope and optimism of an individual for the future will encourage creative behavior when interacting with an innovation-oriented culture. The study of Cha (2017) explains that organizational culture has a moderating effect when positive psychological capital changes individual behavior. The study by Kim and Ahn (2018) also showed moderating effect based on organizational support regarding the influence of positive psychological capital on organizational commitment. In other words, depending on what culture an organization has and what kind of support it provides, individual behavior in an organization may vary. Based on these discussion, we established the following hypothesis.

**Hypothesis 5:** Innovation-oriented culture will have moderating effects between self-efficacy and creative behavior.

**Hypothesis 6:** Innovation-oriented culture will have moderating effects between hope and creative behavior.

**Hypothesis 7:** Innovation-oriented culture will have moderating effects between resilience and creative behavior.

**Hypothesis 8:** Innovation-oriented culture will have moderating effects between optimism and creative behavior.
III. Research Methodology

1. Research Model

This study examined the effects of positive psychological capital, an individual’s psychological competence, on creative behavior, and the moderating effects of innovation-oriented culture. For this purpose, the study designated a research model like Figure 1 upon the basis of both theoretical discussion and review of previous research relating to positive psychological capital, creative behavior, and innovation-oriented culture. First, self-efficacy, hope, resilience, and optimism, which are the sub-components of positive psychological capital, were chosen as the independent variables. In addition, creative behavior were chosen as dependent variables, and innovation-oriented culture was chosen as the moderating variable. Lastly, gender, age, tenure, and ranking were selected as the control variables.

![Figure 1] Research Model
2. Data Collection and Sample

In order to examine the relationship between positive psychological capital, creative behavior, and innovation-oriented culture, this study conducted a survey on executive agency officials. Executive agency is a public organization, but it has high functional uniqueness and expertise with research institute, arts, science, medical, research, etc. Therefore, it institutionally guarantees autonomy for the administration (personnel, budget, etc.) and it can be said that the creative behavior of the members is very important comparing to general public institutions.

The survey was held for one month during May of 2016, and following the results, the responses of 1,064 were able to be utilized in the analysis. The specific characteristics of respondents were as shown in Table 1. With the respondents in this study, male employees were more than female employees, and the most respondents were employees in their 40s and 50s. In addition, 56.8% of the employees had worked for more than 15 years, and the Rank 7 and Rank 6 officials accounted for the largest percentage.

1) Executive agency, the subject of this survey, is managed in a structure where there is more autonomy guaranteed in regards to budget, personnel, and maintenance rather than in administrative enforcement, and responsibility is taken for accomplishments. Following, it is a public organization in which innovation is more heavily emphasized than in pre-existing public organizations.

2) Executive agency includes education and training type, facility management type, culture type, research type, medical type, and research quality management type. This study included all types of institutions in the sample, asked human resources officers of 48 executive agencies to complete survey. We distributed and retrieved questionnaires from 15 possible agencies through mail and e-mail. For the sample collection, we asked for the representative of each organization to take an allocation sample considering the size of the organization. The institutions participating in the survey were National institute for international education (Ministry of Education), The National Institute of Fisheries Science (Ministry of Oceans and Fisheries), National Disaster Management Research Institute (Ministry of the Interior and Safety), National Rehabilitation Center (Ministry of Health welfare) National Statistical Office, The National Audio Visual Information Service (Ministry of Culture, Sports and Tourism).
The Effects of Positive Psychological Capital on the Creative Behavior of Employees in Korean Public Organizations

3. Measurement of the Main Variables

This study established resources that would allow for practical analysis of the relationship between each variable, and arranged each variable as shown in Table 2. Regarding positive psychological capital, the independent variable, a total of 4 questions about self-efficacy, 4 questions about hope, and 3 questions each for resilience and optimism were utilized. In addition, 4 questions regarding creative behavior, and 4 questions relating to innovation-oriented culture were utilized for analysis.  

3) Some items were extracted, translated in Korean and modified to fit public organizations based on independent variables of Luthans and colleagues (2007), dependent variables of Zhou and George (2001) and Scott and Bruce (1994), moderating variable of Quinn and McGrath (1985) and innovation culture of Cameron and Quinn (1999). It also went through the process of re-translating into English. In addition, all variables were measured on 7 Likert scale.
### Measurement Items and Questionnaire Items

<table>
<thead>
<tr>
<th>Measurement Items</th>
<th>Questionnaire Items</th>
</tr>
</thead>
</table>
| **Self-Efficacy** | • I am confident in analyzing long-term issues in order to find solutions.  
• I am confident in setting a goal within my area of work.  
• I am confident in meeting outside people for the purpose of resolving issues.  
• I am confident in providing information to a large number of fellow workers. |
| **Hope**         | • When facing a difficulty at work, I am able to think of various methods to overcome it.  
• I am currently working passionately in order to achieve my work goal.  
• I believe that there are multiple solutions to any given issue.  
• I believe that I am currently performing my work fairly successfully. |
| **Resilience**   | • I use a variety of methods to overcome difficulties at work.  
• I am good at overcoming the stress that I experience within my working environment.  
• I am able to successfully overcome times of difficulty at work, because I have experienced hardships before. |
| **Optimism**     | • When a problem arises related to work, I often give up thinking that it will not work out well(R).  
• I always strive to see the positive side of my tasks.  
• I approach tasks with the belief that when there are bad days, there will also be good days. |
| **Behavior**     | • I develop new ideas in order to solve difficult problems related to work.  
• I make efforts to find new techniques, tools, and solutions that may be used when performing tasks.  
• I use systematic methods to apply innovative ideas in the work place.  
• I make efforts to earn the support of surrounding people regarding innovative issues. |
| **Innovation-Oriented Culture** | • Our organization respects innovative ideas and creative thinking methods.  
• Our organization willingly takes risks to explore and try new solutions.  
• In order to respond to the rapidly changing administrative environment, our organization emphasizes organizational change and administrative innovation.  
• Our organization actively embraces the creative ideas of group members. |
IV. Analyses and Findings

1. Validity and Reliability Analysis

Prior to analyzing the relationship of the effects among the variables, we conducted confirmatory factor analysis and reliability analysis in order to confirm the validity and reliability of the measurement tool that is used in this study. The results of the confirmatory factor analysis showed that all latent variables used in this study are significantly and positively explained by each observed variable. Not only that, the model fit is within statistically acceptable levels. These indices suggest that the model of positive psychological capital, innovation-oriented culture, and creative behavior in Korea public organizations is a good fit to the data. In addition, the reliability analysis was initiated by measuring the coefficient of Cronbach $\alpha$ value. Generally, the Cronbach $\alpha$ value should be great than 0.7 to ensure the reliability (George & Mallery, 2003). In this study, all of Cronbach $\alpha$ values are more than 0.8.

The results of confirmatory factor analysis and reliability analysis can be found in the Table 3, and then we could confirm it consist of variables that have validity and reliability.
<Table 3> Validity and Reliability Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>No.</th>
<th>Factor Loading</th>
<th>Overall fit indices</th>
<th>Cronbach α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Efficacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>.784</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2</td>
<td>.855</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q3</td>
<td>.829</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q4</td>
<td>.776</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hope</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q5</td>
<td>.827</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q6</td>
<td>.837</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q7</td>
<td>.847</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q8</td>
<td>.802</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resilience</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q9</td>
<td>.811</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10</td>
<td>.743</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q11</td>
<td>.832</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optimism</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q12</td>
<td>.774</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q13</td>
<td>.811</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q14</td>
<td>.660</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q15</td>
<td>.892</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q16</td>
<td>.895</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q17</td>
<td>.870</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q18</td>
<td>.799</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation-Oriented</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Culture</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q19</td>
<td>.829</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q20</td>
<td>.822</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q21</td>
<td>.846</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q22</td>
<td>.841</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Correlation Analysis

In order to confirm the correlations among the variables, Pearson's correlation analysis was conducted. The result of correlation analysis is shown in the Table 4. The result depicts that significant positive correlation was found between most variables used in this study.
The Effects of Positive Psychological Capital on the Creative Behavior of Employees in Korean Public Organizations

3. Test of the Hierarchical Multiple Regression Model

This study examines how a positive psychological capital affects employee's creative behavior as a psychological capacity and was conducted to analysis how important an innovation-oriented organization culture is. To use the hierarchical multiple regression model, the gender, position and age were inputted as control variables in the first phase. In the next step, the sub-variables of positive psychological capital that were used as independent variables; self-efficacy, hope, resilience, and optimism were added to it. In the third step, an innovation-oriented culture was added and in the last stage, we examined the moderating effect on mutual interaction of innovation-oriented culture and positive psychological capital. If multiple variables are required to be entered, multi-collinearity between the variables that affect the dependent variables can occur. Thus, in order to solve this problem in advance, the study uses the mean centering value in hierarchical multiple regression.

The summary of the results of the analysis is shown as below, with Table 5. Firstly, in the control variables, women and older employees are shown as a negative impact on creative behavior. On the other hands, higher position shows a positive impact on it.
Next, the hypotheses 1, 2, and 4 were adopted since it is identified that the sub-components of positive psychological capital, self-efficacy, hope, and optimism have a positive impact on creative behavior. However, in the case of resilience, since it is found to have a statistically significant negative impact on the creative behavior, a hypothesis was rejected. In sequence, it has been found that an innovation-oriented culture has a positive impact on creative behavior. Lastly, there were significant moderating effects of innovation-oriented culture between the three sub-components of positive psychological capital and creative behavior. To be specific, this study showed that the positive influence of self-efficacy and optimism on creative behavior is weakened by innovation-oriented cultures. On the other hand, the study found that the negative influence of resilience on creative behavior is turned into a positive influence through innovation-oriented culture. Thus, hypotheses 5, 7, 8 were adopted.

<Table 5> Results of Hierarchical Multiple Regression Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Creative Behavior</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>t</td>
<td>β</td>
<td>t</td>
<td>β</td>
</tr>
<tr>
<td>Gender</td>
<td>-.115***</td>
<td>-.559</td>
<td>-.082***</td>
<td>-.366</td>
<td>-.069**</td>
</tr>
<tr>
<td>Age</td>
<td>-0.031</td>
<td>-0.582</td>
<td>-0.096**</td>
<td>-.2319</td>
<td>-.086**</td>
</tr>
<tr>
<td>Tenure</td>
<td>-.018</td>
<td>-.368</td>
<td>0.051</td>
<td>1.355</td>
<td>0.000</td>
</tr>
<tr>
<td>Position</td>
<td>0.206***</td>
<td>5.551</td>
<td>0.097</td>
<td>3.336</td>
<td>0.107***</td>
</tr>
<tr>
<td>Self-Efficacy (1)</td>
<td>.325</td>
<td>8.515</td>
<td>.309***</td>
<td>8.758</td>
<td>.320***</td>
</tr>
<tr>
<td>Hope (2)</td>
<td>.293</td>
<td>6.648</td>
<td>.254***</td>
<td>6.224</td>
<td>.238***</td>
</tr>
<tr>
<td>Resilience (3)</td>
<td>-0.068*</td>
<td>-1.858</td>
<td>-0.090**</td>
<td>-2.658</td>
<td>-0.077***</td>
</tr>
<tr>
<td>Optimism (4)</td>
<td>0.138</td>
<td>3.807</td>
<td>0.082**</td>
<td>2.419</td>
<td>.074**</td>
</tr>
<tr>
<td>Innovation-Oriented Culture (★)</td>
<td>0.317***</td>
<td>13.252</td>
<td>0.327***</td>
<td>13.552</td>
<td></td>
</tr>
<tr>
<td>(1) X (★)</td>
<td></td>
<td></td>
<td>-.091**</td>
<td>2.278</td>
<td></td>
</tr>
<tr>
<td>(2) X (★)</td>
<td></td>
<td></td>
<td>0.08</td>
<td>0.385</td>
<td></td>
</tr>
<tr>
<td>(3) X (★)</td>
<td></td>
<td></td>
<td>0.092***</td>
<td>3.238</td>
<td></td>
</tr>
<tr>
<td>(4) X (★)</td>
<td></td>
<td></td>
<td>-0.069*</td>
<td>1.858</td>
<td></td>
</tr>
<tr>
<td>(Adjusted)</td>
<td>.053 (.050)</td>
<td>.437 (.432)</td>
<td>.520 (.516)</td>
<td>.527 (.521)</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05, **p < .01, ***p < .001
The Effects of Positive Psychological Capital on the Creative Behavior of Employees in Korean Public Organizations

[Figure 2] Moderating Effect Graph
In hierarchical regression analysis, the impact of three interactive term variables was statistically significant. Statistical significance of final model 4 has been confirmed. Thus, innovative-oriented culture has been shown to moderate the impact of positive psychology capital on creative behavior. Figure 2 clearly shows the influence of moderating variables. These graphs showed that while high innovation-oriented culture weaken the positive influence of self-efficiency and optimism, high innovation-oriented culture turn negative effects into positive ones in the relationship between resilience and creative behavior.

<Table 6> The Result of Hypothesis Test

<table>
<thead>
<tr>
<th>No</th>
<th>Hypothesis</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H-1</td>
<td>Self-efficacy will positively impact on creative behavior.</td>
<td>○</td>
</tr>
<tr>
<td>H-2</td>
<td>Hope will positively impact on creative behavior.</td>
<td></td>
</tr>
<tr>
<td>H-3</td>
<td>Resilience will positively impact on creative behavior.</td>
<td>×</td>
</tr>
<tr>
<td>H-4</td>
<td>Optimism will positively impact on creative behavior.</td>
<td></td>
</tr>
<tr>
<td>H-5</td>
<td>Innovation-oriented culture will have moderating effects between self-efficacy and creative behavior.</td>
<td>○</td>
</tr>
<tr>
<td>H-6</td>
<td>Innovation-oriented culture will have moderating effects between hope and creative behavior.</td>
<td>×</td>
</tr>
<tr>
<td>H-7</td>
<td>Innovation-oriented culture will have moderating effects between resilience and creative behavior.</td>
<td>○</td>
</tr>
<tr>
<td>H-8</td>
<td>Innovation-oriented culture will have moderating effects between optimism and creative behavior.</td>
<td>○</td>
</tr>
</tbody>
</table>

Table 6 shows the results of the hypothesis verification confirmed by hierarchical multiple regression analysis. Six of the eight hypotheses were accepted and two were rejected.

V. Discussion

This study conducted statistical analyses to verify the eight hypotheses of the study, and the moderating effect graphs were specifically reviewed to identify the interaction effects between variables shown in the statistical analyses. The results of the empirical
analysis of this study are summarized as follows.

First, by using the demographic variables as the control variable, gender, age, and position turned out to be a significant factor that impact a person’s creative behavior. It has been confirmed that when the members of an organization are men, younger, and have higher positions, they try to improve the situation and any crisis, along with a strong responsibility to create new ideas and processes within their organizations.

Second, self-efficacy, hope, and optimism, which are sub-components of positive psychological capital, have shown to give positive influences in creative behavior. However, resilience has shown to give negative influence in creative behavior. As shown in previous studies (Ahn & Ahn, 2015; Choi, 2018; Jung, 2017; Lee et al., 2013), the positive psychological capital elements of individuals can be an important factor in their voluntary, active, and creative behavior.

Third, innovation-oriented culture appeared to give positive influence in creative behavior. The more an organization emphasizes innovation and encourages new challenge and change, members of the public organization appear to express new ideas more actively and strive harder to apply creative methods.

Fourth, innovation-oriented culture has been found to moderate the impact of self-efficacy, resilience and optimism on creative behavior. Innovation-oriented culture weakens the positive influence of self-efficacy and optimism, and strengthens the negative influence on resilience. Some studies (Cha, 2017; Kim & Ahn, 2018) have already shown that organizational culture or organizational support factors play a moderating role in leading individuals’ behavior within an organization, cultural elements for organizational innovation have been found to have significant moderating effects in this study.

VI. Conclusion

1. Implications and Recommendations
This study was conducted to empirically investigate how the positive psychological capital regarding work affects the creative behavior of public employees and the moderating effect of the innovation-oriented culture between the variables. This research got the derivation of the hypotheses based on the review of the related previous researches and theoretical discussions. In order to test this hypothesis, we have conducted exploratory factor analysis, reliability analysis, correlation analysis, and hierarchical multiple regression analysis. When presenting some implications and recommendations on the basis of empirical results of this study are as follows.

First, the regression analysis result between the control variable and creative behavior shows that there was a bias in the group showing creative behavior. The reason men show more creative behavior is that men take up so many key positions. Not only that, but also the situation reveals the reality of how majority of autonomy and discretionary authority are heavily concentrated in high ranking members. Moreover, we often see younger members of the organization expressing themselves actively compared to the older generation who more rigid. They are very flexible compared to the older generation as they adjust very fast to rapidly changing technologies and apply them to their work. Thus, they have advantages in proposing new ideas and showing active attitudes in Korea’s public organization.

In order to bring out active and creative attitudes of public employees, it requires us to overcome phenomenon that appears from thoughts of valuing a man’s authority and a deep-rooted seniority culture. In particular, through strengthening the position classification, public organization members must overcome working passively simply to finish a given task. There is an urgent need for a professional development in order to provide an administrative environment for members to exercise administration more actively and to realize the expertise knowledge of the job and the value of public service.

Secondly, it was confirmed that the factors of public employees’ positive psychologies are considered to be the core precedence factor when it comes to attitude, behavior, and performance of tasks in an organization (Luthans et al., 2007; Luthans et al., 2008). Self-efficacy, hope, and optimism help members have positive feelings regarding their tasks by giving positive motivation for them to solve a problem by themselves. On the
other hand, because resilience can also be seen as a capability that restores promptly from adversity of failure, it can be far from creating new ideas and embracing innovation in public sector context.

In order for Korea to overcome various crises that we face today and to take one step closer to becoming the leading developed country, it is necessary to adequately develop and manage a positive psychological capital in order for public organizations to thrive. Especially, in order to increase enthusiastic and active behavior toward an individual's given task, a strategic personnel administration system that is focused on an individual's psychological factors and an assessment must be conducted at the same time.

Third, the result showed that an atmosphere of an organization and the attention of members play a vital role in manifesting a creative behavior from an individual. These findings have shown that organizational culture plays a role in linking members' perceptions, attitudes, and behaviors. In particular, it can be understood that innovation-oriented culture provides sufficient meaning and motivation for creative behavior in that it provides criteria for judgment of behavior to all members.

As a result, much consideration is needed regarding various programs to encourage the innovation-oriented culture, and an organization-wide effort must be made to be equipped with atmosphere that values challenges. Not only that, but also this must be supported with activities that can instill a better understanding of the public service culture through active support from the central government to improve innovation-oriented culture and promotion of best practices.

Fourth, the results of the verification of the moderating effects of the innovation-oriented culture showed that the more innovation-oriented culture is greatly emphasized in an organization, it weakens the impact of self-efficacy and optimism in a creative behavior. This result shows that in an organization with high innovation-oriented culture where members are already strongly showing creative behavior, psychological state of an individual is not significantly affected. This is because an organizational culture has a huge influence in an individual, especially in Korea's society where decency and relationships are highly valued. So, it is safe to say that a culture can directly manage the influence of an individual’s psychological factors. Interestingly, innovation-oriented culture can be seen to reverse the negative influence
of resilience. Although the moderating effects of innovation-oriented culture have different directions, these results also show a strong influence of organizational culture in strengthening individual’s creative behavior.

Considering the fact that Korea’s public organization’s innovation-oriented culture has been limiting behavior and attitude of members (Barney, 1986; Kramer, 2011; O’Reilly et al., 1991), organizational culture must improve its closed-minded and apathetic culture and be transformed into an organizational culture that encourages expressing clear conviction and passion to make contribution. Above all things, public organizations need to establish a culture in which small opinions of members are respected and to provide sufficient institutional support to ensure that authority is granted as necessary.

This research examined how an individual’s psychological attitude affects public employees’ behavior, and what kind of roles the organizational culture is taking in these relationships. In particular, this research addressed the real concerns of national human resources development and management through discussions regarding creative behavior of public organization’s members and exploring its precedence factors. In other words, in public organizations in Korea where Confucian values are deeply embedded, this research was conducted in order to induce an individual’s enthusiastic and active creative behavior. In addition, the results showed that it is necessary to pay attention to its analyzation on both the psychological factors in an individual level as well as the cultural factors in an organizational level. Furthermore, the strengths of this study can be the fact that it analyzed systematic relationship between an individual and an organization through the effects of their mutual interaction.

2. Limitations and Future Research

Although this study has shown various theoretical and practical implications, it has limitations. First, this research only relies on quantitative studies. Because this study deals with employees’ perceptions, future research can lead to more meaningful implications by using qualitative research such as interviews. Second, this research failed to consider various factors that can directly influence the members of an organizations creative behavior. Third, all independent variables, controlled variables, and
dependent variables of this research were collected at the same time. Lastly, the results of this study were based on the survey limited to specific institutions. In order to overcome these limitations in the future studies, it is necessary to supplement qualitative research, consider various factors, and the application of analysis according to the flow of time. More efforts are needed to understand the specific psychological structure of the members of the public organization. Further research on various types of organizations with diverse characteristics needs to be examined together. In addition, further research also needs to be undertaken on analytical methods such as HLM analysis for sophisticated research results.
References


Kim, P. S. (2001). Utilising 360 degree feedback in the public sector: A case study of


Personnel Psychology, 60(3), 541–572.
Peterson, S. J., & Luthans, F. (2003). The positive impact and development of hopeful


MA. McGraw-Hill.

© Received: 2018.11.15 Revised: 2018.12.18 Accepted: 2018.12.22