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Research Article

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The Analysis of Impacts on Innovation Management: The Case of Mongolia

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Abstract

Our study's objective is to find out which factors to achieve as personal skills, cooperation, professional knowledge, rewards on innovation management in Mongolian public sector. There were 649 public servants who work in public sector participated in our study.

We analyzed for using SMART PLS 3.0 software to attempted to prove analyze metrological, correlation, multi-factor, and path analysis. We tried to prove how the variables affect as personal skills, cooperation, professional knowledge, rewards on innovation management in our study.

Keywords: Personal Skills, Cooperation, Professional Knowledge, Rewards, Innovation Management

1. Introduction

An innovation represents an idea or an object that is perceived to be new [1]. According to this theory, the diffusion rate is affected by a relative advantage of an innovation, complexity, compatibility, trial-ability and observability. Adoption of new technology at an organizational level, in this case Law Enforcement Agency is subject to a variety of factors. Organizational adoption occurs in two stages: initiation and completion [2].

In the initiation stage, the organization becomes aware of the innovation, develops an attitude about the innovation, and evaluates the innovation. In the completion stage, the organization decides to acquire the innovation and use it. The innovation process is a success when the innovation is accepted and integrated into the organization [1].

2. Theritical Framework on Innovation Management

Innovation can begin as a novel concept or a fresh perspective on addressing a particular need or challenge. Innovation is the idea that organizations should not only rely on internal resources for innovation but should also collaborate with external partners, including customers, suppliers, and other stakeholders, to access a broader pool of ideas and expertise. Innovation is the ability to see change as an opportunity, not a threat, and to leverage frameworks that guide our creativity, collaboration, and strategic focus.

Mekhala Roy (2019) defined that Innovation management involves the process of managing an organization's innovation procedure, starting at the initial stage of ideation, to its final stage of successful implementation [3]. It encompasses the decisions, activities and practices of devising and implementing an innovation strategyIndividuals with strong adaptability, critical thinking, and professional skills are more likely to success in innovation management [3].

Innovation management methods: Broadly speaking, innovation can be incremental, breakthrough or disruptive as below:
Incremental: In an era where businesses are required to constantly reinvent themselves, incremental innovation helps them thrive by constantly improving current products, services, processes or methods.
Breakthrough: A breakthrough innovation refers to technological advancements that can boost the level of a product or service, within an existing category, ahead of its competitors.

Disruptive: Any ideas that are capable of radically changing the market behavior after being implemented are disruptive innovations.

In many public services organizations there has been imaginative thinking about new style services for the public and innovative ways of helping to produce solutions to community problems, both of which could be the basis of a new civic pride. They will probably require a new type of public management, capable of using new tools and techniques [4].

Public services have been challenged to respond innovatively to change. Innovation means in this context facing up to dif®cult issues, and the public's pressures for change. It means ensuring that changes are managed constructively in the interests of better services and solutions to community problem [5].

2.1. Cooperation and Collaboration on Innovation Management

Atallah, G (2002), the innovation success and overall performance are also influenced by the nature of the cooperation partners [6]. Cooperation and collaboration are essential components, as innovation often thrives in diverse and collaborative teams. Innovation is clear that partnerships and cooperation have mattered [5].

Pedro de Faria, Francisco Lima (2010) analysed the importance of cooperation partners for the development of innovation activities. They contributed to the literature on cooperation in innovation activities that seeks to identify the characteristics differentiating cooperative from non-cooperative firms by proposing a different approach [7].

The public services are learning how to build partnerships between managers and professionals. The professionals are given opportunities to apply their expertise through in¯uence rather than control, which is an inluence that is also personally rewarding to professionals. The public services are creating improvements through co-learning in innovation management [5]. According to the literature review, we were hypothesize as below:
H-1. Cooperation and collaboration will have positive impact on innovation management.

2.2. Rewards and Promotion on Innovation Management

Recognition of innovative contributions through rewards and promotions serves as a powerful incentive, motivating individuals to consistently contribute to the organization's success in the realm of innovation management.

The role of rewards in promoting innovation has received considerable attention in both theory and practice. The fact that rewards have a positive impact on promoting innovation is well established. However, this relationship is complex since different types of rewards are suited for various kinds and stages of innovation [8].

Throughout the past and current decades, a plethora of research enlightens the relationship between rewards and innovation. Rewards are known to drive innovation. Two types of rewards are primarily argued to impact innovation [9].

These include extrinsic rewards consisting of financial benefits and intrinsic rewards expressed through praise and recognition. Even though both these rewarding practices are often used interchangeably, they are different procedures with different benefits. Each type of reward can affect the success of innovative programs within organizations and their ability to influence innovation remains a contentious issue. On the other hand, the literature continues to debate on the usefulness of various rewards in promoting innovation in firms and question the impact of rewards on creativity and innovation [10].

There is existing literature which adequately explains the role of rewards and associated risks in managing and improving innovation portfolios of organizations. There were three decades of studies that have yet to mature into a unified theory and practice on the impact of rewards on creativity and innovation [11]. According to the literature review, we were hypothesize as below:
H-2. Rewards and promotion will have positive impact on innovation management.

2.3. Professional Knowledge on Innovation Management

Knowledge management is a growing important concept in management science. The following definition has been formulated based on the understanding of knowledge management from the majority of researchers. Karl Sveiby, Leif Edvinsson, Debra Amidon, Hubert Saint-Onge, and Verna Allee all made a strong point that knowledge management had up until now been led by practitioners who were problem-solving by the seat of their pants and that it was now time to focus on transforming knowledge management into an academic discipline. Today, over a hundred universities around the world offer courses in knowledge management, and library schools offer degree programs in knowledge management (Mongolia, Ulaanbaatar 특허권 번호: 8431, 2016).

Intensive knowledge exchange and learning processes characterize such cooperation activities, which tend to combine complementary assets and to build synergies [12].

Since innovation cooperative agreements favor the accumulation of knowledge that is likely to be converted into new technological and organizational innovations, firms' decision to cooperate opens the range of their technological options [13].

As argued by Cohen and Levinthal (1989, 1990), external knowledge is more effective for the innovation process when the firm improves its own resource development that is, its internal capacities. Analyzing knowledge flows is essential to understand innovation cooperation.

Cassiman and Veugelers (2002) find that there is a significant relationship between external information flows and the decision to cooperate in research and development: firms that rate the general availability of incoming spillovers as more important inputs to their innovation process are also more likely to be actively engaged in cooperative research and development agreements; firms that are more effective in appropriating the results from their innovation processes are also more likely to cooperate in research and development [14]. Therefore, the management of incoming spillovers and appropriability has important effects: firms more able to capture knowledge from external sources and better prepared to protect their own knowledge have a higher probability of cooperating in research and development or innovation [14]. According to the literature review, we were hypothesize as below:
H-3. Professional knowledge will have positive impact on innovation management.

2.4. Professional Skills on Innovation Management

The abilities of people (such as management and leadership qualities, technical, scientific, and production abilities, and soft/interpersonal abilities) that are in demand in the formal economy are generally referred to as skills.

Interpersonal skills of eloquence, positive attitude and working with the community is accordingly highlighted as the most impressive characteristics of good management colleagues in the public sector [15].

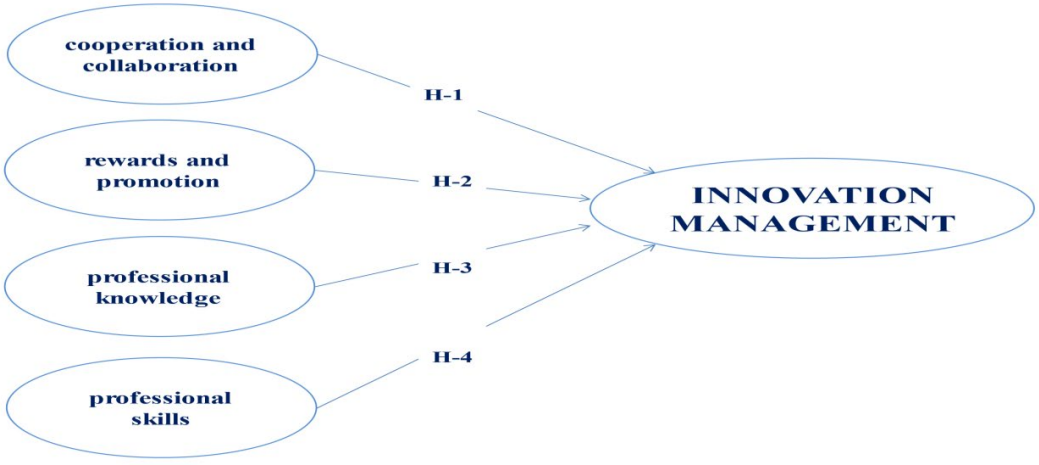
Given that there are many forms of innovation that do not always follow a defined set of stages, the relationship between innovation and skills is bound to be complicated. Skills involved in innovation will depend on:
(1) the nature of the innovation in question (incremental vs. Radical; product, process or organisational etc.), (b) the nature and distribution of skills within and available to an organisation, and (c) the possibility of transforming and growing new skills within enterprises and the wider economy.

It is possible for an individual enterprise to go through the whole process of innovation without changing its skills set (especially if the innovation is incremental, rather than radical), although it is also likely that innovation may lead to, or require, a change (possibly of various different kinds) in the skills of the business. It is however clear that at both the level of the firm and across the economy, the various stages of innovation in manufacturing and services will at some point impact on the demand for skills and new skill composition, including those of management and leadership skills, technical and scientific skills and soft/interpersonal skills [16].

The skills to work effectively with others, share ideas, and leverage collective expertise enhances the overall innovation process. The increased complexity of knowledge processes, which are the backbone of new technologies and innovation, leads firms to search beyond their own boundaries for valuable knowledge and skills, in order to complement their own capabilities [17].

Professional knowledge, spanning technical expertise and industry insights, is fundamental for driving innovation, ensuring that ideas are not only creative but also viable and relevant in innovation management. Understanding the skills and attributes that can help people contribute to innovation is an important first step in the policy-making process.

They include basic skills such as reading and writing, academic skills, technical skills, generic skills such as problem solving and "soft" skills such as multicultural openness and leadership. Managerial and entrepreneurial skills are also mentioned, as are creativity and design in innovation management. According to the literature review, we were hypothesize as below:
H-4. Professional skills will have positive impact on innovation management.



Source: The diagram of our study
Figure 1. Conceptual models of factors on innovation management

Our study is explain howas personal skills, cooperation, professional knowledge, rewards on innovation management. The conceptual model of factors on innovation management is drawn in Figure 1.

3. Research Methodology

The data was analyzed using SMART PLS 3.0 and SPSS 23.0 software. There are seven variables as below:

a) Independent variables: cooperation, professional knowledge, personal skills, rewards.

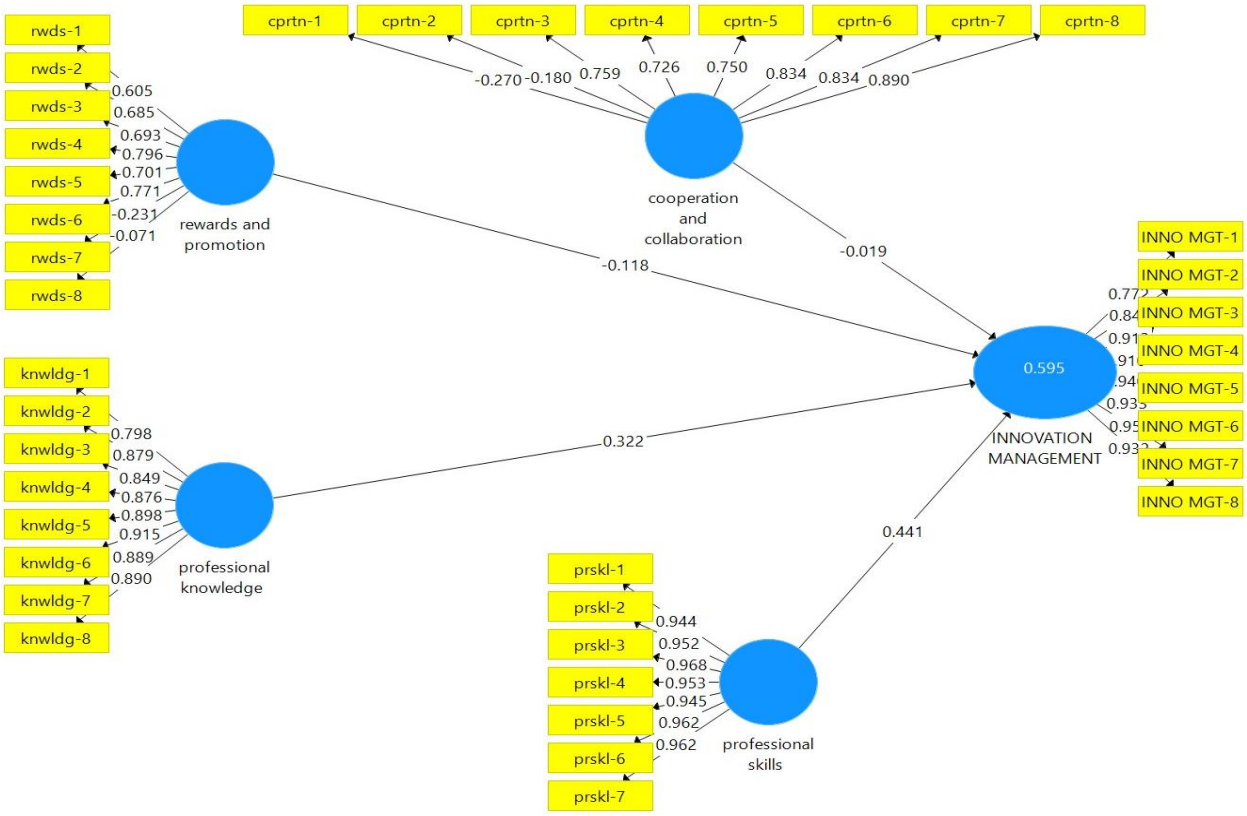
b) Dependent variables: Innovation management.

We conducted causal research in this study. Finding the variables that may establish cause-and-effect relationships between the variables causing specific actions and responses is the aim of causal research. In our study, a Likert scale with a scoring system of 1-5 has been adopted. This means that respondents can express their opinions on each item by selecting a numerical value between 1 and 5, with 1 typically indicating strong disagreement and 5 indicating strong agreement. This scoring system allows for a finer degree of discrimination in capturing varying levels of opinions.

We included for each latent variable affects to impact on innovation management and provided results for each factor such as items for factor analysis, quantitative analysis, correlation analysis, and path analysis were conducted in our study. The study included 649 public servants, categorized by Mongolian regions, and was described the demographic features of the respondents.

4. Results

There are shows the demographic characteristics and general information of the respondents in our study. The participants were total 649 public servants who work in public organization in Mongolia. In terms of gender 387 or 59.63 percent were male whereas 262 and 40.37 percent were female.



Noted:cprtn-cooperation, rwds-rewards, knwdl-professional knowledge, prskl-personal skills, inno mgt-innovation management

Figure 2. Structure Analysis of innovation mnanagement

The factors of our study	Cronbach's alpha	Rho_A	Composite reliability	Average Variance Extracted
cooperation and collaboration	0.839	0.841	0.823	0.494
professional knowledge	0.956	0.957	0.963	0.766
professional skills	0.984	0.985	0.987	0.913
rewards and promotion	0.770	0.741	0.987	0.387
INNOVATION MANAGEMENT	0.966	0.969	0.972	0.812

Table 1. The list of items for each Construct of innovation management

In the table 1, we have analysed the results of our research as below:

Cronbach's alpha is a measure of internal consistency or reliability of a set of scale or test items. It ranges from 0 to 1, where a higher value indicates greater internal consistency. Generally, a Cronbach's alpha of 0.7 or higher is considered acceptable.

- Cooperation and collaboration 0.839, it indicates a good level of internal consistency.
- Professional knowledge 0.956, it is excellent; the scale or test items show very high internal consistency.
- Professional skills 0.984, it is outstanding; the scale or test items demonstrate extremely high internal consistency.
- Rewards and promotion 0.770, it is still acceptable, but it is on the lower side. It might be worth investigating which items are contributing less to the overall reliability.
- Innovation management 0.966, it is excellent; the scale or test items show very high internal consistency.

Rho_A, also known as Revelle's rho, is another measure of internal consistency similar to Cronbach's alpha. It is particularly suitable for non-normally distributed data or when there are issues with tau-equivalence (a condition required for Cronbach's alpha). Like Cronbach's alpha, Rho_A also ranges from 0 to 1, with higher values indicating greater internal consistency.

Cooperation and collaboration 0.841, it indicates good internal consistency. Professional knowledge 0.957, it is excellent; the scale or test items show very high internal consistency. Professional skills 0.985, it is outstanding; the scale or test items demonstrate extremely high internal consistency. Rewards and promotion 0.741, it is a bit lower and might be considered on the lower side. It's worth investigating which items contribute less to the overall reliability and considering potential improvements. Innovation management 0.969 it is excellent; the scale or test items show very high internal consistency.

Composite reliability is another measure of internal consistency, often used in the context of structural equation modeling (SEM).

Cooperation and collaboration 0.823 it indicates acceptable internal consistency, although it's on the lower side. Professional knowledge 0.963 it is excellent; the scale or test items show very high internal consistency. Professional skills 0.987 it is outstanding; the scale or test items demonstrate extremely high internal consistency. Rewards and promotion 0.987 it is an excellent level of internal consistency. Innovation management 0.972 it is excellent; the scale or test items show very high internal consistency.

Average Variance Extracted (AVE) is a measure used in structural equation modeling to assess the convergent validity of a latent construct. It provides an indication of the proportion of variance captured by the construct relative to the measurement error.

Cooperation and collaboration 0.494, it is on the lower side, suggesting that the construct does not explain as much variance as desired relative to measurement error. Professional knowledge 0.766, it is a good value, indicating a substantial amount of variance explained by the construct relative to measurement error. Professional skills 0.913, it is excellent; the construct explains a large proportion of the variance relative to measurement error. Rewards and promotion 0.387, it is on the lower side, suggesting that the construct does not explain as much variance as desired. Innovation management 0.812, it is a good value, indicating a substantial amount of variance explained by the construct relative to measurement error (Table 1).

The factors of our study	Standard deviation	T Statistics	P value	Results
cooperation and collaboration→ innovation management	0.056	0.337	0.736	Non supported
professional knowledge→ innovation management	0.071	4.555	0.000	Supported
professional skills→ innovation management	0.079	5.580	0.000	Supported
rewards and promotion→ innovation management	0.059	2.009	0.045	Supported

Table 2. Estimated Path Coefficients of innovation management

Standard Deviation is a measure of the amount of variation or dispersion in a set of values. T Statistics is a measure of how many standard deviations a data point is from the mean of a sample. P Value is a measure that helps you determine the significance of your results.

Hypothesis H1 such as cooperation and collaboration have no supported on innovation management for standard deviation 0.056, t statistic 0.337, and p value 0.736. Hypothesis H2 such as professional knowledge have supported on innovation management for standard deviation 0.071, t statistic 4.555, and p value 0.000. Hypothesis H3 such as professional skills have supported on innovation management for standard deviation 0.079, t statistic 5.580, and p value 0.000. Hypothesis H4 such as rewards and promotion have supported on innovation management for standard deviation 0.059, t statistic 2.009, and p value 0.045 (Table 2).

5. Conclusion

Innovation can be simply defined as a "new idea, creative thoughts, and new imaginations in form of device or method" and takes place through the provision of more effective public services, processes, services, technologies are made available to markets in public sector. Innovation management will institutionalize change through strategic planning [17].

The 649 public servants participated in online questionnaire, grouped by Mongolian geographical zones.

Hypothesis 1 is not supported, suggesting that cooperation and collaboration do not have a significant impact on innovation management. Hypothesis 2, Hypothesis 3, and Hypothesis 4 are supported, indicating that professional knowledge, professional skills, and rewards/promotion have significant relationships with innovation management. The strongest evidence is for H3 (professional skills), followed by H2 (professional knowledge) and H4 (rewards/promotion) in our study.

Innovation management becomes increasingly vital for effective public service delivery, strategic planning remains a key driver for institutionalizing change and ensuring sustained progress in the ever-evolving landscape of public administration.

While cooperation and collaboration may not emerge as significant factors influencing innovation management among the surveyed public servants, our findings underscore the pivotal role of professional knowledge, skills, and rewards/promotion in fostering innovation.

We are recommending our study as bellow:

a. To study and compare factors od innovation management with another sector.

c. To study and compare the factors with foreign scholars' study in the future more.

Finally, we will study our next research paper, need to correlation skills, behavior, job satisfaction, engagement, engagement with innovation management and etc.

References

1. Rogers, E. M. (1995). Diffusion of innovation. New York: Library of Congress Cataloging in Publication Data.
2. Zaltman, G., Duncan, R., & Holbeck, J. 1973, Innovation and organizations,(New York: John Wiley and Sons).
3. Roy, M. (2019). Effects of cybersecurity skills shortage worsening. Tech Target.
4. Bohret. (1993). The tools of public management. *Managing Public Organizations, Sage, London*, 251-265.
5. Joyce, P. (1998). Managment and innovaation in the public services. *Strategic vvhange*, 19-30.
6. Atallah, G. (2002). Vertical cooperation, market structure, and innovation. *Economics of Innovation and New Technology*, 179-209.
7. De Faria, P., Lima, F., & Santos, R. (2010). Cooperation in innovation activities: The importance of partners. *Research policy, 39*(8), 1082-1092.
8. Al Darmaki, S. J., Omar, R., & Ismail, W. K. W. (2019). Driving innovation: Reviewing the role of rewards. *Journal of Human Resource and Sustainability Studies, 7*(03), 406.
9. Baumann, O., & Stieglitz, N. (2014). Rewarding value-creating ideas in organizations: The power of low-powered incentives. *Strategic Management Journal, 35*(3), 358-375.
10. Eisenberger, R. a. (2011). *Rewards and Creativity.* Elsevier, Amsterdam: Encyclopedia of Creativity, 2nd Edition.
11. Eisenberger, R. a. (2003). Rewards, Intrinsic Motivation and Creativity: A Case Study of Conceptual and Methodological Isolation. *Creativity Research,* 121-130.
12. Becker, W., & Dietz, J. (2004). R&D cooperation and innovation activities of firms—evidence for the German manufacturing industry. *Research policy, 33*(2), 209-223.
13. Mowery, D. C., Oxley, J. E., & Silverman, B. S. (1998). Technological overlap and interfirm cooperation: implications for the resource-based view of the firm. *Research policy, 27*(5), 507-523.
14. Cassiman, B., & Veugelers, R. (2002). R&D cooperation and spillovers: some empirical evidence from Belgium. *American Economic Review, 92*(4), 1169-1184.
15. Bayasgalan Tsogtsuren, Erdenedalai Baigali, Sunduisuren Dorj, Chuluunbat Sharkhuu. (2022). The empirical analysis of impacts on leadership: The Case of National Police agency in Mongolia. *Journal of Humanities and Social Science,* 220-227.
16. Green, L. (2007). Skills for innovation. *Global Review of Innovation Intelligence and Policy Studies*, 36-54.
17. Berry, F. S., & Wechsler, B. (1995). State agencies' experience with strategic planning: Findings from a national survey. *Public administration review*, 159-168.
18. Tssogtsuren, B. (2016). Mongolia, *Ulaanbaatar Patent No.8431.*

The evidence of study