Research Article

THE ANALYSIS OF PROFESSIONAL KNOWLEDGE, PROFESSIONAL SKILLS, TECHNICAL MEASUREMENT AND TRAINING ACTIVITY ON PERFORMANCE MANAGEMENT: THE CASE OF CRIME SCENE INVESTIGATION

[1,] *BAYASGALAN Tsogtsuren, [2]GANKHULEG Ganbaatar, [2]ERDENEJARGAL Munkhjargal, [3]DEMCHIG Batjargal, [3]TSEVEENDORJ Unurbold

[1]Ph.D, A senior lecturer at Executive Leadership Academy, University of Internal Affairs, Mongolia.
[2]Ph.D student at University of Internal Affairs, Mongolia.
[3]Master student at University of Internal Affairs, Mongolia.

ABSTRACT

The aim of this study is to analyse the influence of the impacts of professional knowledge, professional skills technical measurement and training activity on performance management. To accomplish the determined aim of our study, the research collected data through a structured questionnaire from85 experts who work in the centre, capital city, and province of the National Forensic Science Institute of Mongolia and researchers of the University of internal affairs, Mongolia, and other experts. We try to understand the factors which influence to experts' performance management in National Forensic Science Institute's, as well as the consequences of it. In our study of many others, we analysed four hypotheses, and two of them had a positive relationship and two of them had a negative relationship with considered impacts. The result of data was determined online between November and December of fiscal 2022. We estimated SMART PLS 3.0 and SPSS 25.0 software in our study. This study is significant in considering both theoretical and practical issues and for practices in National Forensic Science Institute.Overall, the results showed that employee were mostly had performance management with the factors in this survey. Also, our study discussed the effects of above-mentioned results, the implications for theory and practice along with the limitations of the research and the implications for further research.

Keywords: professional knowledge, professional skills, technical measurement and training activity, on performance management.

INTRODUCTION

Performance, as understood in the context of the social sciences, is a process by which individuals (actors) display for others (the audience) the meaning of their social situation.Performance is an act of staging or presenting a play, concert, or other form of entertainment. It is also defined as the action or process of carrying out or accomplishing an action, task, or function.Ivan T. Robertson; Cary L. Cooper (2015), In the work place,performance management is the hypothesized conception or requirements of a role. There are two types of job performances: contextual and task. Task performance is dependent on cognitive ability, while contextual performance is dependent on personality. Task performance relates to behavioral roles that are recognized in job descriptions and remuneration systems. They are directly related to organizational performance, whereas contextual performances are value-based and add additional behavioral roles that are not recognized in job descriptions and covered by compensation; these are extra roles that are indirectly related to organizational performance. Job performance, like contextual performance, relates to a set of individual activity/contribution (prosocial organizational behavior) that supports organizational culture(Ivan T. Robertson; Cary L. Cooper, 2015).

Haff, G. Gregory; Triplett , N. Travis (2015) defined the characteristics of an ideal performance state:

- Absence of fear
- Not thinking about the performance
- Adaptive focus on the activity

- A sense of effortlessness and belief in confidence or self-efficacy
- A sense of personal control
- A distortion of time and space where time does not affect the activity

Other related factors are: motivation to achieve success or avoid failure, task relevant attention, positive self-talk, and cognitive regulation to achieve automaticity. Frank J. Landy; Jeffrey M. Conte (2010), Performance is also dependent on adaptation of eight areas: Handling crisis, managing stress, creative problem solving, knowing necessary functional tools and skills, agile management of complex processes, interpersonal adaptability, cultural adaptability, and physical fitness. Performance is not always a result of practice, but rather about honing in a skill. Over practicing itself can result in failure due to ego depletion. Bayasgalan Tsogtsuren, Nomin Batkhuu (2022) analyzed the requirements for the impacts of professional skills, professional attitude, and work experience on job performance in entrepreneurship in Mongolia. The result of their data was determined online in the first quarter of 2022. Their study from many others is we analyzed 4 hypotheses, and one of them had a positive relationship with considered impacts. On the other hand, three hypotheses had no positive relationship on considered impacts (Bayasgalan Tsogtsuren N. B., 2022).

THEORITICAL FRAMEWORK AND CONCEPRUAL MODEL

Professional knowledge and performance management

An established discipline since 1991, Knowledge management includes courses taught in the fields of business administration, information systems, management, library, and information science.

Corresponding Author: BAYASGALAN Tsogtsuren,
1Ph.D, A senior lecturer at Executive Leadership Academy, University of Internal Affairs, Mongolia.

Other fields may contribute to knowledge management research, including information and media, computer science, public health, and public policy. Several universities offer dedicated master's degrees in knowledge management Girard, John P, Girard, JoAnn L (2015).Hayes and Walsham (2003) describe knowledge and knowledge management as two different perspectives. The content perspective suggests that knowledge is easily stored; because it may be codified, while the relational perspective recognizes the contextual and relational aspects of knowledge which can make knowledge difficult to share outside the specific context in which it is developed.

First research suggested that knowledge needs to convert internalized tacit knowledge into explicit knowledge to share it, and the same effort must permit individuals to internalize and make personally meaningful any codified knowledge retrieved from the knowledge and knowledge effort. Subsequent research suggested that a distinction between tacit knowledge and explicit knowledge represented an oversimplification and that the notion of explicit knowledge is self-contradictory. Specifically, for knowledge to be made explicit, it must be translated into information (i.e., symbols outside our heads). More recently, together with Georg von Krogh and Sven Voelpel, Nonaka returned to his earlier work to move the debate about knowledge conversion forward. A second proposed framework for categorizing knowledge dimensions distinguishes embedded knowledge of a system outside a human individual (e.g., an information system may have knowledge embedded into its design) from embodied knowledge representing a learned capability of a human body's nervous and endocrine systems.

A third proposed framework distinguishes between the exploratory creation of "new knowledge" (i.e., innovation) vs. the transfer or exploitation of "established knowledge" within a group, organization, or community(Wright, Kirby 2005). Politis (2001, 2002) has been gathered by contradictory evidence pertaining to the relationship between knowledge management and leadership styles. Crawford (2005) was gathered by Further evidence for the view that a transactional leadership style is conducive to engendering knowledge management. His/her quantitative study involved a survey of over 1,000 American students, 54 per cent of whom held managerial positions (Bejan David Analoui, 2012). According to the literature review, we were hypothesized as below:

Hyphothesis 1. Professional knowledge have an influence on training creative activity.

Professional skills and performance management

Wright, Kirby (2005), A skill is the learned ability to act with determined results with good execution often within a given amount of time, energy, or both. Skills can often be divided into domain-general and domain-specific skills. Skill usually requires certain environmental stimuli and situations to assess the level of skill being shown and usedWright, Kirby (2005). Sarfilianty Anggiani (2017), studied two independent variables and analyzed hard skills and soft skills. The dependent variable is employee performance. The study is analyzed with multiple linear regression analysis. The study objective is:

1. to analyze the influence of hard skills on employee performance;
2. to analyze the influence of soft skills on employee performance;
3. to analyze the dominant variable that influences employee performance.

The result of the study indicated hard skills and soft skills have an influence significantly on employee performance. The soft skill variable was found as the dominant variable for its influence on employee performance. The study was on the influence of hard skills and soft skills on employee performance (Anggiani, 2017).

Sommerville, Kerry (2007), Professional skills are career competencies and abilities used in the workplace that are beneficial for nearly any job. Professional skills are a combination of both hard skills (job-specific duties that can be trained) and soft skills.

Professional skills means a mix of hard skills and soft skills. The good thing about professional skills is that many of them are transferable skills. For example, if you learn how to manage a team effectively, you can use your skills in leadership no matter what your next job title is. The hardest part about developing professional skills? You need professional skills to get a job, and employers want to see professional skills before they hire you. Which professional skills are most important according to employers? One study found that over 80% of public employers are looking for problem-solving skills, teamwork skills, and communication skills on public sectors' servant employers' resumesSommerville, Kerry (2007).Piang Lian Thang, Saw Dennis Thein, et all (2019), revealed that professional skills, personality traits, and employee performance are high. Their study recommended that industries should bear in mind that the professional skills and personality traits of workers are essential to the success of business organizations (Piang Lian Thang, 2019). According to the literature review, we were hypothesized as below:

Hyphothesis 2. Professional skills have an influence on training creative activity.

Technical measurement and performance management

Technical measurement is the set of measurement activities used to provide the supplier and/or acquirer insight into progress in the definition and development of the technical solution, ongoing assessment of the associated risks and issues, and the likelihood of meeting the critical objectives of the acquirer.Technical performance measures is a term used by the any kind of military to refer to key technical goals that needed to be met, where the technical goals were vital for the functioning of a system in its environment.

As mentioned by Hampel and Martinsons (2009) (Hampel, 2009), adopting new technology will change the organizational policies and strategies. In most of the organization, the challenges they faced is generated by the advanced technology, competition in the industry, improving employee efficiency, new leadership, and management (Madsen, 2005). Talukder (2012), argued that technology innovation has an important influence on employee's job performance where it helps to reduce human error, increase productivity, and increase the speed of communication. The finding obtained from their study has shown that two out of three factors contributing to employee's job performance such as job stress and motivation have a significant relationship with technology adoption (Talukder, 2012). According to the literature review, we were hypothesized as below:

Hyphothesis 3. Technical measurement have an influence on training creative activity.

Training activity and performance management

Training is a very complex process. One's general ability, cognitive process, emotions, motivation, developmental characteristics, readiness, previous experiences, social environment, and the culture of his/her community are variables that affect the process of learning. Affected by so many factors, individuals have different learning processes.Hardy, Tiffany; Arkin, Robert (2009), The concept of effective teaching comprises specific behaviors, such as "talk expressive" or "highlight keypoints". It also includes the universally perceived characteristics such as "active and energetic teacher" or "facilitate the lecture notes.Literature has identified the presence of characteristics of effective teaching. The main behaviors for effective

teaching involve the characteristics that should be possessed by teachers (Alemu, 2014). Those are including the clarity in lessons delivery, the instructional variety, task orientation instructor, and teacher's involvement in the learning processHardy, Tiffany; Arkin, Robert (2009). The only external indicator of the effectiveness is represented by the student success rate. It is supported by O'Neill (2009) that the effective teaching characteristics can be seen from the attitude of the teacher. Effective teachers would likely have high expectations of their pupils while at the same time recognizing the differences between individuals.

They advocate the use of a variety of pedagogy while controlling the content of their teaching. Teachers maintain the encouragement of students' responsibility. The provision of a safe environment and relationship building among students would be the priority of the effective teachers. They continuously monitor students' progress to encourage them with the appropriate feedback.Teaching and learning constructively synchronize instructions and assessment toward the desired learning outcomes. Achieving the objectives may be facilitated through the provision of tasks in learning activities that positively affecting student's learning effectivity.

Dimensions of Training. The dimensions of training can be divided into several stages: (Hala Moussa, 2015) as below:

1. Training design stage: It is the stage of developing the appropriate curriculum by defining the objectives of the training course, taking into account the available training methods.
2. Training implementation phase: It is the phase of starting the training process and applying the curriculum to achieve the objectives of the training course.
3. Training evaluation stage: It is the follow-up and review process for the training course and the trainees to measure the extent of benefit and achieve the objectives of he training course for which it is established.According to the literature review, we were hypothesized as below:

Hyphothesis 4. Trainning activity have an influence on training creative activity.

Figure 2.1. Conceptual models of factors on performance management
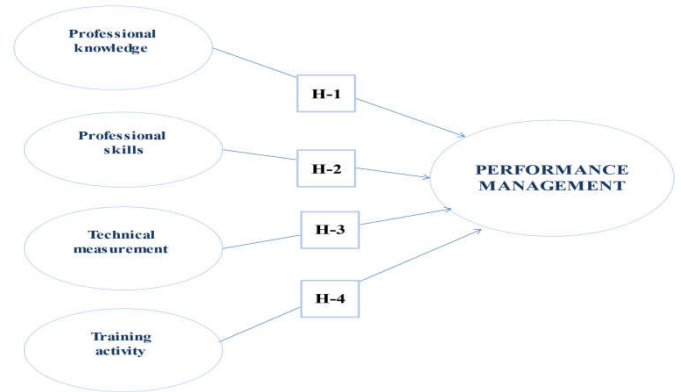

RESEARCH METHODOLOGY

Data collection and questionnaire design

The purpose of our study is to find out the variables of results on performance management. Our study includes two kinds of problems in terms of theoretical and practical frameworks. The first, in theoretical frameworks, previous researchers dem attention on performance management in many public organizations.

Second, from the practical frameworks deemed attention in a fiscal year in 2022. In our study, Likert scales were easy to use and analyze. Bass and O'Conner (1974) defined that although larger Likert scales make it possible to discriminate opinions more finely, they can also confuse the respondents in general, seven-point scales are found to reduce inaccuracy, whereas five-point scales restrict choice more (Bayasgalan Tsogtsuren, 2021).
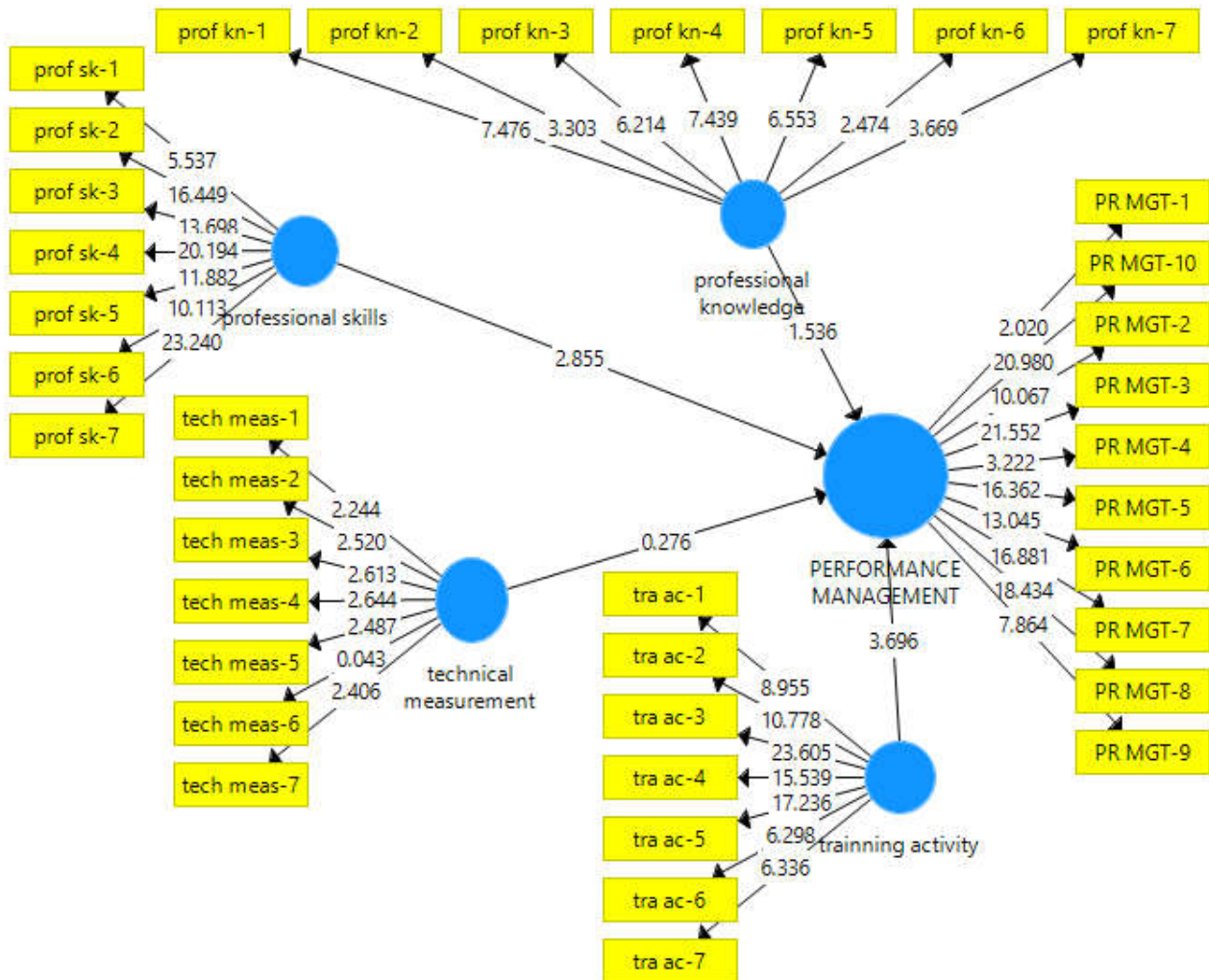
Figure 3.1. Results of Structure Analysis of respondents (algorithm)
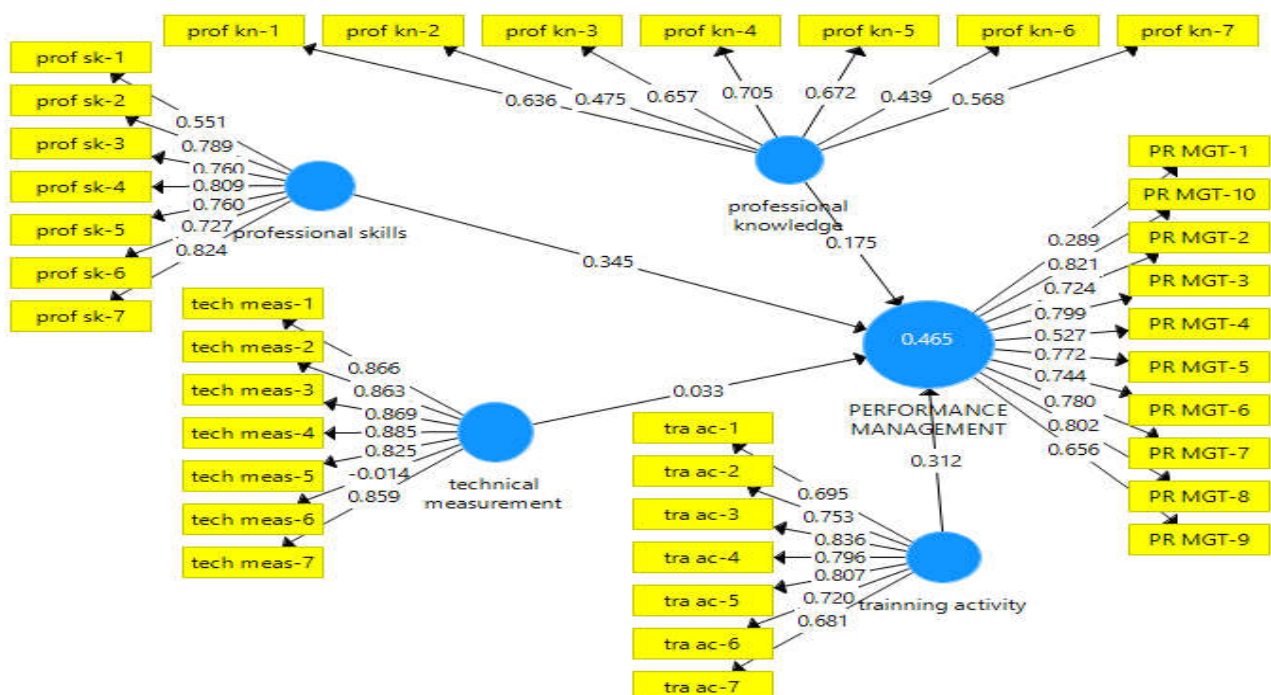
Noted by researchers: professional knowledge- prof kn, professional skills- prof sk, technical measurement- tech meas, training activity-tra ac, performance management- PR MGT

In the table below, a latent variable is a hypothetical construct that is invoked to explain observed covariation in employees' performance management. The correlations among the observed variables that belong to the same latent variable are: Professional skills was highly correlated with performance management (r=0.596), professional skills was highly correlated with professional knowledge (r=0.742) in our study.

Figure 3.2. Results of Structure Analysis of respondents (Bootstrapping)

Noted by researchers: professional knowledge- prof kn, professional skills- prof sk, technical measurement- tech meas, training activity-tra ac, performance management- PR MGT

Table 3.3. Estimated Path Coefficients of performance management.

Hypothesis	mean	Standard deviation	T statistic	P value	Results
Prof kn→ PR MGT	0.197	0.114	1.536	0.125	no supported
Prof sk→PR MGT	0.329	0.121	2.855	0.004	supported
Tech meas→PR MGT	0.032	0.118	0.276	0.783	nosupported
Tra ac →PR MGT	0.309	0.084	3.696	0.000	supported

Noted by researchers: professional knowledge- prof kn, professional skills- prof sk, technical measurement- tech meas, training activity-tra ac, performance management- PR MGT

In the table 3.3 as result, there were four hypotheses in our study, for instance professional knowledge **negative** relates to performance management mean 0.197, standard deviation 0.114, T statistic 1.536, P value 0.125. The professional skills **positive** relates to performance management mean 0.329, standard deviation 0.121, T statistic 2.855, P value 0.004. The technical measurement **negative** relates to performance management latent mean 0.032, standard deviation 0.118, T statistic 0.276, P value 0.783. The training activity **positive** relates to performance management mean 0.309, standard deviation 0.084, T statistic 3.696, P value 0.000 in our study.

In the table below, in the items for each construct of professional knowledge of seven items measuring ranged from **0.439-0.705,** Cronbach's alpha of **0.713,** Composite reliability /CR/ of **0.794** and Average Variance Extracted /AVE/ was **0.361.** The professional skills of seven items measuring ranged from **0.551-0.824,** Cronbach's alpha of **0.870,** Composite reliability /CR/ of **0.899** and Average Variance Extracted /AVE/ was **0.563**. The technical measurement of seven items measuring ranged from **-0.014-0.885,** Cronbach's alpha of **0.887,** Composite reliability /CR/ of **0.904** and Average Variance Extracted /AVE/ was **0.573**.

The training activity of seven items measuring ranged from **-0.014-0.885,** Cronbach's alpha of **0.877,** Composite reliability /CR/ of **0.904** and Average Variance Extracted /AVE/ was **0.574**. The performance management of ten items measuring ranged from **0.681-0.807,** Cronbach's alpha of **0.883,** Composite reliability /CR/ of **0.906** and Average Variance Extracted /AVE/ was **0.503**.

Table 3.1. List of Items for each Construct of respondents

Factors	items	results of items	Cronbach's alpha	CR	AVE
Professional knowledge	Prof kn -1	0.636			
	Prof kn -2	0.475			
	Prof kn -3	0.657	0.713	0.794	0.361
	Prof kn -4	0.705			
	Prof kn -5	0.672			
	Prof kn -6	0.439			
	Prof kn -7	0.568			
Professional skills	Prof sk-1	0.551			
	Prof sk -2	0.789			
	Prof sk -3	0.760	0.870	0.899	0.563
	Prof sk -4	0.809			
	Prof sk -5	0.760			
	Prof sk -6	0.727			
	Prof sk -7	0.824			
Technical measurement	Tech meas-1	0.866			
	Tech meas -2	0.863			
	Tech meas -3	0.869	0.887	0.904	0.573
	Tech meas -4	0.885			
	Tech meas -5	0.825			
	Tech meas -6	-0.014			
	Tech meas -7	0.859			
Training activity	Tra ac-1	0.695	0.877	0.905	0.574
	Tra ac-2	0.753			
	Tra ac-3	0.836			
	Tra ac-4	0.796			
	Tra ac-5	0.897			
	Tra ac-6	0.720			
	Tra ac-7	0.681			
PERFORMANCE MANAGEMENT	PR MGT-1	0.289			
	PR MGT-2	0.724			
	PR MGT-3	0.799	0.883	0.906	0.503
	PR MGT-4	0.527			
	PR MGT-5	0.772			
	PR MGT-6	0.744			
	PR MGT-7	0.780			
	PR MGT-8	0.802			
	PR MGT-9	0.656			
	PR MGT-10	0.821			

Noted by researchers: professional knowledge- prof kn, professional skills- prof sk, technicalmeasurement- tech meas, training activity-tra ac, performance management- PR MGT

Table 3.2. Latent Variable Correlations analysis

Items	Performance management	Professional knowledge	Professional skills	Technical measurement	Training activity
Performance management	0.709				
Professional knowledge	0.543	0.601			
Professional skills	0.596	0.742	0.750		
Technical measurement	0.166	0.153	0.107	0.797	
Training activity	0.509	0.340	0.376	0.223	0.757

Source: *Result of study*

CONCLUSION

We studied performance management and how to relate other impacts such as professional knowledge, professional skills, technical measurement, and training activities in social science. We used SMART PLS-3.0, a qualitative research program, to analyze metrological, correlational, multifactorial, and pathologies, and to summarize the results of teamwork, training engagement and training environment on training creative activity in the public sector.We hypothesized four hypothesis such as professional knowledge will positive related on performance management, professional skills will positive related on performance management, technical measurement will positive related on performance management and training activity will positive related on performance management. Two hypotheses were positive related on performance management and two hypotheses were negative related on performance management in our study. Finally, we will study and compare other impacts on performance management in the future.

REFERENCES

1. Bayasgalan Tsogtsuren et all. (2021). The empirical study of employers' satisfaction: The case of Executive Leadership Academy, University Of Internal Affairs, Mongolia. *International Journal of Asian Social Science*, 365-375.

2. Bayasgalan Tsogtsuren, E. D. (2021). The determinants of students' satisfaction on librarian service quality: The case of University Of Internal Affairs, Mongolia. *International Journal of Innovation Scientific Research and Review*, 1931-1937.

3. Bednarikova, I. M. (2014). *Introduction to leadership communication* . Olomouci: ISBN 978-80-244-4304-1.

4. Bennis, W. (1990). *Managing the dream: leadership in the 21st century.* New York: New York.

5. Burns, J. (1978). *Leadership.* New York: Harper and Row, 141-168.

6. Cooper, H. (1998). *Synthesizing research: A guide for literature 3rd ed.* Oaks: CA: Sage Publications, Thousand.

7. Hencley, S. (1973). Situational behavioral approach to the study of educational leadership. *Leadership: The Science and Art Today*, 139-164.

8. Imran, A. (2019). Personality traits, individual innovativeness and satisfaction with life. *Journal of Innovation and Knowledge* , 38-46.

9. Janie, B. B. (2006). *Ethics in Organizations and Leadership.* Jones and Bartlett .

10. Klingborg, D. J. (2014). What Is Leadership? *Leadership and Professional Development*, 280-285.

11. Mas-Machuca, M. (2014). The Role of Leadership: The Challenge of Knowledge Management and Learning in Knowledge-Intensive he Role of Leadership: The Challenge of Knowledge. *International Journal of Educational Leadership and Management*, 97-116.

12. Mihelič, K. K. (2010). Ethical leadership. *International Journal of Management and Information Systems*, 31-44.

13. Sharma, R. T. (n.d.). Managerial Skills for Managers in the 21st Century.

14. Singh, S. K. (2008). Role of leadership in knowledge management: A study . *Journal of Knowledge management*,

15. 3-15.

16. Smuthy, P. (2012). The Relationship between Managerial Skills and Managerial Effectiveness in a Managerial Simulation Game *Etrategia Organizaion Czech Science Foundation*, 11-21.

17. Stogdill, R. (1948). Personal factors associated with leadership: A survey of the literature. *Psychol*, 64.

18. WK Hoy, C. M. (1987). *Educational Administration:Theory, Research, and Practice 3rd ed.* New York: Random House.

EVIDIENCE OF STUDY

****