

THE IMPACTS OF KNOWLEDGE, SKILLS, ATTITUDES AND ETHICS ON LEADERSHIP FOR NATIONAL FORENSIC SCIENCE INSTITUTE OF MONGOLIA

GANKHULEG GANBAATAR

Ph.D candidate at the University of Internal Affairs, Mongolia; police mayor

ABSTRACT

This study seeks to determine the correlations between knowledge management, soft skills, attitudes, ethics, training experience and leadership of National Forensic Science Institute of Mongolia (NFSIM). We try to understand the factors which influence in National Forensic Science Institute's employees' leadership, as well as the consequences of it. We analyzed in this study that the impact of knowledge management, soft skills, attitudes, ethics, training experience on employees' leadership.

We used qualitative method research design model for the study. The data has been collected from 145 participants who are currently working in public sector such as NFSIM. This study is significant in considering both theoretical and practical issues in Mongolian public sector.

This study is significant in considering both theoretical and practical issues and for practices in Mongolian public sector. Overall, the results of this study showed that most of the hypotheses related positively on employees' leadership. 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.

Key words: knowledge management, soft skills, attitudes, ethics, training experience, employees' leadership, National Forensic Science Institute of Mongolia (NFSIM).

Introduction

There are many scholars' studies examined leadership theory, leadership types and essential leadership skills in the social sciences in the world. Researchers have proposed many different definitions and theories of leadership. Leadership is one of the multidimensional phenomena.

Hemphill and Coons (1957) defined as "Leadership is the behavior of management of group activities by the individual in line with shared purpose". Bass (1960) defined as "Leadership is sum of information and ability of being able to gather a group of people around certain purposes and prod them into action for performing these purposes".

Stogdill (1974) defined as "Leadership is being able to prod a structure into action with mutual behavior and consensus and being able to continue this action" (Hidayet Tiftik, 2015).

As a result, as above, leadership is providing employees' responsibilities and regularly supervising the completion of their tasks and setting and achieving goals management sets in terms of the corporate culture. In Mongolian public sector, this reality is very similar, with the aggravation that within this sector study concerning leadership is in truth still a scarce in Mongolian management cases.

This study is significant in considering both theoretical and practical issues and for practices in Mongolian public sector. Data were estimated by SMART PLS 3.0 statistic program and our paper is the most current and comprehensive summary of the PLS-SEM method and the metrics applied to assess its solutions.

Conceptual framework and hypothesis

Employee leadership

Richards and Engle (1986) argued that "Leadership is about embodying values, and creating the environment within which things can be accomplished" (Richards, 2003). Kouzes and Posner (2002) defined "Leadership as a relationship between those who aspire to lead and those who choose to follow" (Kouzes.J, 2002). Northouse (2010) writes that "Leadership is a process whereby an individual influences a group of individuals to achieve a common goal" (Northouse, 2010). We are agreed that scholars who are Kouzes and Posner's definition such as Leadership as a relationship between aspire to lead and those who choose to follow.

Knowledge management and leadership

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 percent of whom held managerial positions (Bejan David Analoui, 2012). According to the literature review, in our study, it was hypothesized as below:

Hypothesis 1: Knowledge management will have a positive impact on employees' leadership.

Soft skills and leadership

Wallapha (2012) identified seven soft skills including analytical thinking and problem solving, team work, lifelong learning and information management, development and construction of innovation, morality and professional skills are the soft skills should be used by administrators and teachers in educational management (Wallapha Ariratana, 2015). Soft skills are essential skills in promoting organizational effectiveness and efficiency. Then according the literature review, in our study, it was hypothesized as below:

Hypothesis 2: Soft skills will have a positive impact on employees' leadership.

Attitudes and leadership

Malou Oude Luttikhuis (2014) studied that the data from conducting in-depth interviews and an extensively literature research must provide a valuable answer to the question which leadership behaviors and attitudes encourage employees to be innovative (M.L. Ehrenhard, 2014). According to the literature review, in our study, it was hypothesized as below:

Hypothesis 3: Attitude will have a positive impact on employees' leadership.

Ethics and leadership

Effective managers and leaders must be aware of their values, morals, and system of ethics and ethical decision making. Good character and integrity are what we look for in our leaders. In fact, in their research, Kouzes and Posner (2007) identified honestly as the number one characteristic most identified by leaders (J. M. Kouzes, 2007). According to the literature review, in our study, it was hypothesized as below:

Hypothesis 4: Ethics will have a positive impact on employees' leadership.

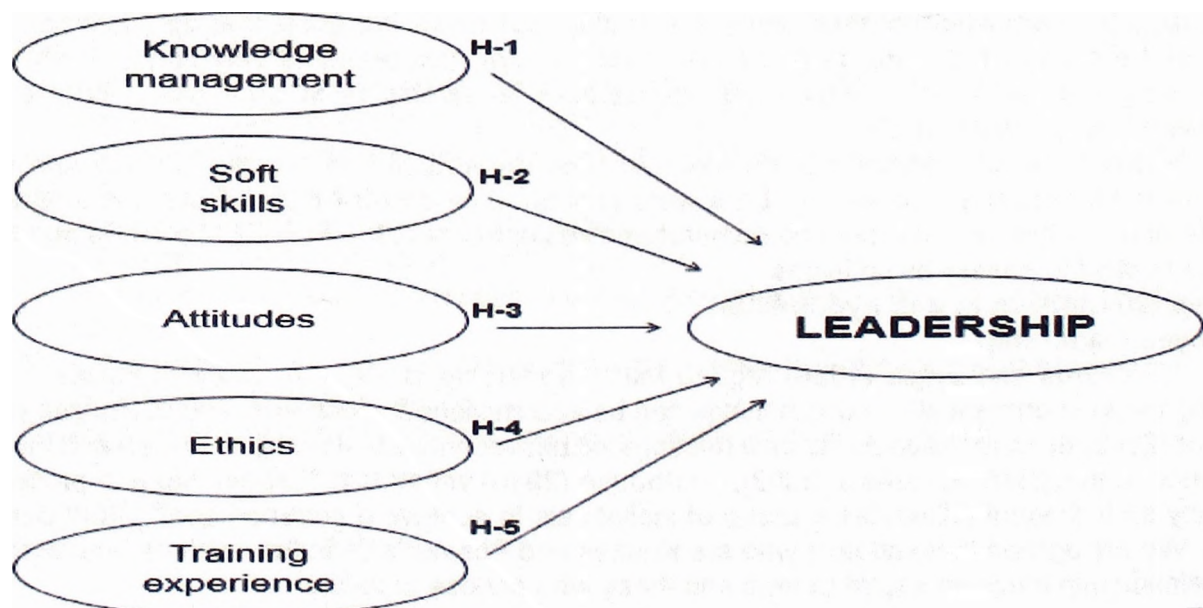
Training experience and leadership

Argyris (1982; Argyris and Schon, 1996) to what they call "knowledge for action", which is largely generated on the basis of experience. McCall et al., 1988) argue that accumulated experience is the most critical key to the development and functioning of leaders in organizations (Karin Amit, 2009). Then according the literature review, in our study, it was hypothesized as below:

Hypothesis 5: Training experience will have a positive impact on employees' leadership.

The conceptual model of factors on employees' leadership is drawn in Figure 2.1. We had study leadership definitions as below.

Figure 1. Conceptual models of factors on Employees' Leadership



Source: Own drawn diagram

Research methodology: Data collection and questionnaire design

The purpose of this study is to find out the variables of results on leadership. Our study includes two kinds of problems in terms of theoretical and practical frameworks. The first, in theoretical frameworks, previous researchers demand attention on leadership in many public and private sectors. Second, from the practical frameworks deemed attention in a fiscal year in 2021. 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 Tsogetsuren, 2021).

Table 1. Sex of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid male	84	57.9	57.9	57.9
female	61	42.1	42.1	100.0
Total	145	100.0	100.0	

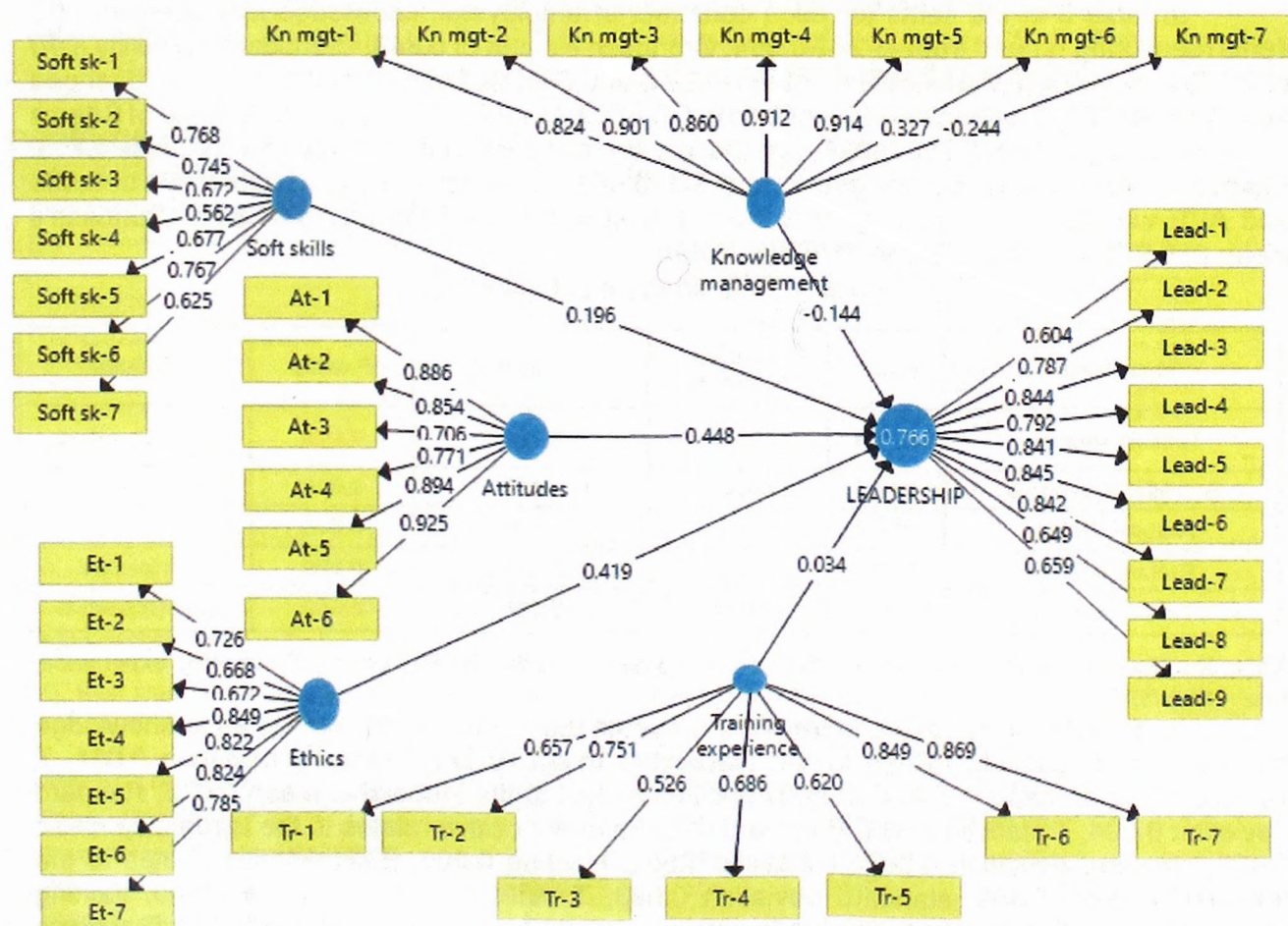
Table 2. Education background

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Bachelor	90	62.1	62.1	62.1
Master	53	36.6	36.6	98.8
Doctor	2	1.4	1.4	100.0
Total	145	100.0	100.0	

Of all the 145 respondents working on NFSIM, The basic demographic information about male 84, female 61 respondents in our study.

EXPLORATORY FACTOR ANALYSIS

Figure 2. Results of Structure Analysis of respondents (algorithm)



Note: Kn mg-knowledge management, Soft sk- soft skills, At- attitude, ET- ethics, Tr- training experience, lead- leadership

Table 3. List of Items for each Construct of respondents

Factors	items	results of items	Cronbach's alpha	CR	AVE	Factors	items	results of items	Cronbach's alpha	CR	AVE				
Knowledge management	Kn mgt-1	0.824	0.843	0.873	0.581	Ethics	Et-1	0.657	0.882	0.908	0.588				
	Kn mgt-2	0.901					Et-2	0.751							
	Kn mgt-3	0.860					Et-3	0.526							
	Kn mgt-4	0.912					Et-4	0.686							
	Kn mgt-5	0.914					Et-5	0.620							
	Kn mgt-6	0.327					Et-6	0.849							
	Kn mgt-7	-0.244					Et-7	0.869							
	Soft skills	Soft sk-1					0.768	0.818				0.864	0.478	Training experience	Tr-1
Soft sk-2		0.745	Tr-2	0.751											
Soft sk-3		0.672	Tr-3	0.526											
Soft sk-4		0.562	Tr-4	0.686											
Soft sk-5		0.677	Tr-5	0.620											
Soft sk-6		0.767	Tr-6	0.849											
Soft sk-7		0.625	Tr-7	0.869											
Attitude		At-1	0.886	0.916	0.936	0.710	Leadership		Lead-1	0.604	0.910				0.927
	At-2	0.854	Lead-2					0.787							
	At-3	0.706	Lead-3					0.844							
	At-4	0.771	Lead-4					0.792							
	At-5	0.894	Lead-5					0.841							
	At-6	0.925	Lead-6					0.845							
	Note: Kn mg-knowledge management, Soft sk- soft skills, At- attitude, ET- ethics, Tr- training experience, lead- leadership							Lead-7	0.842						
								Lead-8	0.649						
Lead-9							0.659								

In table 3 in the items for each construct of employees, knowledge management of 7 items measuring ranged from -0.244-0.914, Cronbach's alpha of 0.843, Composite reliability /CR/ of 0.873 and Average Variance Extracted /AVE/was 0.581. Soft skill of 7 items measured ranged from 0.562-0.768, Cronbach's alpha of 0.818, CR of 0.864 and AVE was 0.478. Attitude of 6 items measuring ranged from 0.706-0.925, Cronbach's alpha of 0.916, CR of 0.936 and AVE was 0.710. Ethics of 7 items measuring ranged from 0.526-0.869, Cronbach's alpha of 0.882, CR of 0.864 and AVE was 0.515. Leadership of 9 items measuring ranged from 0.604-0.844, Cronbach's alpha of 0.910, CR of 0.927 and AVE was 0.590.

Table 4. Path analysis of leadership

Hypothesis	mean	standard deviation	T statistic	P value	Results
KnàLeadership	-0.121	0.081	1.782	0.075	no supported
Soft skàLeadership	0.205	0.094	2.084	0.038	supported
AtàLeadership	0.429	0.097	4.602	0.000	supported
EtàLeadership	0.409	0.083	5.041	0.000	supported
TràLeadership	0.056	0.072	0.468	0.640	no supported

Note: Kn mg-knowledge management, Soft sk- soft skills, At- attitude, ET- ethics, Tr- training experience, lead- leadership

In the table 4 as result, there were 6 hypotheses in our study, for instance knowledge management negatively relates to the leadership mean -0.121, standard deviation 0.081, T statistic 1.782, P value 0.075. Soft skills positive relates to the leadership mean 0.025, standard deviation 0.094, T statistic 2.084, P value 0.038. Attitude positive relates to the leadership mean 0.426, standard deviation 0.097, T statistic 4.602, P value 0.000. Ethic positive relates to the leadership mean 0.409, standard deviation 0.083, T statistic 5.041, P value 0.000. training experience negative relates to the leadership mean 0.056, standard deviation 0.072, T statistic 0.468, P value 0.640.

Conclusion

There are many scholars globally studying the relationship between knowledge management, managerial skill as a soft skills, attitude, ethics and training experience on leadership skills on public and private sectors. We scrutinized 5 hypotheses in our study. Two of them had negative result but three of them had a positive result. The findings our study showed that knowledge management and training experience were negatively related with employees' leadership. Besides, soft skills, attitudes, ethics were positively related with employees' leadership in the National Forensic Science Institute of Mongolia.

Eventually, our study might be unique in ways when special service in Mongolia, and future comparisons might reveal important similarities and differences across nations.

Overall, our study on the forensic institutions reveals their leadership is high but illustrates the number of suggestions to curriculum improvement that all are for the effectiveness of the leadership training more at the National Forensic Science Institute of Mongolia.

Limitation and Recommendations of our study:

1. Our study is considered to be limited in time as fiscal year 2021.
2. Only limited study results by SMART PLS-3.0 and SPSS-23 were compared with other qualitative research methods.

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EVIDENCE of STUDY

20220131 Gkh.txt *Joy Gankhlg.splsm PLS Algorithm (Run No. 1)					
Construct Reliability and Validity					
Matrix	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extr...	
	Cronbach's Al...	rho_A	Composite Rel...	Average Varian...	
Attitudes	0.916	0.920	0.936	0.710	
Ethics	0.882	0.893	0.908	0.588	
Knowledge management	0.843	0.879	0.873	0.581	
LEADERSHIP	0.910	0.918	0.927	0.590	
Soft skills	0.818	0.835	0.864	0.478	
Training experience	0.842	0.868	0.879	0.515	

20220131 Gkh.txt *Joy Gankhlg.splsm PLS Algorithm (Run No. 1) Bootstrapping (Run No. 1)					
Path Coefficients					
Mean, STDEV, T-Values, P-...	Confidence Intervals	Confidence Intervals Bias ...	Samples	Copy to Clipboard:	Excel Fo
	Original Sampl...	Sample Mean (...)	Standard Devia...	T Statistics (JO/...	P Values
Attitudes -> LEADERSHIP	0.448	0.429	0.097	4.602	0.000
Ethics -> LEADERSHIP	0.419	0.409	0.083	5.041	0.000
Knowledge management -> LEADERSHIP	-0.144	-0.121	0.081	1.782	0.075
Soft skills -> LEADERSHIP	0.196	0.205	0.094	2.084	0.038
Training experience -> LEADERSHIP	0.034	0.056	0.072	0.468	0.640

Ph.D candidate at the University of Internal Affairs, Mongolia; police captain

ABSTRACT

The objectives of this study are to analyze the correlations between professional skills, communication skills, knowledge management, managerial ethic and managerial leadership. We determined the factors that directly affect the leadership and management style of employees in the implementation of the strategic program, goals, objectives and plans of the forensic organization. We worked on this study based on the basic theory of management theory and social science developed work assumptions and new conceptual models which were used by international researchers in their studies. The survey was conducted online channel by 152 staff, which made it possible to classify and compare some of the results. We used SMART PLS-3.0, a qualitative research program, to analyze correlational, multifactorial, and pathologies, and to summarize the results of the forensic scientist's analysis of how factor variables affect leadership skills. This study can be significant to consider both theoretical and practical issues and inserting further most necessary practices in the National Forensic Science Institute of Mongolia.

Keywords: *professional skills, communication skills, knowledge management, managerial ethic, managerial leadership, National Forensic Science Institute of Mongolia*

One. INTRODUCTION

The leadership concepts are more important for managing size of organizations. Although the two are similar in some respects, they may involve different types of ethics, attitudes, behaviors and managerial essential skills. Best managers should strive to be good leaders and good leaders, need managerial skills to be more effective.

Also, the concept of "leadership," as used from last era until today, made its own way across the general literature. Nevertheless, only recently it has become more popular between social sciences and researchers. This paper is significant considering both theoretical and practical issues and for practices in Mongolian public special sector. Data were estimated by SPSS 25 and SMART PLS 3.0 software.

Two. CONCEPTUAL FRAMEWORK AND HYPOTHESIS

The management is all possible and positive activities consisting of process which are mainly concerned with important task of organizational goal achievement. From the late 1800s to about 1930, leadership theories emphasized control and centralization of power. The "Great Man" theory, which suggests that leaders are born and not made, supported the existence of some mysterious qualities vested in select individuals and frequently passed between generations. This model faded from popularity in the 1930s and 1940s as "trait" theories appeared that attempted to identify specific traits qualifying an individual for leadership.

The late 1940s brought psychoanalytical theories that explored why individuals are motivated to lead, or to follow a particular leader, with an increased focus on the role of groups and organizations. Investigators in the 1960s emphasized how people are influenced toward shared goals (Hencley, 1973), (WK Hoy, 1987).

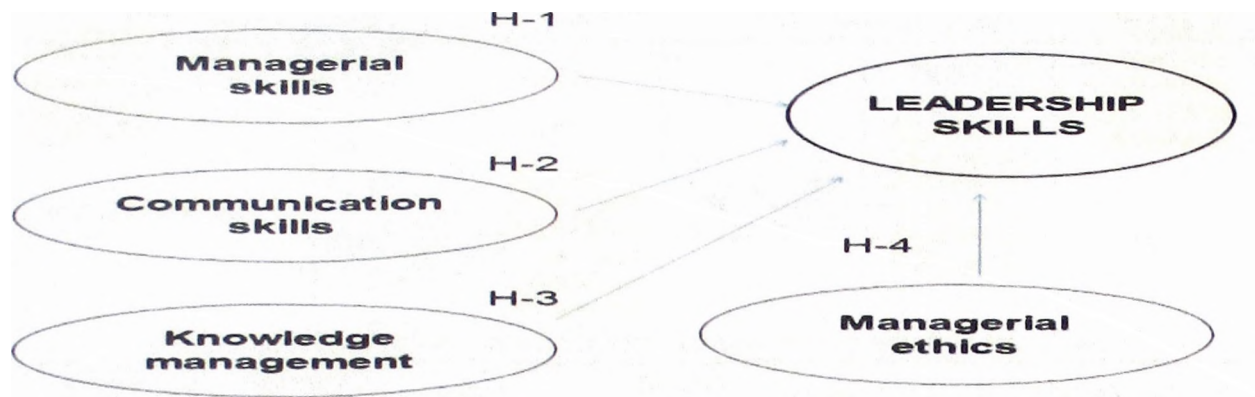
The 1970s there was a shift away from social psychology and toward organizational behavior and management science. Leadership and management roles became generally confused and integrated to look at how followers attribute certain qualities to leaders. "Transformation" became a term describing leadership and "transactional" was associated with management (Burns, 1978).

Since the 1980s, the leadership literature has become overwhelming in size and scope, often recycling concepts such as the "Great Man" and "social" and "organizational behavior" thinking, but with a twist toward "influence," "transformational," "servant," and "collaborative" structures. Leaders have become more responsible to their followers, with a more spiritual or value- or principle-based relationship between leaders and followers.

This study explains how professional skills, communication skills, knowledge management, managerial ethic and managerial leadership. The conceptual model of factors on

managerial leadership is drawn in Figure 2.1.

Figure 2. 1 . Conceptual models of factors on Leadership skills



Source: Own diagram

Managerial skills and leadership

The theory of personality traits postulates that people naturally deal with different situations and interact with their environment in different ways. Ahmed, (1998), Eastman, Eastman, & Tolson (2001), Hsieh, Hsieh, & Wang (2011) defined that however, personality traits may also be key indicators of other facets of an individual's life, including innovativeness (Imran, 2019). Petr Smutny et al (2016), argued that five managerial skills were measured in their study: organizational skills, motivational skills, communication skills, evaluation and supervisory skills and cooperativeness (Smuthy, 2012). According to the literature review, we were hypothesized as below:

H1. Managerial skills have an influence on leadership skills.

Communication skills and leadership

Hackman and Johnson (2004) even define leadership as a specific form of communication, with the aim of influencing and persuading others and conveying the leader's visions and goals. Therefore, it is interesting to notice that it is only in the last 15 years (since 2000) that the focus of leadership scholars started to include leadership communication, and an interdisciplinary approach blending the findings of leadership studies, sociology, political science, and linguistics, the theory of communication, and media studies. This textbook is another small contribution (Bednarikova, 2014). According to the literature review, we were hypothesized as below:

H2. Communication skills have an influence on leadership skills.

Knowledge management and leadership

Lopez et al., (2004) argued that knowledge management and learning go hand in hand in organizations (Singh, 2008). Knowledge management is a circle process that facilitates knowledge sharing and establishes learning as directly process within an organization. According to the literature review, we were hypothesized as below:

H3. Knowledge management has an influence on leadership skills.

Managerial ethics and leadership

Daft (2007) examined those ethical values in an organizational setting are emphasized and strengthened primarily through values-based leadership, that can be defined as a relationship between leaders and co-workers, based on shared, internalized values, that are acted upon by the leader (Miheli , 2010). According to the literature review, we were hypothesized as below:

H4. Managerial ethics have an influence on leadership skills.

Three. RESEARCH METHODOLOGY: Data collection and questionnaire design

This study used Likert five-point scales make it possible to discriminate opinions more finely, restrict for chosen more rather than other scales. Of all the 152 respondents were working on our research, frequency distributions were of National Forensic Science Institute of Mongolia. The basic demographic information about male 96, female 56 employees in our study.

Figure 2. Results of Structure Analysis of leadership skills (algorithm)

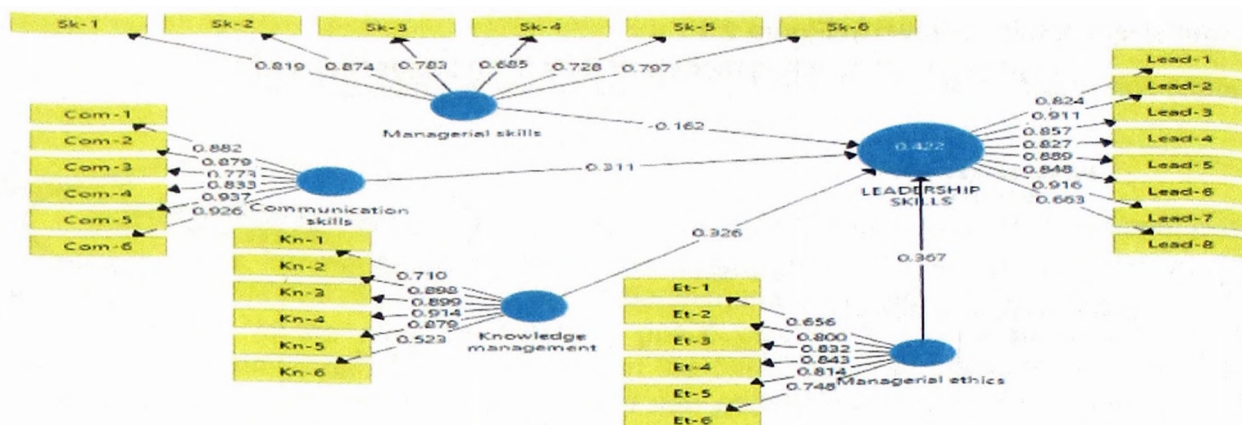


Table 1. List of items of managerial skills for each Construct of respondents

Factor	item	Results of item	AVE	Composite Reliability	Cronbach's alpha
Managerial skills	Sk-1	0.819	0.614	0.905	0.906
	Sk-2	0.874			
	Sk-3	0.783			
	Sk-4	0.685			
	Sk-5	0.728			
	Sk-6	0.797			

Notes: Sk- managerial skills, The result of study

In table 1, managerial skills of 6 items measuring ranged from 0.685-0.874, Average Variance Extracted (AVE) was 0.614, Composite Reliability (CR) of 0.905, Cronbach's Alpha of 0.906.

Table 2. List of items of communication skills for each Construct of respondents

Factor	item	Results of item	AVE	Composite Reliability	Cronbach's alpha
Communication skills	Com-1	0.882	0.763	0.951	0.937
	Com-2	0.879			
	Com-3	0.773			
	Com-4	0.833			
	Com-5	0.937			
	Com-6	0.926			

Notes: Com- communication skills, The result of study

In table 2, communication skills of 6 items measuring ranged from 0.773-0.937, (AVE) was 0.763, (CR) of 0.951, Cronbach's Alpha of 0.937.

Table 3. List of items of knowledge management for each Construct of respondents

Factor	item	Results of item	AVE	Composite Reliability	Cronbach's alpha
Knowledge management	Kn-1	0.710	0.667	0.921	0.893
	Kn-2	0.989			
	Kn-3	0.899			
	Kn-4	0.914			
	Kn-5	0.879			
	Kn-6	0.523			

Notes: Kn-Knowledge management, The result of study

In table 3, knowledge management of 6 items measuring ranged from 0.523-0.989,

(AVE) was **0.667**, (CR) of **0.921**, Cronbach's Alpha of **0.893**.

Table 4. List of items of managerial ethics for each Construct of respondents

Factor	item	Results of item	AVE	Composite Reliability	Cronbach's alpha
Managerial ethics	Et-1	0.656	0.616	0.905	0.874
	Et-2	0.800			
	Et-3	0.832			
	Et-4	0.843			
	Et-5	0.814			
	Et-6	0.748			

Notes: Et- managerial ethics, The result of study

In table 4, managerial ethics of 6 items measuring ranged from **0.656-0.843**, (AVE) was **0.616**, (CR) of **0.905**, Cronbach's Alpha of **0.874**.

Table 5. List of items of leadership for each Construct of respondents

Factor	item	Results of item	AVE	Composite Reliability	Cronbach's alpha
Leadership	Lead-1	0.824	0.714	0.952	0.941
	Lead-2	0.911			
	Lead-3	0.857			
	Lead-4	0.827			
	Lead-5	0.889			
	Lead-6	0.848			
	Lead-7	0.916			
	Lead-8	0.663			

Notes: Lead- Leadership, The result of study

In table 5, leadership of 8 items measuring ranged from **0.663-0.911**, (AVE) was **0.714**, (CR) of **0.952**, Cronbach's Alpha of **0.941**.

Table 6. Estimated Path Coefficients of respondents

Hypothesis	Mean	Standard deviation	T Statistic	P value	Remarks
H1. Managerial skills have an influence on leadership skills.	-0.140	0.145	1.121	0.263	No supported
H2. Communication skills have an influence on leadership skills.	0.313	0.175	1.780	0.076	No supported
H3. Knowledge management has an influence on leadership skills.	0.306	0.131	2.489	0.013	Supported
H4. Managerial ethics have an influence on leadership skills.	0.389	0.140	2.614	0.009	Supported

Notes: The result of study

In table 6, Hypothesis 1 such as managerial skills have no influence on leadership skills (mean -0.140), (Standard deviation 0.145), (T statistic 1.121) and (P value 0.263). Hypothesis 2 such as communication skills have no influence on leadership skills (mean 0.313), (Standard deviation 0.175), (T statistic 1.780) and (P value 0.076). Hypothesis 3 such as knowledge management have influence on leadership skills (mean 0.306), (Standard deviation 0.131), (T statistic 2.489) and (P value 0.013). Hypothesis 4 such as managerial ethics have influence on leadership skills (mean 0.389), (Standard deviation 0.140), (T statistic 2.614) and (P value 0.009).

Four. Conclusion

In the fiscal year of 2021 our paper collected and delivered an online-form- questionnaire with an official inquiry that requested quantitative and qualitative surveys. Moreover, this paper attempted to explore leadership skills in contemporary management which the human resource

development program will provide through the updated including system thinking, analysis of a wide range of social policies and programs, decision-making in emergencies, leadership skills in organizations. We are recommending our study as below:

1. To study annual result in the future.
2. To study and compare with other organization's leadership skills of employees
3. To study and compare with international study in the future.

Finally, we will study our next paper, need to correlation leadership with job satisfaction, correlation leadership with performance management and etc.

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EVIDENCE OF PAPER

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Project New Path Model 0110 3012 Hide Zero Values Increase Decimals Decrease Decimals

Construct Reliability and Validity				
Matrix	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance E...
Communication skills	0.937	0.941	0.951	0.763
Knowledge management	0.893	0.936	0.921	0.667
LEADERSHIP SKILLS	0.941	0.946	0.952	0.714
Managerial ethics	0.874	0.881	0.905	0.616
Managerial skills	0.875	0.906	0.905	0.614

Path Coefficients

Mean, STDEV, T-Values, ...	Confidence Intervals	Confidence Intervals Bi...	Samples	Copy to Clipboard:	Excel Format
	Original ...	Sample Me...	Standard Devia...	T Statistics (O/...	P Values
Communication skills -> LEADERSHIP SKILLS	0.311	0.313	0.175	1.780	0.076
Knowledge management -> LEADERSHIP SKILLS	0.326	0.306	0.131	2.489	0.013
Managerial ethics -> LEADERSHIP SKILLS	0.367	0.389	0.140	2.614	0.009
Managerial skills -> LEADERSHIP SKILLS	-0.162	-0.140	0.145	1.121	0.263