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Measuring Employee Readiness for Knowledge Management Implementation in the Audit Board of the Republic of Indonesia

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ABSTRACT

The Audit Board of the Republic of Indonesia is one of the largest public institutions with frequent job rotations and high employee turnover. The current COVID-19 pandemic, which has forced employees to adopt work from home whether they are ready or not, has compelled the organization to implement knowledge management successfully urgently. Employee readiness is one of the critical factors in the implementation of knowledge management. If the employee is not ready, it will lead to the organization's failure. This study aims to measure the level of employee readiness in BPK to implement knowledge management by using the intention to be involved in the SECI (Socialization, Externalization, Combination, and Internalization) process. The analysis was conducted by using SEM (Structural Equation Modelling). The result reveals that employees of BPK are ready to implement knowledge management. This is shown by the development of the SEM analysis and by the results of descriptive statistics with high values. The SEM analysis displays 14 out of 16 items considered the most representative dimensions in the SECI Process.

KEYWORDS:
Knowledge management; employee readiness; SEM; BPK

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INTRODUCTION

Knowledge is a valuable resource for any organization. Knowledge is regarded as a competitive advantage for maintaining and restraining activity in the market (Razak, Pangil, Zin, Yunus, & Asnawi, 2016). Knowledge has become an essential economic resource for any organization. Therefore, organizations must understand the fundamental principles of knowledge and effectively manage their knowledge assets (Edosio, 2014). In line with those scholars, González, René, Hidalgo, and Alberto (2016) conclude that knowledge is the currency of the economy today and perhaps the most valuable commodity of the twenty-first century as a result. Similar to those scholars, Dalkir (2013) stated that knowledge had become a more crucial aspect of competition. It is one of the essential commodities found in goods (mostly in high-tech products). It is also embedded in highly mobile employees' tacit knowledge. Dalkir (2013) embraced the definition of knowledge management (KM) as the process of capturing, structuring, managing, and disseminating knowledge throughout the organization in order to work more efficiently, repurpose best practices, and prevent expensive rework from project to project.

Employee readiness is the main factor defining the success of implementing KM. No matter how well the other factors are addressed, if the employee is ready to implement KM, it will only be implemented successfully. Abdel-Ghany (2014) mentions that organizational change beliefs are encouraged with the aid of using employee readiness factors. Employees develop change beliefs based on how they perceive the change (readiness) and establish their behavior based on whether they support or oppose it. Individual readiness to participate in KM will affect organizational readiness to adopt KM as it will help to identify opportunities and barriers before adopting KM. Determining readiness will also help to identify the right approach for KM.

The preceding notion is similarly found in many research. A study carried out by Marouf and Agarwal (2016) discovered a strong link between organizational preparation and individual readiness in universities. Therefore, the university administration should pay special attention to the individual factors of openness, knowledge self-efficacy, collegiality, and reciprocity due to their significant effect on personal readiness. The unit department with the highest scores across all of these factors and for overall organizational and individual readiness should be selected as the pilot site when introducing KM across the institution, as this will help to ensure early success. The implementation could be expanded to other university schools or departments after publicizing the success story.

Furthermore, individual readiness is influenced by personal competence and ideas on knowledge sharing. The organization must create a shared commitment to knowledge sharing to increase process readiness. An organization's ability to implement the knowledge-sharing process is represented by a supportive organizational setting that includes communication, engagement, and learning. The interactions between the components of change readiness and the knowledge-sharing process are also shown to be moderated by organization archetype, inter-profession disparities, and knowledge nature (Rusly, Sun, & Corner, 2014).

The value of knowledge is essential to manage; the failure of knowledge management or unmanaged knowledge will lead to the loss of valuable assets. Knowledge must be well-managed to avoid staying with a particular employee. In other words, the knowledge has yet to belong to the organization. The

knowledge embedded in the particular employee will disappear if the employee retires, resigns, or leaves the organization. KM will also help improve public sector innovation and intellectual capital as a buffer between intellectual capital and innovation. KM is critical for companies and organizations to develop intellectual capital and produce innovation. This type of KM is required for organizations to respond to environmental changes, issues, and challenges that arise due to continuous knowledge renewal (Akil, Soemaryani, Hilmiana, & Joeliaty, 2021). KM also improves the public sector performance as well as in the private sector. Al-Ahbabi, Singh, Balasubramanian, and Gau (2018) found that all of the knowledge management processes, which included knowledge creation, knowledge storage, knowledge sharing, and knowledge application and use, had a positive and significant impact on the operational, quality, and innovation performance of the United Arab Emirates public sector.

The Audit Board of the Republic of Indonesia (Badan Pemeriksa Keuangan, BPK) has 34 representative offices in provinces and more divisions in its headquarters. Job rotation for each employee occurs every five years and generally happens at least twice a year. In other words, there might be a new employee every six months in the representative offices or divisions. Also, each division and representative office may have distinct characteristics. Furthermore, employee turnover in BPK is high. Meanwhile, the knowledge and experience embedded in an employee might be essential to the organization. If that knowledge is not managed well, it may vanish with the employee.

By implementing KM, knowledge will be shared easily with other employees, and the knowledge belongs to the organization. It is not embedded only in someone's mind. Furthermore, the successful implementation of KM will make the knowledge accessible to employees anywhere. In addition, the current COVID-19 pandemic condition has forced millions of employees to adapt and "work from home." Therefore, the successful implementation of KM in this situation is also urgently needed, and employees must be able to access the knowledge anywhere.

KM is mostly implemented in the business sector. In Indonesia, KM has yet to be applied widely in the public sector. Meanwhile, KM is aligned with the Grand Design of Bureaucratic Reform for 2010–2025. KM is one of the strategic programs designed to facilitate knowledge-sharing activities, which are helpful for policymaking in bureaucratic reform and as a benchmarking tool for ministry and local government. Following up on this grand design, the Ministry of State Apparatus Utilization and Bureaucratic Reform (Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi Republik Indonesia, Kemenpan RB) issued Menpan-RB Regulation Number 14 of 2011 concerning Guidelines to Implement Knowledge Management Program (Permenpan-RB Nomor 14 Tahun 2011 tentang Pedoman Pelaksanaan Program Manajemen Pengetahuan). Following these regulations, BPK began implementing KM as outlined in BPK's Strategic Plan.

The critical factor in implementing KM is the employees of the organization. Research conducted by Chua and Lam, as cited by Sayyadi Tooranloo, Ayatollah, and Alboghobish (2018), shows that one of the major failure factors affecting KM stages is cultural factors, such as the unwillingness to share knowledge. Here we can see that one success factor is the employee's willingness to share knowledge. Knowledge is a privilege. People might obtain many advantages from the knowledge they have. By sharing their knowledge, they might lose the privilege and benefit they might obtain in the future.

Moreover, an organization should assess its knowledge management readiness before investing and adopting various potentially expensive knowledge management-related activities, systems, and technologies (Karim, Razi, & Mohamed, 2012). Organizations should measure employee readiness beforehand rather than allocating too much budget for a failed implementation of KM. Therefore, assessing employee readiness to implement KM in BPK successfully is essential.

The process of socialization turns "tacit knowledge into new tacit knowledge." It might occur through social interactions, for example, spending time with one another or living in the same area. This process promotes both knowledge creation and sharing. Subsequently, the process of externalization can assist in transforming "tacit knowledge into explicit knowledge" by codifying processes such as concepts, analogies, images, metaphors, etcetera. Such a process assists in knowledge capture and is regarded as one of the components of knowledge creation. The combination process converts explicit knowledge through a systematic exchange mechanism. This process assists in developing new explicit knowledge through systematizing explicit knowledge. The internalization process transforms explicit knowledge into tacit knowledge. This process is known as praxis, and it occurs when knowledge is applied and employed in a practical setting to provide the foundation of a new routine (Razi, Karim, & Mohamed, 2015).

A previous study by Bučková on KM in Public Administration Institutions highlighted the most important factors influencing the development of KM in the particular field of public administration. The result shows that employees in public sectors must continue to be educated, obtaining new knowledge and skills to improve their performance and interactions with citizens. KM strives to eradicate unproductive habits and practices of each individual and, hence, in the organization (Bučková, 2015).

Further, Rusly, Corner, and Sun (2012) argue that readiness for change is multiple structures. The eagerness to change for each individual may be influenced by their understanding of the need, rewards of change, and appropriateness shaping the change's beliefs. Coworker's behavior can affect the willingness to change as these ideas evolve in an employee whose effort is dependent on other employees. Hence, to evolve at the individual level, the ideas for change should be viewed as the organization's member's collective attitudes or intentions. Furthermore, he stated that the ability to change depends on the individuals' and the organizations' ability to undergo changes. This capability includes sufficient financial, human, and information resources to prepare members for new ideas or programs. It also depicts the organization's and its members' circumstances as they embark on the transformation (Rusly et al., 2012).

Another study was conducted by Samaranayake and Takemura (2017) on employee readiness for organizational change in a Sri-Lanka's export-oriented manufacturing. They examine the relationships between organizational commitments, trust in peers and management, and employee change readiness. Some factors were also investigated, such as the effects of gender, age, and working experience (demographic characteristics) on employees' organizational commitment, trust in peers and management, and change readiness. Their research finding reveals that it is challenging to modify or change employees' demographic characteristics to achieve the desired change or steer the organization in the desired direction. Employees' organizational commitment and trust in their peers and management significantly influence their willingness to change than demographic characteristics. Human

resource development functions such as employee career development, employee training, and mentoring can influence these two factors. Meanwhile, intervention from Human Resource Division can also enhance the level of education of the employees, resulting in a multi-level impact on increasing employee readiness (Samaranayake & Takemura, 2017).

Mohajan's (2019) research showed that a significant barrier to knowledge sharing in organizations is a lack of trust. The effect of company culture, a lack of competent leadership, and a lack of suitable rewards impede knowledge sharing. Lack of communication, inequalities in status, a lack of leadership and management, a lack of sharing resources, deficiency of sharing resources in the organization, a lack of formal and informal mechanisms and spaces to increase sharing activities, a lack of sharing initiatives within the organization, a lack of proper knowledge sharing space, a lack of willingness to share knowledge of the highly skilled and experienced employee, and a lack of an exigency of network connection are the barriers to knowledge sharing (Mohajan, 2019).

Karim et al. (2012) conducted research that measured employee readiness using the intention to be involved in the KM SECI processes. The research was based on the established KM SECI process measures and instruments that had been adopted and adapted. The research was conducted on 313 executives working in the selected organizations in the Sri Lankan telecommunication industry using a survey research methodology approach. The research finding provides the revised measurement model for employees' intention to be involved in KM SECI processes. All four variables of the intention to be involved in KM SECI processes emerged as a significant and reliable measure of KM readiness. The finding also indicates that employees in the Sri Lankan telecommunication industry have a positive level of involvement in KM processes (Karim et al., 2012).

According to Alavi and Leinder as cited by Karim et al. (2012), there are four basic processes of KM commonly known in the literature: creating, storing/retrieving, transferring, and applying knowledge. However, among the KM processes, knowledge creation and sharing processes have been given much attention. According to Nonaka, Byosiere, Borucki, and Konno (1994), organizational knowledge creation, as distinct from individual knowledge creation, occurs when all four models of knowledge creation (SECI) are organizationally managed to form a continual cycle. SECI processes propose four different modes of knowledge conversion.

1. Tacit knowledge to tacit knowledge (Socialization)
   Socialization is sharing experiences and creating tacit knowledge, such as shared mental models and technical skills. The conversion might occur through observation, imitation, and practice rather than through language.
2. Tacit knowledge to explicit knowledge (Externalization)
   Externalization is the process of illustrating tacit knowledge into explicit knowledge. It is a fundamental process of knowledge creation in which tacit knowledge is transformed into explicit knowledge in metaphors, concepts, hypotheses, analogies, or models.
3. Explicit knowledge to explicit knowledge (Combination)
   The combination is the process that organizes ideas into a knowledge system. This sort of knowledge conversion requires combining diverse bodies of explicit information. Individuals exchange and combine knowledge using various media such as computerized communication networks, meetings, phone calls, and documents.

4. Explicit knowledge to tacit knowledge (Internalization)
   Internalization is a process of transforming explicit knowledge into tacit knowledge. It is similar to "learning by doing."

These processes are termed SECI (Karim et al., 2012).

Another study was conducted by Salwa and Susanty (2016) using SECI processes in the private sector using the structural equation model (SEM). The variable of employee readiness is made up of the SECI process. One result shows that to achieve the readiness stage, the organization should consider reviewing its program based on the SECI model (Salwa & Susanty, 2016).

Based on the preceding, this study aims to measure and evaluate employee readiness for KM implementation in BPK. As used by prior studies, is the SECI process able to measure the intention to be involved in KM activities and the employee readiness to implement KM? The result of this study is expected to fill the knowledge management implementation gap in Indonesia regarding employee readiness in the public sector. As most of the available literature currently discusses, KM is in the business sector. In addition, no literature is found discussing employee readiness for KM in the public sector in Indonesia. It is also expected to help BPK and other public sector organizations to implement KM successfully by measuring employee readiness beforehand.

RESEARCH METHOD

This study focuses on evaluating employee readiness for KM. How intense the employees are in allowing themselves to be involved in the KM process shows they are ready. This study was conducted in BPK, considering the high turnover of employees in BPK. Moreover, its vast organizational structure and the current COVID-19 pandemic force employees to adapt and "work from home."

Primary data was collected through questionnaires submitted to employees in the headquarter and representative offices using a random sampling method. The questionnaire used for this study is associated with the previous research, and such a questionnaire is tailor-made to BPK's condition. The detail of the questionnaire is attached in Appendix 1. Each questionnaire was ranked by a 5 points Likert Scale. Meanwhile, secondary data was collected from the literature, previous research findings, and BPK's internal data.

Employee readiness is represented by the intention to be involved in KM activities (SECI process). Structural Equation Modeling (SEM) is the analytical technique to ensure whether models and indicators are valid and to enable the measurement of employee readiness (Salwa & Susanty, 2016). Confirmatory Factor Analysis (CFA) is performed using AMOS (Analysis of Moment Structures) to validate and confirm the measurement. This technique will be used to refine the measurement items to achieve reliability and validity for a proposed readiness model in Figure 1.

The method performed are unidimensionality, validity, and reliability. Any item with a low factor loading should be deleted to ensure the unidimensionality of a measurement model. Thus the factor loading that is less than 0.6 was removed. Further, all squared multiple correlations (SMCs) must be at least 0.40 (Karim et al., 2012). Variables with factor loading less than 0.60 and SMCs less than 0.40 has been removed, and the rest has been considered for further analysis to assist in constructing a new model. Construct validity is achieved when

the Fitness Indexes for a construct achieve the required level. The fitness indexes indicate how qualified the items are in measuring their respective latent construct.

This study used a value of Composite Reliability of 0.6 or higher and an Average Variance Extracted (AVE) is 0.5 or higher. Descriptive statistical analysis was then performed to obtain the mean score for each variable and the overall score. Descriptive statistics are analyses that summarize, describe, and portray data in ways that make it easier to understand. It aids in understanding and describing characteristics of a specific data set by offering brief observations and summaries about the sample, which can help to indicate the trends. Typically, summaries include quantitative data and visuals such as graphs and charts (Conner & Johnson, 2017).

RESULT AND DISCUSSION

The data was collected by using a questionnaire from 216 respondents. Most respondents are around 31 – 40 years old, with 75% of the total respondents, 45.8% of the respondents are female, and 54.2% are male. The majority of the level of education, which represents 57.9% of the respondents, is undergraduate. Meanwhile, the average work length is 11-15 years, representing 58.8% of respondents. Most of the sample were employees from the West Region, with 44.4% of respondents.

Confirmatory factor analysis was performed to validate and confirm the dimensions test using AMOS version 27. This analysis meth-

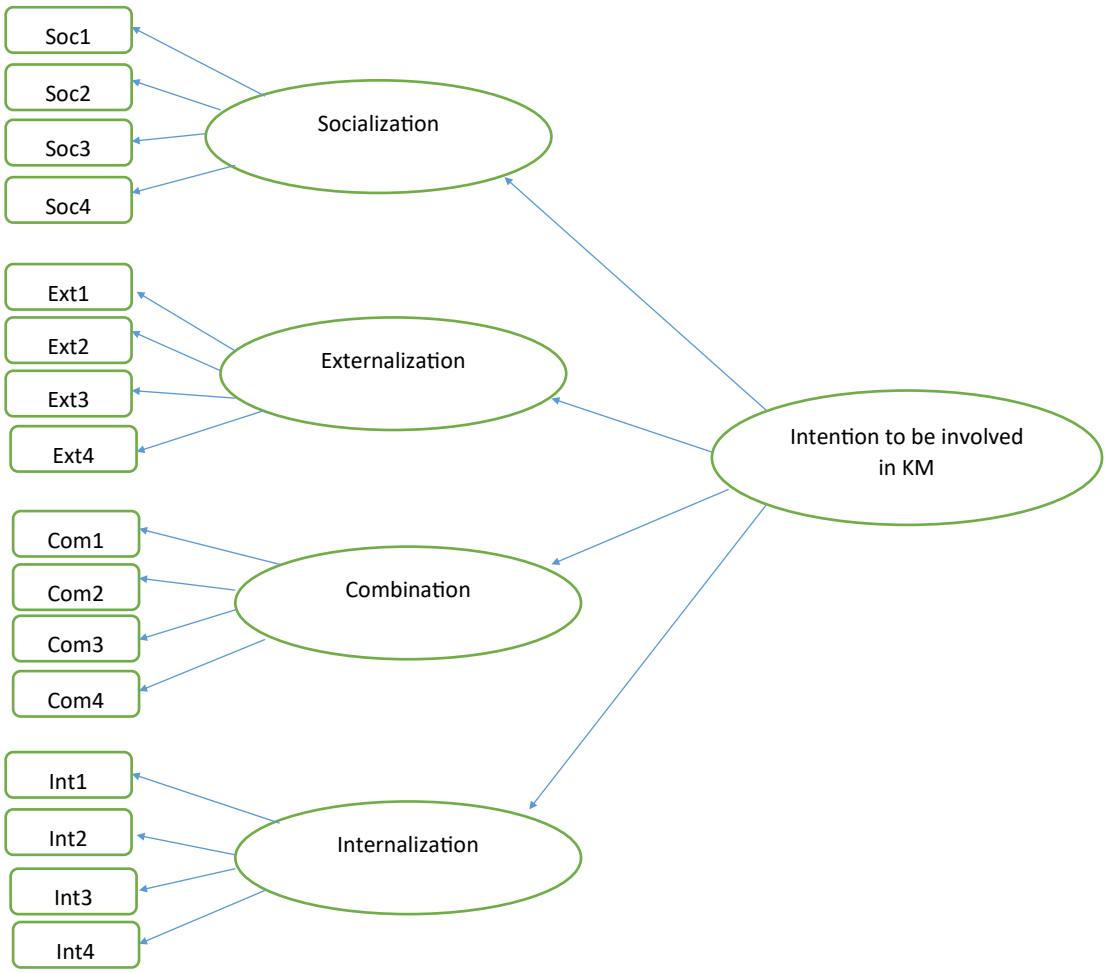

Figure 1. Research Model

od was performed to refine the measurement to attain reliability and validity for a confirmed readiness model. The first test was run for the first model in Appendix 2, and the factor loadings and SMCs are shown in Appendix 3. The first model shows that factor loading for every item is higher than 0.60 except Ext5. Furthermore, SMC for all items is higher than 0.40 except Com1. It suggests that all other item is valid except for Ext 5 and Com1, so both items will be removed from further analysis. A second-order analysis was then conducted, and the new construction is shown in Appendix 4. The construct was performed using CFA to measure the validity and reliability. The result is shown in Appendix 5.

The second-order analysis results show that all factor loading and SMCs are higher than the expected value. In addition, the item deletions for this construct are 10.53% (2 out of 19 items). This suggests that the construct is valid (less than 20%). The result of the model fit for this study and the criteria used are summarized in Table 1.

According to the result of various model fit in Table 1, we can see that some methods did not achieve a good model fit. However, researchers have no agreement on which fitness indexes to use. The technique of model fit will depend on several factors, such as the amount of sample and literature source (the value of acceptable model fit might differ from researcher to researcher). Furthermore, for the reliability test, the AVE is run manually using Formula 1, with K as Factor Loading and n as the number of items. The result is shown in Table 2.

$$AVE = K^2/n \quad \text{..... (1)}$$

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Table 2. AVE Results

Items	AVE
Socialization	0.6380
Externalization	0.5805
Combination	0.5854
Internalization	0.7397

The AVE scores, which compute the convergent validity for all variables, are above the

Table 1. The Result of Various Model Fit

Item	Criteria	Result	Category
Parsimonious fit (X2/Df)	< 3.00	2.811	Fit
Goodness of fit index (GFI)	0.90	0.839	Less Fit
Adjusted Goodness of fit index (AGFI)	0.90	0.786	Less Fit
Root mean square residual (RMR)	<0.05	0.022	Fit
Root mean square error of approximation (RMSEA)	<0.08	0.092	Less Fit
CFI (Comparative Fit Index)	>0.90	0.921	Fit
NFI (Normed Fit Index)	>0.90	0.884	Less Fit
TLI (Tucker-Lewis Index)	>0.90	0.907	Fit

minimum suggested value of 0.5 for all constructs. This suggests that the construct is reliable and has achieved its convergent validity. It implies that BPK's employee is ready to implement knowledge management. In addition, a descriptive statistic was conducted to obtain the mean score for each variable and the overall score. The results of the descriptive statistics are shown in Table 3.

Based on the results of descriptive statistics, the average Mean for each item is in the high category (maximum Likert value is 5). The results indicate that BPK employees have high readiness to implement knowledge management as measured by the intention to engage in socialization, externalization, combination, and internalization.

CONCLUSION

BPK employees are ready to implement KM. The results of the SEM analysis revealed that there were 14 out of 16 items considered the most representative dimensions in the SECI process. The descriptive analysis also substantiated this, which showed average value in the high category. Both analyses reveal that employees of BPK are willing to be involved in KM activities.

This study reveals that socialization, externalization, combination, and internalization are applicable to measure employee readiness for KM implementation in BPK. The result of the second-order analysis shows this. Furthermore, each dimension's factor loading value is higher than 0.6. It implies that all the criteria of the goodness of fit model tested qualified.

Further studies are required to add more variables, extend the number of samples, and use different methods. Moreover, instead of the SECI process, the subsequent researchers might use the concept of Ba for knowledge exchange and creation: Originating Ba, Dialoguing Ba, Systematizing Ba, and Exercising Ba (Sujatha & Krishnaveni,

Table 3. Descriptive Statistics

Item	N	Mean	Standard Deviation
Soc5	216	4.31	0.573
Soc4	216	4.15	0.679
Soc3	216	4.22	0.700
Soc2	216	4.47	0.570
Soc1	216	4.32	0.574
Ext4	216	4.46	0.536
Ext3	216	4.12	0.692
Ext2	216	4.15	0.666
Ext1	216	4.37	0.564
Com5	216	4.16	0.615
Com4	216	3.96	0.746
Com3	216	4.00	0.692
Com2	216	4.19	0.589
Int4	216	4.15	0.625
Int3	216	4.13	0.663
Int2	216	3.97	0.715
Int1	216	4.07	0.661

2018). As the SECI process is popularly cited in the KM literature as the basic process for knowledge creation and sharing, further studies might consider other knowledge cycles or processes to measure employee readiness.

Meanwhile, for BPK to achieve readiness, it is suggested to conduct, facilitate, and institutionalize knowledge management activities in job descriptions by conducting the socialization, externalization, combination, and internalization processes. Moreover, it is also suggested that knowledge creation activity be extended, for example, by encouraging research and development and by conducting publications, delivering presentations, preparing websites, formulating white papers, teaching, learning activities, policies, reports, and other mechanisms of knowledge sharing.

Furthermore, it is suggested that public institutions implementing knowledge management assess employee readiness beforehand. However, employee readiness will define the institution's successful implementation of Knowledge Management. It will also prevent organizations from allocating too much budget for "failure" implementation of knowledge management. This paper could be used as one of the references to measure employee readiness for the public sector or any organization before implementing knowledge management, especially for ministries or public institutions with employee characteristics similar to BPK.

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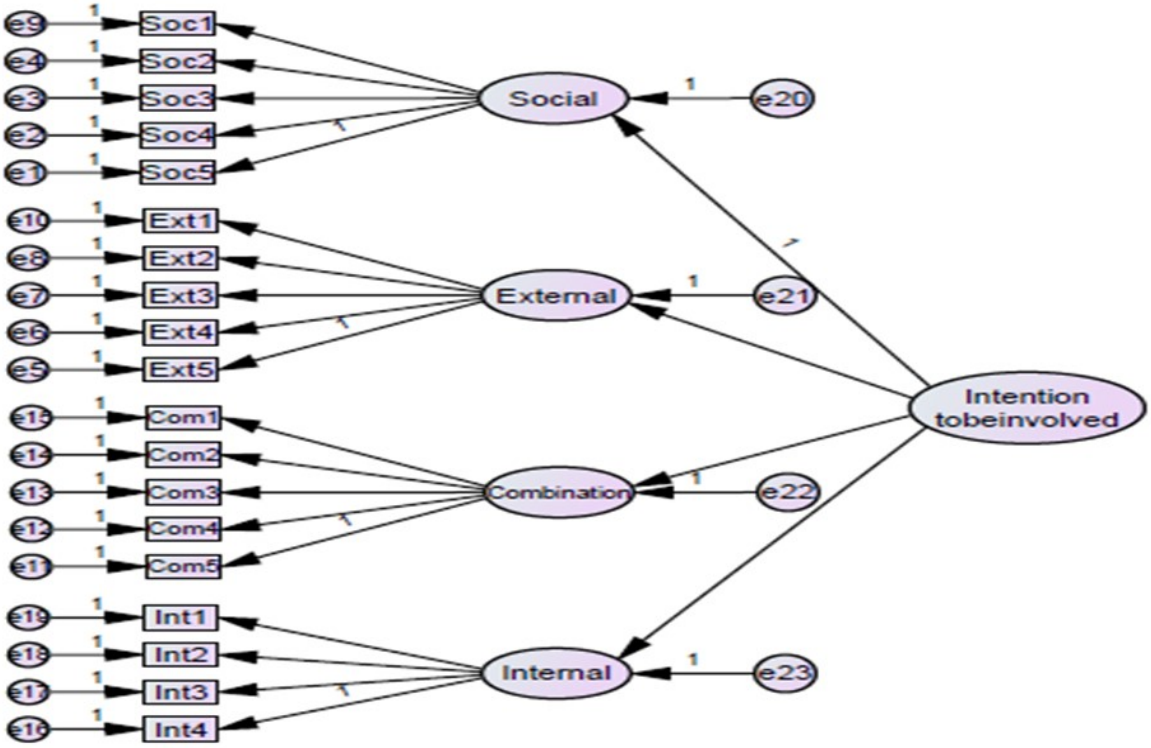
APPENDICES

Appendix 1. Questionnaire

Employee Readiness
I intend to get involved in knowledge management activities
Socialization
I intend to be involved in gathering information and experiences from others within my organization
I intend to be involved in sharing information and experience with others within my organization
I intend to be engaged in dialogue with stake holders
I intend to be involved in findings new strategies and opportunities inside the organization
I intend to be involved in creating a work environment that allows colleagues to understand the craftsmanship and expertise
Externalization
I intend to be involved in creative dialogues with colleagues
I intend to use deductive (top down) and inductive (bottom up) thinking for strategy formulation
I intend to use metaphors (images/description) in dialogue for concept
I intend to exchange various ideas with colleagues
I intend to provide subjective opinions in dialogues
Combination
I intend to use published literature, computer simulation, and forecasting of multi-unit to formulate
I intend to create documents on job/tasks
I intend to create databases on job/tasks
I intend to build up materials by gathering literature and technical information
I intend to transfer newly created concepts to my colleagues
Internalization
I intend to be involved in liaisoning activities with other departments by developing cross functional
I intend to be involved in setting teams as a model for conducting experiments and sharing results with entire departments
I intend to be involved in searching and sharing new values and thoughts with colleagues
I intend to share and try to understand management vision through communications with colleagues

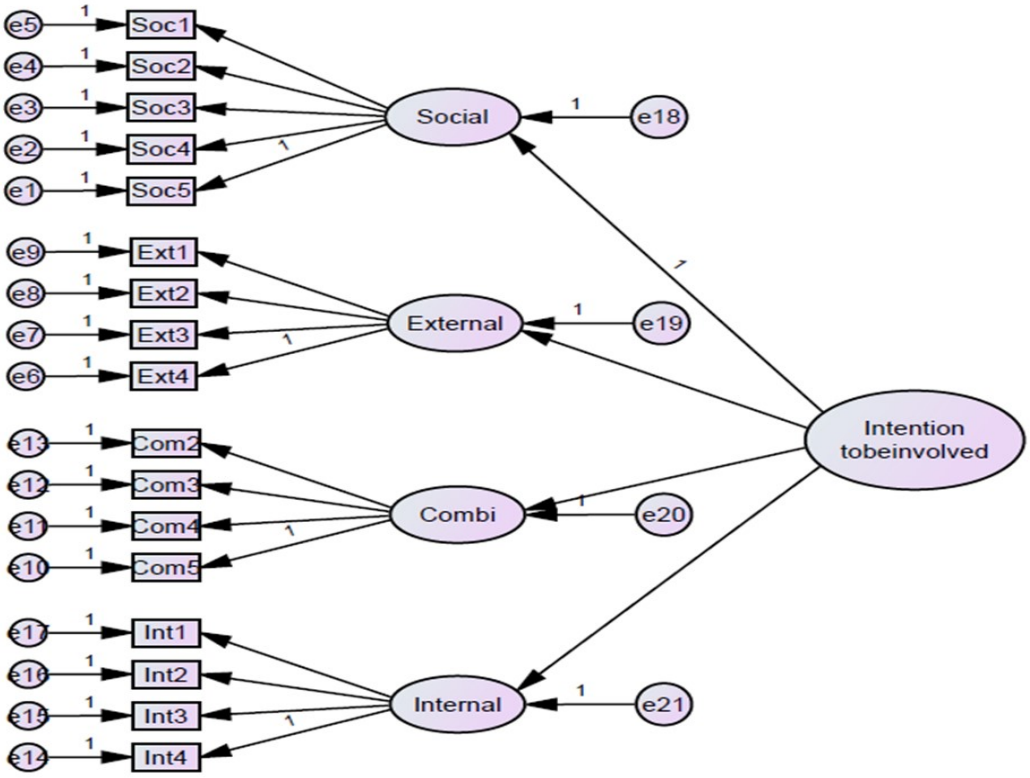
Appendix 2. Proposed Model 1



Appendix 3. Results of factor loadings and SMC—First Model

Item	Factor loadings	SMC
Social	0.875	0.711
External	0.977	0.745
Combination	0.863	0.955
Internal	0.843	0.765
Soc5	0.837	0.738
Soc4	0.827	0.715
Soc3	0.824	0.828
Soc2	0.740	0.679
Soc1	0.760	0.470
Ext5	0.467	0.571
Ext4	0.739	0.653
Ext3	0.742	0.553
Ext2	0.799	0.605
Ext1	0.771	0.595
Com5	0.685	0.578
Com4	0.778	0.638
Com3	0.743	0.551
Com2	0.808	0.546
Com1	0.756	0.218
Int4	0.824	0.547
Int3	0.910	0.679
Int2	0.846	0.684
Int1	0.859	0.700

Appendix 4. Proposed Model of Second Order Analysis



Appendix 5. Results of factor loadings and SMC— Second Order Analysis Model

Item	Factor loadings	SMC
Social	0.882	0.709
External	0.98	0.683
Combination	0.827	0.959
Internal	0.842	0.779
Soc5	0.835	0.736
Soc4	0.826	0.714
Soc3	0.826	0.829
Soc2	0.741	0.681
Soc1	0.761	0.650
Ext4	0.742	0.622
Ext3	0.735	0.597
Ext2	0.797	0.473
Ext1	0.772	0.595
Com5	0.688	0.636
Com4	0.773	0.54
Com3	0.788	0.551
Com2	0.806	0.579
Int4	0.825	0.548
Int3	0.910	0.682
Int2	0.845	0.682
Int1	0.858	0.697