

A Causal Model of Managerial Effectiveness for Managers of Water Service Providers in Davao Region XI, Philippines

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Abstract: This study determined the best fit model of managerial effectiveness among managers of water service providers based on knowledge management, personal skills, and emotional labor of six public water utility providers in Davao Region, one of the regions of the Philippines, designated as Region XI. The Structural Equation Modeling (SEM) was utilized in this study with a sample of 400 respondents who were employees of the different water utility providers in Region XI. Sets of adapted survey questionnaires were used to obtain data from the respondents, which were subjected to content validity and reliability analysis. The data were analyzed using the Mean, Pearson-r, and Structural Equation Model. The results reveal that the levels of knowledge management, personal skills, and emotional labor strategies of managers among water service providers are very high. Moreover, a significant relationship existed between these variables. The best fit model (hypothesized model 5) revealed a significant relationship between knowledge management and personal skills as exogenous variables predicting the endogenous variable managerial effectiveness.

Index Terms: causal model, knowledge management, management, managerial effectiveness, Philippines, water service provider, SEM

I. INTRODUCTION

Organizational problems such as managerial ineffectiveness often arise because of a lack of managerial responses arising from dispersed knowledge (Becker, 2002). There have been a number of managerial strategies tested to address different components of effectiveness, thereby guiding managers to be in control, one of which is feedback-seeking. However, seeking positive feedback, for example, decreased constituents' opinions of the manager's effectiveness [3]. Further, it was argued that the problems brought by managerial ineffectiveness such as low productivity, dwindling morale, and high excessive employee turnover are because of a lack of quality relationship between the manager and employees [2].

One important aspect of managerial effectiveness that can be stressed out is the managerial context that focuses on the individual's attributes. It is believed that organizational context can significantly support or hinder job performance [23]. Considering the context of the water industry, a study conducted in the U.K.'s Privatized water industry [21] revealed that a firm could enhance the interests of its shareholders and other relevant stakeholders by upholding customer interests and managerial performance. Hence, managerial effectiveness can be translated into managerial autonomy in water service

providers, which is considered an important factor in managerial effectiveness. In support, the relationship between managerial effectiveness and the water industry [4] is mutually beneficial because it develops a sense of managerial autonomy that is central to the overall firm's strategy.

As a firm's overall strategy, the pillars of Knowledge management can capture managerial effectiveness by embracing internal and external factors [30]. Also, on the manager's personal skills aspect, it can be argued that the perceived level of management effectiveness lies in the missing link between the importance of managerial effectiveness and behavioral self-assessment. The relative importance of the manager's skills [29] highlights the aspects of technical, administrative, and human skills that can be used as a barometer when exploring managerial effectiveness. Also, the role of emotional labor (Shuck et al., 2013) is a crucial factor taken by professionals when addressing managerial effectiveness in terms of coaching and counseling.

In the scope of managerial effectiveness, the three variables such as knowledge management, personal skills, and emotional labor play an important part. Further, knowledge management is a vital economic resource essential for sustaining competitive advantage [25]. Personal skills are the variable that highlights the use of cognitive and technical skills for managers to uphold a holistic behavioral management approach in an organization [19]. Emotional engagement [26] is based on the feeling that the employees' work matters and that their co-workers are committed, passionate, and motivated by their work and its mission.

The water industry in the Philippines has affirmed the need for holistic managerial effectiveness to uphold full quality service to customers. More recent researches has focused on quality service that is dependent on dedication, positive emotions, and good emotional engagement [32]. It was suggested that the study shall contribute to addressing the growing evidence of failures and increasing public pressure in water supply and sanitation services [24]. Moreover, there is also a need to find a model for managerial effectiveness that considers the organizational context, personal skills of managers, and quality of engagement among employees that would serve as a benchmark for other industries.

II. METHOD

2.1 Research Design

This study used Structural Equations Modelling, a statistical methodology that takes a confirmatory approach to analyze a structural theory bearing on some phenomenon [6]. This study determined the levels of relationship and causal processes among knowledge management, personal skills, emotional labor, and managerial effectiveness.

First, the study applied a descriptive correlation method. It is descriptive because it involves describing a certain aspect of group individuals whose responses are continuous data wherein simple means on the average level are depicted. The correlation approach is a preliminary analysis to measure the connection between two or more variables. Second, the relationships are represented by a series of structural regression equations and modeled pictorially to generate a concrete conceptualization of the propositions and theory under study. Structural equation modeling is an advanced multivariate technique to simultaneously examine multiple dependence relationships between variables. Specifically, this study examined the underlying relationship of knowledge management, personal skills, emotional labor, and managerial effectiveness of water service providers in the Davao Region.

Also, structural equation modeling has been viewed as an appropriate tool because the researcher postulates the model based on his knowledge of the related theories and propositions on empirical research in the study area. It is noted that the ultimate objective is to find a model that is both substantively meaningful and statistically well-fitting [15].

The managerial effectiveness is the endogenous variable in this study, and it is identified as the "unobservable" variable. Since the latent cannot be observed directly, they naturally cannot be measured directly. Five hypothesized models developed for this study are tested through Amos version 22.0. The aim is to determine the extent to which it is consistent with the data. If the model fits adequately, it is found to be plausible or postulated relations among the variables. If it is otherwise, then the testability of the relationship is rejected, and a new model has to be generated [6].

Furthermore, SEM is the core statistical analytical technique applied in this study because it is appropriate in investigating the factors influencing managerial effectiveness among water service providers in the Davao Region. The SEM measures relationships among the observed and latent variables by estimating multiple regression equations to test the overall fit of the models [6]. The characteristics of the SEM model are summarized in three perspectives: first, estimation of multiple and interrelated dependence relationships; second, an ability to represent unobserved concepts in these relationships and account for the measurement error in the estimation process; and the third, defining a model to explain the entire set of relationships.

The SEM in this research is schematically portrayed with configurations of four geometric symbols – a circle or ellipse,

a rectangle, single-headed arrows, and double-headed arrows. The circles or ellipse represent unobserved latent variables, rectangles represent observed variables, single-headed arrows (\rightarrow) represent the impact of one variable on another, and double-headed arrows (\leftrightarrow) represent co-variances or correlations between pairs of variables.

The error terms (ϵ) unique factors to a variable represent residual variance within variables not accounted for pathways in the hypothesized model. Measurement error is associated with an observed variable and residual error predicting an unobserved variable [6].

2.2 Research Participants

Using Yamane's formula [33], 400 respondents participated in the study as employees of the different water utility providers in Region XI. The stratified random sampling technique was employed in selecting the respondents. This technique is a form of non-probability sampling in which decisions concerning the individuals are included in the sample are taken by the researcher, based upon a variety of criteria which may include specialist knowledge of the research issue or capacity and willingness to participate in the research. Specifically, the respondents were from the rank and file up to supervisory positions representing the different water service providers in Davao Region. Further, the respondents understood the survey questionnaire content and could interpret it based on their experience in the water utility.

Excluded in the study are the department managers, division managers, and the general managers of water service providers in Region XI and those who refused to answer the survey questionnaire. The respondents can be withdrawn from the research study if they commit falsification, plagiarism and other moral offenses or the respondents have health conditions and special needs. Further, they are also free to withdraw from participating in the conduct of the study whenever they find it uncomfortable or hard to answer the items in the survey questionnaires. Their reasons are prioritized and respected by the researcher.

2.3 Problem Statement and Objectives

The discussion revolves around the following research questions: 1. What is the status of knowledge management, personal skills, emotional labor, and managerial effectiveness of water service providers?; 2. What is the significance of relationship among the endogenous and exogenous variables?; and 3. What are perceptions of the water service providers about the best fit model?

Specifically, this study addressed the major question: What is the best fit model of managerial effectiveness among managers of water service providers based on knowledge management, personal skills, and emotional labor. To answer this major question, this study addressed the following objectives:

- To assess the level of knowledge management of managers in terms of: externalization, combination, internalization; and socialization;

- To ascertain the level of personal skills of managers in terms of : technical competence, cognitive abilities, administrative skills and interpersonal skills;
- To measure the level of the emotional labor of managers in terms of: frequency, intensity, variety, deep acting, and service acting;
- To measure the level of managerial effectiveness of managers in terms of: valuing behaviors, communication behaviors, and leadership behaviors;
- To determine the relationships between: knowledge management and managerial effectiveness, personal skills and managerial effectiveness, emotional labor and managerial effectiveness; and
- To discover the best fit model of managerial effectiveness for managers of water service providers in Davao City, Philippines.

2.4 Research Instrument

Four sets of survey questionnaires were used to obtain data from the respondents, which are adapted from the existing questionnaires used in previous studies. To ensure the accuracy of measurements, the questionnaires were subjected to content validity and reliability analysis. External validators validated the survey instruments with expertise in social research and statistics.

Before conducting the actual survey, the researcher conducted a preliminary survey with 40 respondents for reliability testing. The preliminary data gathered was subjected to internal consistency type of validity test using Cronbach's alpha.

The managerial effectiveness scale is adapted from surveymonkey.com. The questionnaire is a 5-point Likert Scale from 1 (Never) to 5 (Always). It has four subscales: valuing behavior, interdependence behavior, communication behaviors, and leadership behaviors.

2.5 Sampling Procedure and Data Analysis

Using Yamane's (1967) formula, 400 respondents participated in the study as employees of the different water utility providers in Region XI. The stratified random sampling technique was employed in selecting the respondents. This technique is a form of non-probability sampling in which decisions concerning the individuals are included in the sample are taken by the researcher, based upon a variety of criteria which may include specialist knowledge of the research issue or capacity and willingness to participate in the research. Specifically, the respondents were from the rank and file up to supervisory positions representing the different water service providers in Davao Region.

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plagiarism and other moral offenses or the respondents have health conditions and special needs. Further, they are also free to withdraw from participating in the conduct of the study whenever they find it uncomfortable or hard to answer the items in the survey questionnaires. Their reasons are prioritized and respected by the researcher.

After retrieval of the accomplished questionnaires, the gathered data are screened, encoded, tabulated, and analyzed. The following statistical tools were utilized for a more comprehensive interpretation and analysis of the data.

- Mean was used to measure the levels of knowledge management, personal skills, emotional labor, and managerial effectiveness.
- Pearson Product Moment Correlation was utilized to determine the relationships of knowledge management, personal skills, emotional labor, and managerial effectiveness.
- Structural Equation Model (SEM) was used to assess the interrelationships among variables of the conceptual model and determine the best fit model of managerial effectiveness. In evaluating the goodness of fit of the models, the following indices were computed: CMIN/DF, Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA) and P of close Fit (PCLOSE).

III. RESULTS AND DISCUSSION

This section presents a discussion, interpretation and implications of the results of the quantitative study on causal model for managerial effectiveness of water service providers. The section is sub-divided into two: Quantitative Results and Establishing the Best Structural Model for Managerial Effectiveness. The former describes the respondents' perceived level of Knowledge Management, Personal Skills, Emotional Labor, and Managerial Effectives. On the other hand, the latter presents an analysis of the significance and relationships of variables in the best structural model.

3.1 Quantitative Results

Status of Knowledge Management, Personal Skills, Emotional Labor, and Managerial Effectiveness is shown in Table 1. The high level of Knowledge Management (4.19) may be attributed to organizational cultures that urge employees to ask questions objectively and upholds the importance of socialization and sharing of ideas related to work. The results also proved that managers' creativity and building new ideas are being valued and appreciated. The high level of emotional labor (3.50) is due to the ability of the manager to control his/her emotion based on the situation. Simply put, managers make an effort to express the different sets of emotions per varying situations. Further, the very high levels of personal skills (4.51) and managerial effectiveness (4.39) are due to the crucial roles of technical competence, cognitive abilities, administrative and interpersonal skills. Ultimately, it revealed that being competent in technology and having people skills play a big

role in having a successful career. In terms of managerial effectiveness, it was revealed that managers value behavior because it is one way of showing importance to people, concepts and things.

For Knowledge management level, the study results are in conformance with the pronouncement that in any organization, there is a need to mobilize knowledge resources held by individuals and turn these resources into value-creating activities [13]. Also, employees are encouraged to use network systems and the web for identifying tasks that conform to the concept that emphasizes that technology is one of the key supplements of knowledge management [17].

The level of Personal Skills of Managers is very high. The very high level of personal skills of managers is manifested in all of the statements under the four indicators, which revealed the four high mean scores described as very high. This observable fact supports the importance of technical competence [7], which can be translated using the three functions: entrepreneurial, managerial, and technical-functional aspects. The personal skill factor is crucial in capitalizing on human capital because it involves entrepreneurial spirit, supporting the concept of and competitive drive to foster team effort [18]. Further, the very high mean scores in cognitive abilities support the vitality of metacognition among managers. It can also be argued that a very high level of personal skills supports the process of metacognition that allows the manager to do reflective thinking, which is considered central in personal skills [11].

The level of Emotional Labor of Managers is High. When the level of emotional labor was computed per indicator, except for "surface acting," the results showed that all indicators such as frequency, intensity, variety, deep acting were high. The result of the study supports the concept on the process involved in emotional labor, which highlights the varying degrees of job satisfaction in terms of physical, cognitive, and roles being performed by the managers [16]. The frequency of emotions [9], for example, raised the concern on the behavior change based on organizational climate. Similarly, this concept is further emphasized in the study conducted by Mahal (2009), wherein dimensions of organizational climate significantly influence emotional labor.

The level of Managerial Effectiveness of Managers is Very High. This result can be translated into the context of motivating factors. The ability of managers to motivate supports the concept of intrinsic and extrinsic factors [30]. The role of emotional labor in the preceding section provides a strong argument that managers may take an interpersonal and intrapersonal perspective when assessing one's level of effectiveness. Both levels (intra and inter) are difficult to internalize because it needs leadership skills. The very high value of the leadership item reflects the needs of internal and external alignment to the organization's strategies. This occurrence supports upholding a proactive culture that strengthens the role of knowledge management to enhance managerial effectiveness [31]. The difficulty in managing

personal skills captures the advancement of technological capabilities [20] and the competitiveness of employees to overall team's skills [18], which has also remained a difficulty for managers in setting a clear preference and make informed decisions.

Table 1. Status Of Knowledge Management, Personal Skills, Emotional Labor, And Managerial Effectiveness

Latent Variables / Observed Variables	Standard Deviation		Mean	Descriptive Level
Knowledge Management	0.48		4.19	High
Personal Skills	0.41		4.51	Very High
Emotional Labor	0.72		3.50	High
Managerial Effectiveness	0.60		4.39	Very High

Correlation of the Exogenous and Endogenous variables is shown in Table 2. It can be seen from the results that there was a significant positive, strong relationship between knowledge management process and effectiveness of managers as reflected in the table, the p-value that was less than 0.05 and correlation coefficient $r = 0.573$ ($r=0.573$, $p<0.05$). Therefore, the null hypothesis that there is no significant relationship between the knowledge management process and managers' effectiveness was rejected. This meant that the knowledge management process was strongly related to managerial effectiveness.

Mainly, the data revealed that all indicators: externalization, combination, internalization, and socialization showed a significant relationship to valuing behaviors, interdependent behavior, communication behavior, and leadership behavior as their individual p-values are less than 0.05. The significant relationship between leadership behavior and socialization, for example, may support the idea that the level of employees' capacity to relate with one another or with the customers is highly attributed to managerial effectiveness. Apart from the significant values obtained, the similarities of the indicators possessed by variables such as interdependent behavior and socialization supposes the idea that managerial effectiveness and knowledge management are strongly correlated. In totality, the statistical soundness of results justifies all possible relationships between the two variables.

Managerial effectiveness of managers was significant with a p-value less than 0.05 and $r = 0.815$ ($r=0.815$, $p<0.05$). This indicates that the Personal Skills of Managers are greatly concerned with managers' effectiveness. Thus, the null hypothesis was rejected. The findings also suggested that to be an effective manager; a manager should consider and acquire technical competence, cognitive abilities, administrative skills, and interpersonal skills.

The result revealed that all indicators of emotional labor were positively correlated with the managers' effectiveness except variety and surface acting since the p-value was more than 0.05, and the overall $r =$ value was 0.089 ($r=0.089$, $p>0.05$) on variety and 0.030 on surface acting.

There is a significant positive, strong relationship between the knowledge management process and the managerial

effectiveness of managers. These findings are aligned with the statement that managerial effectiveness is dependent on knowledge management [12]. Findings also support the concept that the absence of measurable benefits and inadequate support may lead to the failure of managers [28]. This concept is parallel to the idea of continually enhancing managerial skills in terms of strategy, management, learning, communication, IT, and interpersonal skills. Again, this concept is reflected in this study's high correlation between knowledge management and managerial effectiveness.

In a similar perspective, this study can be supported by the concept on organizational routines, processes, and norms influence the level of managerial effectiveness because knowledge is a fluid mix of framed experiences, values, contextual information, and expert insights. This is also aligned with the concept of Chong and Choi (2005), wherein emphasis is directed to the implementation of knowledge management because its success would yield continued adequate top management support. Also, this concurs with the concept which emphasized the importance of the basic process of creation, organization, diffusion, and exploitation, which are crucial in influencing managerial effectiveness [13].

Table 2. Correlation Of Exogenous and Endogenous Variables

Exogenous Variables	Endogenous Variable Managerial Effectiveness	
	r-value	Sig.
Knowledge Management	0.573	.000
Personal Skills	0.815	.000
Emotional Labor	0.285	.000

The relationship between personal skills and managers' effectiveness was significant. This indicates that the Personal Skills of Managers are greatly concerned with managers' effectiveness [22]. In his study, the core competencies of a manager consider the following factors: Technical competence, Cognitive abilities, Administrative skills, and Interpersonal skills, which determine managerial effectiveness.

The result revealed that all indicators of emotional labor were positively correlated with the manager's effectiveness except variety and surface acting. The significant relationships are aligned with the concept of mutual roles of emotional labor and managerial effectiveness [1]. The concept highlights the role of emotional labor, which deals with the employees' level of interest, good disposition, anxiety, and other affective states. The significant ratings may also reflect the findings wherein emotional labor is a basic course of action to consider when handling relationships, especially conflict management [27].

3.2 Establishing the best structural model for managerial effectiveness

This area provides the analysis of the interrelationships among the study's variables. The hypothesized model specified was tested, and several alternative models were classified and identified to achieve a best-fitting model. Models discussion and implications were presented for understanding the impact

of the exogenous variables on endogenous variables performance. Four alternative models were tested to attain the best fit model of managerial effectiveness. The summary of the findings of the goodness of fit measures of these five structural models is presented in Table 3.

In identifying the best fit model, all the indices included must consistently fall within the acceptable ranges. Chi-square/degrees of freedom value should be between 0 and 2, with its corresponding p-value greater or equal to 0.05. Root Mean square of Error Approximately value must be less than 0.05, and its corresponding p-value must be greater or equal to 0.05. The other indices such as the Normed Fit Index, Tucker-Lewis Index, Comparative Fit Index, and Goodness of Fit Index must be greater than 0.90 [8].

Hypothesized Structure Model 1, 2, 3, and 4 (See Appendix 2) failed to meet the criteria that the value of Chi-square/ degrees of freedom should fall between 0 and 2 also, its corresponding p-value is less than 0.05. In addition, the outcome presented failed to meet the root mean square of the error approximation assumption. The root mean of the data is not less than 0.05, and the corresponding p-value is less than 0.05. Thus, the null hypothesis that there is no best fit model for managerial effectiveness for the water service provider managers is rejected.

Likewise, hypothesized structure models 1 and 2 show a fit index for GFI, CFI, NFI, and TLI did not meet the criteria, indicating a poor model. All the index values hardly meet the criteria. Lastly, as shown in Figure 5.1, hypothesized model 5 is the best fit model. It included knowledge management process and personal skills as the latent variable that is expected to influence the latent endogenous variable on managerial effectiveness.

The model fitting was calculated as highly acceptable, as presented in Table 6. The Chi-square divided by the degrees of freedom was 1.460 with a P-value of 0.000. This indicated a very good fit model to the data. This was also strongly supported by the RMSEA index of .034, which was less than to 0.05 level of significance with its corresponding p-value > 0.05. Likewise, NFI, TLI, and CFI were a good fit model as their values fall within each criterion.

Figure 1 shows the model that represents the causal relationships between (know_mgt) knowledge management and (man_eff) managerial effectiveness; and (per_skil) personal skills and (man_eff) managerial effectiveness as represented by the single-headed arrows. It further shows that oval shapes represent the latent variables are (know_mgt) knowledge management, (man_eff) managerial effectiveness, (PER_EFF) personal effectiveness, and (per_skil) personal skills. The factor on (emo_lab) emotional labor of managers is no longer part of the model. As to the observed variables, (SN) socialization, (IN) internalization, and (EN) externalization under (know_mgt) knowledge are included. The model also shows that (AS) administrative skills, (CA) cognitive abilities, and (TC) technical competence under (per_ski) personal skills are included in the model.

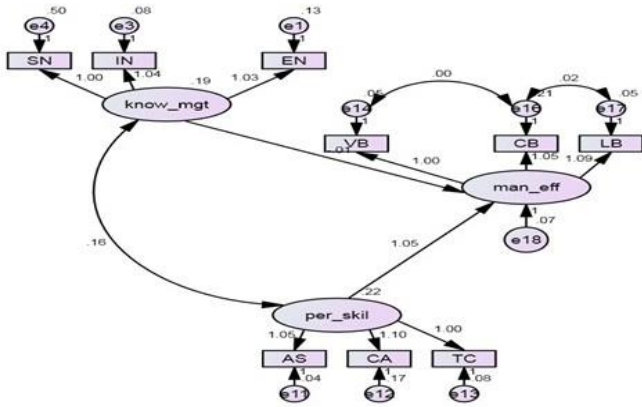


Fig. 1. A Model Showing the best fit model of interrelationship between the Exogenous Variable Personal Skills and Knowledge Management and their Causal Relationship on Managerial Effectiveness

Hypothesized Model 5 satisfied the criteria for the best fit model. It included knowledge management process and personal skills as the latent variable that is expected to influence the latent endogenous variable on managerial effectiveness. In a learning organization where managerial effectiveness is crucial [12], [8], [21], [10] and play a vital role in analyzing the complexity and possibility of the revealed relationship among latent variables. Looking closely at the best fit model, the aspects of leadership and managerial skills are deemed necessary to practice strategic plan and systems thinking the

approach to use resources in the best possible way. Theoretically speaking, this study relates to the investigation conducted wherein the concept of managerial effectiveness is aligned with the classical organizational theory of administrative approach as espoused by Henri Fayol's planning, leading, organizing, and controlling process [5].

IV. CONCLUSION

The use of the structural equation model strengthened the reliability and thoroughness of this research because the analysis goes through the steps of model specification, model estimation, and model evaluation. Results revealed that the level of knowledge management is high; the level of personal skills is very high; the level of emotional labor is high; the level of managerial effectiveness is very high, there is a significant relationship among knowledge management, personal skills, emotional labor to managerial effectiveness; there is a combined influence among knowledge management, personal skills, emotional labor to managerial effectiveness. Of the five explored structural models, only model 5 had indices that consistently indicated an outstanding fit to the data; therefore, it is identified as the best fitting structural model. This model indicates that the managerial effectiveness of managers of water service providers is influenced by personal skills and knowledge management.

Table 3. Summary of The Goodness of Fit Measures of The Five Structural Models

Model	P-value >0.05	CMIN / DF 0<value<2	GFI >0.95	CFI (0.95	NFI >0.95	TLI >0.95	RMSEA <0.05	P-close >0.05
1	.000	5.378	.854	.892	.870	.873	.105	.000
2	.000	4.839	.875	.906	.885	.888	.098	.000
3	.000	3.089	.944	.974	.962	.967	.072	.002
4	.000	2.847	.933	.969	.953	.961	.068	.006
5	.000	1.460	.983	.996	.988	.994	.034	.852

Legend: CMIN/DF – Chi-Square/Degrees of Freedom
 GFI – Goodness of Fit Index
 RMSEA – Root Mean Square of Error Approximation
 NFI – Normed Fit Index
 TLI – Tucker-Lewis Index
 CFI – Comparative Fit Index

The success of managerial effectiveness of the water service provider managers can be attributed to many factors. Other studies may have postulated these factors to manifest the personal effectiveness of managers. It is feasible that other factors which manifest more lengthily in the respondents were not among those included in this study. The model fit for managerial effectiveness agrees with modern management theory wherein a combination of theories (Classical and Behavioral Management) is imperative to adapt to constant change. There is no single theory that determines the success of an organization. The modern theoretical concept of engaging and influencing the employees to be part of an overall system is a basic way to manage collective accomplishments and meet

efficiency goals.

In totality, the results of the study support the propositions that there is a significant relationship among the hypothesized relationships: Knowledge Management and Managerial effectiveness [12]; Personal skills and Managerial Effectiveness (Katz, 1974); and Emotional Labor and Managerial Effectiveness (Shuck et al., 2003). Almost all exogenous and endogenous variables' indicators revealed a significant correlation. However, in the aspect of emotional labor, it was revealed that the concept of variety and surface acting do not relate to managerial effectiveness. This may emphasize that deep or surface acting may not be a material component in upholding managerial effectiveness when

employees' emotions are focused on the level of interest, good disposition, anxiety, and other affective states. The best fit model showed that only personal skills have a significant direct effect on managerial effectiveness, which strongly confirms the theory of Katz (1974) linking personal skills to Managerial Effectiveness.

V. RECOMMENDATION

Based on the findings, the significant relationship among knowledge management, personal skills, and managerial effectiveness may give an impetus to the management of water service providers to consider in their strategy the aspects of the value of culture's internalization (knowledge management), administrative skills (personal skills), and leadership and valuing behavior (managerial effectiveness).

Also, it is then recommended that with the challenges and opportunities of managerial effectiveness, the high level of knowledge management and very high level of personal skills have to be addressed by conducting another study that will only focus on these fertile areas for discussion. This future study may employ a qualitative one to grasp another level of the problem.

The Water Service provider may look into a program or project like a managerial attitude enhancement program that will give opportunities for managers and "next-in-line" managers to improve their administrative and strategic skills. For the overall high level of managerial effectiveness, a revisit on the human resource program for different levels of managers is recommended to reinforce the lowest items in the survey result positively.

Lastly, the concept of sustainability [30] may be incorporated into the minds and hearts of managers so that they can empower themselves to strike a balance between societal responsiveness (internal, external, mixed). This challenge also helps them align motivational orientation and attitude to further develop their sense of leadership by taking responsibility and not merely on the liability perspective.

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APPENDIX 1:

Data Collection

During the data collection, the researcher applied the following six steps: First, the researcher presented his concept to his adviser in June 2018. A series of revisions were done before the survey instruments were drafted. Second, the survey instruments were validated through experts' opinions from experienced research enthusiasts from different Universities. Third, after the validation of survey instruments was completed, the researcher tested them in August 2018. A total of 40 respondents participated in the simulation of survey instruments. Fourth, the accomplished survey instruments were submitted to the University of Mindanao statistician for reliability testing. Fifth, after completing the validation and reliability testing for the survey instruments, the researcher submitted her manuscript to the Ethics Review Committee (ERC). After approval from ERC, written permission and endorsement were obtained from the Department. A large chunk of work in terms of the data collection process would occur on the sixth and its succeeding steps. On the sixth step, a letter is attached to the endorsements and then submitted to the General Manager of water utility providers. As soon as the individual permission was granted, a schedule was set for distributing and retrieving the survey forms. Seventh, the researcher personally administered the survey instruments. The survey process is conducted during break time, "toolbox" meetings, refresher courses, and other group activities to maximize time and effectively explain each questionnaire item. Eighth, the researcher personally collected and gathered the questionnaires from her appointed staff after one to two weeks.

APPENDIX 2:

Hypothesized Models 1, 2, 3, 4

