

## Factors affecting knowledge sharing among faculty and staff in a Philippine Public School

Fatores que afetam o compartilhamento de conhecimento entre professores e funcionários em uma escola pública filipina

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### ABSTRACT

One of the most important assets in an organization is knowledge. Once knowledge has been created or captured, organized, and stored, it will now be ready for sharing in the internal and external stakeholders of an organization. However, the quality and how knowledge that is being shared is affected by some factors causing inefficiency or dysfunctions in the organization. This study aims to assess the knowledge management (KM) practices or domains of Sta. Cruz National High School and determine how these domains affect or influence knowledge sharing among its faculty and staff. A survey was used to determine the demographic profile, the levels of knowledge management strategy, culture, and process/technology, and the level of knowledge sharing in the school's organization. A simple random sampling was used using the slovin's formula to determine the sample size which is 108. The reliability of items in the questionnaire was tested by Cronbach alpha (0.962). The data was analyzed using Kolmogorov-Smirnov to test the normality of data, Pearson r correlation, and Multi-linear regression. The results of the study indicated that among the knowledge management domains, KM culture and KM process / technology are the significant predictors of knowledge sharing among the faculty and staff of Sta. Cruz National High School. The KM domain strategy and the demographics are not significant predictors of knowledge sharing. The results of the survey also indicate that KM culture is considered the strongest predictor followed by KM process / technology. Hence, knowledge management culture in the organization enhances communication and sharing between organizational members, and enriches collaboration among them. The study also suggests that the involvement of process innovation such as the use of advance technology is important in providing efficient and effective way of sharing knowledge in the organization.

**Keywords:** Knowledge Management, Knowledge Management Strategy, Knowledge Management Culture, Knowledge Management Process/Technology, Knowledge Sharing.

### RESUMO

Um dos ativos mais importantes de uma organização é o conhecimento. Uma vez que o conhecimento tenha sido criado ou capturado, organizado e armazenado, ele estará pronto para ser compartilhado com as partes interessadas internas e externas de uma organização. No entanto, a qualidade e a forma como o conhecimento está sendo compartilhado é afetado por alguns fatores que causam ineficiência ou disfunções na organização. Este estudo tem como objetivo avaliar as práticas ou domínios de gestão do conhecimento (GC) da Escola Secundária Nacional de Sta. Cruz e determinar como esses domínios afetam ou influenciam o compartilhamento do conhecimento entre seus professores e funcionários. Uma pesquisa foi usada para determinar o perfil demográfico, os níveis de estratégia de gestão do conhecimento, cultura e processo/tecnologia e o nível de compartilhamento do conhecimento na organização da escola. Foi utilizada uma amostragem aleatória simples utilizando a fórmula de Slovin para determinar o tamanho da amostra que é de 108. A confiabilidade dos itens do questionário foi testada pelo alfa de Cronbach (0,962). Os dados foram analisados usando Kolmogorov-Smirnov para testar a normalidade dos dados, correlação de Pearson r e regressão multilinear. Os resultados do estudo indicaram que entre os domínios da gestão do conhecimento, a cultura da GC e o processo/tecnologia da GC são os preditores significativos do compartilhamento do conhecimento entre os docentes e funcionários da Escola Nacional de Ensino Médio Santa Cruz. A estratégia de domínio de GC e a demografia não são preditores significativos de compartilhamento de conhecimento. Os resultados da pesquisa também indicam que a cultura de GC é considerada o mais forte preditor seguido pelo processo/tecnologia de GC. Assim, a cultura de gestão do conhecimento na organização melhora a comunicação e o compartilhamento entre os membros da organização e enriquece a colaboração entre eles. O estudo também sugere que o envolvimento da inovação de processos como o uso de tecnologia avançada é importante para proporcionar uma forma eficiente e eficaz de compartilhamento do conhecimento na organização.

**Palavras-chave:** Gestão do Conhecimento, Estratégia KM, Cultura KM, Processo/Gestão do Conhecimento, Estratégia de Gestão do Conhecimento, Cultura de Gestão do Conhecimento, Processo/Tecnologia de Gestão do Conhecimento, Compartilhamento do Conhecimentoologia KM, Compartilhamento de Conhecimento

## 1. INTRODUCTION

Knowledge is considered as one of the most important assets in an organization. Knowledge, according to Kamasak (2012), enables organizations to develop core competencies and achieve long-term competitive advantage. Organizations must successfully manage their knowledge in order to transfer knowledge into efficiency and productivity. For a fast and efficient exchange of information, a practical understanding and use of knowledge management (KM) is needed.

Girard & Girard (2015) defined knowledge management as the process of creating, sharing, utilizing, and managing an organization's knowledge and information. Jelenic (2011) defines KM as something that adds value to an organization by leveraging its intellectual and knowledge-based assets. Some of the value that can be collected or developed in an organization is determining what employees, partners, and customers know and exchanging information with employees, departments, and even other firms in order to uncover best practices.

Schools and other educational institutions also grab important opportunities to apply KM practices to support their missions in the society. The effective use of KM in these institutions will allow them to improve their students' academic performance, establish a productive workforce, develop new curriculum programs, increase enrollment by looking for cost-effective uses of technology, marketing, and other strategies, and improve existing systems and processes in providing information (Beidelman, 2015).

The introduction of K to 12 in the Philippine educational system poses a big challenge to teachers and administrators due to exhaustive loads of internal and external demands. Hence it calls for a strategic implementation of knowledge management to achieve successfully the visions and missions of the Department of Education not just in the head office but most especially in the school organizations which are considered the frontlines in providing quality education to the communities.

Schools' organizations must effectively employ knowledge management in order to achieve their vision and goal. How teachers and employees share knowledge in their schools plays a vital role in the success of the implementation of the schools' different programs and projects and on how to serve better their most important clientele, the students.

Currently, numerous literatures on the study of knowledge management are predominantly focused on profit-oriented business organizations. In the Philippines, education institutions most especially in public schools' knowledge management and knowledge sharing practices are not well investigated.

Thus, this study attempts to assess the knowledge management practices or domains of a certain public school organization in the Philippines and determine how these domains affect or influence knowledge sharing. The results of this study would provide significant insights to school organizations to address and provide solutions to issues that obstruct knowledge sharing. This would also strengthen best practices that promote knowledge sharing to attain successfully the goals of the organization.

### 1.1 Objectives of the Study

This study aimed to analyse the knowledge management domains and how these affect the knowledge sharing among the faculty and staff of Sta. Cruz National High School. Specifically, it sought to achieve the following objectives:

1. Determine the demographic profile of the faculty and employees of Sta. Cruz National High School in terms of:
  - a. Age
  - b. Sex
  - c. Type of organization personnel (faculty/administration)
  - d. Years in the organization
  - e. Assigned department (Junior High / Senior High)

2. Determine if there is a significant relationship between the following demographic profile and the knowledge sharing among the faculty and staff of Sta. Cruz National High School in terms of:
  - a. Age
  - b. Sex
  - c. Type of organization personnel (faculty/administration)
  - d. Years in the organization
  - e. Assigned department (Junior High / Senior High)
3. Determine if there is a significant relationship between the knowledge management domains (KM Strategy, KM Culture, and KM Process/Technology) and the knowledge sharing among the faculty and staff of Sta. Cruz National High School.
4. Determine which of the demographic profile and knowledge management domains significantly predict knowledge sharing among the faculty and staff of Sta. Cruz National High School.

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## 1.2 Hypotheses

This study aimed to test the following research null hypotheses:

1. There is no significant relationship between the following demographic profile and the knowledge sharing among the faculty and employees of Sta. Cruz National High School in terms of:
  - a. Age
  - b. Sex
  - c. Type of organization personnel (faculty/administration)
  - d. Years in the organization
  - e. Assigned department (Junior High / Senior High)
2. There is no significant relationship between the knowledge management domains (KM Strategy, KM Culture, and KM Process/Technology) and the knowledge sharing among the faculty and employees of Sta. Cruz National High School.
3. The demographic profile and knowledge management domains do not significantly predict knowledge sharing among the faculty and employees of Sta. Cruz National High School.
4. The knowledge management domains do not significantly predict knowledge sharing among the faculty and employees of Sta. Cruz National High School.

## 2 THEORETICAL FOUNDATION

This study is anchored on the different theories that help explain knowledge sharing. One of these theories is the Theory of Reasoned Action (TRA) by Ajzen (1985) which focuses on the intention knowledge sharing behavior among the individual preferences. This theory depicts how attitudes and societal norms influence individuals' intentions to share knowledge. Attitude is defined as the inclination to respond positively or negatively to oneself, others, and the environment.

Another theory is the Social Exchange Theory (SET) from Blau (1964) which is defined as an exchange of a valuable resource in which both parties expect to benefit. This theory is described as an individual's rational action in recognizing the prospect of rewards through social exchange. Another works on Social Exchange Theory was of Emerson (1976). His perspective on social exchange theory highlights the basic dynamics of resource availability, power, and dependence. He believed that relationships were organized in various ways that might vary depending on the type and amount of resources exchanged. He contends that power and dependence are the primary characteristics that define a relationship.

### 3 METHODS

#### 3.1 Research Locale

The study was conducted at Sta. Cruz National High School, Province of Davao del Sur, Region XI, Philippines. The school is located in Barangay Zone III, Poblacion, Sta. Cruz, Davao del Sur. The school has two campuses, the SCNHS Junior High School campus and the SCNHS Senior High School Campus. The Junior High School Campus is situated in a small lot, besides the Municipal Plaza while the Senior High School Campus is located along Rizal Street where the old public market was located.

As a public school, Sta. Cruz National High School carries and embodies the vision, mission, goals, and the core values of the Department of Education.

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#### 3.2 Respondents of the Study

The school has 147 teaching and administrative personnel serving the students and their parents, and also the community. Out of 147 population consisting of teaching and administrative personnel, a sample size of 108 respondents were surveyed using the slovin's formula:  $n = \frac{N}{1 + Ne^2}$ .

#### 3.3 Research Design

To analyze the factors that influence the knowledge sharing among faculty and staff of Sta. Cruz National High School, this study used a quantitative descriptive predictive correlational research design.

#### 3.4 Research Instrument

A questionnaire was used to assess the factors that influence the organization's knowledge sharing in Sta. Cruz National High School. A multi-dimensional standard scale was adopted from Erwee et al., (2007) which consisted of 16 questions (known as the USQ KMS-16) which measures the level of knowledge management culture, strategy, and process. Another 3 questions were developed by the researcher to measure the dependent variable which is the knowledge sharing. The reliability statistics resulted a Cronbach's Alpha of 0.962 indicating that the questions were statistically highly reliable. Based on the results of the reliability analysis, no items were excluded.

#### 3.5 Data Analysis

The data was analysed using mean, standard deviation, percentage, Cronbach's Alpha for item / reliability analysis, Kolmogorov-Smirnov to test the normality of data, Pearson r correlation, and Multi-linear regression. The data was analyzed using MS Excel and SPSS software.

### 4 RESULTS AND DISCUSSION

#### 4.1 Results

##### 4.1.1 Demographics

The distribution of the respondents of the study as to age is shown in Table 1. Result shows that most of the respondents' age are under 31-40. Only few respondents are at the age of 61-70.

*Table 1. Distribution of respondents in terms of age*

Age Group	N	Percent
21-30	32	29.62
31-40	38	35.19
41-50	17	15.74
51-60	17	15.74
61-70	4	3.70
<b>Total</b>	<b>108</b>	<b>100</b>

The distribution of the respondents of the study as to sex is shown in Table 2. Result shows that most of the respondents were female.

Table 2. Distribution of respondents in terms of sex

Sex	N	Percent
Male	24	22.20
Female	84	77.80
<b>Total</b>	<b>108</b>	<b>100</b>

Presented in Table 3 is the distribution of respondents in terms of teaching and administrative personnel. The table shows that 73.1 percent of the respondents are teaching personnel while only 26.9 percent are administrative personnel.

Table 3. Distribution of respondents in terms of organization personnel

Organization Personnel	N	Percent
Faculty	97	89.80
Administration	11	10.20
<b>Total</b>	<b>108</b>	<b>100</b>

The table presented in Table 4 shows the distribution of respondents in terms of the number of years in the organization. Result shows that most of the respondents are 10 years and below in terms of the number of years in the organization. Only few are working as teachers or employees from 31 to 40 years.

Table 4. Distribution of respondents in terms the number of years in the organization

No. of Years	N	Percent
1 - 10	78	72.22
11 – 20	11	10.18
21 – 30	13	12.04
31 - 40	6	5.56
<b>Total</b>	<b>108</b>	<b>100</b>

The distribution of respondents in terms of assigned departments (Junior High School or Senior High School) is shown in Table 5. It shows that 74.10 percent of the respondents are from the Junior High School department. Only 25.90 percent of the respondents are from the Senior High School department.

Table 5. Distribution of respondents in terms of departments (JHS/SHS)

Department	N	Percent
Junior High School	80	74.10
Senior High School	28	25.90
<b>Total</b>	<b>108</b>	<b>100</b>

### 4.1.2 Correlation Analysis

Table 6 shows the measure of the degree of linear association between the tested variables. Based on the results, the variables such as age, sex, type of organization personnel, and years in the organization are not significantly correlated to knowledge sharing. On the other hand, the variables like assigned department (JHS/SHS), KM culture, and KM process/technology are significantly correlated to the knowledge sharing of the organization.

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Table 6. Correlation among variables

Variables	N	Mean	SD	1	2	3	4	5	6	7	8	9
1. Knowledge Sharing	108	6.09	0.80	1	-0.09	-	-0.13	0.03	-0.21**	0.63*	0.78*	0.76*
2. Age	108	37.60	11.69	-0.09	1	0.09	0.16**	0.84*	-0.07	-0.09	-	-
3. Sex	108	1.78	0.42	-0.04	0.09	1	0.03	0.11	-0.04	-0.12	-0.04	-0.07
4. Type of org. personnel	108	1.10	0.30	-0.13	0.16**	0.03	1	0.00	0.08	-0.07	-0.15	-0.14
5. Years in the Organization	108	9.31	10.84	0.03	0.84*	0.11	0.00	1	-0.22**	0.02	-0.06	-0.05
6. Department (JHS/SHS)	108	1.26	0.44	-0.21**	-0.07	-	0.08	0.22**	1	-0.07	-0.27*	-0.29*
7. KM Strategy	108	6.12	0.68	0.63*	-0.09	-	-0.07	0.02	-0.07	1	0.74*	0.67*
8. KM Culture	108	5.94	0.92	0.78*	-	-	-0.15	-0.06	-0.27*	0.74*	1	0.83*
9. KM Process / Technology	108	5.90	0.84	0.76*	-	-	-0.14	-0.05	-0.29*	0.67*	0.83*	1

\* $P < 0.05$  \*\* $P < 0.01$

### 4.1.3 Regression Analysis

Table 7 shows the model summary of the regression analysis. The R-value (0.813) shows a high correlation between the combination of predictors (Age, Sex, Type of org. personnel, Years in the Organization, Department, Strategy, Culture, Process/Technology) and Knowledge Sharing.

The SPSS output for  $R^2$  shows that the 66.2% of the variability in Knowledge Sharing is influenced by the combined variability of Age, Sex, Type of org. personnel, Years in the Organization, Department, Strategy, Culture, Process/Technology. The minimal or very small change in the adjusted  $R^2$  compared to the  $R^2$  suggests that the additional independent variables are valid predictors. The Durbin-Watson statistic is within the acceptable range (between 1.50 - 2.50). This indicates absence of serial correlations among residuals which means a good sign for the model since it is independent of errors.

The Standard error of the estimate is also referred to as the root mean squared error. It is the standard deviation of the error term. It tells us how much the observed values differ from the values on the regression line. It gives us an idea of the scatter of the points around the line of regression. Lower value suggests that observed values are closer to the regression line.

Table 7. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.813 <sup>a</sup>	0.662	0.634	0.48213	0.662	24.193	8	99	0	1.762

a. Predictors: (Constant), Knowledge Sharing, Age, Sex, Type of org. personnel, Years in the Organization, Department, Strategy, Culture, Process/Technology

b. Dependent Variable: Knowledge Sharing

As shown in Table 8, the significant value which resulted from the ANOVA shows the goodness of fit of the model. This means that the data fits the model. At least one of the independent variable significantly predicts our dependent variable which is knowledge sharing.

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Table 8. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44.989	8	5.624	24.193	.000 <sup>a</sup>
	Residual	23.012	99	0.232		
	Total	68.001	107			

a. Predictors: (Constant), Knowledge Sharing, Age, Sex, Type of org. personnel, Years in the Organization, Department, Strategy, Culture, Process/Technology

b. Dependent Variable: Mean Sharing

Table 9 shows the coefficients of the regression analysis. The T-test shows KM Culture and KM Process/Technology have sig. values below 0.05, this means that these variables are significant predictors of Knowledge Sharing. The unstandardized coefficients (B) show that for every unit level of increase in KM Culture and KM Process/Technology lead to a 0.402 and 0.343 increase respectively in Knowledge Sharing. 4. The Collinearity Statistics shows the Tolerance values for all independent variables (none below 0.10) indicating the absence of collinearity of each independent variable with other independent variables. Likewise the VIF values (none more than 10) indicates the same interpretation.

Table 9. Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error				Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	1.199	0.632		1.899	0.06	-0.054	2.453					
Age	0	0.008	-0.003	-0.028	0.978	-0.016	0.016	-0.094	-0.003	-0.002	0.243	4.11
Sex	0.006	0.114	0.003	0.051	0.959	-0.22	0.232	-0.041	0.005	0.003	0.961	1.04
Type of org. personnel	-0.032	0.162	-0.012	-0.196	0.845	-0.353	0.29	-0.13	-0.02	-0.011	0.895	1.117
Years in the Organization	0.006	0.009	0.086	0.726	0.470	-0.011	0.024	0.03	0.073	0.042	0.242	4.134
Department (JHS/SHS)	0.075	0.119	0.041	0.628	0.532	-0.162	0.312	-0.212	0.063	0.037	0.786	1.272
KM Strategy	0.059	0.108	0.051	0.552	0.582	-0.154	0.273	0.632	0.055	0.032	0.4	2.502
KM Culture	0.402	0.104	0.462	3.879	0.000	0.196	0.607	0.781	0.363	0.227	0.241	4.142
KM Process/Technology	0.343	0.102	0.359	3.345	0.001	0.139	0.546	0.76	0.319	0.196	0.296	3.376

a. Dependent Variable: Knowledge Sharing

#### 4.1.4 Empirical Model

Based on the results, the following empirical model on knowledge sharing among the faculty and staff of Sta. Cruz National High School was formulated:

$$KM\ Sharing = 1.199 + 0.402_{(KM\ Culture)} + 0.343_{(KM\ Process / Technology)}$$

#### 4.2 Discussion

The findings of this study revealed that among the knowledge management domains, KM culture and KM process / technology are the significant predictors of knowledge sharing among the faculty and staff of Sta. Cruz National High School. The KM domain strategy and the demographics are not significant predictors of knowledge sharing. The results of the survey also indicate that KM culture is considered the strongest predictor followed by KM process / technology.

The findings indicating a significant influence of culture to knowledge sharing affirms the statement of Skrabanek (2017) stating that organizational culture is the main driver of knowledge sharing success. He believes that knowledge sharing success means building a culture from the ground up in an organization. An open communication cycle is essential. Communication must be fluid, that is, there is no top-down in a circle of equals. Any information silos that exist within teams, departments, or individuals must be addressed in order to remove the barriers that are holding an organization behind.

The results of this study confirm with the findings of Poul, Khanlarzadeh, and Samiei (2016) when they investigated the impact of organizational culture on knowledge sharing. They argue that the success or failure of a knowledge management application is heavily dependent on the cultural context, which can strongly influence people's ability not only to create but also to share and effectively use knowledge, as well as to transfer tacit knowledge into an explicit form that can benefit the entire organization. Their research revealed evidence that several cultural characteristics are important for effective knowledge sharing as a major process related to knowledge management methods. The study's findings stress the importance of cultural factors in determining the level of information sharing with the organizational context.

Knowledge culture, according to Oliver and Kandadi (2006), is an organizational way of life that enables and motivates individuals to generate, share, and apply knowledge for the benefit and success of the business. The establishment of a knowledge culture inside an organization is crucial to the success of knowledge management projects because it signifies a managerial commitment to KM initiatives and encourages the sharing of tacit information for decision making.

KM process / technology as a significant predictor to knowledge sharing which is also revealed in this study is supported by the findings in a study made by Chandran, and Mohammed (2016). Apart from leadership support, they believe that the knowledge sharing process and IT infrastructure are knowledge management organizational elements that are favorably and strongly associated to staff knowledge sharing attitude.

IT infrastructure refers to technologies that facilitate staff communication and aid in decision-making processes. It is important in information sharing since it increases the level of adoption of knowledge sharing. Information technology is related with knowledge creation in a variety of ways, including information exchange, storage, and flow processes. Knowledge management systems based on IT solutions are quickly embraced within businesses to generate, capture, exchange, and deliver massive amounts of knowledge information (Jolae, Nor, Khani, Yusoff, 2014).

The major findings of the study revealed that KM culture and KM process/technology significantly influence KM sharing among the faculty and staff of Sta. Cruz National High School. However, it also indicates that KM strategy does not significantly influence or predict knowledge sharing. This finding suggests that further investigation and more literature reviews are needed to find out why knowledge sharing in Sta. Cruz National High School is not significantly influenced by KM strategy.



## 5 CONCLUSIONS

This study aimed to assess the knowledge management practices or domains of Sta. Cruz National High School as an organization in the Philippines and determine how these domains affect or influence knowledge sharing among its faculty and staff. It was found out that demographics is not associated on how knowledge is being shared in the school organization. As to knowledge management domains, KM culture and KM process/ technology significantly influence knowledge sharing among the faculty and staff of the school. On the other hand, the empirical model does not include KM strategy as predictor to knowledge sharing.

The result of the study tells that the high level of knowledge sharing in the school organization might be due to a positive culture among the faculty and staff that fosters sharing and collaboration. For instance, aside from faculty meetings, one of the activities conducted almost every month of the school year is the conduct of *School Learning Action Cell* (Deped Order No. 18, s. 2014) in which group of teachers engage collaborative learning sessions to solve shared challenges encountered in the school, as well as the conduct an In-Service Training (INSET) activities in support of continuing professional development. It also allows them to review some areas of concern in performing the duties and responsibilities of an effective and efficient teacher. Thus, the present knowledge management culture in the organization enhances communication and sharing between organizational members, and enriches collaboration among them.

Apart from culture, technology also plays a vital role in obtaining high level of knowledge sharing among the teachers and employees of the school. The rise of mobile phones, internet, and social media usage really confirms the statement that the world is getting smaller which allows sharing of information or knowledge so easy thus cutting some cost on time and money. One of the breakthroughs in the Department of Education is its provision of different intranets such as Learners Information System (LIS), Enhanced Basic Education Information System (EBEIS), Human Resource Information System (HRIS), and etc. which allows teachers and employees of the entire department to register and update learners information enrolled in public schools; maintains a database of education statistics, sector performance indicators and profile of public and private schools, learning centers and other education service providers; and to improve the efficiency of DepEd personnel and finance departments in generating and transmitting teacher information such as salaries, leave credits, employment status, increments and papers need for loan applications to other organizational units.

Hence, the involvement of process innovation such as the use of advance technology is important in providing efficient and effective way of sharing knowledge in the organization.

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