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Knowledge Sharing and Organizational Performance in Uganda: The Case of National Teachers Colleges (NTCs)

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Abstract

The role of knowledge as the essential source of competitive advantage in organizations has become critical. This is because of the emerging competitive environment in today's global marketplace, where organizations have realized the need to remain competitive through knowledge sharing. Many companies know that to operate effectively in today's economy, it is necessary to become a knowledge-based organization. However, only a few truly understand what that means or how to implement the changes required to bring it about. This research aimed to assess the impact of knowledge sharing on the organizational performance of NTCs in Uganda. Data was collected using questionnaires in July 2022 from the teaching staff of the five National Teachers' Colleges that train teachers in Uganda, targeting a sample of 141 respondents. Data was analyzed using descriptive statistics, which included frequencies and percentages, and inferential statistics, which included Spearman correlation, coefficient of determination, and regression analyses in determining the impact of knowledge sharing as an independent variable on the performance of the NTCs as the dependent variable. It was, therefore, concluded from the findings that knowledge sharing positively impacted the organizational performance of NTCs in Uganda. This study will guide the NTCs to integrate their knowledge assets, including databases, people, experience, and expertise of these people, systems, policies, and procedures during knowledge management for their better performance. Moreover, the results of this research will be used to improve the sharing

of knowledge at the NTCs in Uganda, which may lead to improvement in the way NTCs make themselves relevant to the society in which they operate.

Keywords: *Knowledge sharing, organizational performance, National Teachers' Colleges (NTCs)*

Introduction

Knowledge sharing has been defined as a process through which a group of people exchange knowledge among themselves through various communication methods (Al-Kurdi et al., 2018). The objective of knowledge sharing is about communicating and transferring ideas to help other people better practices towards achieving something (Djangone & El-Gayar, 2021). However, the quality of knowledge sharing is determined by the quality of individual interactions among a group of people (Wang & Noe, 2010). Knowledge in higher institutions of learning is communicated and transferred in various ways that may include documents, collaboration between experts, face-to-face interaction, and correspondence, among others (Kimile et al., 2020).

Knowledge sharing plays a vital role in the performance of higher learning institutions (Aulawi, 2021), such as the NTCs in Uganda. This is because better knowledge sharing allows students and lecturers in higher institutions of learning to broaden their knowledge, which contributes to the extent to which these institutions are assessed in terms of their performance at the national, regional, and international levels (Kimile et al., 2020; Saifi et al., 2018). Therefore, better knowledge-sharing practices are inevitable in higher institutions of learning if they have competed amongst themselves.

In the context of the critical role of knowledge sharing towards the performance of higher institutions of learning, as explained in the previous paragraph, NTCs in Uganda have embraced knowledge sharing (Nerima, 2021a; Nerima, 2021b). These NTCs hoped that doing so would help them improve their performance and compete favourably. Although there has been improvement in the performance of NTCs in Uganda, this has not been achieved as expected (Kyamazima, 2018). This is reflected in the tendency of secondary schools' preference for university degree graduate teachers to the detriment of the NTC diploma teachers (Weteya, 2019). Thus, improving the quality of training and learning in NTCs is a priority. In addition, knowledge-sharing practices in NTCs in Uganda do not seem to be effectively applied. Therefore, It was necessary to conduct this study on knowledge-sharing practices in these institutions to explore the extent of their impact on enhancing their organizational performance. This article consists of the following parts: introduction, theoretical background, hypotheses, methodology, research results, and conclusions, with a description of the study's implications, limitations, and future research ideas.

Theoretical background

Higher education institutions (HEIs) must generate knowledge from internal and external sources to use it strategically to gain and maintain their performance competitiveness around the world (Ouma et al., 2022). Therefore, HEIs perceive knowledge sharing as an institutional strategy used to improve their quality of learning and novelty, to advance better decision-making and improve the performance of their academic staff and students as well as their general performance as HIEs (Wanderage et al., 2021; Amayah, 2020; Wanjiku, 2017). The way this knowledge sharing is conducted determines the extent to which HEIs successfully impart ideas that inspire the discourses of scholars.

HEIs have adopted various approaches and models to improve the quality of academic teaching as well as the academic learning experience of students (Shahzad, 2020). For example, some of the most popular and effective teaching and learning approaches that HEIs utilize include working group presentations, collaborative problem solving as well as online and classroom discussions for sharing knowledge for improved and effective teaching and learning processes (Rono, 2017). Notwithstanding the above process of knowledge sharing, the improvement of HEIs' performance is highly dependent on the behaviour and attitude of each lecturer and student, as well as the technological and scientific innovations that are utilized to engage the knowledge-sharing methods and approaches earlier on explained (Zhou & Li, 2012).

In the context of higher learning, HEIs are considered sources of academic and non-academic knowledge obtained through human effort, research works, and other academic works designed for consumption by various HEIs' stakeholders that include faculty members, students as well the national, regional and international community (Ouma et al., 2022). As maintained by Ramakrishnan and Yasin (2018), to guarantee that HEIs are successful in their educational performance activities, the acquired knowledge is required to contribute to the success of the entire performance of HEIs. Knowledge sharing should, therefore, be seen as an urgent strategy that institutions require to remain competitive and attractive in the national, regional and international academic market. Moreover, acquiring knowledge will likely make HEIs more sustainable in achieving their desired goals.

Knowledge sharing, however, remains a limited research area in the context of HEIs in Uganda. Poonkothai (2016) explained that the success of HEIs' excellence in the world generally focuses on academic classroom performance as the primary method of performance evaluation, and there have been less efforts given to consideration of knowledge sharing. Webster, Hammond and Rothwell (2014) believed that, in general, knowledge sharing should focus more on market fit compared to the current state of assessment and other academic performance measures utilised by many HEIs.

This Resource-Based Theory (RBT) developed by Penrose in 1959 (Sousa et al., 2021) was used in this study to explain how knowledge sharing impacts the performance of NTCs in Uganda. The theoretical assumptions of RBT assume that organizational characteristics are not only modified, but an organization must adjust its direction to succeed and gain sustainable

competitive advantage (Barney et al., 2021). The principal paradigm in impacting an organization's performance proposes that internal organizational factors, such as capabilities and resources, determine the organization's competitiveness. In other words, the RBT asserts that having valuable capabilities and resources gives an organization a golden opportunity to develop competitive advantages over its competitors (Molloy et al., 2011). These competitive advantages can also help the organization enjoy more benefits, especially in the long run. Valuable capabilities and resources are expensive, rare, difficult to imitate and irreplaceable.

As applied in the context of HEIs, the RBT states that knowledge sharing is one of a firm's most deliberately critical assets. Differences in organizational performance occur when they have valuable capabilities and resources that other firms do not have, allowing them to maintain their quasi-monopoly status (Barney et al., 2021). According to Penrose and Pitelis (cited Ahmed, Kristal & Pagell, 2014), RBT was a modern way of analysing the knowledge shared for a lasting benefit to the organization. In this way, the theory has helped explain the internal capabilities and resources of the university, focusing on the ability to formulate strategies for the success of academic performance in a sustainable way. The RBT provides a vital framework for explaining and predicting the underpinnings of organisational performance and competitive advantage. The RBT is considered influential to strategic management as it is widely used as a management framework to determine a company's critical capabilities and resources to gain sustainable competitive advantage.

The seminal work on valuable resources by Barney in 1991 was an essential contribution to RBT, leading to the conceptual transformation from a resource-based view to the theory developed as RBT (Hitt et al., 2016). Traditional RBT, however, does not explain how and why some organizations gain competitive advantage in unpredictable resources but also by developing new capabilities through learning, skill sharing, and knowledge accumulation over time. The logic of RBT suggests that if organizations own capabilities and resources, those who can control those capabilities and resources can generate sustainable competitive advantage (Setia & Patel, 2013). Therefore, organizations can take advantage by continuously combining or configuring various capabilities and resources to create new ways of sharing knowledge to meet market needs (Sousa et al., 2021).

In addition to being used in strategic management, RBT has been accepted and used in other quantitative and qualitative business management areas. To the present day, the use of RBT has been extended to a range of business studies such as entrepreneurship (Molloy et al., 2011), information systems (Setia & Patel, 2013), supply chain management (Ahmed et al., 2014), the economics (Ahmed et al., 2014), operations management (Hitt et al., 2016), and marketing (Kozlenkova et al., 2014). Several studies have examined the connection between RBT and its implementation of various business goals.

Hypothesis development

The research hypothesis tested in this study was, "*Knowledge sharing has a significant positive impact on the performance of National Teachers' Colleges in Uganda*". This study assumed that poor knowledge sharing by NTCs in Uganda would contribute to the poor performance

of NTCs. On the other hand, better knowledge sharing by NTCs in Uganda would contribute to better performance of NTCs. Earlier studies, such as those conducted by Aulawi (2021), have shown that knowledge sharing significantly impacts organizational performance. This study found out if the two sub-variables of knowledge sharing, which include closed-network knowledge sharing and open-network knowledge sharing, significantly impacted the performance of universities in Uganda.The performance of NTCs in Uganda was investigated using three dimensions: impact performance of NTCs, transparency performance of NTCs and excellence performance of NTCs.

Thus, the assumption of this study with two dimensions of knowledge sharing was as follows. Poor closed-network knowledge sharing and poor open-network knowledge sharing by NTCs in Uganda contributed to poor performance of NTCs in Uganda in terms of poor impact performance of NTCs, poor transparency performance of NTCs and poor excellence performance of NTCs. On the other hand, better closed-network knowledge sharing and better open-network knowledge sharing by NTCs in Uganda contributed to better performance of NTCs in Uganda in terms of better impact performance of NTCs, better transparency performance of NTCs and better excellence performance of NTCs.

These hypotheses were confirmed by Aulawi's (2021) study,which was conducted from a positivist philosophical epistemology like that adopted in this study, to examine the relationship, if any, between knowledge sharing and organizational performance. The study found that better knowledge-sharing practices were linked with better organizational performance. Therefore, organizations must invest in ways to share information from people and institutional repositories. If done, this is likely to benefit the organization's performance.

Methodology

The methodological section treats the research design, the approach adopted, the sample and sampling technique used, the data collection method and instrument, data validity and reliability, the data collection procedure, the data analysis, and ethical considerations.

Research Design and Approach

As defined by (Kothari et al., 2004), *"research design is the conceptual structure within which research is conducted; it constitutes the blueprint for collecting, measuring and analyzing data."* A descriptive cross-sectional survey design was used in this study. This design was used because it enabled the researchers to target a group of respondents to obtain information without follow-up of respondents once information was obtained from them (Amin, 2005; Sakaran, 2003). The design was selected since the study was academic and was used to describe the relationship between knowledge sharing and National Teachers' College (NTC) performance in Uganda. This design helped save time and financial resources during data collection. A quantitative research approach was adopted in this study (Creswell, 2009). The quantitative approach was used to permit the researcher to acquire quantified information.

Sample and Sampling Technique

There are five National Teachers' Colleges (NTCs) in Uganda. They are NTC Muni, NTC Unyama, NTC Kaliro, NTC Mubende and NTC Kabale. The NTCs are Higher Institutions of learning that train and produce teachers with diplomas in Uganda. The data was collected from a sample of 141 teaching staff. These included 29 from Muni NTC, 18 from Unyama NTC, 30 from Kaliro NTC, 32 from Mubende NTC, and 32 from Kabale NTC. Each of the lecturers had an equal opportunity to be selected using simple random sampling since not all lecturers participated in this research, except in the case of Mubende NTC; that census was used since the number of teaching staff was relatively small. They are the focus of this study about Knowledge sharing.

Instrument

The questionnaire was created by the authors. It was tested for validity and reliability to ensure that it helped collect the required data as suggested by Amin (2005). Data was collected from the academic staff using a standardized questionnaire. The questionnaire survey was applied to extract a lot of information on knowledge sharing and performance of the NTCs within a short time, hence saving on time as the researcher administered a big number of questionnaires to many respondents at a time. It was free from the bias of the interviewer since the answers were directly from the respondents. Respondents had adequate time to give well-thought-out answers. Large sample sizes were reached and thus the results are more systemic (C.R.Kotari, 2004).

Validity

The researcher subjected the data collection instrument to two raters to determine that the instrument would collect the data that it purported to collect. The results are as in Table 1.

Table 1: Validity of the Data Collection Instrument

Raters	Relevant items	Not relevant items	Total
Rater 1	17	4	21
Rater 2	15	6	21
Total	32	10	42

Source: Primary data

CVI = 32/42 ≈ .762

Amin (2005) recommends the CVI of .70. This means that the instrument used for the data collection could collect valid data.

Reliability

To ensure that the data collection instrument could collect reliable data, the researcher performed a reliability test using SPSS to determine Cronbach's Alpha. The results are as in Table 2.

Table 2: Reliability of the Data Collection Instrument

Variable	Cronbach's Alpha	N of Items
Knowledge sharing	.805	10
Performance of NTCs	.743	11

Source: Primary data

The two Cronbach alphas in Table 2 were within the recommended reliability of .70 and above as suggested by Amin (2005). This meant that the instrument used for the data collection could collect consistently for both independent and dependent variables. Therefore, the findings were reliable.

Subjects and Procedure

There are five National Teachers Colleges (NTCs) in Uganda. They are NTC Muni, NTC Unyama, NTC Kaliro, NTC Mubende and NTC Kabale. The NTCs are higher institutions of learning that train and produce teachers with diplomas in Uganda. Collecting the data was done in July 2022, targeting a sample of 141 teaching staff. These included 29 from Muni NTC, 18 from Unyama NTC, 30 from Kaliro NTC, 32 from Mubende NTC, and 32 from Kabale NTC. Each of the lecturers had an equal opportunity to be selected using simple random sampling since not all lecturers participated in this research, except in the case of Mubende NTC. That census was used since the number of the teaching staff was relatively small. The questionnaire was administrated face-to-face.

Procedure of Data Collection

The researcher reached every National Teachers' College involved in the study and sought permission from the Principal of the College and administered questionnaires to the teaching staff of each college in accordance with the study design.

Data Analysis

The results are original in that primary data sources entirely were relied on in this research. These primary data sources involved gathering first-hand information directly from those who participated in this research, unlike secondary data sources that involve gathering information that has already been compiled by someone else (Prada-Ramallal et al., 2018). This implies that the information analysed in this research was originally generated directly from the participants.

Data was analysed using quantitative analysis. Quantitative data was entered into a computer software programme called Statistical Package for Social Sciences (SPSS) as it helped analyse large amounts of data in a shorter time, as suggested by Hazarika (2019). The same programme helped in computing univariate and multivariate statistics. Univariate statistics which were in the form of descriptive statistics were performed on each of the variable of this study as explained by various scholars (such as Allen, 2017; Canova, Cortinovis &

Ambrogi, 2017; Zhang, 2016). Descriptive statistics which were in the form of percentages were necessary for understanding how participants in this study responded to statements on the variables. The reason for relying on percentages in this research was that the responses to the items/questions in the questionnaire were measured using an ordinal scale (in other words, respondents selected one discrete response suitable to the item/question) as suggested by Canova et al. (2017). The percentages were followed by multivariate statistics that helped to address the objective of this research as advocated by McQuitty (2018). The multivariate statistics included Spearman Rank Order correlation, coefficient of determination, and regression analyses to determine the impact of the knowledge sharing as the independent variable on performance of the NTCs (McQuitty, 2018).

Results

This section presents the empirical findings. It is divided into two major sections. The first section presents the demographic data, and the second section presents the results on the impact of knowledge sharing on performance of the NTCs in Uganda.

Background Information Findings

The NTCs' teaching staff members were asked about the NTCs employing them as well as their gender, age, and length of time the teaching staff had worked with the NTCs. The demographic data are presented in Table 3.

Table 3: Demographic data

Institution Employing Teaching Staff	**Frequency**	**Percent**
Muni NTC	29	20
Unyama NTC	18	13
Kaliro NTC	30	21
Mubende NTC	32	23
Kabale NTC	32	23
Total	141	100
Gender of teaching staff	**Frequency**	**Percent**
Male	128	91
Female	13	9
Total	141	100
Age of teaching staff	**Frequency**	**Percent**
20-29 years	12	9
30-39 years	96	68
40-49 years	19	13
Above 49 years	14	10
Total	141	100
Length of time teaching staff has worked with the NTCs	**Frequency**	**Percent**

Institution Employing Teaching Staff	Frequency	Percent
Less than 5 years	38	26
5-10 years	98	70
11-15 years	5	4
Total	**141**	**100**

Source: Primary data

Findings in Table 3 show that 20% of the teaching staff members that participated in this study were from Muni NTC, 13% were from Unyama NTC, 21% were from Kaliro NTC, 23% were from Mubende NTC, and 23% were from Kabale NTC. The percentages are almost equally represented among the five NTCs. Further, it is shown that more male teaching staff members (91%) participated in this study than their female counterparts (9%). Both sexes were, however, involved. In addition, most of the teaching staff members (68%) were aged 30 to 39 years, followed by teaching staff members aged 40 to 49 years (13%), teaching staff members aged above 49 years (10%), and teaching staff members aged 20 to 29 years (9%). This implied that all the respondents were mature enough to respond appropriately to the items on the questionnaire. Lastly, most of the teaching staff members had worked with the NTCs for 5 to 10 years, followed by teaching staff members that had worked with them for less than five years (26%) and 11 to 15 years (4%). This meant that the majority of the teaching staff, by the time of data collection, had worked with the NTCs for a good number of years that allowed them to know and have the required information.

Impact of Knowledge Sharing on Performance of NTCs in Uganda

It is recommended that descriptive statistics for each variable of the objective investigated in the study should be presented before presenting inferential findings. Therefore, in this section, descriptive findings related to knowledge sharing in NTCs and those related to the performance of NTCs are presented separately. These are then followed by inferential findings related to knowledge sharing and performance of NTCs.

Descriptive findings related to Knowledge Sharing in NTCs in Uganda

Knowledge sharing in NTCs in this study was measured in terms of closed-network knowledge sharing and open-network knowledge sharing. The teaching staff members were requested to respond to a statement on each of these two measures of knowledge sharing with the guidance of a five-response Likert scale ranging from never to very often, as shown in Table 4.

Table 4: Descriptive findings related to Knowledge Sharing in NTCs in Uganda

Statement about closed-network knowledge sharing	N	VR	Total	R	O	VO	Total
1. This institution academic community has adequate time to share the relevant knowledge with members within the institution	13%	41%	54%	8%	13%	25%	38%
2. This institution academic community has adequate funds to share the relevant knowledge with members within the institution	21%	52%	73%	3%	11%	13%	24%
3. This institution academic community shares their new ideas with members within the institution for them to benefit from them	23%	42%	65%	1%	20%	14%	34%
4. This institution academic community shares their new understanding of problems of concern with members within the institution for them to benefit from it	16%	48%	64%	5%	11%	20%	31%
5. This institution academic community shares discovered new facts about problems with members within the institution for them to benefit from them	23%	43%	66%	1%	21%	12%	33%
Statement about open-network knowledge sharing	N	VR	Total	R	O	VO	Total
6. This institution academic community has adequate time to share the relevant knowledge with members outside the institution	20%	41%	61%	9%	14%	16%	30%
7. This institution academic community has adequate funds to share the relevant knowledge with members outside the institution	18%	46%	64%	10%	12%	14%	26%
8. This institution academic community shares their new ideas with members outside the institution for them to benefit from them	15%	44%	59%	12%	20%	9%	29%
9. This institution academic community shares their new understanding of problems of concern with members outside the institution for them to benefit from it	20%	44%	64%	10%	12%	14%	26%
10. This institution academic community shares discovered new facts about problems with members outside the institution for them to benefit from them	13%	47%	60%	11%	16%	13%	29%

Source: Primary data

Note: N = Never, VR = Very rarely, R = Rarely, O = Often and VO = Very often

To ease analysis of the results in Table 4, a sum of the percentages for "*Never*" and "*Very rarely*" was computed to indicate teaching staff members who responded "*less favourably*" to the statements. In addition, a sum of the percentages for "*Often*" and "*Very often*" was computed to indicate teaching staff members who responded "*more favourably*" to the statements. On the other hand, the percentages for rarely were left as they are and were treated as teaching staff members who responded fairly to the statements.

Therefore, findings in Table 4 related to closed-network knowledge sharing show that the highest sum percentage range response (that is lowest to the highest percentage response)

on the five statements was that of teaching staff members who responded unfavourably to the statements (54% to 73%). This was followed by sum percentage range response for teaching staff members who responded favourably to the statements (24% to 38%), while the least sum percentage range response (1% to 8%) was for teaching staff members who responded fairly to the statements. Therefore, the interpretation from this analysis is that most of the teaching staff members were of the view that closed-network knowledge sharing was poor at the NTCs, while approximately a third of them were of the view that it was good, and very few of them believed it was fair.

Table 4 related to open-network knowledge sharing shows that the highest sum percentage range response (that is, lowest to the highest percentage response) on the five statements was that of teaching staff members who responded unfavourably to the statements (59% to 64%). This was followed by sum percentage range response for teaching staff members who responded favourably to the statements (26% to 30%), while the least sum percentage range response was for teaching staff members who responded fairly to the statements (9% to 12%). Therefore, the interpretation from this analysis is that most of the teaching staff members were of the view that open-network knowledge sharing was poor at the NTCs, while approximately a third of them were of the opinion that it was good, and very few of them were of the opinion that it was fair.

Descriptive findings related to organizational performance of NTCs in Uganda

Performance of the NTCs in this study was measured in terms of impact (visibility) performance, transparency (openness) performance, and excellence performance. The teaching staff members were requested to respond to statements on each of these three measures of performance of NTCs with the guidance of a five-response Likert scale ranging from never to very often, as shown in Table 5.

Table 5: Descriptive findings related to organizational performance of NTCs in Uganda

Statement about impact (visibility) performance	**N**	**VR**	**Total**	**R**	**O**	**VO**	**Total**
1. The institution has been recognized globally for producing relevant and graduates with the skills and knowledge needed by society	18%	38%	56%	6%	25%	13%	38%
2. The institution has been recognized globally for engaging research/innovations that has been useful to the community	18%	36%	54%	4%	21%	21%	42%
3. The institution has been recognized globally for assisting the country to address developmental challenges	14%	38%	52%	13%	17%	18%	35%
Statement about transparency (openness) performance	N	VR	Total	R	O	VO	Total
4. The institution has been recognized globally for having published works that are accessible	21%	40%	61%	3%	22%	14%	36%

Statement about impact (visibility) performance	N	VR	Total	R	O	VO	Total
5. The institution has been recognized globally for employing international academic staff in various fields of expertise	16%	35%	51%	12%	21%	16%	37%
6. The institution has been recognized globally for enrolling international students in various fields of expertise	13%	42%	55%	8%	12%	25%	37%
7. The institution has been recognized globally for publishing a large of research through various platforms	21%	51%	72%	3%	11%	14%	25%
Statement about excellence performance	N	VR	Total	R	O	VO	Total
8. The institution has been recognized globally for carrying out the best research work in various fields of expertise	13%	42%	55%	8%	13%	24%	37%
9. The institution has been recognized globally for having high teaching quality in various fields of expertise	18%	38%	56%	8%	25%	11%	36%
10. The institution academic community has been recognized globally for winning of Nobel prizes and fields medals	13%	42%	55%	8%	12%	25%	37%
11. The institution academic community has been recognized globally for producing research publications that attract citations	18%	38%	56%	8%	25%	11%	36%

Source: Primary data

Note: N = Never, VR = Very rarely, R = Rarely, O = Often and VO = Very often

Findings in Table 5 related to impact (visibility) performance show that the highest sum percentage range response (that is lowest to the highest percentage response) on the five statements was that of teaching staff members who responded unfavourably to the statements (52% to 56%). This was followed by sum percentage range response for teaching staff members who responded favourably to the statements (35% to 42%), while the least sum percentage range response was for teaching staff members who responded fairly to the statements (4% to 13%). Therefore, the interpretation from this analysis is that most of the teaching staff members were of the view that the impact (visibility) performance of NTCs was poor, while approximately a third of them were of the view that it was good, and very few of them were of the view that it was fair.

Findings in Table 5 related to transparency (openness) performance show that the highest sum percentage range response (that is, lowest to the highest percentage response) on the five statements was that of teaching staff members who responded unfavourably to the statements (51% to 72%). This was followed by sum percentage range response for teaching staff members who responded favourably to the statements (25% to 37%), while the least sum percentage range response was for teaching staff members who responded fairly to the statements (3% to 12%). Therefore, the interpretation from this analysis is that most of the teaching staff members were of the view that the transparency (openness) performance of NTCs was poor, while approximately a third of them were of the view that it was good, and very few of them were of the view that it was fair.

Findings in Table 5 related to excellence performance show that the highest sum percentage range response (that is, lowest to the highest percentage response) on the five statements was that of teaching staff members who responded unfavourably to the statements (55% to 56%). This was followed by the same percentage range response for teaching staff members who responded favourably to the statements (36% to 37%), while the least sum percentage range response was for teaching staff members who responded fairly to the statements (8%). Therefore, the interpretation from this analysis is that most of the teaching staff members were of the view that the excellence performance of NTCs was poor, while approximately a third of them were of the view that it was good, and very few of them were of the view that it was fair.

Inferential findings on knowledge sharing and performance of NTCs in Uganda

The inferential findings were used to address the objective of this study, which was to assess the impact of knowledge sharing on performance of NTCs in Uganda. The inferential analysis involved computing the Spearman correlation, coefficient of determination and multiple regression. Results are presented in the following paragraphs.

The hypothesis that was tested stated, "Knowledge sharing has a significant positive impact on performance of NTCs in Uganda". Results of the Spearman correlation and coefficient of determination for knowledge sharing and performance of NTCs in Uganda are presented in Table 6.

Table 6: Correlation and coefficient of determination findings for knowledge sharing and performance of NTCs in Uganda

	Knowledge sharing in NTCs
Performance of NTCs in Uganda	rho = .406 rho^2 = .165 p = .000 n = 141

Source: Primary data

Table 6 shows a moderate positive relationship (rho = .406) between knowledge sharing and the organizational performance of NTCs in Uganda. However, since the hypothesis emphasizes "impact" and not "relationship", a coefficient of determination (rho^2 = .165) was computed to address the objective. This shows that knowledge sharing accounted for 16.5% of the change in the performance of NTCs in Uganda. Testing this finding shows that the significance value in Table 4 (p = .000) was less than the recommended .05. Because of this, this finding was accepted, leading to the acceptance of the hypothesis. Therefore, it was concluded that there was a significant positive impact of knowledge sharing on performance of the NTCs in Uganda. The positive nature of the impact indicated that poor knowledge sharing contributed to poor performance of NTCs in Uganda, while better knowledge sharing contributed to better performance of NTCs in Uganda. The moderate nature of the impact indicated that a unit change in knowledge sharing contributed to a moderate change in organizational performance

of NTCs in Uganda.

The regression analysis was important in this study as it enabled the researcher to determine how the two measures knowledge sharing that included closed-network knowledge sharing and open-network knowledge sharing impacted performance of NTCs in Uganda. Findings are presented in Table 7.

Table 7: Regression findings for knowledge sharing and performance of NTCs in Uganda

Regression Statistics					
R	.406				
R Square	.165				
Adjusted R Square	.153				
Standard Error	2.193				
Observations	141				
ANOVA statistics					
	df	*SS*	*MS*	*F*	*Sig F*
Regression	2	131.1	65.6	13.6	.000
Residual	138	663.4	4.8		
Total	140	794.6			
Coefficients statistics					
	Coefficients	*Standard Error*	*Beta*	*t Stat*	*P-value*
Intercept	7.51	.76		9.87	.000
Closed-network knowledge sharing	.14	.05	.24	2.87	.005
Open-network knowledge sharing	.15	.05	.26	3.11	.002

Source: Primary data

Table 7 shows a moderate linear relationship (R = .406) between the combined measures of knowledge sharing (closed-network knowledge sharing and open-network knowledge sharing) and performance of NTCs in Uganda. The adjusted R Square (.153) shows that the combined measures of knowledge sharing (closed-network knowledge sharing and open-network knowledge sharing) accounted for 15.3% change in performance of NTCs in Uganda. Testing this finding using ANOVA statistics shows that the significance value (Sig F = .000) of the Fisher's ratio (F = 13.6) was less than the recommended significance value of .05. Because of this, this finding was accepted.

The coefficients statistics were used to determine how each of the measures of knowledge sharing (closed-network knowledge sharing and open-network knowledge sharing) significantly impacted performance of NTCs in Uganda. Findings show that all two measures of knowledge sharing (closed-network knowledge sharing and open-network knowledge sharing) had significant values (p = .005, p = .002) less the .05. This indicated that the measures of knowledge sharing impacted performance of NTCs in Uganda. However, the t-Stat value for open-network knowledge sharing (3.11) was higher, followed by closed-network knowledge sharing (2.87). This indicated that open-network knowledge sharing had the most impact on

performance of the NTCs in Uganda, followed by the impact of closed-network knowledge sharing on performance of the NTCs in Uganda.

Discussion

This study established a significant effect where knowledge sharing accounted for 15.3% of the change in performance of NTCs in Uganda, whereby poor knowledge sharing contributed to poor performance of NTCs in Uganda while better knowledge sharing contributed to better performance of NTCs in Uganda. This result indicates that knowledge sharing matters for NTCs in Uganda that always endeavour to share the latest and updated information that can be transferred to their students and other higher institutions of learning. This finding is supported by various studies. For example, the finding of this study is consistent with Shonubi, Odunlami and Akintaro (2020) who conducted their study in Lagos State, Nigeria. They investigated how knowledge sharing affected the organizational performance of Kresta Laurel Company. Their analysis was almost like that of this study except that they did not perform a Spearman correlation and coefficient of determination during their analysis. Despite the slight difference in their analysis from that used in this study, the effect between the variables that they investigated was significant which was in line with the finding of this study.Shonubi et al. (2020), however, did not present the results of R coefficient, R Square and Adjusted R Square to enable comparing with the findings of this study in this respect.

The findings of this study are also like results by Ngah and Ibrahim (2010) who investigated similar variables among small and medium enterprises in the manufacturing and services sector in Malaysia.The way they measured knowledge sharing, however, differed from this study in that they focused on value of knowledge and social network. In addition, their analysis differed from this study in that they used Structural Equation Modelling (SEM). Their finding was that knowledge sharing significantly and positively influenced organizational performance.

Furthermore, supporting the findings of this study is a study conducted by Aulawi (2021) who studied knowledge sharing in a private Indonesian university. However, the difference of this study from that of Aulawi (2021) is that the impact is on the performance NTCs while that of the latter is on research productivity. In addition, Aulawi (2021) investigated a private university while this study investigated public National Teachers Colleges (NTCs). This study, like Aulawi (2021), targeted higher education and more than that, it used a quantitative approach. Like the analysis in this study, Aulawi (2021) analysed the responses to the questions from 35 participants quantitatively but more to that, followed it with qualitative analysis which involved analysing data from focus group discussions (FGDs), documents and interviews. The sample size Aulawi's (2021) study was small compared to the one that participated in this study; and usually smaller sample sizes tend to produce results that are not significant upon testing. Despite the small sample size, the results of Aulawi's (2021) study were in line with the finding of this study in that it confirmed that information sharing had a positive significant impact on the research productivity of the university.

The finding of this study is like that of Tran (2021) who investigated knowledge sharing,

innovativeness, and organizational performance in Vietnam. One of his objectives was the effect of knowledge sharing on organizational performance. He postulated that knowledge sharing was positively related to organizational performance. His analysis differed from this study as explanatory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modelling (SEM) were performed. Despite this, his finding confirmed a significant effect ($\beta = 0.225$, $p < 0.001$) and the is consistent with Song, Park and Kang (2015).

Conclusion

This study was conducted to investigate the impact of sharing processes (closed-network knowledge sharing and open-network knowledge sharing) on performance of NTCs in Uganda. Using a quantitative survey method, the results demonstrate that knowledge sharing positively impacts the performance of NTCs in Uganda.

Recommendation

Educational institution administrators and leaders can use these results to consult with investors about implementing knowledge sharing projects in their institutions. This study also contributes to practitioners as it provides organizations with new insights and findings that HEIs administrators or managers from other industries can use to improve the performance of their organizations. In line with the finding, the study recommends that the NTCs vigorously adopt knowledge sharing, as it will directly lead to their improved performance.

Contribution to science

The major reason for conducting this research was to utilize its findings to propose a new approach to organizational norms and values for the NTCs in Uganda to support their knowledge management which will help in improving their performance. This approach will focus on how the NTCs can integrate their knowledge assets that include databases, people, experience, and expertise of these people, systems, policies, and procedures during knowledge management for their better performance.

Socio-economic effects of research and impact of research results

Higher education institutes play a critical role in facilitating the socio-economic development of a country through various ways such as channelling people who have been equipped with the knowledge to the labour force, contributing to innovations, and conducting research to address societal problems. Such contributions are part of the measurement of the performance of the NTCs. Moreover, the various ways through which NTCs facilitate the socio-economic development of the country are anchored on the effectiveness of knowledge management, with knowledge sharing being one of its dimensions. Thus, the results of this research are likely to be used to improve the management of knowledge at the NTCs, which may lead to the improvement in the way NTCs style themselves relevant to the society in which they operate.

Limitations and future directions of the research

This study had some limitations which may open doors for future studies. First, the study targeted teaching staff members only from the NTCs in Uganda. Further research may also include other employees of higher education institutions, such as members of the administration. Secondly, the study was conducted on NTCs exclusively in Uganda. A study expanded to other developing countries may lead to more insights into the impact of knowledge sharing on the performance of NTCs. Finally, opportunities for more research exist to explore a moderator analysis based on respondent demographics such as position, but also a similar study may make use of a mixed methods.

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