

**Knowledge sharing as a determinant of Zimbabwe's State universities' performance:
The mediating role of research collaboration**

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Abstract

Knowledge sharing enhances organisational performance, fosters competitive advantage, organisational learning, and innovation; it is of significant interest to both researchers and practitioners. The study sought to examine whether knowledge sharing positively influences university performance and collaborative behaviour among academics and researchers. Also, the study investigated how university collaborations influence university performance. A cross-sectional survey of 180 academic staff was conducted, and data gathered using a self-administered structured questionnaire. Respondents were randomly sampled from selected universities, and data were analysed through SPSS V23 and AMOS V23. Results from the study show that knowledge sharing has a positive influence on both university research collaborations and university performance. Additionally, university research collaborations were found to influence university performance. Lastly, it was concluded that university research collaborations mediate the relationship between knowledge sharing and university performance. By examining the influence of knowledge sharing on university collaborations and performance, the current study aimed to contribute to the existing body of knowledge in the performance of the higher education institutions domain.

Keywords: Knowledge sharing, research collaborations, and university performance.

Introduction

University performance is a subject that is both current and growing, and it is discussed by both academic scholars and practitioners (Purwanto et al., 2023). The idea of performance is

examined generally and specifically in academic settings (Mehmood et al., 2022). The notion of performance has experienced a remarkable transformation in the last few decades. Initially, definitions of performance solely focused on financial metrics; however, as time went on, non-financial metrics were also considered, which proved to be crucial for the smooth operation of the organisation, particularly within higher education institutions (Miao et al., 2024). In order to compare and differentiate institutions, either in terms of their study programs or overall, or for financial purposes, accreditation, and quality assurance, performance assessment employs certain metrics (Ahmed & Barry, 2023).

One of the newest fields of management, knowledge sharing, is dedicated to the study of how information is created, arranged, disseminated, and used for the growth of organisations (Purwanto et al., 2023). Knowledge sharing is of great importance for many organisations in the knowledge-based economy (Miao et al., 2024). Also, knowledge sharing is a key part of the knowledge management process (Alyouzbaky et al., 2024) and structures that ensure effective utilization of available knowledge resources to improve performance (Mehmood et al., 2022). It enables firms to improve their strategic, innovative, and marketing abilities (Chatterjee et al., 2022). As a result, developing a sustainable competitive advantage heavily depends on employees' knowledge sharing (Mehmood et al., 2022). Consequently, the competence to share knowledge is crucial for most organizational processes and performance outcomes (Rossoni et al., 2024) and attracts a lot of interest from the academic community (Chikazhe & Makanyeza, 2022).

Research that involves cooperation between researchers, institutions, organisations, and/or communities may be referred to as collaborative research (Miao et al., 2024). This collaboration can contribute unique knowledge to a project. International research partnerships greatly improve institutions' academic standing and excellence (He & Ismail, 2023). Universities may have access to a variety of information and skills by collaborating with organisations and researchers throughout the world (Miao et al., 2024). Establishing creative partnerships between research teams from academia, government, and the corporate sector can also benefit from collaboration (Nurdiana et al., 2023). These partnerships may lead to long-term research collaborations that advance society, science, and a wide range of economic interests (Nguyen et al., 2021).

Despite having individual researchers and academics, Zimbabwe's higher education institutions continue to underperform in terms of the production of goods (Chikazhe & Makanyeza, 2022; Mazikana et al., 2023). Zimbabwean state universities' performance does not match world standards, where universities are ranked among the best goods producers through research (Dangaiso et al., 2022). Individual researchers in Zimbabwe are researching, but university performance within the country remains low (Chikazhe et al., 2022; Chivasa et al., 2021). Intention to research is there, but can good results come from sole research? The current study therefore, attempted to investigate whether Knowledge Sharing and university collaborations amongst academics can improve Zimbabwean state universities. In trying to achieve this, the study sought to answer the following questions:

- 1. What is the effect of knowledge sharing on university performance?*
- 2. Does Knowledge Sharing influence university research collaborations?*
- 3. Do university research collaborations have an effect on university performance?*
- 4. What is the mediating role of university research collaboration on the relationship between Knowledge Sharing and university performance?*

The remainder of the document is structured as follows: Hypotheses are developed in the hypothesis development section. The literature review section presents the research and discusses the theories supporting it. The research methodology section explains the methodology used for data collection and analysis, as well as the presentation of research findings. The discussion section discusses the study's findings, and the conclusion and implications follow.

Literature Review

Theories anchoring the study

According to the Theory of Planned Behaviour (TPB), an individual is more likely to participate in a certain behaviour if they have a greater intention to do so (Manstead & Parker, 1995). It shows the link between beliefs and behaviour, further indicating that behaviour can be planned and is intentional (Wahyuni et al., 2020). The theory proposes that people's actions are not solely determined by their attitudes or aims but also influenced by the perceptions of what others think of them, in addition to their ability to control those intentions (Peters et al., 2020). The TPB serves as the foundational research framework for analysing the attitude, perceived behavioural control, and subjective norm about the academics' intention to share

their knowledge. The TPB in the current study was used to assist in examining how academics' attitudes toward continuing to share knowledge in universities may influence collaboration and research.

The Theory of Reasoned Action introduced by Fishbein and Ajzen (1975) underpins the decisions to focus on the knowledge-sharing intention of employees, as opposed to their attitude or actual knowledge-sharing behaviour. In this instance, the Theory of Reasoned Action explains actual behaviour as a function of attitude and intention towards a specific behaviour (Razak et al., 2016). In the context of knowledge sharing, this suggests that an employee's intention to share information would be greater if they had a more positive attitude towards doing so. In turn, an employee's likelihood of sharing information with colleagues increases with the strength of their intention to do so. Lyu et al. (2020) assert that a lack of knowledge-sharing intention may negatively influence actual knowledge-sharing behaviour. To profit from real information sharing, it is crucial to investigate the elements that affect knowledge-sharing intention. In order to relate the exogenous and endogenous variables that have contributed to the present body of knowledge, this study has connected the two theories.

Knowledge sharing

Since the efficacy of information sharing among employees and the resulting value created for the organisation ultimately determine the success of knowledge management activities, knowledge sharing is a key component of knowledge management (Al-Husseini et al., 2021). The deliberate dissemination and transmission of both explicit and implicit information by individuals is referred to as knowledge sharing (Al-Kurdi et al., 2020; Lam et al., 2021). According to Al-Kurdi et al. (2020), Knowledge Sharing was found to be significantly influenced by attitude, perceived behavioural control, subjective norms, organizational variables, and technology. Bock et al. (2005) pointed out that knowledge sharing intention refers to the degree to which individuals believe that they will engage in knowledge sharing behaviours. This study refers to the definition of knowledge sharing intention by Bock et al. (2005). Intention to share knowledge in an organization refers to the willingness of employees to share knowledge with others that they have acquired or created (Chikazhe et al., 2022). Meanwhile, the intention to share knowledge indicates how someone has a desire to share knowledge with others, and the intention is due to a relationship or relationship interaction between the person and other individuals, which is manifested in behaviour (Miao et al., 2024). Furthermore, it is well understood that the desire to exchange knowledge is fuelled by the

presence of knowledge-sharing self-efficacy (Miao et al., 2024). Knowledge sharing self-efficacy is a behavioural control variable that may help people overcome issues in the learning environment connected to knowledge sharing (Lyu et al., 2020). Knowledge-sharing intention is the source for any employee before they can begin sharing anything in organizations (Fait et al., 2023). Intention to share knowledge is considered one of the variables affecting knowledge sharing (Gupta et al., 2009).

University Research Collaboration

Collaboration refers to the capacity of an individual to contribute effectively in a group (Haider et al., 2022). This entails tenacity, adding to the collective knowledge, appreciating the efforts of others, and settling disputes. Effective collaboration involves a division of labour with participants who are engaged in active discourse that results in a compilation of their efforts (Scoular et al., 2025). According to Chedid et al. (2020), Collaboration has been considered a way to address the challenges of the 21st century, fostering the necessary innovation, growth, and productivity for all parties involved. The importance of scientific knowledge generated by academic institutions in collaboration with the private sector is undeniable for the economic growth of a nation, in less developed countries, diverse barriers may impede this type of cooperation (Chikazhe et al., 2022). By integrating all of the current technological skills and capacities, cooperation between highly trained academics and professionals in private organisations and businesses might strengthen local economies. Several scholars have looked at examples of how research institutes working together might affect economic growth. Largely influenced by the Anglo-American model, HE in the Arabian Gulf is characterized by the evolving roles of universities, which now have traditional missions of teaching and research, as well as a third mission of economic development (Al-Thani et al., 2021; Sam and Van Der Sijde, 2014). Although there may be different perspectives on this new goal, universities in the Gulf region are expected to adopt the concept of an entrepreneurial university, which emphasizes partnerships between universities and external stakeholders (Al-Maadeed, 2019). This means that they are now placing more emphasis on making a positive social and economic impact (Al-Kuwari et al., 2021). This is in line with the decades-old trend of higher-education institutions (HEIs) adopting economic objectives and entrepreneurial approaches, patenting, and licensing technologies to commercial entities (Fisher and Atkinson-Grosjean, 2002). Alongside the preservation, production, and transmission of knowledge, HEIs are engaged in the promotion of economic growth and development to promote societal welfare (Al-Thani et al., 2021). In the Gulf region, this means that HEIs are increasingly seen as knowledge-

production hubs and as partners for industries with the goal of maintaining competitiveness (Al-Qahtani et al., 2022).

University Performance

Performance refers to the degree of achievement of the mission at the workplace that builds up an employee's job (Cascio, 2006). University performance can also be divided into financial and non-financial performance (Guthrie & Neumann, 2007). Research and teaching performance are typically included in non-financial performance. He and Ismail (2023) indicated that the role of higher education, especially universities, is an important role in efforts to improve the quality of human resources, and universities compete to increase competitiveness by improving their performance. In this regard, state universities' performance is based on their capacity to manufacture things, conduct research, provide students with relevant and high-quality higher education, and give staff and other stakeholders fulfilling jobs.

Empirical Literature and Research Hypotheses Development

A study carried out by Huang and Zhou (2020) on Chinese students' intention to use Internet-based technology for learning indicated that Chinese university students' intention to use Internet-based technology with a learning focus was significantly influenced by attitude, perceived usefulness, and the subjective norm. A study by Hosen et al (2023) aimed to examine knowledge sharing behaviour among academics from a behavioural perspective through the lenses of the theory of planned behaviour, perceived trust, and organizational climate. The results showed that academics' attitudes, subjective norms, and perceived behavioural control are greatly influenced by their salient beliefs, which include behavioural, normative, and control beliefs. Alyouzbaky et al. (2024) stated that when workers share their experience and knowledge with others, organizational staff performance will improve (Al-Kurdi et al., 2020), and studies have proven that knowledge sharing directly affects improving organizational performance (Oyemomi et al., 2017). Based on the debate above, it is therefore hypothesised that:

H1: Knowledge Sharing has a positive effect on university performance

The study by Nurdiana et al. (2023) examined the implementation and impact of collaborative partnerships for digital education in improving students' learning achievement at the Institute of Islamic Religion of Sultan Muhammad Syafiudd in Sambas, Indonesia. Since they provide

new ways to improve teaching and learning, digital technologies have become essential to education. The study's findings add to the body of knowledge already available on cooperative partnerships in digital education and offer guidance to practitioners, legislators, and educational institutions looking to improve student learning outcomes through productive partnerships. The results emphasised how crucial it is to build long-lasting relationships and use digital tools to advance high-quality education and help students succeed in Indonesia. Fait et al.'s (2023) study's primary goal was to show how "volunteer" employees' perceptions of the human, structural, and relational capital elements of intellectual capital foster a motivating atmosphere that improves knowledge sharing and encourages "volunteer" employee engagement. The concept is used in the non-profit sector, which bases its strategy on sharing values with volunteers and staff. As a result, it requires the implementation of engagement techniques that are advantageous for the development and deployment of organisational and individual human resources. The findings demonstrate that the advantageous environment brought about by the incentives below the industrial collaboration dimensions has a direct and beneficial impact on knowledge sharing. Volunteer employee involvement benefits from increased knowledge sharing, which is a result of industry collaboration. Considering the above, it is therefore hypothesised that:

H2: Knowledge Sharing positively influences university research collaborations

Rossoni et al. (2024) analyzed university-industry collaborations set up for the purpose of research and development in an effort to recognize the barriers and facilitators of the process and to identify the approaches by which such barriers may be overcome. The findings demonstrate the value of building relational social capital and offering tax breaks to support the industry's efforts to innovate through partnerships with academia. They also demonstrate that, to some extent, collaborative barriers in R&D can be removed by beginning with smaller projects and progressively increasing their complexity. A study by Tseng, Huang, and Chen (2020) on traditional viewpoints, which mostly confine university–industry collaboration within a separate channel, to build the relationship between university–industry collaboration overall channel characteristics and university research performance. Two collaboration strategies are collaboration breadth, which is the scope of different channels, and collaboration depth, which is the extent to which universities delve into different channels. Based on a comprehensive panel dataset of Chinese universities in mainland China in 2009–2013, it was found that collaboration breadth and collaboration depth have a linear and curvilinear effect on academic research performance, respectively. Moreover, the interaction of collaboration

breadth and depth shows a negative impact on academic research performance. Therefore, it is hypothesized that:

H3: University research collaborations have a positive effect on university performance

A study carried out by Ting and Tan (2019), "The influence of researcher competence on university-industry collaboration: The mediating role of domain knowledge transfers and spillovers," Findings revealed that Researcher's competence serves as a success booster to initiate the collaborative endeavour, and the University-Industry collaboration is found to be substantially influenced by the domain knowledge transfers and spillovers. The goal of the study by Alyouzbaky and Tawfeeq (2024) is to investigate the variables that influence online information sharing among academics at the University of Mosul in the Republic of Iraq. The findings demonstrated that communication and knowledge self-efficacy had no bearing on the behaviour of online knowledge sharing, but that cooperation, perceived flexibility, and willingness to share had a significant impact on this behaviour, which in turn affected the respondents' academic performance. It is therefore hypothesized that:

H4: University research collaboration plays a mediating role in the relationship between knowledge sharing and university performance.

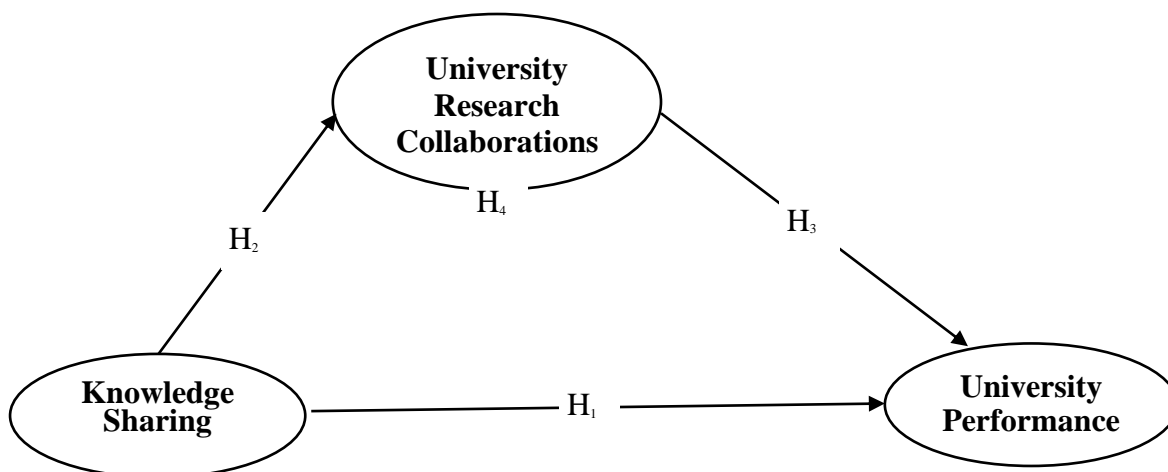


Figure 1: Conceptual Framework

Source: Researcher (2024)

Research gap

From the literature reviewed, it can be concluded that studies on knowledge sharing were done in many other countries and little has been done in Zimbabwe, particularly in state universities. Therefore, a gap exists in the literature to be covered Koko & Makumbe (2020). Knowledge

sharing has many factors to consider in terms of the university performance, aligning to the innovation and industrialisation concept. As a result, this research aims to fill the gaps in the current literature in two ways:

Firstly, by developing a policy recommendation framework that portrays how university performance can be enhanced through university research collaborations, knowledge sharing, and university research funding. Secondly, by investigating how university research funding plays a moderating role in the relationship between university collaborations and university performance. This gap in knowledge sharing makes this study unique and imperative as it seeks to contribute to the current body of knowledge sharing intention, university collaboration, university funding, and university performance.

Methodology

Positivist philosophy was adopted in this study. Positivism depends on statistics in revealing the truth and objectivity (Sekaran & Bougie, 2016). This viewpoint is free from partiality since the researcher does not influence outcomes (Martelli, 2018; Sekaran & Bougie, 2016). Also, positivism is open to objective and scientific analysis (Martelli, 2018; Sekaran & Bougie, 2016). Positivism is based on the concept that knowledge is validated by actual facts (Creswell 2017). Positivists assume that study findings may be extrapolated from other studies (Creswell, 2009, & Martelli, 2018). Bryman (2024) states that a research paradigm is a cluster of beliefs about how a particular discipline influences what should be studied, how research should be done, and how results should be interpreted to produce a report.

A cross-sectional survey of 180 academics was conducted within institutions of higher education in Zimbabwe between October and December 2024. The study adopted a cross-sectional survey because it provides an assessment of exposure and outcome in a sample of the population at a certain moment in time. Participants in the study were lecturers from ten out of fifteen (15) state universities in Zimbabwe. Convenience sampling was used to select respondents since some of the lecturers were not available during the time of study. Primary data were gathered using a self-administered questionnaire with a five-point Likert scale. The instrument was pilot tested before actual data collection, and errors and ambiguity were eradicated. Data was collected through both physical and online questionnaire distribution. Ethical considerations were observed during the data collection process; for example, permission was sought and granted to carry out the study.

Questionnaire design

The questionnaire had six components and twenty-nine (29) closed-ended questions. The three components are: knowledge sharing, collaborative research, and university performance. The questionnaire had a demographic data section.

Table 1: Items used to measure collaborative research, Knowledge Sharing, and university performance

Codes	Collaborative Research	Sources
COL1	Through collaborative research, the university benefits from multiple researchers within universities who are willing to share data.	Scoular et al. (2025), Rossoni, Vasconcellos, and Rossoni (2024)
COL2	Through collaborative research, the university benefits from collaborative research utilising resources not easily accessible to an individual	
COL3	The university benefits from sharing its expertise.	
COL4	University achieves a common goal through collaborative research	
COL5	Through collaborative research, scholars can tackle complex problems to benefit the nation.n	
COL6	Through collaborative research, innovative solutions are attained for the benefit of the university.	
COL7	Through collaborative research, the university benefits from a team with complementary skills, and knowledge is assembled.	
	Knowledge Sharing	Sources
KSI1	Knowledge sharing creates strong relationships with members who have common interests in the university.	Charband and Navimipour (2019), (Chandran and Alammari, 2021),
KSI2	Knowledge sharing draws smooth cooperation from outstanding members in the future	
KSI3	Knowledge sharing expands the scope of my association with other members in the university.	

KSI4	Knowledge sharing would strengthen the ties between existing members in the university.	Mustika et al. (2022), Moreno, Cavazotte, and Dutra (2020)
KSI5	Knowledge with other university academics answers queries regarding future knowledge.	
KSI6	Academics who are intrinsically motivated are more likely to actively share their expertise since doing so will increase their happiness and recognition.	
KSI7	Reward is one of the most effective methods of encouraging academics to share their knowledge with others	
	University Performance	Sources
UNIP1	The university is enjoying good-quality research from collaborative studies.	Tseng, Huang, and Chen (2020) Bock et al. (2005) Son et al. (2020)
UNIP2	University ranking is increasing as a result of collaborative funding.	
UNIP3	The university is coming up with new discoveries and insights resulting from funded research.	
UNIP4	Researchers within the universities are developing theories to proffer solutions to solve national problems.	
UNIP5	The university attracts students due to its collaborative studies	
UNIP6	Greater talent retention is achieved by universities through collaborative studies.	
UNIP7	Through collaborative studies, the university is innovative and effective in problem-solving	
UNIP8	Through collaborative studies, the university is attracting global funding	

Source: Author (2025)

Results from the demographic data analysis are presented in Table 2 below:

The response rate

Table 2 shows that the majority of respondents (82.2%) were above 30 years, and the bigger part were female (57.8%) compared to male (41.1%) respondents. Most respondents (28.9%)

were between 11-15 years of employment, followed by 16-20 years (27.8%). Master's degree holders constituted 45.6% of the bigger part of respondents who participated in the study.

Table 2: Demographic

Demographic profile of the sample		Frequency	Percent%
Age group of respondents	Less than 30	32	17.8
	30-39	30	16.7
	40-49	60	33.3
	50-59	50	27.8
	60 and above	8	4.4
Gender of respondents	Male	74	41.1
	Female	104	57.8
Length of employment of the respondent	Less than 5 years	31	17.2
	6 -10 years	30	16.7
	11-15 years	52	28.9
	16 - 20 years	50	27.8
	21 years and above	17	9.4
Educational level	First Degree	28	15.6
	Masters	82	45.6
	Doctoral	69	38.3

Source: Authors (2025)

Results

Present results in terms of each research question.

1. Does Knowledge Sharing influence university research collaborations?

The results show that in a context where the government exercises subsidy strategies, actors within university-industry collaborations receiving the subsidy will generate more profit and greater social welfare. University-industry collaboration (UIC) can moreover formulate strategies for promoting products. Existing research by Tian, Su, & Yang 2022) has shown that UIC helps a firm achieve superior innovation outcomes. They examined the influence of UIC on firm innovation performance by considering the interfirm alliance network. Through collaborative research, the university benefits from multiple researchers within universities

who are willing to share data. Through collaborative research, the university benefits from collaborative research utilising resources not easily accessible to an individual.

2. Do university research collaborations have an effect on university performance?

The findings and interpretation of the results provide enough evidence to conclude that university collaborations have a positive effect on university performance. This implies that Higher education institutions should continue offering support to researchers to improve university performance. In addition, the study concludes that the University achieves a common goal through collaborative research. This implies that university collaborations should be supported as well, since they complement each other. Based on the hypothesis tested, the study concludes that through collaborative research, scholars are able to tackle complex problems to benefit the nation. The study's findings demonstrated that through collaborative research, the university benefits from collaborative research utilising resources not easily accessible to an individual. Furthermore, the study findings revealed that the university benefits from sharing their expertise.

3. What is the mediating role of university research collaboration on the relationship between Knowledge sharing and university performance?

University research funding was found to play a moderating role on the relationship between university collaborations and university performance. The results provide adequate confirmation that University research funding plays a moderating role on the relationship between university collaborations and university performance. In addition, the study sought to establish what should be done by the government or the Higher Education Institutions to improve university performance.

Scale Validation

Before conducting a structural equation modelling to test research hypotheses, data were validated through confirmatory factor analysis (CFA), reliability analysis, convergent validity, and discriminant validity. Confirmatory factor analysis was used to better understand variable item structures and to determine which items in the questionnaire truly measured the underlying constructs. According to Gesing, Burbage, Hoang, Kulo and Tornwall, (2023), the main goal of factor analysis is to understand the structure of a latent variable and to create a questionnaire to measure this latent variable. These analyses were done in SPSS version 20 and AMOS version 21. Scale validation was done through sampling adequacy, reliability, and validity (discriminant & convergent) testing

Sampling adequacy testing

KMO and Bartlett's Test of Sphericity were used to test the sampling adequacy in AMOS V23. Results for the KMO test are presented below in Table 2.

Table 3: KMO and Bartlett's Test Results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.765
Bartlett's Test of Sphericity	Approx. Chi-Square	15001.536
	Df	404
	Sig.	.000

Source: Author (2025)

As illustrated in Table 2, the sample was adequate and allowed confirmatory factor analysis to be conducted (Kline, 2015). Thus, in accordance with the recommendations of Bartlett (1954) and Kaiser (1974), KMO should be at least 0.6, with Bartlett's Test of Sphericity significant at $p=0.00$.

Reliability results

Reliability was tested using Cronbach's alpha scale, and the results are presented in Table 3.

Table 3: Reliability results

Item	No. of items	alpha value
Collaborative Research	7	0.889
Knowledge Sharing	7	0.901
University Performance	8	0.864

Source: Author (2025)

The results in Table 3 indicate that minimum requirements for reliability were achieved as all alpha values were above 0.8 (Bujang et al., 2018; İnal et al., 2017).

Validity testing

Validity was tested using convergent and discriminant validity. A model fit index test was conducted before the validity test.

The measurement model was carried out using AMOS version 23. CMIN/DF (χ^2/DF), Goodness of Fit Index (GFI), Adjusted GFI (AGFI), Normed Fit Index (NFI), Tucker-Lewis

Index (TLI), Comparative Fit Index (CFI), and Root mean square error of approximation (RMSEA) were the measurement model fit indices calculated. A satisfactory match is indicated by values of GFI, AGFI, NFI, TLI, and CFI that are closer to 1, and an acceptable RMSEA is less than .08 (Reisinger & Mavondo, 2007). According to Hooper et al. (2008), a decent model should have a χ^2/DF that is between 0 and 5, with smaller values signifying a better fit. Model fit indices test results show that the model was fit and met minimum expectations, as shown in Table 4 below:

Table 4: Measurement model fit indices results

Item	Actual	Recommended	Source
CMIN/DF	3.175	Between 0-5	Hooper et al. (2008), Monteiro et al. (2017), Reisinger and Mavondo (2007)
GFI	.909	>.900	
AGFI	.951	>.900	
NFI	.936	>.900	
TLI	.944	>.900	
CFI	.917	>.900	
RMSEA	.052	Between .05 and .10	

Source: Author (2025)

The standardised factor loadings, individual item reliability, critical ratio, Cronbach's alpha, and composite reliability were used to evaluate convergent validity. Results for convergent validity are shown in Table 5 below:

Table 5: Results for convergent validity

Construct & items	Standardised factor loading	Individual item reliability	Critical ratio	Cronbach's alpha	Composite reliability
<i>Collaborative Research</i>					
COL1	.654	.677	-	.878	.890
COL2	.792	.843	16.556***		
COL3	.809	.861	17.442***		
COL4	.732	.911	15.120***		

COL5	.845	.754	14.223 ^{***}		
COL6	.712	.922	16.900 ^{***}		
COL7	.844	.779	17.528 ^{***}		
Knowledge Sharing					
KSI1	.914	.852	-	.855	.901
KSI2	.925	.925	18.025 ^{***}		
KSI3	.898	.707	17.345 ^{***}		
KSI4	.738	.879	15.642 ^{***}		
KSI5	.896	.658	17.336 ^{***}		
KSI6	.738	.934	16.760 ^{***}		
KSI7	.863	.722	16.784 ^{***}		
University Performance					
UNIP1	.703	.733	-	.821	.865
UNIP2	.756	.743	15.330 ^{***}		
UNIP3	.745	.846	15.221 ^{***}		
UNIP4	.623	.762	14.434 ^{***}		
UNIP5	.689	.867	14.740 ^{***} -		
UNIP6	.770	.788	16.001 ^{***}		
UNIP7	.787	.832	17.001 ^{***}		
UNIP8	.623	.749	14.221 ^{***}		
Notes: – CR is fixed; ^{***} significant at $p < 0.001$					

Source: Author (2025)

The analysis's findings, which are displayed in Table 5 above, indicate that the requirements for convergent validity were met as the standardised factor loadings and individual item reliability were all acceptable (Monteiro et al., 2017). Critical ratios were large enough, and the Cronbach's alphas and composite reliability results were all above 0.7 as recommended by Reisinger and Mavondo (2007).

Discriminant validity

As suggested by Hooper et al. (2008), discriminant validity was evaluated by comparing squared inter-construct correlations (SICCs) and average variance extracted (AVEs). The findings of the discriminant validity test are displayed in Table 6 below.

Table 6: Discriminant validity test results

Construct	Mean	SD	COL	KSI	UNIP
Collaborative Research (COL)	4.132	1.003	0.713		
Knowledge Sharing (KSI)	4.112	0.932	0.298	0.687	
University Performance (UNIP)	3.996	1.104	0.327	0.287	0.693

Note: Diagonal elements in bold represent AVEs

Source: Author (2025)

The diagonal bold figures AVEs must be above 0.5 and greater than the equivalent figures below each of them (SICC) for the results of a discriminant validity test to be considered acceptable (Fornell & Larcker, 1981). Accordingly, all constructs exhibited AVEs higher than 0.5 and above their corresponding squared inter-construct correlations (Masuwai et al., 2024), according to the data in Table 6. This demonstrates that the requirements for meeting discriminant validity were met (Henseler et al., 2015).

Hypotheses test results

Structural equation modeling (SEM) using maximum likelihood estimation (MLE) was applied in AMOS 23 to estimate the hypothesised model (H₁, H₂ and H₃). The adoption of SEM was based on the recommendation by Kline (2011) that it is one of the dominant techniques for testing complex models. Also, McQuitty and Wolf (2013) commend that SEM is effective in removing the effects of measurement error. Table 7 below presents the results of direct relationships (H₁, H₂, and H₃).

Table 7: Results of hypothesis testing

Hypothesis	Hypothesised Relationship	SRW	CR	Remark
H ₁	KSI → UNIP	0.312	16.325***	Supported
H ₂	KSI → COL	0.241	15.023***	Supported
H ₃	KSI → UNIP	0.275	14.256***	Supported

Notes: SRW standardised regression weight, CR critical ratio, *** significant at p < 0.001

Source: Author (2025)

The outcomes of the tests for hypotheses H₁, H₂, and H₃ were confirmed to be affirmative (supported) as shown in Table 7 above. All examined relationships had positive results, as shown by standardised regression weights (SRW) greater than 0.2. Furthermore, at $p < 0.001$, the critical values (CR) were both significant and acceptable.

The mediation effect of university research collaboration on the effect of knowledge sharing on university performance was further investigated using structural equation modelling in AMOS 23. The mediation effect results are displayed in Table 8 below;

Table 8: University research collaboration mediation results (H₄)

Hypothesis	Path	Path Coefficient	Description	Comment
H ₄	KSI→COL→UN IP	0.281***	COL partially mediates the effect of KSI on UNIP	Partial mediation
Note: ***Significant at $p < 0.001$				

Source: Author (2025)

The path knowledge sharing → research collaboration → university performance was a significant one, as shown by the data in Table 8 (path coefficient = .281; $p < 0.001$). The results show that research collaboration mediates the knowledge-sharing effect on university performance. Consequently, H₄ received support.

Discussion and Implications

Studies of this nature are important as they promote team building, hence improve performance within businesses and the success of the nation at large. Therefore, by examining the influence of knowledge sharing on research collaboration and university performance, the current study aimed to add to the body of knowledge in the management and performance of higher education institutions, leading to the production of goods. Earlier studies by Scoular et al. (2025), Rossoni, Vasconcellos, and Rossoni (2024) supported that knowledge sharing influences collaboration, which is similar to the findings of the current study. Evidently, the study has demonstrated that academics who are intrinsically motivated are likely to share their expertise and, by doing so, increase their happiness and recognition. Furthermore, the current study established that collaborations by researchers partially mediate the effect of knowledge sharing

on university performance. This implies that if collaboration is fully supported, knowledge sharing will have a positive effect on university performance. This corroborates an earlier study by Ting and Tan (2019) that settled for almost similar results. The current studies further extended findings by prior studies and went on to focus on how reward is one of the most effective methods of encouraging academics to share their knowledge with others.

Theoretical implications

This study improves our understanding of the effect of knowledge sharing on research collaboration and university performance, and it adds to the literature on higher education institutions' performance. The study sheds light on the effect of Knowledge Sharing and provides a theoretical contribution to the literature which agrees with the study findings (Rahman et al., 2021; Al-Kurdi et al., 2020; Fait et al., 2023; Oyemomi et al., 2017; Nurdian et al., 2023). As a result, this study supports the theoretical justification that currently exists for the beneficial effects of research knowledge sharing on team research and academic achievement.

Also, the study findings agree with theories underpinning the study. The TPB in the current study was used to assist in examining how academics' attitudes toward continuing to share knowledge in universities may influence collaboration and research. The study results confirmed that sharing knowledge has a positive influence on university performance. The TPB hypothesis is thus supported by the study's findings. Furthermore, choices to concentrate on workers' intentions to share information in order to enhance company outcomes are supported by the Theory of Reasoned Action. This has been supported by the study's results, in that knowledge sharing was found to influence both research collaboration and university performance, hence supporting the Theory of Reasoned Action.

Additionally, the study concluded that research collaborations mediate the impact of knowledge-sharing intentions on university performance. Thus, this study went further to add more on direct relationships among knowledge sharing, research collaboration, and university performance. The mediation results add new insights to the already existing body of knowledge on sharing and business performance.

Practical implications

This study sheds light on how leaders or executives oversee academic personnel to improve their intention to share information. Management should improve collaborative research, as universities benefit from multiple researchers within institutions who are willing to share data and knowledge. Through collaborative research, the university benefits from collaborative research utilising resources not easily accessible to an individual academic researcher. Furthermore, the university benefits from sharing its expertise and achieves common goals through collaborative research. Through collaborative research, scholars can tackle complex problems to benefit the institution and nation as innovative solutions are attained. Over and done with collaborative research, the university benefits from a team with complementary skills as knowledge is assembled for better results.

Management should be encouraged to promote knowledge sharing by academics through offering various incentives as this is one solution used to create strong relationships among researchers who have common research interest areas. This also draws smooth co-operation from outstanding members. Promotion of knowledge sharing among academics expands the scope of association with other members in the university and strengthen the ties among academics.

Management for higher education institution need to understand that the performance of their institutions is hinged on the production of goods and publications made by academic employees. Hence, universities should enjoy good quality research from collaborative studies. University raking results from collaborated new discoveries and insights, and this sometimes comes from funded research. University growth can be determined by increased enrolment which can result from students being attracted by collaborated and funded research.

Therefore, policymakers and university authorities are advised to support knowledge sharing and collaborated researches in universities so as to improve on the university performance. The study discovered that a reluctance to share knowledge has an impact on academic achievement. Regardless of the amount or nature of the rewards, management may put in place a system that is specifically tailored to encourage employees to share their expertise. Both inner and extrinsic incentives will successfully increase the exchange of information. Management should take into consideration factors that hinder knowledge sharing and assist in any way possible to make academics enjoy sharing knowledge amongst themselves.

Future research implications

The study was conducted within state universities only. Expanding similar studies to other private universities, not to state universities, may draw new insights which can assist the education sector. In this study, data were gathered from academic staff only. Future research may also take non-academic opinions into account when assessing the factors that influence Knowledge Sharing. It will also be interesting to consider other factors that can stand as mediators and moderators in the relationship between factors affecting knowledge sharing and knowledge sharing intention.

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