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Digital Transformation Influence on Knowledge Sharing in Tanzania Banks: Leveraging SEM-Based IPMA Analysis

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Abstract

To remain competitive and adaptable, banks are increasingly adopting digital technologies. This paper discusses the influence of digital transformation on knowledge-sharing in the banking industry. A deductive approach was used in this study; data were gathered via closed-ended questionnaires, and SmartPLS was used for PLS-SEM analysis. The results showed that while digital transformation of operational processes had a major negative effect, digital transformation of analytical information processing and customer touchpoints had considerable benefits in influencing knowledge-sharing. Identifying the key decision-making factors for achieving excellence in knowledge-sharing in the digital age presents difficulties for both practitioners and policymakers. This study's broad framework, which incorporates digital transformation and knowledge-sharing elements, would be a useful research avenue, as knowledge-sharing is studied from many angles. This study provides a more in-depth understanding by further analysing SEM results using techniques such as importance-performance map analysis (IPMA). By empirically analysing banks' practices, this article enhances understanding by indicating digital transformation variables that are crucial for knowledge-sharing but perform poorly, highlights corporate growth as well as competitiveness needs, and aids managers with recommendations on how digital transformation can influence knowledge-sharing.

Key words

Digital transformation, Knowledge-sharing, customer touchpoints, process digitalisation, information processing digitalisation.

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Introduction

The transition to digitally integrated, intelligent systems is being accelerated by modern technology (Favoretto et al., 2022; Vial, 2021). This shift marks a move from static information management to dynamic, real-time analytics, therefore redefining competition in digital markets (Denyes, 2019). As such, digital transformation of operational processes, digital transformation of customer touchpoints and digital transformation of analytical information processing are now critical to organisational survival and strategic positioning (Probojakti et al., 2025). However, previous studies rarely consider examining influence of digital transformation on knowledge-sharing from an IPMA perspective for managerial action, and a quantifiable assessment of the validity of IPMA outcomes is inadequate (Shen et al., 2024).

The rise of the Internet, broadband, smartphones, cloud computing, and online payments has expanded the use of digital technology. With growing global competition and shifting consumer behaviour, digital touchpoints are increasingly shaping the customer journey (Verhoef et al., 2021). Traditional business models are being challenged by this trend of increased adoption of digital technology (Verhoef et al., 2021). The increased inclination to provide individualised digital services places traditional banks under greater pressure to attract and retain customers (Pallant, Sands & Karpen, 2020). It is now necessary to continuously innovate in offline, online, and mobile value-added services to deliver a great client experience and ensure business continuity (Jahan & Shahria, 2022). Business organisations risk falling behind if they do not swiftly adopt digital transformation models and strategies (Matt et al., 2015).

Knowledge management is crucial for gaining, retaining, and sharing expertise, enhancing productivity, facilitating decision-making, fostering innovation, and maintaining a competitive edge, as institutional information frequently comes from various sources (Antunes & Pinheiro, 2020). As a result, organisations having the capability of effective sharing of knowledge can be able to withstand competition in the ever-dynamic business environment. Organisations acquire information that enables them to get new ways to handle issues since knowledge is a key component whose effective application enables businesses to offer innovative goods and services (Lyama, Salema & Tinali, 2025; Musa & Enggarsyah, 2025; Adobor & Kudonoo, 2025). Organisations require skilled professionals capable of mastering and leveraging rapidly advancing technologies and their complex integration within social, economic, and political systems to maintain resilience (Bashir et al., 2021). Consequently, strengthening digital transformation is crucial, as it enables the efficient acquisition, storage, and sharing of knowledge.

Research has addressed how digital transformation of customer touchpoints (Camară, 2024; Muthaffar, Vilches-Montero & Bravo-Olavarria, 2024), digital transformation of operational processes (Awad &

Martín-Rojas, 2024; Garlatti, Fedele & Iacuzzi, 2025; Malgorzata, Susanne & Martyna, 2023; Yang et al., 2025), and the digital transformation of analytical information processing (Stachová et al., 2020; Nwankpa et al., 2022) influence knowledge-sharing. Nonetheless, the findings are inconclusive, as some find a significant positive influence while others find a significant negative influence. While previous studies on the effects of specific dimensions of digital transformation on knowledge-sharing have inconclusive results (Camară, 2024; Garlatti, Fedele & Iacuzzi, 2025; Gong, Yao & Zan, 2023; Malgorzata, Susanne & Martyna, 2023; Muthaffar, Vilches-Montero & Bravo-Olavarria, 2024), prediction- oriented studies examining the influence of combined dimensions digital transformation on knowledge- sharing, focusing on evaluating their importance and performance for managerial action, is scarce.

This limitation leads to an inadequate understanding of the managerial decisions to be made in operational actions of the banks regarding the influence of three dimensions of digital transformation (Operational processes, customer touchpoints and analytical information processing) on knowledge-sharing. This study addresses this methodological gap by applying a more robust approach, using structural equation modelling (SEM) and importance-performance map analysis (IPMA) to aid managerial decisions regarding the choice of digital transformation initiatives by showing their relative importance in influencing knowledge- sharing for effective bank operational activities. The aim is to present findings on the influence of digital transformation on knowledge-sharing in the banking sector in Tanzania, where there is a dearth of research on the SEM-Based IPMA Analysis in examining the influence of digital transformation on knowledge-sharing in facilitating bank operations.

The article is organised as follows: subsequent section provides a literature review and delineates the hypotheses of our research. Then the methodology, data analysis, and discussion of the results are presented. Finally, authors present conclusion, implications, limitations, and areas for future research.

Literature Review

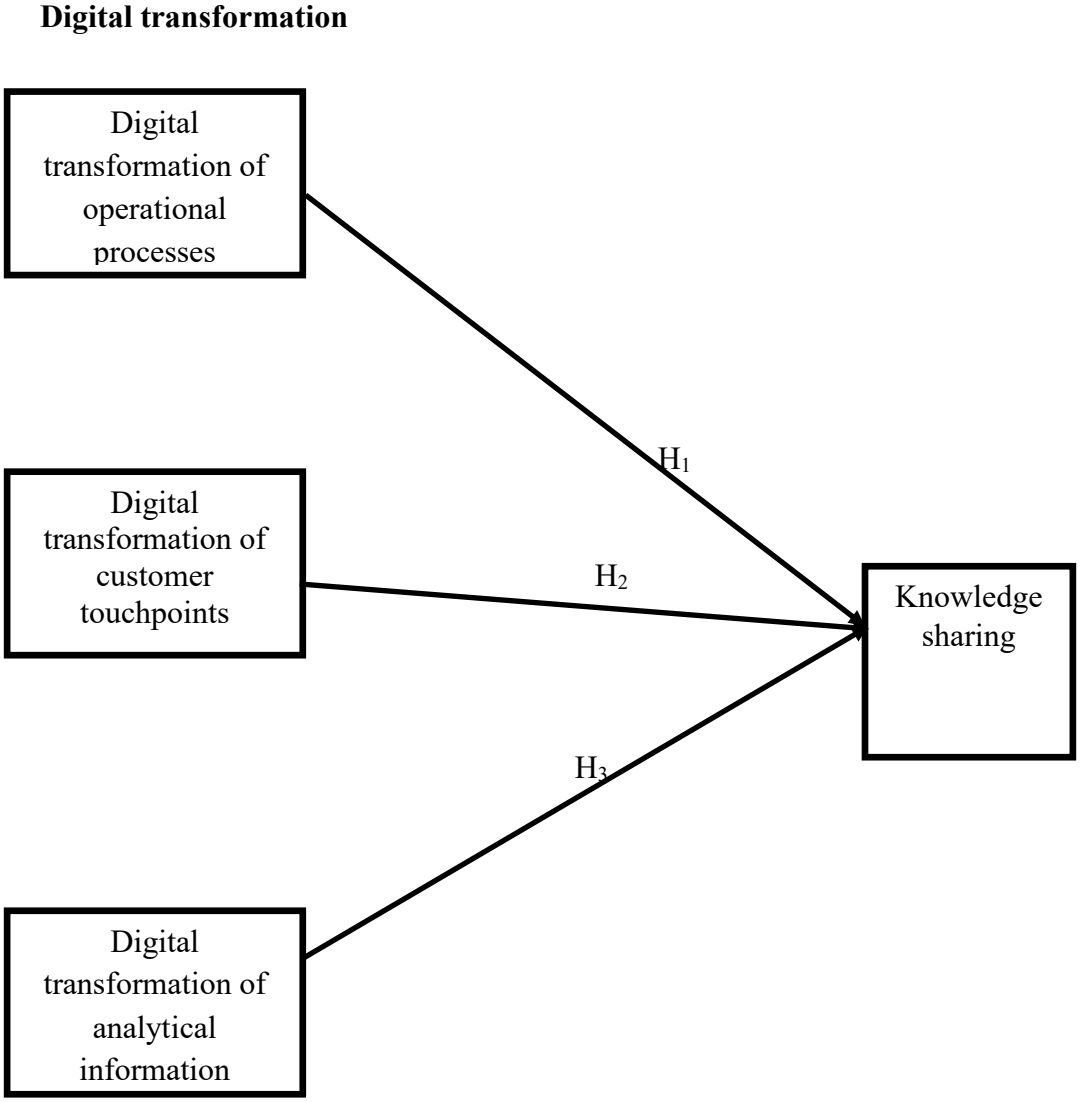
Theoretical framework

The Dynamic Capability Theory (DCT) and Adaptive Structuration Theory (AST) were applied, with AST complementing DCT to develop a comprehensive theoretical framework for analysing the influence of digital transformation on knowledge-sharing in banks. To maintain strategic flexibility, the DCT underscores a firms' capability to identify alterations in the environment, capitalize on emerging possibilities, and reorganize internal resources (Teece et al., 1997). Later, the DCT incorporated innovative, absorptive, and adaptive capabilities, which are considered relevant to this study's objectives (Durman et al., 2025; Marco-Lajara et al., 2023). Complementing this, the AST offers a social-structural viewpoint. This viewpoint explains how information sharing between technology and organisational structures shapes new work, decision-making, and learning patterns (DeSanctis & Poole, 1994). Combining these theories provides a thorough explanation of how integrating digital efforts improves knowledge sharing in banks while also capturing the strategic components of digital transformation.

In this article, DCT informs the variables based on three categories of capability: absorptive capability, which informs "knowledge-sharing," innovative capability, which tells "digital transformation of operational processes" and "digital transformation of customer touchpoints," and adaptive capability, which informs "firm adaptive capacity" (Marco-Lajara et al., 2023; Quansah et al., 2022). The variable "digital transformation of analytical information processing" is derived from AST, which describes how information technologies influence organisational processes (Desanctis & Poole, 1994; Gefen, Ben-Assuli & Denekamp, 2024). Together, these theories frame a conceptual model to understand how digital transformation fosters knowledge-sharing and strategic deployment of innovations across organisations (Appio et al., 2021).

The IPMA method is a management tool used to evaluate and prioritise the factors affecting performance within a system or organisation. The method analyseS both "importance" (the relative importance of each factor in achieving objectives) and "performance" (the current level of achievement of that factor). Analysis of the performance and importance of each predictor helps decision-makers allocate resources in the most optimal way (Haverila, Haverila & McLaughlin, 2023; Tailab, 2020). Studies indicate the need for IPMA because its use in methodology yields surprising results compared to other methods. It reveals factors that might not seem so problematic under straight path coefficients (importance), implying that IPMA can indicate which factors are prioritised for improvement (Divya & Prabu Christopher, 2025; Leal-Rodríguez et al., 2023).

Figure 1 presents the conceptual model.



Empirical studies and hypothesis development

Digital transformation denotes an organization's capacity to embrace and implement modern technology and methodologies. It involves establishing procedures that enable management and staff to strategically explore, test, and apply new technologies (Herbert, 2017). Customer experience, operations, and business models are the three key areas that can be digitally transformed (Capgemini Consulting, 2011; Denyes, 2019). This paper examines these dimensions of digital transformation: process operations, customer touchpoints, and analytical information processing.

Digital transformation of operational processes refers to changes in how goods and services are produced and delivered (Tidd & Bessant, 2020). It involves internal procedures that enhance efficiency and effectiveness by adding value to the chain. In the banking sector, digital transformation of operational processes is used to enhance accuracy, speed, and security while mitigating operational disruptions (Theiri & Alareeni, 2023), thereby boosting organisational performance.
Banking firms digitally transform operational processes to be better positioned to share knowledge (Cardoso et al., 2023; Li et al., 2025; Nwankpa et al., 2022), both internally and externally, to improve task and contextual performance by simplifying workflows and accelerating processes (Tønnessen et al., 2021). This includes developing new services via digital platforms, such as banking apps and mobile ATMs. Additional innovations include authentication tools, account management, exchange rate viewing, and loan calculators (Naimi, Tayabehi & Mohammad, 2021). Thus, it can be stated that:
H1: *Digital transformation of operational processes positively influences knowledge-sharing.*

Touchpoints refer to technology-enabled channels through which customers and organisations interact, such as phone-based support or self-service via websites and apps (Barann et al., 2022; Kim & So, 2024). Digitalisation can take the form of facilitating, changing, or introducing new touchpoints. Transforming entails turning physical touchpoints into digital, frequently utilising technology to facilitate remote access and minimise resource consumption (Kiwanuka, Shamim & Nakalanda, 2025). Likewise, facilitation is the process of using digital tools to coordinate consumer data so that businesses can take actions to shape customer experiences (Lundin & Kindström, 2023). Previous studies confirm that digitalisation of

customer touchpoints significantly and positively influences digital knowledge-sharing (Camară, 2024; Cheng et al., 2025; Chiang, 2023). The findings lead to the hypothesis that:
H2: *Digital transformation of customer touchpoints positively influences knowledge-sharing*.

Digital transformation of analytical information processing denotes the use of digital technology for data collection, analysis, and interpretation for decision-making, operational enhancement and value generation. It focuses on changing data workflows, analytics capabilities, and information systems to improve efficiency, accuracy and strategic value (Machasio, 2020; Rauf et al., 2024; Zhu & Li, 2023). The process connects marketing and advertising technology and improves data accessibility, connectivity, interoperability, and communication efficiency (Liu, Zheng & Xu, 2021; Neligan et al., 2022). Several studies report a positive influence of digitalisation on knowledge-sharing (Saratchandra, Shrestha & Murray, 2022; Colnar et al, 2022). Based on these insights, this hypothesis is developed:
H3: Digital transformation of analytical information processing positively influences knowledge-sharing.

Research Methodology

Research Design and Data Collection

A positivist philosophy was adopted, applying deductive logic and empirical observation to forecast population patterns and assess the influence of digital transformation on knowledge- sharing through an importance-performance analysis (Kasim & Antwi, 2015; Kumar, 2018). Likewise, a quantitative cross-sectional design was used. Sampling was done to draw conclusions that may be applied to other organisations with the same attributes (Lakens, 2022). The questionnaire underwent preliminary testing by experts in technology and information systems, human resource management, and organisational change to assess content relevance and the assessment scale, enabling necessary revisions before the study was conducted (Sajko, 2024). Data was collected via structured questionnaires with slightly adapted items measured on a 7-point Likert scale to ensure a wide range of discrimination. Managing Directors, who were the unit of inquiry, completed all questionnaires using the drop-off/pick-up method (Junod & Jacquet, 2023; Mugenda & Mugenda, 2003). The unit of analysis was banks, and hypotheses were tested through data analysis and synthesis.

Sample Size Determination

The minimum sample size determination was based on the inverse square root method. This method is recommended for its robustness of ensuring results are valid, reliable, and capable of producing meaningful findings (Hair et al., 2022; Sarstedt, Hair & Ringle.; 2023; Kock & Hadaya, 2018). The following formula provides the minimum sample size (n_{min}), using an acceptable statistical power of 80% and significance of 5%.

Significance level = 5%: $n_m > \left(\frac{2.486}{|p_{min}|} \right)^2$

Where p_{min} is the PLSpath model's coefficient with the upper boundary of the effect range as reference. At a significance level of 5% and a minimum path coefficient of 0.631 obtained through a retrospective estimation, the minimum sample size is given by:

$$n_m > \left(\frac{2.486}{|0.631|} \right)^2 = 39.816$$

Hence, the required minimum sample size in this study is forty (40).
Therefore, sample size used in this study is scientifically adequate and acceptable, as it is representative of the study population (Ludwig et al., 2022).

Study population characteristics

A sample of forty (40) banks was selected from the list of 46 banks provided by the Central Bank of Tanzania Report (2021). All distributed questionnaires were returned. Table 1 presents key characteristics of the banking sector (BOT, 2021). The report indicates that most banks are foreign-owned (55%) and predominantly commercial (78%), followed by community banks (10%) and microfinance banks (7%). Headquarters are concentrated in six regions, mainly Dar es Salaam (85%). Over 82% have more than a decade of experience in carrying out business operations. Hence, the majority of the banks that

participated in the study were suitable for testing the study variables.

Table 1: Characteristics of study banks.

		Frequency	Per cent (%)
Firm Ownership	Locally owned	18	45
	Foreign owned	22	55
	Total	***40***	***100***
Firm Category	Commercial bank	31	78
	Development bank	02	5
	Community bank	4	10
	Microfinance bank	3	7
	Total	***40***	***100***
Headquarters	Dar es Salaam	34	85
	Kilimanjaro	2	5
	Arusha	1	2.5
	Iringa	1	2.5
	Mtwara	1	2.5
	Unguja	1	2.5
	Total	***40***	***100***
Years of existence	Below 5 years	3	7.5
	5-10 years	4	10
	More than 10 years	33	82.5
	Total	***40***	***100***

Source: Literature Review (2021)

Variable Description

All variables in the descriptive statistics for the 40 banks were above the midpoint, indicating positive outcomes. Digital transformation of analytical information processing scored the highest grade (Mean = 4.083). This was followed by digital transformation of operational processes (Mean = 3.921) and digital transformation of customer touchpoints (Mean = 3.809). There are some variations among variables, as seen by the standard deviations (1.094–1.319). The lower score for customer touchpoints indicates areas that might need improvement, even though banks generally have a positive view of their digital transformation initiatives.

Operationalisation of Variables

This article employed three independent variables. They are the digital transformation of operational processes, the digital transformation of customer touchpoints, and the digital transformation of analytical information processing. These variables represent technologies and innovations that businesses have incorporated into digital services to bolster their competitive advantages (Kamphake, 2020). The criterion variable was knowledge-sharing (Leoni et al., 2022). Furthermore, in order to satisfy the objectives of this study, all indicators were somewhat modified. The modifications were based on industry expert feedback and were rigorously tested for validity and reliability. Variables were operationalised using existing validated scales, measured on 7-point Likert scales ranging from 1 = strongly disagree to 7 = strongly agree.

Moreover, the DOP measurements were modified from Gurbaxani and Dunkle (2019); Swacha-Lech (2017). Furthermore, the DPS measurements were modified from various researchers including He et al. (2021); Aral and Weill (2007); Nwankpa and Roumani (2016). DIB Measurements were modified from (Küfeoğlu et al., 2022; Liu et al., 2021; Neligan et al., 2022), whereas KDS was used as a criterion variable, where all indicators were modified from Darroch (2003) and Ho (2008).

Study Results

Data analysis using SmartPLS assessed normality and dispersion (Black & Babin, 2019; Hair et al., 2019). No missing values were found; means ranged from 3.289 to 4.489, minima 1, maxima 5, and standard deviations 0.806–1.47. Skewness (-2.077 to -0.127) and kurtosis (-0.324 to 3.692) were within acceptable limits (Kline et al., 2015), indicating an appropriate data distribution. PLS-SEM was chosen for its robustness with correlated constructs, suitability for prediction-oriented research, and effectiveness with small to medium samples, making it ideal for testing the hypothesised relationships.

PLS-SEM Analysis and Tests for Hypothesised Relationships

Following the standard PLS-SEM procedures outlined by Sarstedt, Hair and Ringle (2021), we performed statistical analysis to assess both the measurement model and the structural model.

Measurement model analysis

Validity and reliability tests confirmed quality of the measurement model. Cronbach's Alpha values exceeded .854, and composite reliability ranged from 0.886 to 0.892, indicating strong internal consistency. Average Variance Extracted (AVE) values ranged from 0.526 to 0.542, meeting convergent validity criteria, while Content Validity Index (CVI) scores were above .724, reflecting acceptable content validity (Table 2).

Table 2: Reliability and validity tests

Construct	No of indicators	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)	Content Validity Index (CVI)
DOP	7	0.856	0.896	0.886	0.526	0.724
DPS	7	0.856	0.863	0.889	0.533	0.730
DIB	7	0.854	0.864	0.888	0.532	0.728
KDS	7	0.860	0.871	0.892	0.542	0.735

Source: *Research Data (2024)*

Note(s): DOP: Digital transformation of operational processes; DPS: Digital transformation of customer touchpoints; DIB: Digital transformation of analytical information processing; KDS: Knowledge-sharing.

Discriminant validity was assessed using the heterotrait-monotrait (HTMT) ratio, preferred over cross-loadings and Fornell-Larcker (Benitez et al., 2020; Hair et al., 2022). Values below 0.85 indicate constructs are conceptually distinct (Dijkstra & Henseler, 2015). As shown in Table 3, all HTMT values met this threshold. As a result, they verified that the measurement model's constructs are theoretically and experimentally different.

To avoid misleading regression findings, collinearity was evaluated using the Variance Inflation Factor (VIF) (Hair et al., 2022). Values above 3 indicate potential issues (Hair et al., 2019; Kock & Lynn, 2012). Using SmartPLS, all inner and outer VIF values ranged from 1.881 to 2.133, below the 3.3 threshold. They, therefore, indicated that multicollinearity is not a concern (Henseler et al., 2014; Chin et al., 2020).

Table 3: Discriminant validity results

	DIB	DOP	DPS	VIF
				KDS
DIB				1.818
DOP	0.742			2.361
DPS	0.627	0.736		2.021
KDS	0.736	0.423	0.675	-

Source: *Research Data (2024)*

Structural model analysis

The structural model was tested using bootstrapping with 5,000 resamples (Hair et al., 2011). Explanatory power was assessed via the variance (R^2) (Dijkstra & Henseler, 2015; Sarstedt, Hair & Ringle, 2021). R^2 values of 0.75, 0.50, and 0.25 indicate high, moderate, and low explanatory power, respectively (Hair et al., 2022). The model explained 60.3% of the variance (R^2), reflecting moderate explanatory power and sufficient statistical power to assess the hypothesised relationships (Table 4).

Table 4: Coefficient determination values

	R Square	R Square Adjusted
ACR	0.603	0.574

Figure 2 provides a summary of constructs and their indicators, the upper limit of coefficients used to determine the minimum sample size required for the study, and the coefficient of determination.

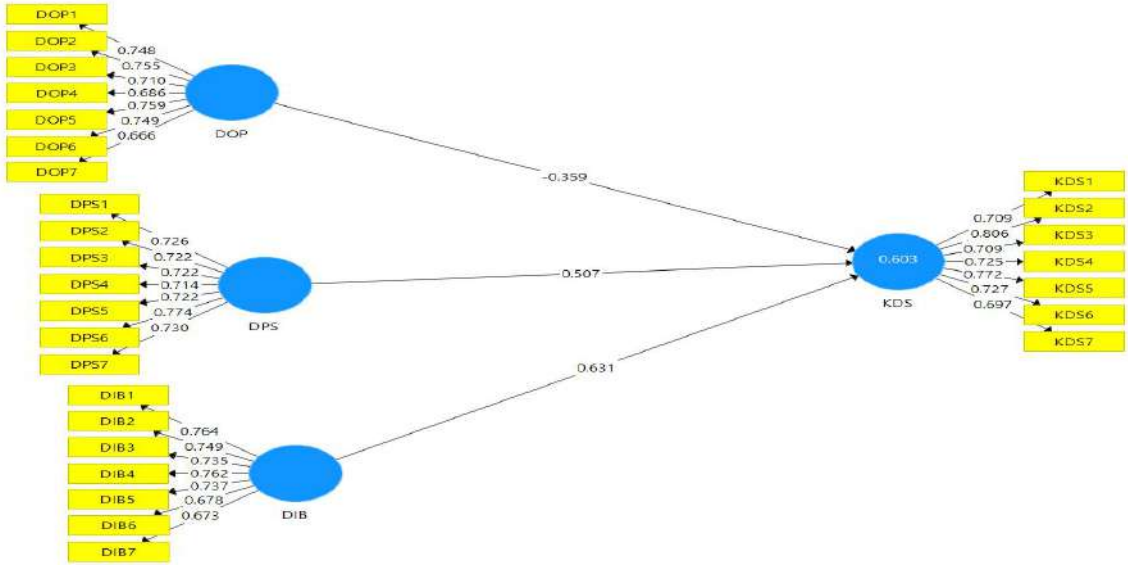


***Figure 2**: Structural model results*
***Source:** Research Data Analysis extracted from Smart PLS (2024)*

Hypothesis testing

The relationships between digital transformation, knowledge-sharing, and firm adaptive capacity were examined through path analysis. The results are presented in Table 5 and described thereafter.

Table 5: Hypothesis testing results

	Path Coefficients and Significance Levels for Hypothesized Relationships (n = 40)							
Hypotheses	Relationships	*β*	(STDEV)	*t*-values	*p*-values	f^2	95% CI	Supported?
H1	DOP -> KDS	-0.359	0.209	1.716	0.043	0.137	{-0.710;-0.113}	No
H2	DPS -> KDS	0.507	0.208	2.436	0.007	0.320	{0.178; 0.839}	Yes
H3	DIB -> KDS	0.631	0.130	4.872	0.000	0.552	{0.418; 0.828}	Yes

***Source:** Research Data (2024)*
Note(s) CI: Confidence Interval

Hypothesis H1 examined the influence of DOP on KDS. The influence is significant but negative (β = -0.359, p = 0.043). Bootstrap confidence intervals (-0.710; -0.113) exclude zero, supporting that there is a significant negative influence of DOP on KDS, suggesting rejection of H1. The f^2 value of 0.137 indicates a medium effect size. Thus, there is a significant negative effect of DOP on KDS.Hypothesis H2 tested the influence of DPS on KDS and found that digitally transformed customer touchpoints have a significant positive influence (β = 0.507, p = 0.007). The bootstrapping analysis yields confidence intervals (0.309; 0.700) excluding zero, further indicating significant influence. The f^2 value of 0.320 indicates a medium effect size. Thus, H2 is accepted, confirming a significant positive influence.Hypothesis H3 tested the influence of DIB on KDS. The digital transformation of analytical information processing significantly influences knowledge-sharing (β = 0.631, p = 0.001). The bootstrapping analysis yields confidence intervals (0.418; 0.828) that do not include zero, further indicating a significant effect. The f^2 value of 0.552 is large. These findings suggest a high influence (Hair et al., 2017), supporting H3 and confirming a significant positive influence.

Insights from the Importance Performance Map Analysis (IPMA) Perspective

The study adapted the analytical technique of importance-performance analysis of Hsu (2008). The first, second, third, and fourth quadrants make up a strategic management map, with “do better”, “keep up”, “education”, and “no change” areas (Hsu, 2008). In this study, Hsu’s IPMA attributes, as shown in Figure 3, were used for analysis. IPMA offers helpful guidance to help a service organization identify areas in which the way it operates needs to be improved (Bossi et al., 2025), thereby making it a managerial decision by clearly bringing attention to particular areas that need it as indicated in Figure 3.

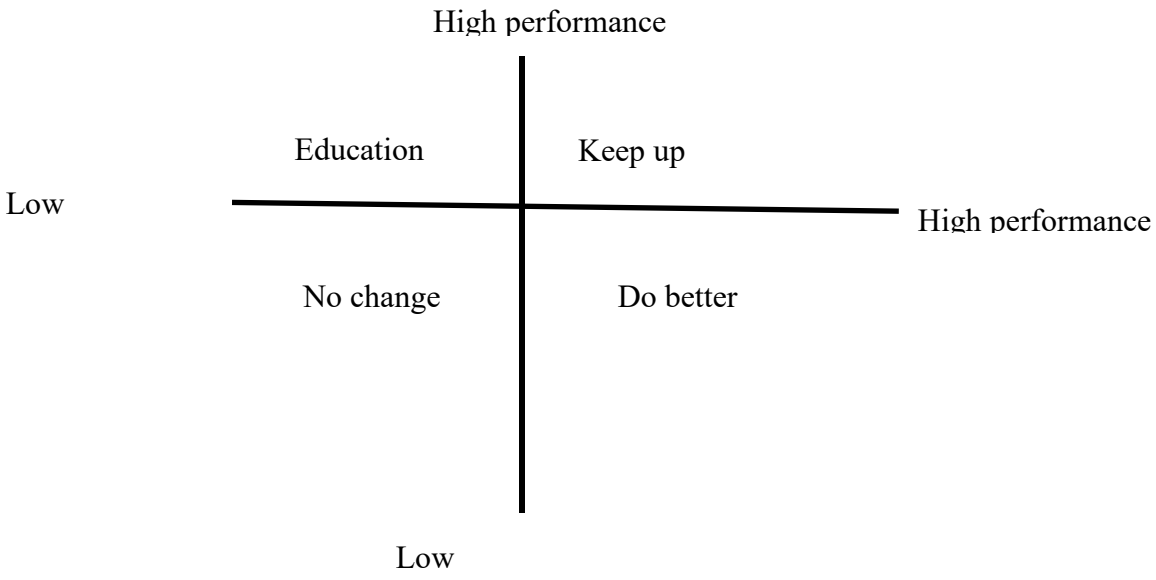


Figure 3: IPMA Analysis framework
Source: Adapted from Hsu (2008

The primary goal of testing was to confirm that the structural model was appropriate for carrying out the IPMA analysis (Rangasamy & Yang, 2025). Statistical analysis and discussion above were supplemented by the IPMA analysis, which was carried out using the PLS-SEM. The IPMA analysis helps managers make decisions by identifying digital transformation variables that are crucial for knowledge-sharing but perform poorly (Martínez-Falcó et al., 2025). Table 6 indicates IPMA analysis at the construct level.

Table 6: IPMA results of variables

Variable	Importance	Performance	Action
DOP	0.194	74.627	Education
DPS	0.195	70.759	Do better
DIB	0.196	78.285	Keep up

Based on the four quadrants in Figure 4, DIB represents a strength that supports knowledge- sharing and should be maintained. DOP indicates a need for employee education and customer awareness, though its negative effects suggest limited relevance to knowledge sharing. DPS is the area most in need of managerial focus, as improvements here would most strongly benefit knowledge-sharing. Overall, the new insights revealed by IPMA results indicate that sustaining DIB and improving DPS are key for banks to achieve knowledge- sharing.

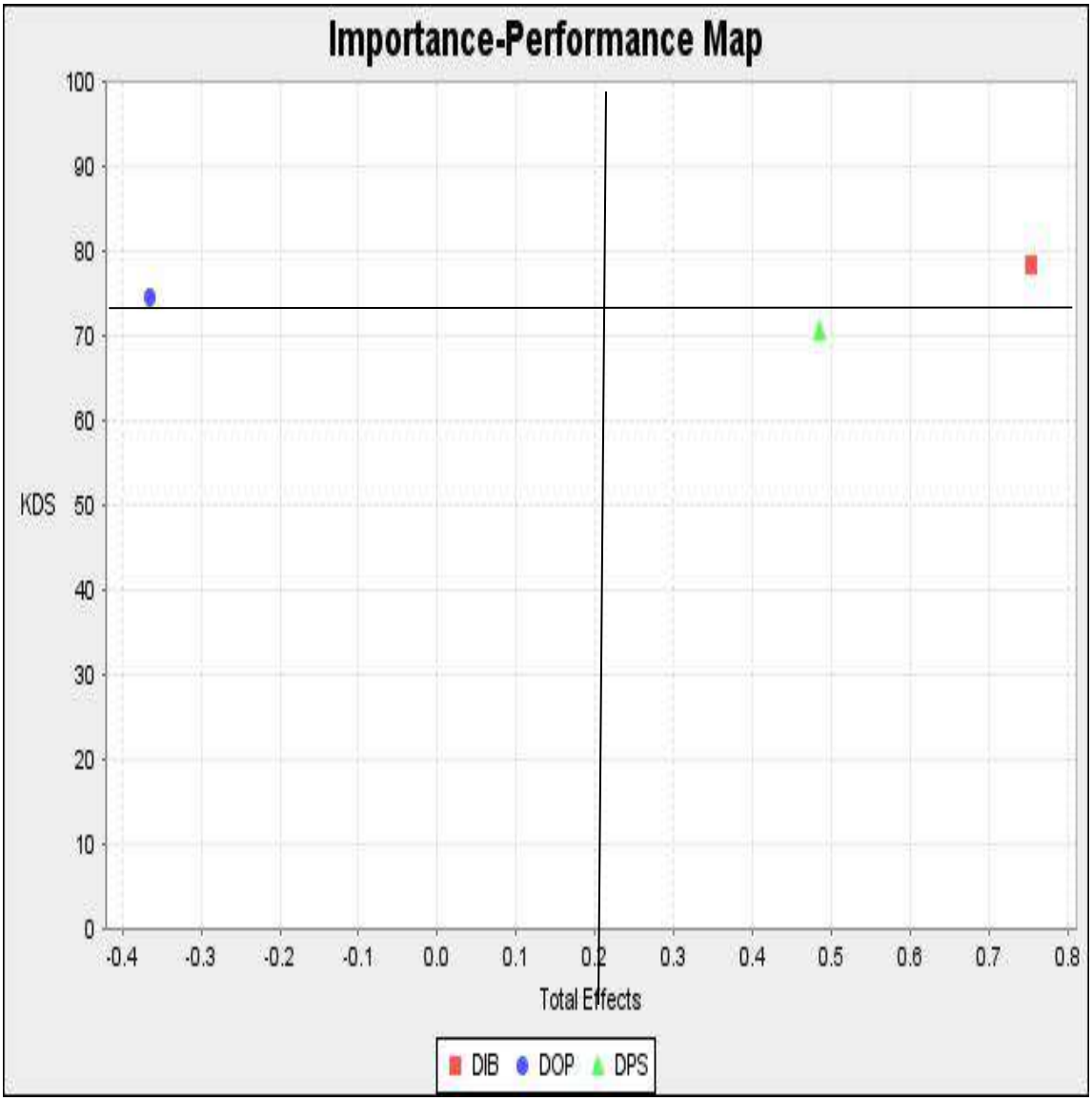


Figure 4: IPMA results of variables
Source: Research Data

IPMA of Indicators

Digital transformation was assessed using the indicators listed in Table 7. Thus, the relative significance of digital transformation indicators in influencing knowledge-sharing measures was assessed using the IPMA results. Table 7 and Figure 5 show differences in digital transformation at both construct and indicator levels. Among DOP indicators, DOP1, DOP2, DOP6, and DOP7 fall in the "no change" quadrant, while DOP3, DOP4, and DOP5 require employee education to build awareness of their importance.

Table 7: Variable indicators' IPMA results

Variable	Items	Importance	Performance	Action
DOP	DOP1	-0.074	70.000	No change
	DOP2	-0.062	71.667	No change
	DOP3	-0.072	87.222	Education
	DOP4	-0.036	75.000	Education
	DOP5	-0.054	85.000	Education
	DOP6	-0.039	57.222	No change
	DOP7	-0.029	65.000	No change
DPS	DPS1	0.095	77.222	Keep up
	DPS2	0.063	77.778	Keep up
	DPS3	0.065	72.222	Keep up
	DPS4	0.065	55.000	Do better
	DPS5	0.045	67.778	Do better
	DPS6	0.075	73.333	Keep up
	DPS7	0.077	68.333	Do better
DIB	DIB1	0.098	68.889	Do better
	DIB2	0.102	73.333	Keep up
	DIB3	0.153	77.778	Keep up
	DIB4	0.089	77.222	Keep up
	DIB5	0.098	80.556	Keep up
	DIB6	0.056	72.778	Keep up
	DIB7	0.159	88.889	Keep up
Average		0.042	73.439	

For DIB and DPS, most indicators (DPS1, DPS2, DPS3, DPS6, DIB2, and DIB7) lie in the "keep up" quadrant and should be maintained, whereas DPS4, DPS5, DPS7, and DIB1 fall in the "do better" quadrant, demanding the greatest managerial attention. Strengthening these attributes would result in the greatest improvements in knowledge-sharing.

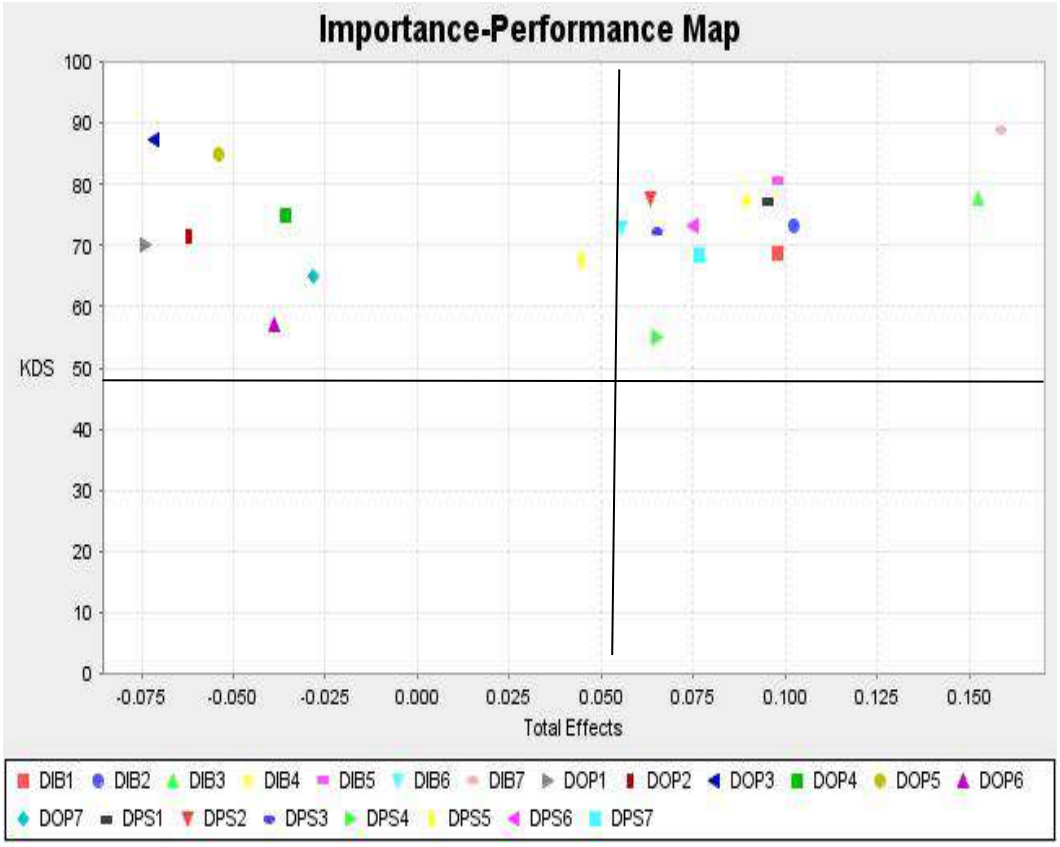


Figure 5: A chart of variable indicators' IPMA results
***Source**: Research data*

Discussions of Findings

The purpose of this study was to investigate how digital transformation affects knowledge- sharing in Tanzania banks. Three hypotheses were tested, two of which were supported by the data. The findings did not support Hypothesis H1, contrary to the theoretical expectation of the Dynamic Capability theory, indicating that DOP has an insignificant influence on knowledge-sharing. The results suggest that DOP can produce varying effects on knowledge sharing (Awad & Martín-Rojas, 2024; Ma et al., 2022). This study's findings are consistent with those who have shown that DOP negatively and significantly influences knowledge- sharing (Garlatti, Fedele & Iacuzzi, 2025; Malgorzata,Susanne & Martyna, 2023; Gong, Yao & Zan, 2023; Yang et al., 2025). This justifies the ongoing inconclusiveness regarding the influence of DOP on KDS, hence calling for further studies. These findings challenge the initial assumption of the DCT and suggest that DOP alone may be insufficient to support KDS practices. This suggests that elements like staff involvement, organizational culture, or the type of digital tools employed could be more important in promoting knowledge-sharing (Zamiri & Esmaeili, 2024). The anticipated benefits of digital transformation may have been inhibited by behavioral resistance to new technologies while knowledge-sharing may have been discouraged by employees' perceptions of greater monitoring or decreased autonomy within digital systems (Cieslak & Valor, 2025; Trenerry et al., 2021).However, results support hypothesis 2 that DPS strongly, significantly, and positively influences knowledge-sharing. This suggests that a higher level of DPS improves knowledge- sharing within a firm. These results are consistent with the findings of Camară (2024) and Muthaffar, Vilches-Montero and Bravo-Olavarria (2024), who found that the influence of DPS on KDS enhances customer-business interactions. This finding underscores the role of digital tools and process innovations in enhancing the flow, accessibility, and knowledge-sharing among employees. Results align with the theoretical expectation of the AST that DPS fosters a more connected and informed work environment, thereby supporting improved knowledge-sharing practices.

Moreover, results indicate that DIB significantly and positively influences knowledge- sharing. This aligns with prior research conducted by Stachová et al. (2020) and Nwankpa et al. (2022), which revealed that DIB has a positive influence on KDS. An interesting new knowledge from IPMA analysis is that the effect of DIB on KDS is much stronger than that of DPS. DIB ranks first since its path coefficients are higher than DPS, implying that DIB is highly adopted by banks of various categories in Tanzania.
In addition to analysing direct relationships, IPMA results also show that DOP is not highly important for knowledge-sharing. This is particularly evident in the indicator analysis of sharing information about transaction automation, customer feedback through social media, and digital product catalogues (DOP3, DOP4, and DOP5). These results point to the need to teach staff members about these qualities. According to earlier studies, such education enhances knowledge-sharing (Nicolás-Agustín et al., 2025; Valk & Planojevic, 2021). The study findings contrast with the previous research by indicating that DOP significantly hinders information sharing, which offers a fresh perspective.DIB significantly influences knowledge-sharing. This is in line with earlier research demonstrating the favourable effects of disruptive technology, and digital task interdependence on team creativity and readiness to learn and share. This emphasises to managers the necessity of continuing to invest in analytical information systems as they promote wider organisational innovation and strengthen knowledge sharing (Colnar et al., 2022; Saratchandra, Shrestha & Murray, 2022). Therefore, it is important to carefully analyse and implement steps to accelerate the DIB to enhance KDS (Tibesigwa et al., 2025;Yang et al., 2025).

Conversely, the DPS, such as 24/7 Internet banking, online account opening, and digital payment cards (DPS4, DPS5, DPS7), is perceived as low in importance but high in performance in influencing knowledge-sharing. This indicates that banks should strengthen these services to increase customer awareness, encourage experience sharing, and expand the customer base. These findings align with previous studies showing that online self-services in banking improve knowledge-sharing. For managers, prioritising improvements in customer-facing digital services can generate stronger knowledge flows between customers and firms, supporting long-term competitiveness (Marfo et al., 2022; Ugwuanyi & Idoko, 2022).

Theoretical Implications

This research provides findings that are crucial in contributing to the body of knowledge since few prior studies explored how digital transformation affects dimensions of knowledge- sharing. The findings show that applying DCT and AST theories is useful for discerning that possessing advanced digital technologies alone does not ensure a competitive advantage without effective knowledge sharing. This research proved that knowledge-sharing strengthens both internal and external knowledge flows and serves as the basis for implementing and developing digital transformation across processes, touchpoints, and information processing.

Practical Implications

The study offers an understanding of how managers can make decisions regarding the adoption of digital transformation and knowledge-sharing approaches. Findings from IPMA reveal that the DPS, along with DIB are the most critical determinants of knowledge-sharing in relation to other factors. Consequently, Managers seeking to enhance their banking operations may utilize these insights to inform investment

decisions in crucial areas of concern. Furthermore, the results of this study provide significant insights for many stakeholders seeking to revolutionize the banking industry in the current digital age, including legislators, development agencies, consumers, and the wider community. The results provide a basis for developing successful policies, making informed decisions, and executing measures that improve information sharing in banks.

Conclusion and recommendations

The study provides insights into how digital transformation influences knowledge-sharing in banks in developing countries, particularly Tanzania. The findings indicate that DPS and DIB positively influence knowledge-sharing. The study concludes that banks must use digital technology and information sharing to thrive in an unpredictable business environment. Managers should prioritise key digital transformation and knowledge-sharing initiatives to support growth and sustain a competitive edge. The IPMA results further show that some indicators of DPS are associated with lower knowledge-sharing. Therefore, bank Managing Directors should ensure that employee training accompanies digital transformation efforts to support digital knowledge-sharing. The study recommends that managers use these findings to guide investment decisions aimed at strengthening knowledge-sharing.

However, the study has limitations. Digital transformation only moderately explains variation in digital knowledge-sharing, suggesting that future research should examine additional influencing factors. Moreover, the DPS showed a negative and significant influence on KDS, indicating the need for further investigation. Lastly, the limited number of enterprises led to a constrained sample size. The small sample size has a limitation for generalizing these findings outside of the specific study context. Future studies should explore appropriate strategies to expand the study's scope.

References

Adobor, H., & Kudonoo, E. C. (2025). Antifragility and organizations: an organizational design perspective. *Leadership & Organization Development Journal*, *46*(2), 351–375.

Aguirre-Urreta, M., & Rönkkö, M. (2015). Sample size determination and statistical power analysis in PLS using R: An annotated tutorial. *Communications of the Association for Information Systems*, *36*, 33–51. https://doi.org/10.17705/1cais.03603

Antunes, H. de J. G., & Pinheiro, P. G. (2020). Linking knowledge management, organizational learning and memory. *Journal of Innovation & Knowledge*, *5*(2), 140–149.

Appio, F. P., Neirotti, P., Frattini, F., & Petruzzelli, A. M. (2021). Special Issue Guest Editorial Digital Transformation and Innovation Management: A Synthesis of Existing Research and an Agenda for Future Studies. *Journal of Product Innovation Management*, *38*(1), 4–20. https://doi.org/10.1111/jpim.12562

Aral, S., & Weill, P. (2007). IT assets, organizational capabilities, and firm performance: How resource allocations and organizational differences explain performance variation. *Organization Science*, *18*(5), 763–780. https://doi.org/10.1287/orsc.1070.0306

Awad, J. A. R., & Martín-Rojas, R. (2024). Digital transformation influence on organisational resilience through organisational learning and innovation. *Journal of Innovation and Entrepreneurship*, *13*(1), 1–24. https://doi.org/10.1186/s13731-024-00405-4

Barann, B., Hermann, A., Heuchert, M., & Becker, J. (2022). Can't touch this? Conceptualizing the customer touchpoint in the context of omni-channel retailing. *Journal of Retailing and Consumer Services*, *65*, 102–269. https://doi.org/10.1016/j.jretconser.2020.102269

Bashir, S., Arney, L., Khan, J. I., Lim, V., Kumar, S., & Sundharam, J. (2021). "Digital Skills The Why, the What and How " Methodological Guidebook for Preparing Digital Skills Country Action Plans for Higher Education and TVET (V2.0). In *European University Institute, 2, 1-133*. https://www.worldbank.org/en/programs/digital-development-partnership

Benitez, J., Henseler, J., Castillo, A., & Schuberth, F. (2020). How to perform and report an impactful analysis using partial least squares: Guidelines for confirmatory and explanatory IS research. *Information & Management*, *57*(2), 1-28. https://doi.org/10.1016/j.im.2019.05.003

Black, W., & Babin, B. J. (2019). Multivariate data analysis: Its approach, evolution, and impact. In *The great facilitator: Reflections on the contributions of Joseph F. Hair, Jr. to marketing and business research* , Springer, 121–130.

Bossi, S., Butković, L. L., Pürckhauer, P., & Silvius, G. (2025). *IPMA Guide on Sustainable Project Management: Based on the Sustainable Project Management ICB4 Reference Guide*. Van Haren, 1-337.

BOT. (2021). *Financial Sector Supervision Annual Report, Bank of Tanzania, 1-67*. https://www.bot.go.tz

Camară, A. B. (2024). The Impact of Digitalization on Customer Knowledge Management. *Management Dynamics in the Knowledge Economy*, *12*(1), 21–38. https://doi.org/10.2478/mdke-2024-0002

Capgemini Consulting. (2011). Digital Transformation: A Roadmap for Billion-Dollar Organisations. *MIT Center for Digital Business and Capgemini Consulting*, *726 KEM*, 1–68. https://doi.org/10.4028/www.scientific.net/KEM.726.460

Cardoso, A., Pereira, M. S., Sá, J. C., Powell, D. J., Faria, S., & Magalhães, M. (2023). Digital culture, knowledge, and commitment to digital transformation and its impact on the competitiveness of Portuguese organizations. *Administrative Sciences*, *14*(1), 1–25.

Cheng, Q., Peng, C., Wan, H., Dai, Y., & Zhang, S. (2025). How to realize digital knowledge innovation through digital technology? A perspective based on knowledge digitization and inter-organizational knowledge sharing. *Technology in Society*, *82*, 1–22.

Chiang, C.-T. (2023). Engraving customer experiences through digital technologies. *Journal of Services Marketing*, *37*(5), 671–685.

Chin, W., Cheah, J. H., Liu, Y., Ting, H., Lim, X. J., & Cham, T. H. (2020). Demystifying the role of causal-predictive modeling using partial least squares structural equation modeling in information systems research. *Industrial Management and Data Systems*, *120*(12), 2161–2209. https://doi.org/10.1108/IMDS-10-2019-0529

Cieslak, V., & Valor, C. (2025). Moving beyond conventional resistance and resistors: an integrative review of employee resistance to digital transformation. *Cogent Business & Management*, *12*(1), 1–31.

Colnar, S., Radević, I., Martinović, N., Lojpur, A., & Dimovski, V. (2022). The role of information communication technologies as a moderator of knowledge creation and knowledge sharing in improving the quality of healthcare services. *PLoS ONE*, *17*, 1–24. https://doi.org/10.1371/journal.pone.0272346

Darroch, J. (2003). Developing a measure of knowledge management behaviors and practices. *Journal of Knowledge Management*, *7*(5), 41–54. https://doi.org/10.1108/13673270310505377

Denyes, B. L. (2019). *Basic Business Models for Banks Providing Digital Financial Services in Africa*, 1-6. www.ifc.org/thoughtleadership

Desanctis, G., & Poole, M. S. (1994). Capturing the Complexity in Advanced Technology Use : Adaptive Structuration Theory. *Organisation Science*, *5*(2), 121–147. https://doi.org/10.1287/orsc.5.2.121

Dijkstra, T. K., & Henseler, J. (2015). Consistent Partial Least Squares Path Modeling. *MIS Quarterly*, *39*(2), 297–316.

Divya, S., & Prabu Christopher, B. (2025). The Role of Supervisor Support and Change Information in Determining Behavioral Attitudes Toward Change in an Academic Setting : Empirical Validation of Intra-Organizational Dynamics Using IPMA Analysis. *Sage Open*, *September*, 1–21. https://doi.org/10.1177/21582440251367804

Durman, S., Iyiola, K., Alzubi, A. B., & Aljuhmani, H. Y. (2025). Dynamic capabilities in action: digital capability, business model innovation and absorptive capacity. *Management Decision*, 1–36.

Favoretto, C., Mendes, G. H. de S., Filho, M. G., Gouvea de Oliveira, M., & Ganga, G. M. D. (2022). Digital transformation of business model in manufacturing companies: challenges and research agenda. *Journal of Business & Industrial Marketing*, *37*(4), 748–767. https://doi.org/10.1108/JBIM-10-2020-0477

Garlatti, A., Fedele, P., & Iacuzzi, S. (2025). Public sector digitalisation: not all positive impacts for knowledge assets. *Knowledge Management Research and Practice*, *00*(00), 1–13. https://doi.org/10.1080/14778238.2025.2478050

Gefen, D., Ben-Assuli, O., & Denekamp, Y. (2024). Adaptive Structuration Theory: A Health Information Exchange (HIE) Diffusion Study. *Information Systems Management*, *41*(1), 2–19. https://doi.org/10.1080/10580530.2023.2174278

Gong, Y., Yao, Y., & Zan, A. (2023). The too-much-of-a-good-thing effect of digitalization capability on radical innovation: the role of knowledge accumulation and knowledge integration capability. *Journal of Knowledge Management*, *27*(6), 1680–1701. https://doi.org/10.1108/JKM-05-2022-0352

Gurbaxani, V., & Dunkle, D. (2019). Gearing up for successful digital transformation. *MIS Quarterly Executive*, *18*(3), 209–220. https://doi.org/10.17705/2msqe.00017

Hair, J. F., Hult, T. G., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd ed.). SAGE Publications Inc., 1-386

Hair, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, *1*(2), 107–123.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–152.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24.

Haverila, M., Haverila, K., & McLaughlin, C. (2023). Competence-based appraisal of the quality of higher education using the importance-performance (IPMA) analysis. *Journal of Marketing for Higher Education*, *0*(0), 1–25. https://doi.org/10.1080/08841241.2023.2219207

He, Z., Huang, H., Choi, H., & Bilgihan, A. (2021). Building organizational resilience with digital transformation. *Journal of Service Management*, 1–25. https://doi.org/10.1108/JOSM-06-2021-0216

Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., & Calantone, R. J. (2014). Common beliefs and reality about PLS: Comments on Rönkkö and Evermann (2013). *Organizational research methods*, *17*(2), 182-209. https://doi.org/10.1177/1094428114526928

Herbert, L. (2017). *Digital Transformation: Build Your Organization's Future for the Innovation Age*. Bloomsbury Publishing Plc., 1-313. https://lccn.loc.gov/2017020394

Ho, L. A (2008). What affects organizational performance ? The linking of learning and knowledge

management. *Emerald Publishing Limited*, *108*(9), 1–21. https://doi.org/10.1108/02635570810914919

Hsu, S. (2008). *Developing an index for online customer satisfaction : Adaptation of American Customer Satisfaction Index*. *34*, 3033–3042. https://doi.org/10.1016/j.eswa.2007.06.036

Jahan, N., & Shahria, G. (2022). Factors effecting customer satisfaction of mobile banking in Bangladesh: a study on young users' perspective. *South Asian Journal of Marketing*, *3*(1), 60–76. https://doi.org/10.1108/sajm-02-2021-0018

Junod, A. N., & Jacquet, J. B. (2023). Insights for the Drop-off/Pick-up Method to Improve Data Collection. *Society & Natural Resources*, *36*(1), 76–88. https://doi.org/10.1080/08941920.2022.2146821

Kamphake, A. G. (2020). *Digitization in Controlling*. Springer, 1-327.

Kasim, H., & Antwi, S. K. (2015). Qualitative and quantitative research paradigms in business research: A philosophical reflection. *European Journal of Business and Management*, *7*(3), 217–225.

Kim, H., & So, K. K. F. (2024). Customer touchpoints: Conceptualization, index development, and validation. *Tourism Management*, *103*, 1–43.

Kiwanuka, A., Shamim, A., & Nakalanda, R. (2025). Financial Inclusion of Refugees : The Role of Trust and Financial Literacy. *ORSEA Journal*, *15*(1), 123–138.

Kline, E., Thompson, E., Demro, C., Bussell, K., Reeves, G., & Schiffman, J. (2015). Longitudinal validation of psychosis risk screening tools. *Schizophrenia Research*, *165*(2–3), 116–122.

Kock, N., & Hadaya, P. (2018). Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. *Information Systems Journal*, *28*(1), 227–261. https://doi.org/10.1111/isj.12131

Kock, N., & Lynn, G. S. (2012). Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations. *Journal of the Association for Information Systems*, *13*(7), 1–40.

Küfeoğlu, S., Liu, G., Anaya, K., & Pollitt, M. G. (2022). Digitalisation and New Business Models in Energy Sector. *JSTOR*, *2019*, 1–40. https://doi.org/41.222.180.176

Kumar, R. (2018). *Research methodology: A step-by-step guide for beginners*. SAGE publications Ltd, 1-528.

Lakens, D. (2022). Sample Size Justification. *Collabra: Psychology*, *8*(1), 1–28.

Leal-Rodríguez, A. L., Sanchís-Pedregosa, C., Moreno-Moreno, A. M., & Leal-Mill, A. G. (2023). Journal of Innovation. *Journal of Innovation & Knowledge*, *8*(3), 1–14.

Leoni, L., Ardolino, M., Baz, J. El, & Bacchetti, A. (2022). management processes in the effective use of artificial intelligence in manufacturing firms. *International Journal of Operations & Production Management*, *42*(13), 411–437. https://doi.org/10.1108/IJOPM-05-2022-0282

Li, J., Li, J., Ghouri, F., & Mahmood, K. (2025). *The Impact of Digital Transformation and Dyadic Learning on Knowledge Exchange Dynamics Through CPEC as Mediating Factor*. *15*(2), 1–16. https://doi.org/10.1177/21582440251328072

Liu, C., Zheng, P., & Xu, X. (2021). Digitalisation and servitisation of machine tools in the era of Industry. *International Journal of Production Research*, 1–35. https://doi.org/10.1080/00207543.2021.1969462

Ludwig, M., Enders, D., Basedow, F., Walker, J., & Jacob, J. (2022). Sampling strategy, characteristics and representativeness of the InGef research database. *Public Health*, *206*, 57–62.

Lundin, L., & Kindström, D. (2023). Digitalizing customer journeys in B2B markets. *Journal of Business Research*, *157*, 13-39. https://doi.org/10.1016/j.jbusres.2022.13639

Lyama, L. A., Salema, G. L., & Tinali, G. Z. (2025). The Effect of Lean Manufacturing Practices on Social Sustainability Performance: Empirical Evidence from Manufacturing Firms in Tanzania. *ORSEA Journal*, 155–171. https://doi.org/10.56279/orseaj.v15i1.9

Ma, J.-Y., Shi, L., & Kang, T.-W. (2022). The effect of digital transformation on the pharmaceutical sustainable supply chain performance: The mediating role of information sharing and traceability using structural equation modeling. *Sustainability*, *15*(1), 1–21.

Machasio, I. (2020). *COVID-19 and Digital Financial Inclusion in Africa: How to Leverage Digital Technologies During the Pandemic*, 4 (1), 1-7.

Malgorzata, Z., Susanne, D., & Martyna, G. (2023). Knowledge risks arising from digitalization. *Proceedings IFKAD: Managing Knowledge for Sustainability*, 38–47.

Marco-Lajara, B., Sarmiento-Chugcho, C. B., Ramón-Ramón, D. I., & Martínez-Falcó, J. (2023). Dynamic capabilities and innovation in a developing country SMEs: the role of absorptive, learning and adaptive capacities. *International Journal of Business Environment*, *14*(2), 211–239.

Marfo, J. S., Owusu-Bio, M. K., & Asamoah, P. (2022). The Effect of Self-Service Technologies on Customer Experiences in Banking. *International Journal of Online Marketing*, *12*(1), 1–18. https://doi.org/10.4018/ijom.299404

Martínez-Falcó, J., Sánchez-García, E., Marco-Lajara, B., & Dorta-Rodríguez, A. (2025). Digital transformation, innovation ambidexterity and competitive advantage in the wine industry: a PLS-SEM and IPMA analysis. *British Food Journal*, 1–22.

Matt, C., Hess, T., & Benlian, A. (2015). Digital Transformation Strategies. *Business & Information Systems Engineering*, *57*(5), 339–343. https://doi.org/10.1007/s12599-015-0401-5

Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches* (2nd ed.). African Centre for Technology Studies (ACTS), 1-34.

Musa, S., & Enggarsyah, D. T. P. (2025). Absorptive capacity, organizational creativity, organizational agility, organizational resilience and competitive advantage in disruptive environments. *Journal of Strategy and Management*, *18*(2), 303–325.

Muthaffar, A., Vilches-Montero, S., & Bravo-Olavarria, R. (2024). From digital touchpoints to digital journeys: How shopping mindsets influence appraisal of omnichannel journeys. *International Journal of Information Management*, *77*, 102-138.

Naimi, A., Tayebeh, S., & Mohammad, A. (2021). Digital Transformation in the Value Chain Disruption of Banking Services. *Journal of the Knowledge Economy*, *0123456789*, 1–31. https://doi.org/10.1007/s13132-021-00759-0

Neligan, A., Baumgartner, R. J., Geissdoerfer, M., & Schöggl, J.-P. (2022). Circular disruption : Digitalisation as a driver of circular economy business models. *Business Strategy and the Environment*, 1–14. https://doi.org/10.1002/bse.3100

Nicolás-Agustín, Á., Jiménez-Jiménez, D., Maeso Fernandez, F., & Di Prima, C. (2025). ICT training, digital transformation and company performance: an empirical study. *European Journal of Innovation Management*, *28*(4), 1687–1708.

Nwankpa, J. K., & Roumani, Y. (2016). IT Capability and Digital Transformation : A Firm Performance Perspective. *Thirty Seventh International Conference on Information Systems*, 1–16.

Nwankpa, J. K., Roumani, Y., & Datta, P. (2022). Process innovation in the digital age of business: the role of digital business intensity and knowledge management. *Knowledge Management*, *26*(5), 1319–1341. https://doi.org/10.1108/JKM-04-2021-0277

Pallant, J., Sands, S., & Karpen, I. (2020). Product customization: A profile of consumer demand. *Journal of Retailing and Consumer Services*, *54*, 1-10. https://doi.org/10.1016/j.jretconser.2019.102030

Probojakti, W., Utami, H. N., Prasetya, A., & Riza, M. F. (2025). Driving sustainable competitive advantage in banking: The role of transformational leadership and digital transformation in organizational agility and corporate resiliency. *Business Strategy and the Environment*, *34*(1), 670–689.

Quansah, E., Hartz, D. E., & Salipante, P. (2022). Adaptive practices in SMEs: leveraging dynamic capabilities for strategic adaptation. *Journal of Small Business and Enterprise Development*, *29*(7), 1130–1148.

Rangasamy, V., & Yang, J.-B. (2025). Barriers to promoting sustainable prefabricated construction in immature markets using PLS-SEM and IPMA. *Architectural Engineering and Design Management*, 1–26.

Rauf, M. A., Shorna, S. A., Joy, Z. H., & Rahman, M. M. (2024). Data-driven transformation: Optimizing enterprise financial management and decision-making with big data. *Academic Journal on Business Administration, Innovation & Sustainability*, *4*(2), 94–106.

Sajko, R. L. (2024). On Survey Questionnaire Testing. *Central European Journal of Paediatrics*, *20*(2), 176–181. https://doi.org/10.5457/p2005-114.377

Saratchandra, M., Shrestha, A., & Murray, P. A. (2022). Building knowledge ambidexterity using cloud computing: Longitudinal case studies of SMEs experiences. *International Journal of Information Management*, *67*, 1–25. https://doi.org/10.1016/j.ijinfomgt.2022.102551

Sarstedt, M., Hair, J. F., & Ringle, C. M. (2023). "PLS-SEM: indeed a silver bullet"–retrospective observations and recent advances. *Journal of Marketing Theory and Practice*, *31*(3), 261–275. https://doi.org/10.1080/10696679.2022.2056488

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Handbook of Market Research. In *Handbook of Market Research*. Springer Nature. https://doi.org/10.1007/978-3-319-05542-8

Scholz, R. W., Czichos, R., Parycek, P., & Lampoltshammer, T. J. (2020). Organizational vulnerability of digital threats: A first validation of an assessment method. *European Journal of Operational Research*, *282*(2), 627–643. https://doi.org/10.1016/j.ejor.2019.09.020

Scholz, R. W., Yann B., B., & and Brand, F. S. (2012). Risk, vulnerability, robustness, and resilience from a decision-theoretic perspective. *Journal of Risk Research*, *15*(3), 313–330. https://doi.org/10.1080/13669877.2011.634522

Shen, M., Cheng, A., & Bi, Y. (2024). An integrated framework for importance-performance analysis of product attributes and validation from online reviews and maintenance records. *Design Science*, *10*, 1–35. https://doi.org/10.1017/dsj.2024.15

Stachová, K., Stacho, Z., Cagánová, D., & Starecek, A. (2020). Use of Digital Technologies for Intensifying Knowledge Sharing. *Applied Sciences*, *10*(4281), 1–14. https://doi.org/10.3390/app10124281

Swacha-Lech, M. (2017). The main challenges facing the retail banking industry in the era of digitalisation. *Journal of Insurance, Financial Markets and Consumer Protection*, *26*(4), 1–23.

Tailab, M. M. K. (2020). Using importance-performance matrix analysis to evaluate the financial performance of American banks during the financial crisis. *Sage Open*, *10*(1), 1–17.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, *18*(7), 509-533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

Theiri, S., & Alareeni, B. (2023). Perception of the digital transformation as a strategic advantage through the Covid 19 crisis? case of Tunisian banks. *Journal of Sustainable Finance & Investment*, *13*(1), 477–498. https://doi.org/10.1080/20430795.2021.1964809

Tibesigwa, W., Masele, J. J., & Magova, G. (2025). Leveraging Knowledge Management to Enhance Competitive Benchmarking and Operational Performance: A Ugandan Healthcare Perspective. *Orsea Journal*, *14*(2), 132–156. https://doi.org/10.56279/orseaj.v14i2.8

Tidd, J., & Bessant, J. (2020). Managing Innovation: Integrating Technological, Market and Organizational Change. In M. McDonald (Ed.), *Managing Innovation* (7th ed., Issue May, pp. 75–87). John Wiley & Sons, Inc.

Tønnessen, Ø., Dhir, A., & Flåten, B. T. (2021). Digital knowledge sharing and creative performance: Work from home during the COVID-19 pandemic. *Technological Forecasting and Social Change*, *170*, 1–14. https://doi.org/10.1016/j.techfore.2021.120866

Trenerry, B., Chng, S., Wang, Y., Suhaila, Z. S., Lim, S. S., Lu, H. Y., & Oh, P. H. (2021). Preparing workplaces for digital transformation: An integrative review and framework of multi-level factors. *Frontiers in Psychology*, *12*, 1–24.

Ugwuanyi, C. C., & Idoko, E. C. (2022). Effects of Self-service Effects of Self-service Technologies' Attributes on Bank Customers' Experience, Relationship Quality and Re-use Intention: Insights from a Developing Economy. *Vision: The Journal of Business Perspective*, *0*(0), 1–21. https://doi.org/10.1177/09722629221110035

Valk, R., & Planojevic, G. (2021). Addressing the knowledge divide: digital knowledge sharing and social learning of geographically dispersed employees during the COVID-19 pandemic. *Journal of Global Mobility*, *9*(4), 591–621. https://doi.org/10.1108/JGM-02-2021-0019

Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, *122*, 889–901. https://doi.org/10.1016/j.jbusres.2019.09.022

Vial, G. (2021). Understanding digital transformation. *Managing Digital Transformation*, 13–66. https://doi.org/10.4324/9781003008637-4

Yang, Z., Dong, M., Guo, H., & Peng, W. (2025). Empowering resilience through digital transformation intentions: synergizing knowledge sharing and transformational leadership amid COVID-19. *Journal of Organizational Change Management*, *38*(1), 59–81.

Ye, F., Ke, M., Ouyang, Y., Li, Y., Li, L., Zhan, Y., & Zhang, M. (2024). Impact of digital technology usage on firm resilience: a dynamic capability perspective. *Supply Chain Management*, *29*(1), 162–175. https://doi.org/10.1108/SCM-12-2022-0480

Zamiri, M., & Esmaeili, A. (2024). Methods and technologies for supporting knowledge sharing within learning communities: A systematic literature review. *Administrative Sciences*, *14*(1), 1–34.

Zhu, X., & Li, Y. (2023). The use of data-driven insight in ambidextrous digital transformation: how do resource orchestration, organizational strategic decision-making, and organizational agility matter? *Technological Forecasting and Social Change*, *196*, 1–18.