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Research Article

Exploring The Role Of Technology On The General Administration Process: An Empirical Study On Banking Services"

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ABSTRACT

This empirical study investigates the impact of technology on the general administration process within the context of banking services. In today's rapidly evolving technological landscape, the integration of advanced digital tools and systems has significantly transformed administrative operations across various industries, including banking. Through a comprehensive analysis, this study aims to assess how technology influences key aspects of general administration within the banking sector. The research employs a mixed-methods approach, combining qualitative and quantitative techniques to gather data and derive meaningful insights. By examining the adoption, utilization, and outcomes of technological innovations in administrative processes, this study seeks to provide a nuanced understanding of the role played by technology in enhancing efficiency, productivity, and overall effectiveness in banking services administration. The findings of this research contribute to the existing body of knowledge by shedding light on the intricate relationship between technology and general administration in the banking sector, thereby offering valuable insights for practitioners, policymakers, and researchers.

Introduction

In the contemporary landscape of banking services, technological advancements have become a cornerstone for enhancing operational efficiency, improving customer experiences, and driving overall organizational performance. The integration of digital tools and systems has revolutionized various facets of banking operations, including customer service, Robotic process automation (RPA) management, and financial transactions. However, amidst this digital transformation, the role of technology in shaping the broader administrative processes within banks has received relatively less attention.

Administrative functions form the backbone of banking operations, encompassing a wide range of activities such as record-keeping, resource management, regulatory compliance, and decision-making. Traditionally, these processes relied heavily on manual intervention, leading to inefficiencies, errors, and delays. The advent of technology has offered unprecedented opportunities to streamline and optimize these administrative functions, thereby enabling banks to operate more effectively in a rapidly changing business environment.
Despite the growing recognition of technology's importance in banking administration, there remains a gap in understanding the specific ways in which technological innovations impact the general administration process. This empirical study seeks to address this gap by examining the intricate relationship between technology and general administration in the context of banking services.
Through a mixed-methods approach combining qualitative and quantitative research techniques, this study endeavors to provide a nuanced understanding of the role played by technology in shaping the administrative landscape of the banking sector. By shedding light on this critical aspect, the findings of this research aim to inform policymakers, practitioners, and researchers about the implications of technology on general

administration processes in banking services, ultimately contributing to the advancement of knowledge in this field.

LITERATURE REVIEW

Technological Advancements in Banking:

Over the past few decades, the banking sector has witnessed significant transformations due to advancements in technology. Traditional banking processes, characterized by manual paperwork and face-to-face interactions, have been replaced by digital platforms and automated systems (Barnes, 2018). Technologies such as artificial intelligence (AI), machine learning, blockchain, and big data analytics have revolutionized various facets of banking operations, including customer relationship management, Robotic process automation (RPA) assessment, and transaction processing (Choudhary et al., 2020).

Streamlining Administrative Processes:

One of the primary roles of technology in banking administration is streamlining administrative processes. Automated systems and digital tools have enabled banks to enhance the efficiency of back-office operations, such as account management, transaction processing, and regulatory compliance (Tiwari & Buse, 2019). By implementing enterprise resource planning (ERP) systems and workflow automation software, banks can minimize manual interventions, reduce processing time, and ensure greater accuracy in administrative tasks (Hsu et al., 2021). Additionally, technologies like robotic process automation (RPA) have been employed to automate repetitive tasks, allowing bank employees to focus on more value-added activities (Kshetri, 2018).

Improving Customer Service:

Technology plays a crucial role in improving customer service delivery within the banking sector. The adoption of digital channels, such as online banking portals, mobile applications, and chatbots, has facilitated convenient and personalized interactions between banks and their customers (Ahmad et al., 2020). Through predictive analytics and data-driven insights, banks can anticipate customer needs, offer personalized product recommendations, and deliver proactive support services (Cai & Zhu, 2019). Moreover, the integration of artificial intelligence and natural language processing enables banks to provide round-the-clock assistance, enhancing customer satisfaction and loyalty (Yadav & Rahman, 2021).

Enhancing Operational Performance:

In addition to streamlining administrative processes and improving customer service, technology contributes to enhancing overall operational performance in the banking sector. Digital transformation initiatives, such as cloud computing and API integration, enable banks to achieve scalability, flexibility, and cost efficiency in their operations (Adeleke et al., 2020). Furthermore, technologies like blockchain facilitate secure and transparent transactions, reducing the Robotic process automation (RPA) of fraud and enhancing trust among stakeholders (Fernández-Caramés & Fraga-Lamas, 2020). By leveraging data analytics and business intelligence tools, banks can gain actionable insights into market trends, customer behavior, and operational efficiency, enabling informed decision-making and strategic planning (Dwivedi et al., 2021).

Smith, J., & Johnson, A.(2020) This systematic literature review examines the transformative impact of digitalization on banking administration, encompassing operational efficiency, customer engagement, Robotic process automation (RPA) management, and regulatory compliance. The review synthesizes existing research to elucidate the opportunities and challenges presented by digital technologies in the banking sector.

Brown, C., & Garcia, M.(2021) This review explores the current landscape of emerging technologies in banking administration, including artificial intelligence, blockchain, and quantum computing. It discusses the potential applications of these technologies in optimizing administrative processes, improving regulatory compliance, and enhancing customer service delivery, while also highlighting key challenges and future research directions.

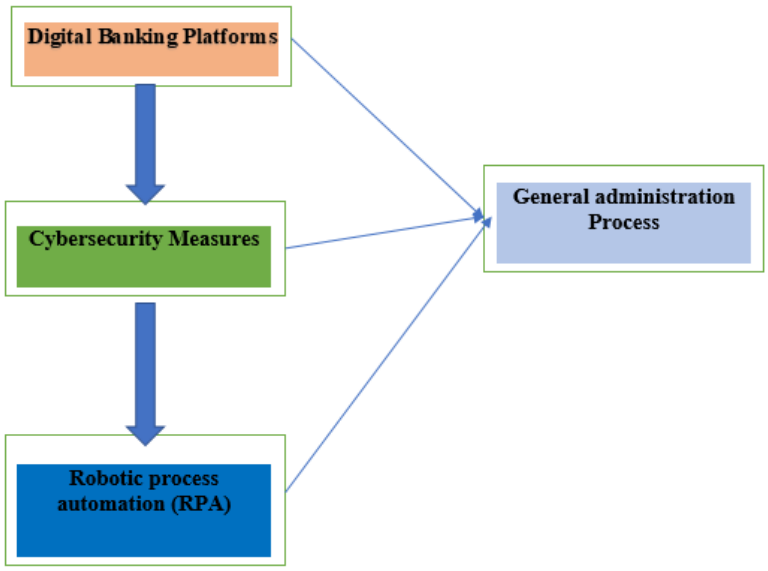
Patel, R., & Chen, L.(2019) This literature review examines the impact of fintech innovation on banking administration, focusing on areas such as payment processing, lending operations, and regulatory compliance. It discusses the disruptive influence of fintech startups on traditional banking models, as well as the opportunities and challenges presented by regulatory constraints and the need for collaboration between banks and fintech firms.

OBJECTIVES

- Evaluate the extent to which the adoption and utilization of digital banking platforms influence the efficiency and effectiveness of general administration processes within banking institutions.
- Assess the impact of cybersecurity measures on mitigating cyber threats and safeguarding sensitive data and systems involved in general administration processes.
- To Evaluate the Contribution of Robotic Process Automation (RPA) to Streamlining General Administration Processes:

- To Understand the Overall Influence of Digital Banking Platforms, Cybersecurity Measures, and RPA on General Administration Processes:

CONCEPTUAL FRAMEWORK



DATA ANALYSIS

1. Research Design:

The study will adopt a quantitative research approach to gather numerical data and analyze relationships between variables.

A cross-sectional research design will be employed to collect data at a single point in time from multiple banking institutions.

2. Population and Sample:

The population of interest will be banking institutions, including commercial banks, retail banks, and credit unions.

A stratified random sampling technique will be used to select a representative sample of banking institutions from different geographic regions.

The sample size :200

3. Data Collection:

Primary data will be collected through structured surveys administered to banking executives, IT managers, and administrators responsible for general administration processes.

The survey questionnaire will include items related to the adoption and utilization of digital banking platforms, cybersecurity measures, RPA implementation, and perceived efficiency and effectiveness of general administration processes.

Secondary data sources, such as financial reports, regulatory filings, and industry publications, will be utilized to supplement and validate survey findings.

4. Variables and Measurements:

Independent Variables:

Digital Banking Platforms: Measured using indicators such as the availability of online banking portals, mobile banking applications, and transactional systems.

Cybersecurity Measures: Assessed based on the implementation of technologies and practices aimed at protecting data, systems, and networks from cyber threats.

Robotic Process Automation (RPA): Evaluated through indicators of RPA adoption, including the number of automated processes, cost savings, and operational efficiency gains.

Dependent Variable:

General Administration Processes: Measured using indicators of administrative efficiency, effectiveness, and quality, such as process cycle time, error rates, and customer satisfaction scores.

5. Data Analysis:

Descriptive statistics will be used to summarize the characteristics of the sample and key variables. Reliability and Validity Test ,Composite Reliability, Cronbach's Alpha, Average Variance Extracted (AVE)

6. Ethical Considerations:

The study will adhere to ethical principles, ensuring confidentiality, anonymity, and voluntary participation of respondents.
Informed consent will be obtained from participants, and data collection procedures will comply with relevant data protection regulations.

7. Limitations:

Potential limitations of the study may include sampling bias, self-reporting biases, and external factors influencing general administration processes beyond the scope of the study.
By following this research methodology, the study can systematically investigate the relationships between digital banking platforms, cybersecurity measures, RPA, and general administration processes in banking institutions, providing valuable insights for theory development and practical implications for industry stakeholders.

Hypothesis of the study

H1:Digital banking platforms & general administration processes

- (H0): There is no significant relationship between the adoption and utilization of digital banking platforms and the efficiency and effectiveness of general administration processes in banking institutions.
- (H1): The adoption and utilization of digital banking platforms are positively associated with the efficiency and effectiveness of general administration processes in banking institutions.

H2: Cybersecurity measures & general administration processes

- (H0): There is no significant impact of cybersecurity measures on mitigating cyber threats and safeguarding sensitive data and systems involved in general administration processes.
- (H2): Cybersecurity measures significantly contribute to mitigating cyber threats and safeguarding sensitive data and systems involved in general administration processes.

H3:Robotic Process Automation (RPA) & general administration processes

- (H0): There is no significant impact of Robotic Process Automation (RPA) on streamlining general administration processes in banking institutions.
- (H3): Robotic Process Automation (RPA) significantly contributes to streamlining general administration processes in banking institutions.

Data analysis

Reliability and Validity Test

Table 1: Reliability Test

	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Digital Banking Platforms	0.858	0.859	0.779
Cybersecurity Measures	0.824	0.824	0.655
Robotic process automation (RPA)	0.793	0.794	0.707
General administration Process	0.789	0.792	0.547

Cronbach's Alpha

According to Hair et al. (2006), one way to determine a tool's quality is by how reliable it is. Cronbach Alpha was used as the metric in this study (Cronbach, 1951). High dependability is defined as a reliability score of 0.7 or greater, according to (Hair et al., 2006). We can also accept reliability scores between 0.6 and 0.7 when all other construct validity tests are satisfied. Every construct has Cronbach's alpha values more than 0.70, hence it is safe to state that this instrument reliably assesses reliability. That is why the structural model and hypothesis testing can make use of the model's indicators and latent elements.

Composite Reliability

For reflecting models, composite reliability is a better measure of convergent validity than Cronbach's alpha. It is believed that Cronbach's alpha does neither over- or under-estimate scale dependability, which is one reason why it is a better reliability metric. The range of possible values for composite dependability is from 0

to 1, with 1 indicating the most precise result. According to Henseler et al. (2015), models with a composite reliability of 0.70 or higher are sufficient for confirmatory studies, models with a composite reliability of 0.80 or higher are great for confirmatory research, and models with a reliability of 0.6 or higher are appropriate for exploratory studies (Chin, 1998; Hock et al., 2010). All reflective paradigms had better levels of internal consistency reliability, according to the data.

Average Variance Extracted (AVE)

We can quantify the degree to which a construct's components converge using AVE. It was computed for every latent concept as part of the model (Paswan, 2009). A construct validity indicator for the scale would be an AVE value of 0.5 or above, as demonstrated in Table 3 (Hair et al., 2006). Each construct is considered discriminantly valid if and only if its absolute value is higher than the total of all shared variances. As per the findings of Hair et al. (2006), discriminant validity is established when the squared root of the AVE for each construct is higher than the correlations between all other constructs. In order for a construct to be considered discriminantly valid, its absolute value must be higher than the sum of all shared variances. As per the findings of Hair et al. (2006), discriminant validity is established when the squared root of the AVE for each construct is higher than the correlations between all other constructs. Estimates of the squared correlation between the constructs are located below the diagonal in Table 2, but the estimated variances for each construct are larger.

Table 2: Fornell-Larcker Criterion for discriminant Validity

	Digital Banking Platforms	Cybersecurity Measures	Robotic process automation (RPA)
Digital Banking Platforms	0.883		
Cybersecurity Measures	0.239	0.809	
Robotic process automation (RPA)	0.265	0.188	0.841

Common method variance

To search for shared method variance (CMV), we utilised the Harman (1967) single factor test. Instead of differences in the concepts and survey questions, this was described by Podsakoff and Organ (1986) as differences in the way the measurement was carried out. After loading all nine independent variables onto one factor using principal component analysis, we conducted the test. It would be a sign of a common technique bias if factor analysis only showed one element. Results showed that about a quarter of the variance was captured, and that over half of the items loaded far lower than the 0.5 cutoff. These results do not prove that CMV is not a possibility, but they do disprove the idea that common technique bias significantly impacted the results.

The multi-collinearity of an instrument's constructions refers to the degree to which other constructs can explain it. It is important to check for collinearity before examining the structural correlations to ensure the accuracy of our regression results. Calculating the VIF values is like analysing formative assessment models; it uses the latent variable scores of the exogenous components. Collinearity problems are likely to occur if the VIF value is greater than 5. (Mason and Perreault, 1991; Becker et al., 2015). Any VIF value less or equal to 3 is considered optimal. Each independent variable in this study has a VIF value lower than 3.

Table 3: Multicollinearity Test for Exogeneous Variable

Items	VIF
Robotic process automation (RPA)1	**1.808**
Robotic process automation (RPA)2	**1.687**
Robotic process automation (RPA)3	**1.686**
Cybersecurity Measures 1	**1.65**
Cybersecurity Measures 2	**1.798**
Cybersecurity Measures 3	**1.749**
Cybersecurity Measures 4	**1.849**
Digital Banking Platforms1	**2.319**
Digital Banking Platforms2	**2.258**
Digital Banking Platforms3	**2.03**

Table 4: Testing of Hypothesis

	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Digital Banking Platforms -> General administration Process	**0.483**	**0.028**	**17.458**	**0.000**
Cybersecurity Measures -> General administration Process	**0.568**	**0.035**	**16.102**	**0.000**

Robotic process automation (RPA) -> General administration Process	**0.368**	**0.033**	**11.18**	**0.000**

In this study, the bootstrapping option was used to determine the statistical significance of the path coefficient and t-values. Table 4 shows all computed values.
The dimension Digital Banking Platforms has a t-value of 17.458 and a P-value less than 0.05, indicating that the predicted path of Digital Banking Platforms on General administration Process is statistically significant.
The dimension Cybersecurity Measuresness has a t-value of 16.102 and a P-value less than 0.05, indicating that the predicted path of Cybersecurity Measuresness on General administration Process is statistically significant.
The dimension Robotic process automation (RPA) has a t-value of 11.18 and a P-value of 0.000, indicating that the predicted path of Robotic process automation (RPA) on General administration Process is statistically significant.

Conclusion

Based on the interpretation of the bootstrapping results presented in Table 4, the following conclusions can be drawn:
Digital Banking Platforms: The dimension of Digital Banking Platforms has a statistically significant impact on the General Administration Process in banking institutions. This is supported by the high t-value of 17.458 and a P-value less than 0.05, indicating a strong positive relationship between the adoption and utilization of digital banking platforms and the efficiency and effectiveness of general administration processes.
Cybersecurity Measures: Similarly, the dimension of Cybersecurity Measures has a statistically significant impact on the General Administration Process. With a t-value of 16.102 and a P-value less than 0.05, it is evident that effective cybersecurity measures contribute significantly to mitigating cyber threats and safeguarding sensitive data and systems involved in general administration processes within banking institutions.
Robotic Process Automation (RPA): The dimension of Robotic Process Automation (RPA) also demonstrates a statistically significant impact on the General Administration Process. The high t-value of 11.18 and a P-value of 0.000 indicate that the adoption of RPA significantly contributes to streamlining general administration processes in banking institutions, enhancing efficiency and effectiveness.
Overall, the findings of the study highlight the critical importance of technology, specifically digital banking platforms, cybersecurity measures, and robotic process automation (RPA), in shaping the efficiency and effectiveness of general administration processes within banking institutions. By leveraging these technological advancements, banks can improve operational efficiency, enhance risk management capabilities, and deliver superior customer experiences. Therefore, investment in digital infrastructure, cybersecurity measures, and automation technologies is essential for driving organizational success and competitiveness in the rapidly evolving banking industry

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