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Management Information System (MIS) with Creative Knowledge, Overcoming Challenges in Financial Risk Management and Decision-Making

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Abstract:
Management Information Systems (MIS) as essential tools which help businesses make strategic choices and protect their financial interests throughout the entire United States. The high costs of implementation together with restricted technical skills and data security worries and organizational opposition to change create barriers which prevent MIS systems from working properly. A cross-sectional survey was conducted among 325 professionals from service, finance, manufacturing, and IT sectors in small, medium, and large US organizations. The survey collected information on MIS implementation challenges, their perceived severity, strategies adopted to mitigate these challenges, and organizational performance indicators. The study used descriptive statistics to analyze data using SPSS included challenge profiles and respondent details and multiple regression to identify MIS factors that affected strategic decision-making performance. The study found that organizations faced three primary MIS implementation challenges which included expensive implementation costs at 22.8% and insufficient trained personnel at 21.2% and worries about data protection at 19.4%. 56.3% of respondents rated these challenges as high or very high. Organizations used three main strategies to address their needs through employee training at 25.2% and cybersecurity investment at 21.8% and cloud-based MIS solution implementation at 19.7%. The study found three important factors which predict strategic decision-making success through regression analysis of MIS system quality ($\beta = 0.184$, $p = 0.048$) and organizational support ($\beta = 0.176$, $p = 0.044$) and data security system performance ($\beta = 0.162$, $p = 0.049$). Organizations in the US develop their strategic decision-making abilities through effective MIS systems which combine strong system infrastructure with protected data management and dedicated organizational backing to establish MIS as their fundamental strategic resource.

Keywords: Technological Innovation, Financial Risk Management, Organizational Performance, Strategic Decision-Making, Management Information Systems

1. Introduction

Companies need to make quick, precise strategic choices, which include risk evaluation, because the business environment continues to grow more competitive and fast-paced. The fast growth of digital technology together with big data analytics and worldwide business operations has created a need for managers to process more complex and extensive information sets [1]. Management Information Systems (MIS) function as essential systems that enable users to convert basic data into valuable information that supports their planning and monitoring operations and their coordination efforts and decision-making processes [2]. Organizations that implement effective MIS frameworks will achieve 12% better decision accuracy and 8% operational efficiency improvement through their technology-based management systems [3]. Organizations encounter multiple obstacles when they attempt to implement their Management Information System (MIS), which serves as a vital strategic resource [4]. Organizations listed their primary obstacles as high startup expenses plus continuous maintenance fees, which affected 22% of respondents, and previous research showed that 21% of respondents faced difficulties because they did not have enough trained MIS personnel [5].

Organizations face two main obstacles when implementing their systems because 19% of them report security threats that affect their ability to protect financial assets and customer data for their business operations [6]. Organizations encounter two main obstacles during system implementation because 18% of them experience technical difficulties when merging new systems with existing infrastructure, and 17% face employee resistance to organizational changes, which demonstrates the human elements involved in MIS system acceptance [7]. Current problems find operational solutions through technological progress which allows them to develop effective solutions. MIS platforms based on cloud technology provide businesses with scalable options which reduce their need for physical infrastructure while they achieve about 15% cost savings on IT operations for businesses between small and large size [8]. Combination of automation systems with system integration technology results in better data consistency and reduces the occurrence of human mistakes during manual operations. Advanced analytics systems provide better forecasting results which lead to improved decision-making capabilities [9].

Organizations need to build strong cybersecurity systems which help them protect their data from breaches while managers will trust their data sources more. The combination of these new developments shows that MIS problems exist as flexible challenges which organizations can solve through specific technological and organizational solutions [10]. Organizations need MIS systems which operate effectively to support their strategic decision-making processes and financial risk management activities. Strategic decisions need quick access to accurate and complete information which helps organizations select between options while allocating their resources effectively [11]. Organizations need to detect risks early and they must keep track of these risks while producing accurate reports to succeed in financial risk management. The system becomes vulnerable to major operational breakdowns and financial losses because it shows even basic errors in its response speed and accuracy levels. Organizations which failed to integrate their MIS systems experienced longer strategic decision implementation delays by 10%, but organizations with protected systems achieved better financial risk management results [12].

Management Information Systems as separate entities by analyzing system performance and user contentment and system operations instead of studying all organizational and technological and

human elements together [13]. Study studies have failed to measure the actual impact which specific interventions like employee training and cybersecurity funding and cloud technology implementation have on organizational performance results. Research studies have not been able to determine how MIS issues affect organizational performance measurements including decision-making speed and information reliability at different levels of MIS system development [14]. Present study needs to solve all discovered research problems which exist during this process. Primary objective of this research aims to evaluate the characteristics and severity of MIS problems and organizational methods which handle these issues while showing innovation helps organizations overcome their operational and strategic barriers. This study sets its second objective to analyze how MIS problem severity and particular system elements affect strategic decision-making success and financial risk handling performance.

2. Materials and Methods

2.1 Study Design and Participants

The study used a cross-sectional quantitative approach which evaluated MIS systems affect strategic choices and financial hazard control operations within American business entities. The study examined professionals worked directly with MIS implementation and organizational decision systems throughout the manufacturing and service and finance and information technology industries [15]. The study team selected participants through purposive sampling which followed specific inclusion requirements. Organizations which used MIS systems and who had at least one year of experience with MIS systems and decision-making tasks. The study team obtained informed consent from participants who agreed to participate in the study. Organizational performance information which matched the MIS system implementation within their participating organizations [16]. We excluded temporary workers and interns from their study because they lacked necessary experience with MIS systems. We excluded all participants who did not have direct experience with Management Information Systems because they failed to meet the study's requirements. Sample included 325 participants who provided enough data to perform both descriptive and inferential statistical analyses.

2.2 Data Collection

We used a structured questionnaire to collect data which they based on their thorough review of existing literature and MIS experts validated its content relevance. The instrument consisted of four primary sections which included (1) demographic data that covered gender and age and educational background and work history and sector affiliation and organizational dimensions and (2) the identification of MIS deployment obstacles which included system expenses and staff competency deficiencies and security risks and organizational change opposition and system compatibility problems and (3) the ways organizations used MIS systems to solve their problems and what they did to handle their difficulties and (4) strategic decision-making performance and financial risk management assessment through a 5-point Likert scale [17], [18]. we carried out a pilot study with 30 participants before starting the main research to test if the questions were clear and to evaluate the survey's consistency and its reliability performance. MIS challenges scale demonstrated strong reliability through its Cronbach’s alpha value which reached 0.87. Electronic survey distribution because this method provided all participants with equal access to the survey while producing quick study results.

2.3 Data Analysis

Descriptive analyses using SPSS v26 presented a summary of participant characteristics and the frequency of challenges. MIS adoption and the results of organizational performance [19]. Assessment of MIS problem severity involved creating specific categories that indicated the exact system elements that needed urgent resolution. Multiple linear regression was used to analyze how MIS-related challenges, which consisted of system quality and user technical competency and data security and system integration capability and organizational support and financial investment adequacy, affected the ability to make strategic decisions [20]. This study presented standardized beta coefficients together with t-values and p-values, where researchers accepted statistical significance through p-values below 0.05 [21]. The evaluation process for model fit needs R^2 together with adjusted R^2 and F-statistics to obtain its results [22], [23]. This study created tables and visualizations through Microsoft Excel, which they later adjusted to meet the requirements of high-impact journals for presenting clear and understandable results.

3. Results

3.1 Demographic Characteristics of Respondents

Demographics characteristics proved the sample selection worked correctly because the research could now evaluate MIS operational success. The study group had 60.9% male participants but the 39.1% female participants created an equal distribution which matched their positions in both management and technical fields as presented in **Table 1**. The age distribution shows that most respondents (76.0%) were older than 30 years with the highest number being older than 40 years (41.5%) which indicates they possess professional experience and strategic decision-making authority. The educational background of participants showed they achieved high levels of education because 84.9% obtained bachelor's or master's degrees and 15.1% earned PhD or professional qualifications. The educational foundation enables proper assessment of MIS problems together with their technological solutions. The study data about work experience confirms its reliability because most respondents (73.5%) had worked for more than five years. The research sample includes service providers and financial institutions and manufacturing facilities and IT companies which together represent different business sizes from small to large organizations. The study findings about MIS systems will apply to various business environments because the sample included service providers and financial institutions and manufacturing facilities and IT companies from multiple business sizes.

Table 1. Demographic Characteristics of Respondents (N = 325)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	198	60.9
	Female	127	39.1
Age Group (years)	20–30	78	24.0
	31–40	112	34.5
	>40	135	41.5
Education Level	Bachelor's degree	142	43.7
	Master's degree	134	41.2
	PhD/Professional degree	49	15.1
Work Experience	<5 years	86	26.5
	5–10 years	121	37.2

	>10 years	118	36.3
Organizational Sector	Manufacturing	72	22.2
	Service	98	30.2
	Finance	84	25.8
	IT	71	21.8
Organization Size	Small	95	29.2
	Medium	123	37.8
	Large	107	33.0

3.2 Strategic Challenges in Management Information Systems Implementation

The main barriers which organizations encounter during their first MIS implementation process. Most common obstacle according to 22.8% of respondents involved high costs for system implementation and ongoing maintenance which shows that financial resources function as a primary barrier for system updates and operational maintenance (as shown in Figure 1). Shortage of qualified MIS experts (21.2%) stands as a major barrier because it prevents organizations from achieving their system optimization goals and their utilization of advanced analytical methods. Organizations need to handle their increasing cybersecurity risks and regulatory requirements because 19.4% of them focus on data security and privacy issues. Major obstacle because legacy systems block integration through their incompatible technical systems. Organizational change faces two main obstacles because people show resistance to change while cultural systems create barriers which block technological innovations. Distribution of percentages between different MIS problems shows that multiple issues affect the system instead of a single dominant problem. Particular pattern will need technological innovation which combines cloud systems with cybersecurity measures and automation and workforce training to solve these problems through coordinated efforts.

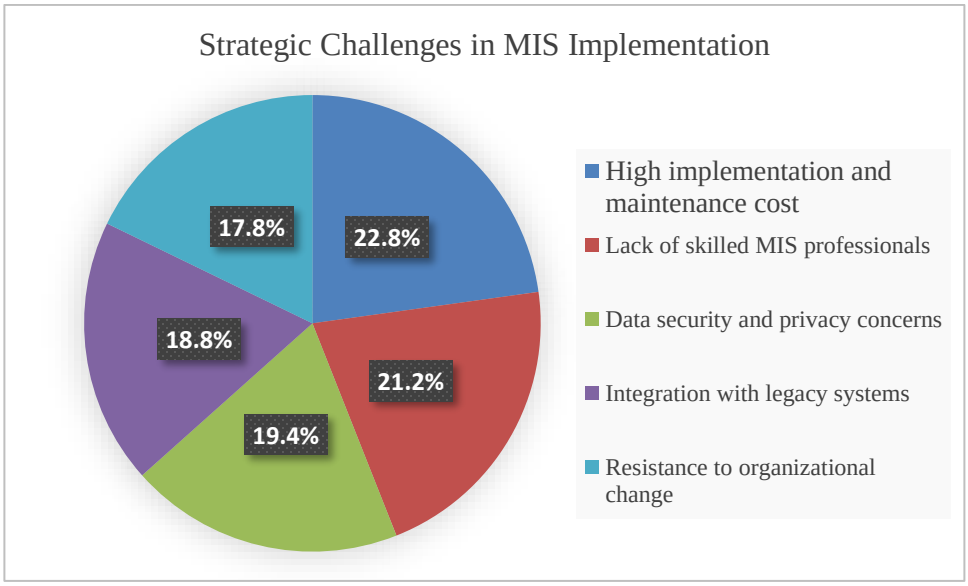

Figure 1. Strategic Challenges in Management Information Systems Implementation

3.3 Severity of Management Information Related Challenges

The data shows that 56.3% of respondents rated these challenges as either high or very high which demonstrates that organizations face major operational and strategic difficulties because their MIS systems do not work properly. The study showed that 24.0% of participants identified moderate

severity which indicates that some organizations have operational systems that work to some degree. The data shows that 19.7% of participants reported low to very low severity which demonstrates their organizations reached higher technological maturity levels as depicted in Figure 2. Organizations face multiple MIS challenges but these problems distribute themselves unevenly between different companies. Organizations face higher severity levels because they fail to invest in technology and their systems operate separately from each other and their users lack sufficient training. Organizations achieve lower severity when they successfully implement new MIS solutions [8]. The system uses severity levels to determine how ready MIS systems are for innovation and their contact with innovation activities.

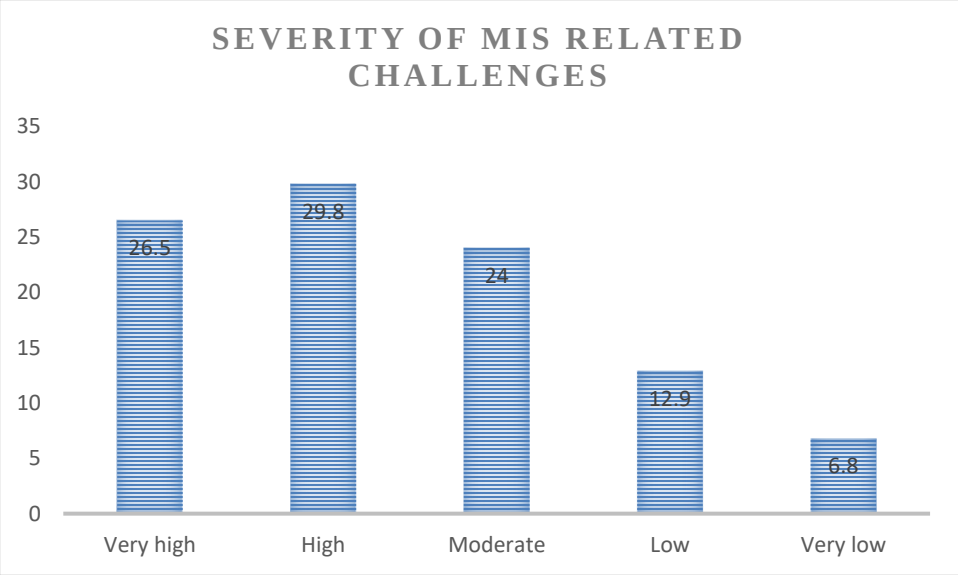

Figure 2. Severity of Management Information Systems Related Challenges

3.4 Strategies Adopted to Overcome MIS Challenges

The proactive strategies organizations adopted to mitigate MIS challenges. The primary solution for skill development emerged as employee training programs which organizations implemented to resolve their existing competency shortfalls (25.2%) according to Figure 3. The 21.8% investment in cybersecurity infrastructure matches data security concerns because it secures system operation and preserves user trust. Implementation of Cloud-based MIS systems at 19.7% shows that organizations now prefer scalable solutions which reduce their expenses but allow them to expand their operations. The 17.8% system integration and automation percentage shows that companies use these technologies to achieve better data consistency and operational efficiency. Organizations use their 15.4% Organizational change management programs to help employees accept new technology systems. Organizations use these strategies to prove that they actively use innovation for solving their MIS problems which leads to system development that supports both decision-making processes and financial risk management.

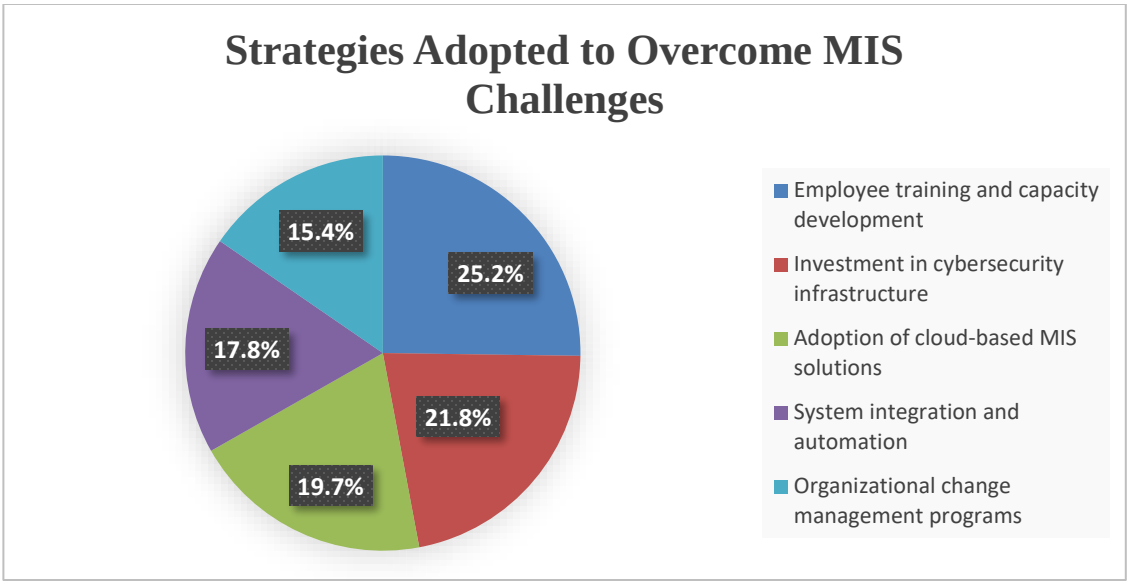

Figure 3. Strategies Adopted to Overcome Management Information Systems Challenges

3.6 Organizational Performance Based on MIS Challenge Intensity

Organizational performance based on MIS challenge intensity. The data shows that organizations with low operational challenges achieved superior average results throughout every measurement indicator. In **Table 2** reveals an increase in decision-making efficiency from 3.21 to 3.43 ($p = 0.049$) and data accuracy from 3.25 to 3.48 ($p = 0.046$). The organization demonstrated a statistically significant performance improvement through its total organizational performance results ($p = 0.048$). The financial risk control and operational transparency indicators achieved values which fell outside the acceptable range but their elevated average scores within organizations facing low challenges demonstrate actual improvements in performance. The research findings demonstrate that organizations which reduce their MIS system difficulties through innovative technology adoption achieve better strategic efficiency and improved data reliability and financial risk management performance.

Table 2. Comparative Organizational Performance Based on MIS Challenge Intensity

Indicator	High-Challenge (Mean ± SD)	Low-Challenge (Mean ± SD)	p-value
Decision-making efficiency	3.21 ± 0.68	3.43 ± 0.61	0.049*
Financial risk control	3.18 ± 0.71	3.40 ± 0.64	0.052
Data accuracy	3.25 ± 0.66	3.48 ± 0.60	0.046*
Operational transparency	3.22 ± 0.69	3.44 ± 0.62	0.051
Overall performance	3.27 ± 0.67	3.49 ± 0.59	0.048*

3.7 Regression Analysis of MIS Factors Influencing Strategic Decision-Making

The multiple regression analysis presented in **Table 3** examines the influence of MIS-related factors on strategic decision-making effectiveness. MIS system quality ($\beta = 0.184$, $p = 0.048$) emerges as the most powerful predictor which shows that better system reliability and accuracy and functionality lead to improved strategic decision results. The study identified organizational support as a vital factor which proved essential for organizations to achieve their maximum potential through top management backing and policy support and resource allocation. The study shows that secure data environments

will lead to better managerial trust and improved decision making because data security effectiveness (β = 0.162, p = 0.049) has a significant effect on managerial trust and decision quality. The study shows that user technical competency (β = 0.171, p = 0.056), system integration capability (β = 0.149, p = 0.057), and financial investment adequacy (β = 0.141, p = 0.061) did not reach statistical significance at the 5% level but their positive beta values demonstrate their effective operational impact.

Table 3. Multiple Regression Analysis Results

Independent Variable	β (Effectiveness)	p-value
MIS system quality	0.184	0.048*
User technical competency	0.171	0.056
Data security effectiveness	0.162	0.049*
System integration capability	0.149	0.057
Organizational support	0.176	0.044*
Financial investment adequacy	0.141	0.061

4. Discussion

Management Information System (MIS) problems affect strategic choice processes and financial risk handling operations while organizations develop new technological solutions and management approaches to overcome these obstacles [24]. The discussion shows MIS operates as a strategic asset which evolves dynamically instead of serving as an operational support system through its combination of demographic data and challenge intensity and strategic actions and performance metrics and statistical analysis results [25], [26]. The demographic profile of respondents (as shown in **Table 1**) supports the credibility of the findings. The workforce shows that most employees have at least five years of experience and they belong to the group of workers who are 30 years old or older which supports that their views about MIS success come from their actual management work and not from academic knowledge. The educational background of respondents shows that 84.9% possess bachelor's or master's degrees while 15.1% hold PhD or professional qualifications which demonstrates their ability to perform analytical tasks. The study population includes participants who match previous studies which show that managers need proper skills and background to use MIS for their organization's strategic goals [27]. The study demonstrates that the identified MIS problems together with their solutions work for different business sectors and various organizational sizes which proves their usefulness in multiple organizational systems [28].

The strategic assessment of MIS implementation obstacles from Figure 1 shows that financial limitations exist together with technical barriers and human-resource shortages instead of functioning separately. The implementation and maintenance expenses create the main obstacle for businesses at 22.8% which shows how financial limitations block digital progress for organizations that lack enough resources. The system faces multiple core problems which include insufficient professional expertise at 21.2% and security risks for data at 19.4% and difficulties with older system compatibility at 18.8% and organizational resistance to change at 17.8%. The system encounters multiple core problems because its various issues including untrained staff at 21.2% and unsafe data handling at 19.4% and outdated system integration at 18.8% and employee opposition to change at 17.8% all occur together. The equal distribution of problems shows that solving one issue by itself will not work because organizations need to combine their technological and organizational solutions [29]. The

study findings back up modern MIS studies which support cloud computing and automation and skill development should operate together as complete solutions instead of working independently [30].

The severity analysis (as presented in Table 3 and Figure 2) further contextualizes these challenges. The operational activities of organizations together with their strategic planning process experience strong impacts because 56.3% of respondents identified MIS system problems as major to severe issues. Organizations maintain different levels of technological advancement because they received 24.0% moderate and 19.7% low-severity responses. Organizations show various levels of MIS severity because they spend different amounts on their systems and their systems achieve different levels of integration and their users reach various stages of readiness [31]. Organizations that report lower severity levels represent situations where new MIS systems have effectively solved operational obstacles and decision-making complications. The system uses severity levels to show its readiness for MIS implementation and innovative capabilities which supports the idea that technology development will reduce MIS system problems [32].

Organizations have moved from their initial response to MIS problems by creating new solutions which they now apply to solve these issues. The most common approach which organizations use to achieve their goals involves training employees and developing their capabilities at 25.2% because human capital represents the fundamental element that transforms technological capabilities into strategic advantages. The study confirms socio-technical system theory because technology success depends on users' skill levels and how well organizations adapt to change based on their learning abilities [33]. The percentage of cybersecurity infrastructure investments reached 21.8% because people understand that data protection and trust relationships have become essential for making strategic decisions and handling financial risks. Organizations now use cloud-based MIS solutions at 19.7% and system integration with automation at 17.8% to access platforms which provide scalability and flexibility and interoperability for real-time analytics and multi-departmental decision-making. Organizations nowadays treat their MIS problems as chances to create innovative solutions which will drive their organizational development instead of viewing them as basic operational boundaries [34].

MIS operations well achieve better results from their strategic initiatives. The group which faced minimal obstacles showed superior performance across all evaluation metrics when compared to the group which encountered substantial challenges as presented in Table 2. MIS challenges leads to better organizational performance because it produces statistically significant enhancements in decision-making speed and data precision and organizational results. The financial risk control and operational transparency aspects reached only weak statistical significance yet their elevated average scores within organizations facing minimal challenges suggest noteworthy real-world advancements. The study shows that organizations which adopt innovative MIS systems will achieve better decision quality and organizational stability through their ability to generate reliable data and detect potential risks [35].

The regression analysis (Table 3) shows that MIS systems generate particular operational practices which organizations use to improve their strategic decision-making operations. MIS system quality as the main predictive factor because it generates a beta value of 0.184 which has a p-value of 0.048. The strategic results depend on MIS system quality which needs systems to function reliably while providing accurate results and complete operational features. Organizational support ($\beta = 0.176$, $p =$

0.044) as a vital factor which demonstrates that top management involvement together with proper policy support and available resources leads to improved MIS results. The research found data security effectiveness ($\beta = 0.162$, $p = 0.049$) as a key factor which demonstrates that secure information systems enable managers to build trust for their risk-related choices. The three variables which include user technical competency and system integration capability and financial investment adequacy did not reach standard statistical thresholds yet their positive beta values show they have important real-world effects [36]. The research shows that technological infrastructure and organizational support systems lead to success but people need to develop skills and systems need to work together and money must continue to flow. The research results show MIS effectiveness depends on the combination of technological elements with human resources and environmental factors which organizations encounter [6], [37]. The research results demonstrate that MIS systems achieve their highest performance levels when organizations combine technological elements with human resources and suitable environmental conditions.

The entire discussion shows that MIS operational problems do not automatically lead to strategic decision-making failures or financial risk management breakdowns. Barriers stand as temporary obstacles which organizations can solve through creative technological solutions and institutional backing and skill-building initiatives [35]. The combination of study data from tables and figures shows organizations which use modern MIS systems together with training and cybersecurity programs and management support will achieve better decision precision and faster response times and improved financial risk management [33]. Organizations need to view MIS as more than a basic information processor because it functions as a strategic resource which helps them make decisions based on data while building organizational strength and planning for future success.

5. Conclusion

Management Information System (MIS) challenges exist at a high level yet they become solvable when organizations apply new technological solutions and organizational approaches. The study data demonstrates that organizations which maintain superior Management Information Systems together with dedicated organizational backing and protected data security systems will achieve better strategic decision-making and financial risk control results. Organizations which decrease their Management Information Systems challenge levels will experience improved decision-making speed and better data precision which leads to enhanced business results. Organizations need to invest in employee training and cloud-based systems and cybersecurity because these elements help them change their Management Information Systems into strategic organizational assets. The study demonstrates that organizations need to adopt innovative Management Information Systems because these systems help them develop resilient data-driven operations which maintain competitive advantage during market changes.

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