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**FINANCIAL IMPACT OF ENTERPRISE RESOURCE PLANNING (ERP) ON  
ACCOUNTING INFORMATION SYSTEMS (AIS): A STUDY ON PETROLEUM  
COMPANIES IN BANGLADESH**

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**Abstract:** *The study aims to address the gap by exploring how the implementation of ERP systems influences the structure, efficiency, accuracy, and effectiveness of AIS of petroleum companies in Bangladesh. This research holds significance as it sheds light on how ERP systems impact a company's financial operations and overall business performance of petroleum companies in Bangladesh. The objectives of the research include evaluating the costs of ERP implementation for AIS, investigating how integration streamlines financial workflows, and determining how ERP adoption enhances the quality of financial reports generated by AIS of different petroleum companies in Bangladesh. The research study focuses on examining the financial impact of Enterprise Resource Planning (ERP) systems on Accounting Information Systems (AIS) within petroleum companies. To achieve this, a mixed-methods approach is employed, combining qualitative case studies and quantitative analysis. Qualitative methods involve in-depth exploration of 10 selected petroleum companies of Bangladesh through interviews and discussions with key stakeholders, while quantitative methods collect data from 50 ERP and Accounting software users within these companies. The qualitative data is analyzed using thematic analysis to identify recurring themes related to ERP-AIS integration, challenges faced, financial impacts, and*

*process changes. The findings highlighted respondents' perceptions of ERP and accounting software across various dimensions, such as cost-effectiveness, financial data accuracy, timely reporting, internal controls, audit trail, compliance, financial management, budgeting, planning, transaction processing, and tax management. The findings also revealed that a majority of respondents perceive ERP software as cost-effective and leading to cost savings over time. The recommendations include investing in ERP systems for long-term financial benefits, prioritizing ERP's integrated approach for data accuracy and timely reporting, utilizing ERP features for internal controls and compliance, and optimizing AIS for tax management.*

**Keywords:** ERP, AIS, Cost Effectiveness, Financial Reporting, Internal Control.

## 1. Introduction

Enterprise resource planning (ERP) refers to “the type of software that organizations use to manage business activities such as accounting, purchasing, project management, risk and compliance management, and supply chain operations” (Faccia & Petratos, 2021). A complete ERP suite also includes enterprise performance management, software that helps plan, budget, forecast, and report on an organization's financial performance (ORACLE, 2021). Accounting information systems (AIS) involve the collection, storage and processing of financial and accounting data used by internal users to report to investors, creditors and tax authorities (Turner & Weickgenannt, 2017). AIS are generally computerized methods for tracking accounting activity in conjunction with information technology resources. AIS combines traditional accounting practices such as generally accepted accounting principles (GAAP) with modern information technology resources (Cleary, 2022). AIS design and analysis are challenging (Kocsis 2019, (Hall, 2000), (Curtis et al., 2008). ERPs are even more complex because they need to integrate many business applications to meet different needs (Mahmood et al., 2020). In addition, AIS are usually implemented before any other business application as they ensure compliance with mandatory regulations (i.e. accounting and financial reporting) (Petratos & Faccia, 2019). AIS (albeit cloud-based) currently used by all companies are designed as centralized systems (Demi & Haddara, 2018) to ensure security principles such as confidentiality (Hadidi & Hadidi, 2020), controllability (direct access and release of chain of command) (Bondarevskiy & Lebedev, 2018) and cost effectiveness (Parthasarathy & Sharma, 2016). In addition, all other business applications are built in ERP around AIS to collect and provide (input or output) data for further analysis in line with accounting results (Grabski et al., 2011). Most of the literatures discussed the ERP and AIS implementations in different firms and the complexity and efficiency of ERP and AIS. But the previous studies did not focus on the financial impact of Enterprise Resource Planning (ERP) on Accounting Information Systems (AIS). So, the aim of this study is to discuss and find out the financial impact of ERP on AIS in terms of petroleum companies in Bangladesh.

## 2. Background

Any transaction of the petroleum companies carries out with external entities should be recorded in the accounting system (FI module) as an expense or revenue, payment, liability or receivable and further processed for other internal purposes (i.e. management, quality, production, logistics)

(Weidner et al., 2015). In this way, a direct link between AIS modules and other ERP modules can be demonstrated. For example, the same transaction, say a purchase, will affect the general ledger and general journal ledgers in the administrative department and other departments such as production, quality, supply chain, logistics, sales, marketing and so on. Furthermore, due to the importance of fair financial disclosure, directly related to public trust in financial markets, standardization in accounting is ensured by very detailed regulations, laws, accounting standards (i.e. IAS/IFRS, US GAAP), XBRL taxonomies (Faccia et al., 2019). For the fair presentation of financial information, it is very crucial to justify the actual impact of ERP on AIS. So, this study is very meaningful for the ERP using organizations and petroleum companies to entitle the AIS with accounts departments.

### 3. Problem Statement

As businesses strive for enhanced operational efficiency, streamlined processes, and improved decision-making, they often adopt ERP systems to integrate various functions like finance, human resources, supply chain, manufacturing, and more. These systems are designed to provide a centralized platform that facilitates data sharing, process automation, and real-time insights. Concurrently, AIS plays a pivotal role in capturing, processing, and reporting financial information, aiding organizations in accurate financial management, regulatory compliance, and performance evaluation.

This research aims to investigate the financial impact of integrating Enterprise Resource Planning (ERP) systems with Accounting Information Systems (AIS) within petroleum companies. The study seeks to explore how the implementation of ERP systems influences the structure, efficiency, accuracy, and effectiveness of AIS, ultimately affecting financial data management, reporting processes, decision-making, and overall organizational performance. The research will analyze the potential benefits and challenges of ERP-AIS integration, considering factors such as data accuracy, timeliness, internal controls, compliance with financial regulations, resource allocation, and user satisfaction.

### 4. Significance

The study on the "Financial Impact of Enterprise Resource Planning (ERP) on Accounting Information Systems (AIS)" holds significant importance due to its potential to shed light on the profound implications that ERP systems can have on a company's financial operations and overall business performance of petroleum companies in Bangladesh. ERP systems are substantial investments for businesses, involving significant costs in terms of implementation, customization, training, and maintenance. Understanding their financial impact on AIS helps organizations assess whether the benefits derived from ERP implementation justify these expenses. ERP systems integrate various business processes, including financial and accounting functions. Studying the financial impact of ERP on AIS can uncover improvements in operational efficiency, automation of financial processes, reduction of manual errors, and streamlining of workflows. This can result in cost savings, improved resource allocation, and optimized financial management. ERP systems can provide real-time insights into financial performance, enabling quicker identification of trends

and opportunities. Researching the financial impact of ERP on AIS can reveal how ERP systems contribute to better financial monitoring, forecasting, and strategic planning, ultimately fostering business growth and sustainability.

### **5. Objectives**

1. To evaluate the cost effectiveness and savings of implementing an ERP system on AIS of petroleum companies in Bangladesh.
2. To investigate how the integration of ERP with AIS streamlines financial workflows, reduces manual data entry, and eliminates redundant processes of petroleum companies in Bangladesh.
3. To determine how ERP adoption enhances the quality of financial reports and statements generated by the AIS. Analyze the impact on the accuracy, timeliness, and comprehensiveness of financial information presented to stakeholders of petroleum companies in Bangladesh.

### **6. Related Literature Review**

Accounting information systems (AIS), the core module of any enterprise resource planning (ERP) system, are typically designed as centralized systems. Today, the continuous development and application of blockchain or more generally distributed ledger technology (DLT) can change the architecture, overcome and improve some of the limitations of centralized systems, especially security and privacy (Faccia & Petratos, 2021). Financial technology (FinTech) applications can facilitate the integration of AIS and ERP systems and bring significant benefits to efficiency, productivity and security (Faccia et al., 2019). An ERP system is a technology that serves to coordinate and integrate information within a company and between companies in the business area of the process. ERP is a complex and expensive system, so its implementation required a user who is able to apply it (Kuntum, 2019). Enterprise resource planning (ERP) systems integrate business processes and information technology into a synchronized set of practices, applications, and metrics that span business boundaries (Wier et al., 2007). Accounting, as an information system, aims to provide different forms of useful information to different users to meet their different needs. Accounting therefore tries to use the surrounding circumstances to improve the quality and quantity of information and the delivery mechanism to users (Alzoubi, 2012). Enterprise Resource Planning (ERP) builds on AIS and provides the benefits of sharing information across all business areas, leading to improved business processes. Many internal controls are handled by the ERP system (Halimuzzaman & Sharma, 2022). Many companies that implement ERP systems try to reduce redundancy and inconsistency in data by creating and maintaining a central database of business information (Poston & Grabski, 2001). An accounting information system (AIS) is a system that processes financial and non-financial transactions that directly affect the processing of an organization's financial activities, such as changes to customer names and addresses to keep these files up to date. The ERP system was not used enough to realize its full potential. It was widely used in matters related to finance (Odoyo & Ojera, 2020). Other authors have also mentioned several other benefits and importance of ERP systems. Organizations that have successfully used an ERP system able to minimize their inventory costs by 30 percent. Whereas these organizations they were also able to reduce their raw material costs by fifteen percent. In addition, organizations have successfully been able to minimize their production costs,

production time and delivery time for customers using ERP systems (Lutfi et al., 2022). ERP systems automate the business model, effectively reducing the burden of accounting staff, but this automatic mode cannot completely replace the work of accountants, accountants still need to manually enter relevant information and data. Accounting information system (AIS) is a collection of resources, such as people and equipment, designed to transform financial and other data into information (Halimuzzaman & Sharma, 2023). Enterprise resource planning (ERP) reflects an innovative business strategy, as ERP adoption involves business process improvement, best practices implementation, intra-enterprise integration and inter-enterprise coupling. ERP systems are designed to facilitate the ERP concept by replacing disparate patchworks of legacy systems across business organizations with synchronized suites of enterprise-wide applications. Potential benefits of an ERP system include productivity and quality improvements in key areas, such as product reliability, customer service, and knowledge management. As a result, ERP systems are expected to enhance market value and firm performance through efficiency and effectiveness gains (Hunton et al., 2003). Enterprise systems are fundamentally also changing the financial accounting landscape because the processes used to record, assimilate and distribute such information are radically changing. The process of recording transactions can generally be traced back to individuals such as production workers on an assembly line, a warehouseman on a receiving dock, or a cashier, each of whom scans a bar code that captures the data and initiates the update processes that make up the basic financial accounting records (G. Sutton, 2006).

**Potential research gaps or areas for further investigation:** While the text briefly mentions the potential of blockchain and distributed ledger technology (DLT) to improve the limitations of centralized systems, the specific ways in which these technologies can be integrated into ERP systems and AIS for enhanced security, privacy, and data integrity need further exploration. Research could delve into the technical challenges, benefits, and real-world implementation of blockchain/DLT in ERP and AIS. The text highlights the potential benefits of Financial Technology (FinTech) applications in integrating AIS and ERP systems. A research gap exists in understanding the specific FinTech tools and solutions that can facilitate this integration, as well as how these tools impact efficiency, productivity, and security. The text suggests that ERP systems offer various benefits, such as cost reduction, improved processes, and enhanced market value. However, further research could focus on understanding the challenges organizations face during ERP adoption and how these challenges influence the realization of expected benefits. Additionally, investigating cases where ERP systems have not been fully utilized to realize their potential could provide valuable insights. The text mentions that ERP systems automate business processes, but there is still a need for manual data entry and human involvement. Research could delve into the dynamics of human interaction with automated systems, including the challenges and opportunities this presents. This could include exploring the roles of accountants, their evolving responsibilities, and how human expertise is integrated into automated accounting systems. The text briefly mentions that enterprise systems are changing the landscape of financial accounting by altering how information is recorded and distributed. A research gap exists in

understanding the specific changes in financial accounting processes due to ERP adoption. This could involve investigating the implications of these changes on financial reporting accuracy, transparency, and compliance. While the text primarily discusses the use of ERP systems in finance-related matters, there could be a research gap in exploring the implementation of ERP systems in non-financial domains. Understanding how ERP systems are applied in other areas of business, such as manufacturing, supply chain management, or human resources, could provide insights into broader organizational impacts. The text mentions that blockchain/DLT can enhance security and privacy in ERP and AIS systems. However, there could be a research gap in exploring the specific security and privacy challenges that centralized ERP and AIS systems face and how blockchain/DLT integration can effectively address these challenges. While the text touches on the potential benefits of ERP adoption, further research could focus on the long-term impacts of ERP systems on organizations. This could include studying how ERP systems influence organizational culture, decision-making processes, and overall business strategies over extended periods. The text mentions that ERP systems integrate business processes across different areas. A research gap exists in exploring the challenges and benefits of cross-functional integration within organizations through ERP systems. This could involve examining how ERP systems impact communication, collaboration, and coordination between different departments. But none of the previous studies analyzed or discussed the financial impact of ERP on AIS.

## 7. Methods

This study aims to investigate the financial impact of Enterprise Resource Planning (ERP) systems on Accounting Information Systems (AIS) within organizations. To achieve this objective, the research method would likely involve a combination of qualitative and quantitative research approaches, with an emphasis on empirical analysis and data collection. Here's a used research method for the study:

**Research Design:** The research design involved a mixed-methods approach, combining qualitative case studies and quantitative analysis. Qualitative case studies allowed in-depth exploration of 10 selected petroleum companies to understand their ERP-AIS integration processes, challenges faced, and perceived financial impacts. Quantitative analysis involved data collection from 50 ERP and Accounting software using staffs of 10 selected petroleum companies to quantify the financial impact of ERP on AIS.

**Data Collection:** Conducted semi-structured interviews, focus group discussions, or surveys with key stakeholders in organizations that have implemented ERP systems. Participants could include finance managers, IT managers, accountants, and other relevant personnel. Gathered financial data, performance metrics, and other relevant information from a diverse sample of organizations that have adopted ERP systems.

**Data Analysis:** Analyzed qualitative data from interviews and discussions using thematic analysis. Identify recurring themes related to the financial impact of ERP on AIS, challenges faced, benefits observed, and specific changes in financial processes. Performed statistical analysis on quantitative data to measure the financial impact

## 8. Analysis and Results

The implementation of Enterprise Resource Planning (ERP) systems can have a significant financial impact on Accounting Information Systems (AIS). Here are some ways in which ERP systems can influence AIS financially:

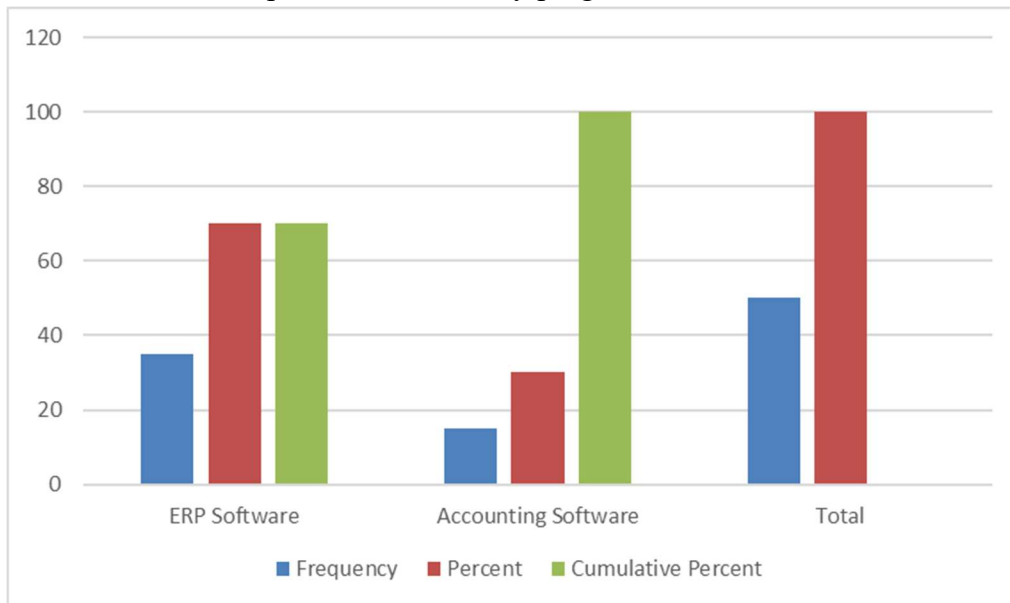
**Cost of Effectiveness:** Implementing an ERP system involves significant upfront costs, including software licensing, hardware, consulting, customization, training, and data migration. These expenses can impact an organization's budget and financial resources. Table 1 showed that which one is cost effective between ERP and Accounting software:

**Table-1: Cost effectiveness of ERP & Accounting software**

	Frequency	Percent	Cumulative Percent
ERP Software	35	70.0	70.0
Accounting Software	15	30.0	100.0
Total	50	100.0	

Source: Field Survey, 2022

Table-1 can be inferred that 70% of the respondents found ERP (Enterprise Resource Planning) software to be cost-effective, while 30% of the respondents found accounting software to be cost-effective. The table represents the responses from a field survey conducted in 2022, where 50 participants were asked about the cost-effectiveness of ERP and Accounting software. Out of these respondents, 35 (70% of 50) believed that ERP software is cost-effective, while 15 (30% of 50) believed that accounting software is cost-effective. The cumulative percent column indicates the cumulative distribution of responses as the survey progresses.



**Figure-1: Cost effectiveness of ERP & Accounting software**

Figure 1 showed that ERP is 70% cost effective and Accounting software is 30% cost effective.

**Cost Savings:** Despite the initial investment, ERP systems can lead to long-term cost savings. By streamlining and automating processes, reducing manual data entry, and minimizing duplicate efforts, ERP systems can enhance efficiency and reduce labor costs within the accounting

department. Here is the data of cost savings of ERP and Accounting software in the following table:

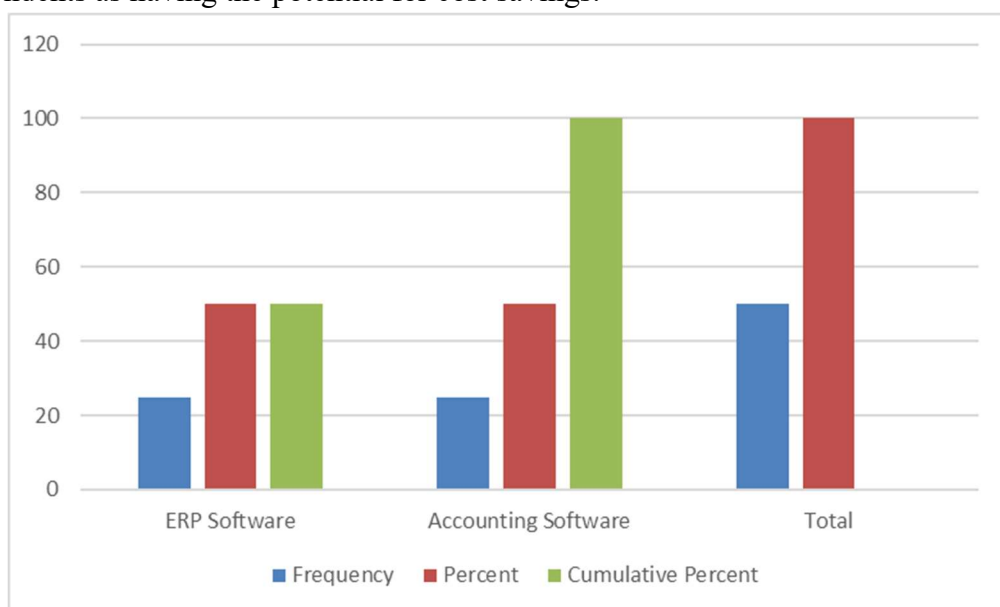
**Table-2: Cost Savings**

	Frequency	Percent	Cumulative Percent
ERP Software	25	50.0	50.0
Accounting Software	25	50.0	100.0
Total	50	100.0	

Source: Field Survey, 2022

The table 2 shows that 50% of the respondents indicated that ERP software leads to cost savings, and the same percentage (50%) of respondents also indicated that accounting software leads to cost savings. The cumulative percent adds up to 100%, which represents the total number of respondents in the data set.

In summary, the data suggests that both ERP software and accounting software are perceived by the respondents as having the potential for cost savings.



**Figure-2: Cost Savings**

Figure 2 resulted that both ERP and Accounting software equally save cost of organizations, that is 50% by ERP and 50% by Accounting software.

**Financial Data Accuracy and Integrity:** ERP systems integrate various business processes, including finance, supply chain, human resources, and more. This integration can improve data accuracy and integrity by reducing errors that might occur when data is transferred between different systems. Accurate data can lead to better financial reporting and decision-making. Now the following table contains the data of financial data accuracy and integrity between ERP and Accounting software:



**Table-3: Financial Data Accuracy and Integrity**

	Frequency	Percent	Cumulative Percent
ERP Software	40	80.0	80.0
Accounting Software	10	20.0	100.0
Total	50	100.0	

Source: Field Survey, 2022

The table 3 shows that 80% of the respondents indicated that ERP software improves financial data accuracy and integrity, while 20% of the respondents indicated the same for accounting software. The cumulative percent adds up to 100%, which represents the total number of respondents in the data set.

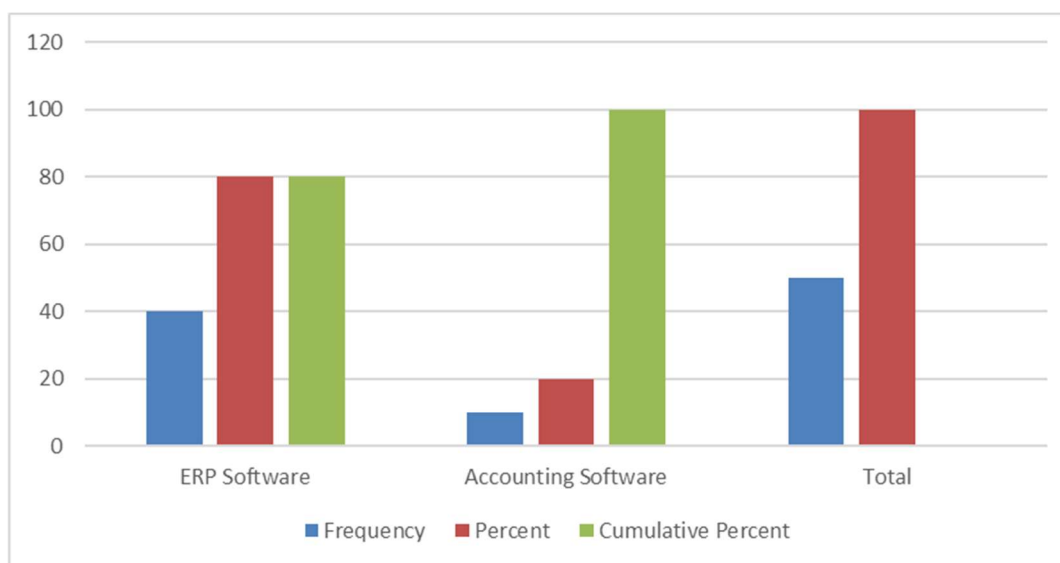
**Figure-3: Financial Data Accuracy and Integrity**

Figure 3 showed that ERP has 80% financial data accuracy and integrity and Accounting software has 20% ERP has 80% financial data accuracy and integrity.

**Timely Financial Reporting:** ERP systems provide real-time or near-real-time data updates, enabling faster financial reporting and analysis. This can help organizations make more informed decisions quickly, potentially leading to better financial outcomes. Table 4 is presenting the percentage of timely financial reporting frequencies of ERP and Accounting software:

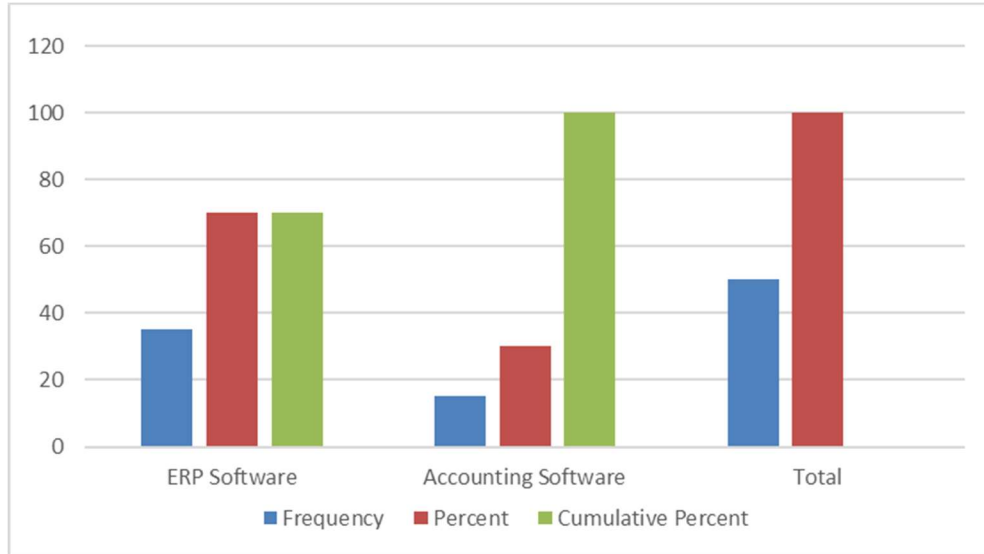
**Table-4: Timely Financial Reporting**

	Frequency	Percent	Cumulative Percent
ERP Software	35	70.0	70.0
Accounting Software	15	30.0	100.0
Total	50	100.0	

Source: Field Survey, 2022

The table 4 shows that 70% of the respondents indicated that ERP software enables timely financial reporting, while 30% of the respondents indicated the same for accounting software. The

cumulative percent adds up to 100%, which represents the total number of respondents in the data set. In summary, based on the survey data, a higher percentage of respondents believe that ERP software facilitates timely financial reporting compared to accounting software.



**Figure-4: Timely Financial Reporting**

In figure 4 it is clear that ERP provides 70% timely financial reporting and Accounting software provides 30% ERP has 80% timely financial reporting.

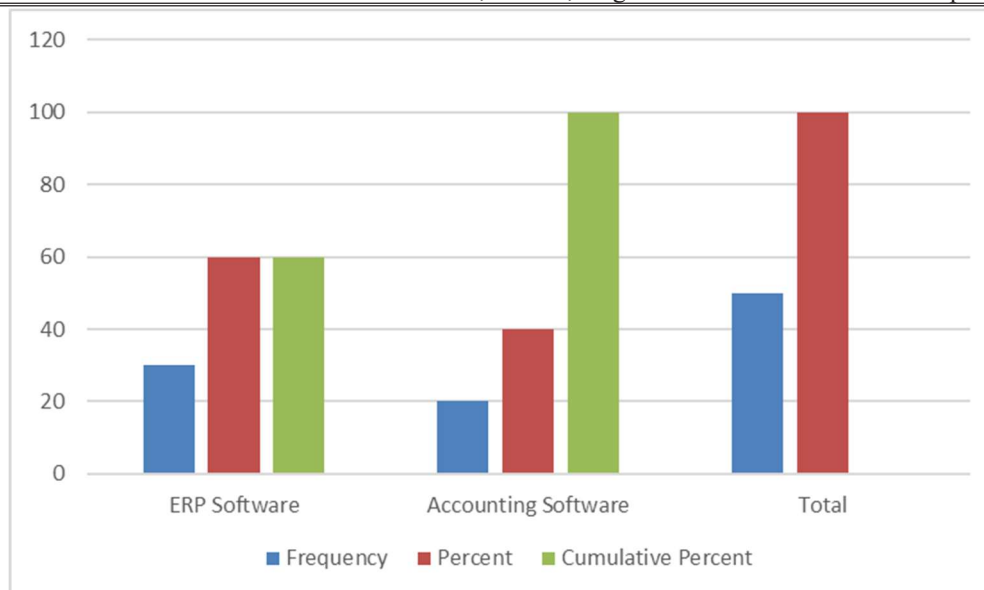
**Internal Controls:** ERP systems often come with built-in internal control mechanisms. These controls can help mitigate risks and prevent fraudulent activities, which could have financial implications for the organization. Here are the frequencies of internal controlling activities of ERP and Accounting software:

**Table-5: Internal Control**

	Frequency	Percent	Cumulative Percent
ERP Software	30	60.0	60.0
Accounting Software	20	40.0	100.0
Total	50	100.0	

Source: Field Survey, 2022

The table 5 essentially shows the distribution of internal control frequencies between ERP software and accounting software. In this survey, 60% of the respondents reported that internal controlling activities are conducted with ERP software, while 40% reported the same for accounting software. The cumulative percent helps in understanding the total percentage of respondents who mentioned each type of software.



**Figure-5: Internal Control**

In figure 5, it is revealed that 60% of internal controlled performed by ERP and 40% of internal controlled performed by Accounting software.

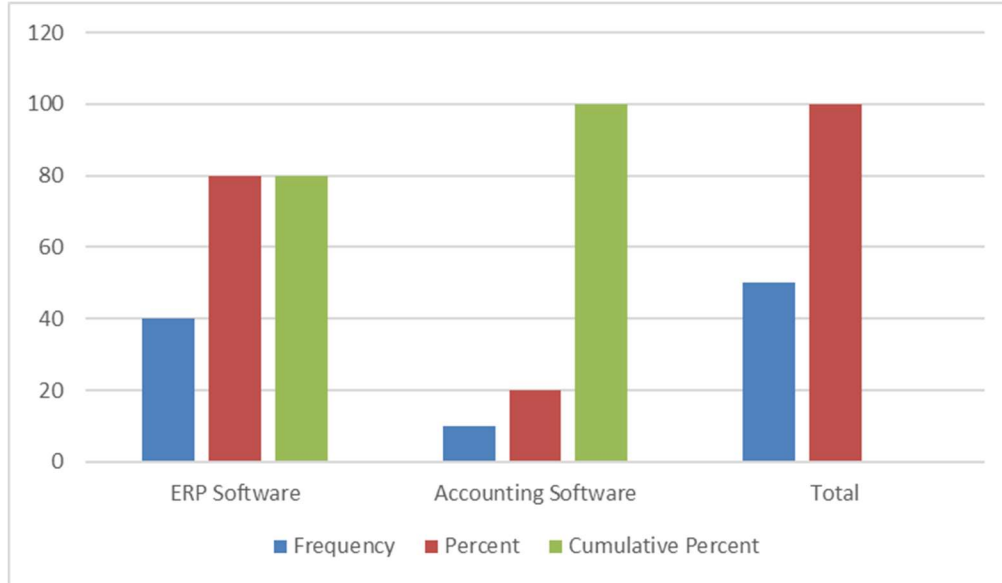
**Audit Trail and Compliance:** ERP systems typically maintain detailed audit trails, documenting every transaction and change. This feature can aid in compliance with regulatory requirements and facilitate audits, which can affect an organization's financial standing. In table 6, audit trail and compliance of ERP and Accounting software are shown numerically:

**Table-6: Audit Trail and Compliance**

	Frequency	Percent	Cumulative Percent
ERP Software	40	80.0	80.0
Accounting Software	10	20.0	100.0
Total	50	100.0	

Source: Field Survey, 2022

The table 6 indicates the distribution of audit trail and compliance frequencies between ERP software and accounting software. In this survey, 80% of the respondents reported that ERP software provides audit trail and compliance features, while only 20% mentioned the same for accounting software. The cumulative percent represents the total percentage of respondents who mentioned each type of software in relation to audit trail and compliance capabilities.



**Figure-6: Audit Trail and Compliance**

Figure 6 showed 80% of audit trail and compliance are abide by ERP and 20% of audit trail and compliance are abide by Accounting software.

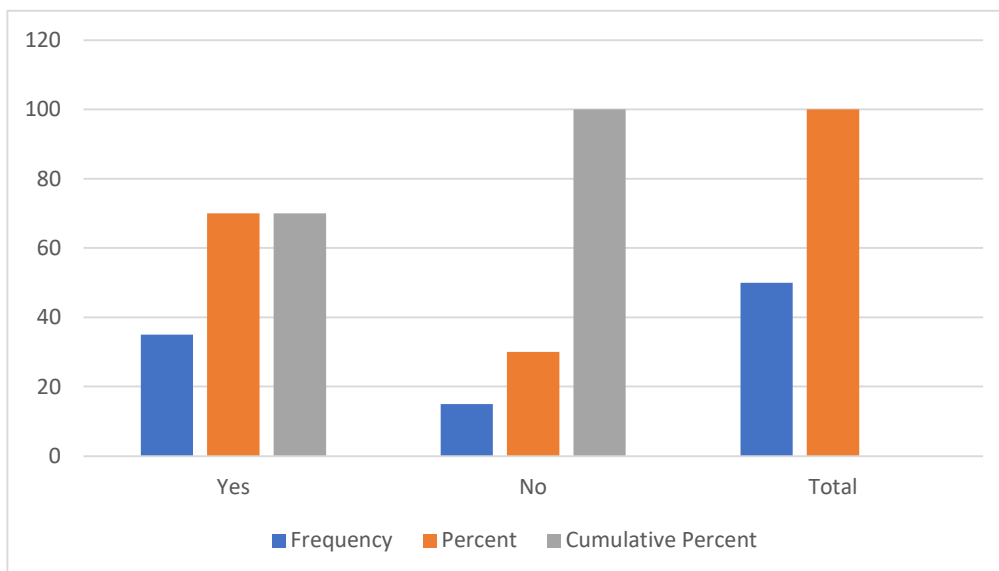
**Financial Management of ERP:** ERP systems integrate various financial processes, including general ledger, accounts payable, accounts receivable, and asset management. This integration provides a comprehensive view of an organization's financial status and helps in managing financial transactions effectively. In table 7, financial management of ERP is stated from view point of respondents:

**Table-7: Financial Management of ERP**

	Frequency	Percent	Cumulative Percent
Yes	35	70.0	70.0
No	15	30.0	100.0
Total	50	100.0	

Source: Field Survey, 2022

The table 7 indicates that 70% of the respondents stated that ERP systems provide financial management capabilities, including integrating various financial processes like general ledger, accounts payable, accounts receivable, and asset management. On the other hand, 30% of respondents indicated that ERP systems do not provide these financial management features. The cumulative percent represents the total percentage of respondents who provided each perspective regarding ERP's financial management capabilities.



**Figure-7: Financial Management of ERP**

In figure 7, 70% of users agreed that financial management of ERP is smooth and 30% of users think financial management of ERP is not so good.

**Budgeting and Planning by ERP:** ERP systems often include modules for budgeting and forecasting. These tools allow organizations to create, manage, and monitor budgets, as well as project future financial performance based on historical data and assumptions. The responses of respondents regarding Budgeting and Planning of ERP are shown in table 8:

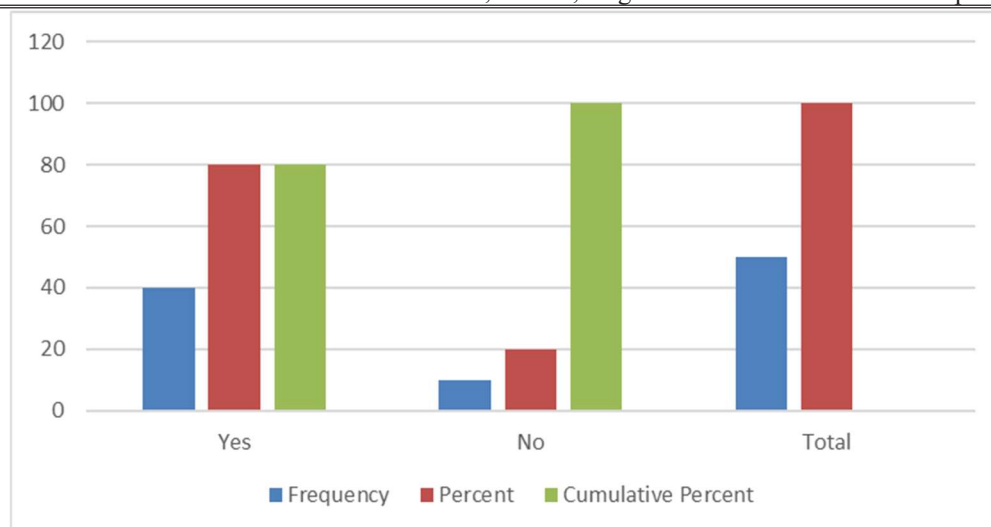
**Table-8: Budgeting and Planning by ERP**

	Frequency	Percent	Cumulative Percent
Yes	40	80.0	80.0
No	10	20.0	100.0
Total	50	100.0	

Source: Field Survey, 2022

In table 8, the "Cumulative Percent" column indicates the cumulative percentage of respondents up to a certain point in the table. In this case, when you add up the percentages of those who answered "Yes" (80.0%) and "No" (20.0%), you get the total cumulative percentage of 100.0%.

In summary, based on the responses from the 50 participants in this survey, it can be concluded that 80.0% of the organizations represented in the survey use the Budgeting and Planning modules provided by ERP systems, while 20.0% do not.



**Figure-8: Budgeting and Planning by ERP**

Figure 8 resulted that 80% of users agreed that it is possible to set budget and plan by ERP and 20% of users think that it is not so possible.

**Transaction Processing of AIS:** AIS processes and records financial transactions, ensuring accurate and timely data entry. This includes recording sales, purchases, payroll transactions, and more. In the following table the answers of respondents about transaction processing of AIS are shown:

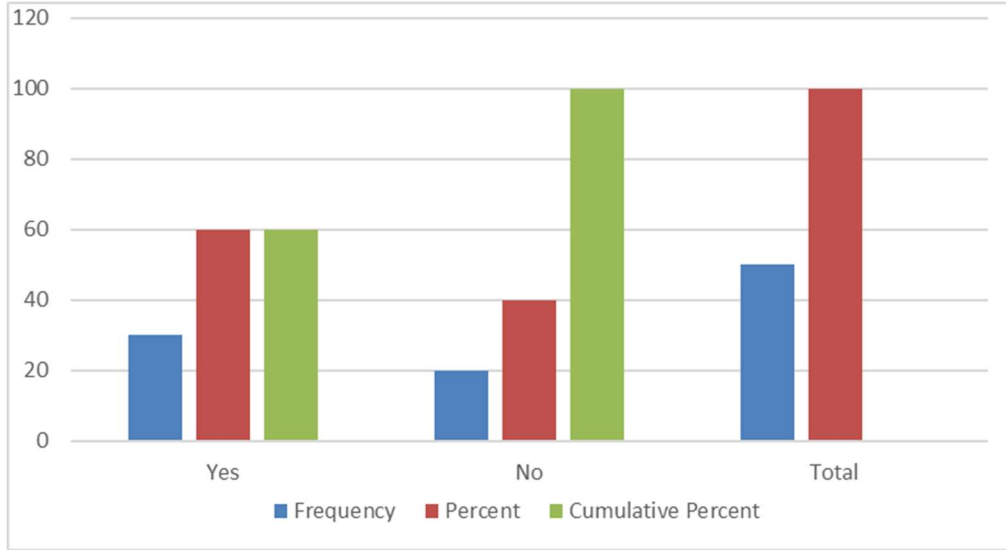
**Table-9: Transaction Processing of AIS**

	Frequency	Percent	Cumulative Percent
Yes	30	60.0	60.0
No	20	40.0	100.0
Total	50	100.0	

Source: Field Survey, 2022

In the table 9, the "Cumulative Percent" represents the cumulative percentage of respondents up to a certain point. In this case, since there are only two options ("Yes" and "No"), the cumulative percent for "Yes" is the same as its percentage (60.0%), and the cumulative percent for "No" is the total percentage (100.0%).

So, the results indicate that 60% of the respondents answered "Yes," indicating that they engage in transaction processing in their AIS. On the other hand, 40% of the respondents answered "No," indicating that they do not engage in transaction processing in their AIS.



**Figure-9: Transaction Processing of AIS**

In figure 9, 60% of respondents think that transaction processing of AIS is very effective and rest of 40% of respondents disagreed regarding this.

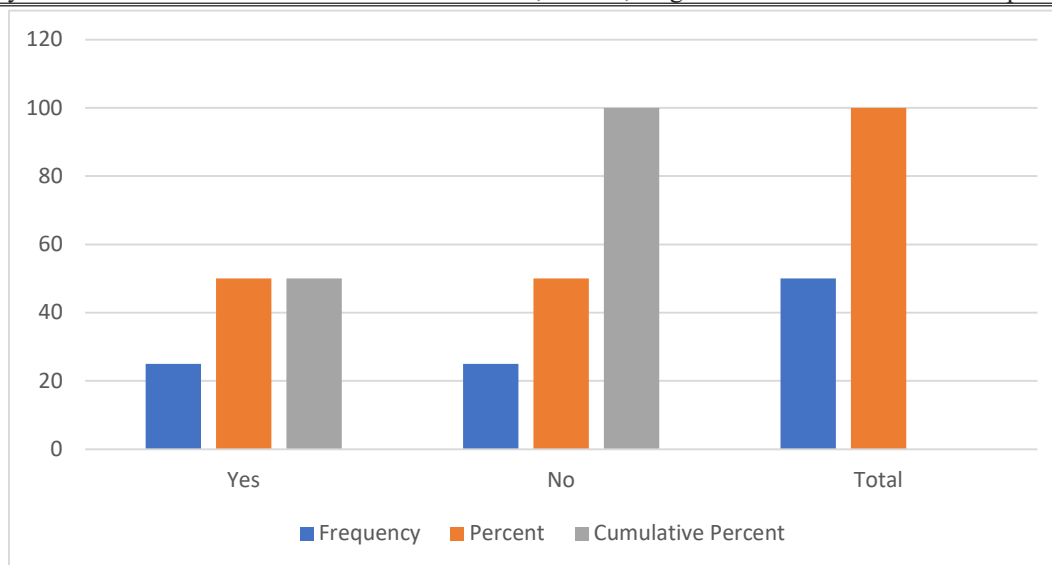
**Internal Controls by AIS:** AIS helps establish and enforce internal controls to prevent fraud, errors, and unauthorized activities. This involves setting up segregation of duties, access controls, and audit trails. The frequencies of internal controls by AIS are presented in the view of 50 respondents are given in the following table:

**Table-10: Internal Controls by AIS**

	Frequency	Percent	Cumulative Percent
Yes	25	50.0	50.0
No	25	50.0	100.0
Total	50	100.0	

Source: Field Survey, 2022

In table 10, the survey reveals that out of the 50 respondents: 25 respondents (50%) indicated that their organization does implement internal controls by AIS ("Yes"). 25 respondents (50%) indicated that their organization does not implement internal controls by AIS ("No"). The survey results suggest that there is an even split between organizations that do and do not implement internal controls by AIS among the surveyed respondents.



**Figure-10: Internal Controls by AIS**

Figure 10 showed that 50% of users agreed that internal controls by AIS is so efficient and another 50% of users did not think that internal controls by AIS is not so efficient.

**Tax Management by AIS:** AIS assists in calculating and managing various taxes, such as income tax, sales tax, and payroll tax. It ensures accurate calculations and helps with timely tax submissions. What is the thinking of respondents about tax management by AIS is tabulated in table 11:

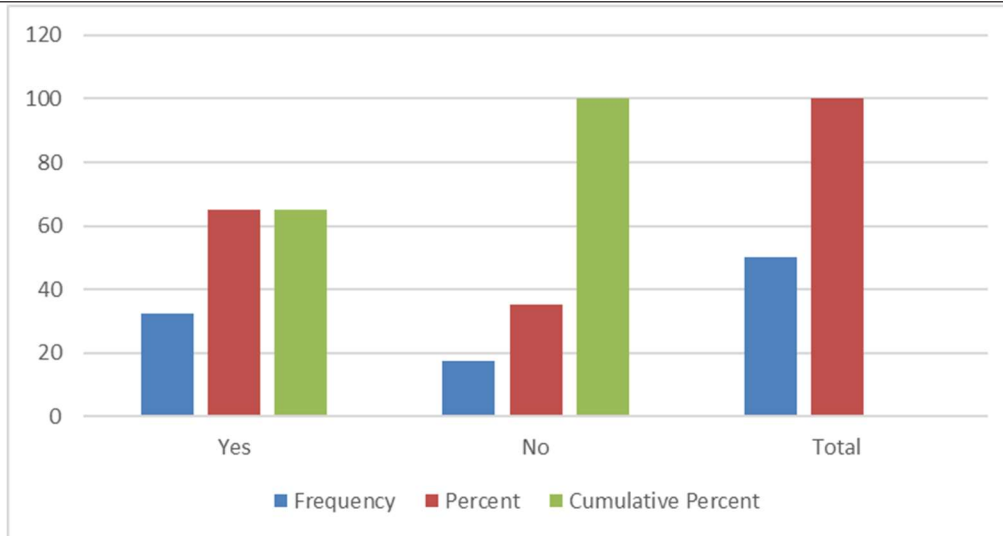
**Table-11: Tax Management by AIS**

	Frequency	Percent	Cumulative Percent
Yes	32.5	65.0	65.0
No	17.5	35.0	100.0
Total	50	100.0	

Source: Field Survey, 2022

In table 11, based on the survey responses from 50 participants: 32.5 respondents (65.0%) believe that AIS assists in tax management ("Yes"). 17.5 respondents (35.0%) do not believe that AIS assists in tax management ("No"). The survey results suggest that a majority of respondents have a positive perception, believing that AIS helps in tax management.





**Figure-11: Tax Management by AIS**

Here the figure 11 concluded that 65% of users agreed that tax management by AIS is very necessary for organizations and 35 65% of users disagreed the same statement.

## 9. Discussion

The analysis and results of this study provides insights into the perceptions of respondents regarding various aspects of ERP (Enterprise Resource Planning) software and Accounting software, particularly in terms of cost effectiveness, cost savings, financial data accuracy and integrity, timely financial reporting, internal controls, audit trail and compliance, financial management, budgeting and planning, transaction processing, internal controls by AIS, and tax management by AIS. Let's discuss the implications of these findings:

The survey indicates that 70% of respondents find ERP software to be cost-effective, while 30% find accounting software to be cost-effective. Additionally, both ERP software and accounting software are perceived by 50% of respondents each to lead to cost savings. This suggests that organizations recognize the potential for both types of software to offer financial benefits over the long term, despite the initial upfront costs associated with ERP implementation. A significant majority of respondents (80%) believe that ERP software improves financial data accuracy and integrity, while only 20% attribute the same capability to accounting software. This underscores the perception that ERP's integrated approach can reduce errors and enhance the reliability of financial data. A higher percentage of respondents (70%) believe that ERP software enables timely financial reporting compared to accounting software (30%). This aligns with the real-time or near-real-time data updates that ERP systems offer, allowing for quicker financial reporting and analysis. The survey results indicate that 60% of respondents associate internal control mechanisms with ERP software, while 40% attribute this feature to accounting software. This suggests that organizations see ERP systems as having built-in capabilities to mitigate risks and prevent fraudulent activities. A substantial majority (80%) of respondents believe that ERP software provides effective audit trail and compliance features, highlighting the software's ability to maintain detailed records and facilitate regulatory compliance. Only 20% attribute the same capabilities to accounting software. A significant portion (70%) of respondents believe that ERP

systems provide effective financial management capabilities. Additionally, 80% of respondents find that ERP systems offer budgeting and planning modules, which underscores the importance of these features in helping organizations manage their financial processes effectively. While 60% of respondents engage in transaction processing within their AIS (Accounting Information System), a higher percentage (65%) believe that AIS assists in tax management. These findings suggest that organizations value the accuracy and assistance provided by AIS in tax-related tasks.

## 10. Findings

The several key findings of this study can be identified:

1. A substantial majority (70%) of respondents perceive ERP software as cost-effective, while a smaller proportion (30%) perceive accounting software the same way. However, both ERP and accounting software are perceived by an equal 50% of respondents each to lead to cost savings. This suggests that petroleum companies recognize the potential for both types of software to offer financial benefits over time, despite the initial implementation costs of ERP systems.
2. A significant majority (80%) of respondents believe that ERP software enhances financial data accuracy and integrity, while only 20% attribute this capability to accounting software. The petroleum companies of Bangladesh have the perception that ERP's integrated approach can lead to fewer errors and improved reliability of financial data.
3. A higher percentage (70%) of respondents believe that ERP software enables timely financial reporting, compared to accounting software (30%). This is likely due to the real-time or near-real-time data updates that ERP systems offer, allowing for quicker financial reporting and analysis.
4. The survey results show that 60% of respondents associate internal control mechanisms with ERP software, while 40% attribute this feature to accounting software. This suggests that organizations view ERP systems as having built-in capabilities to mitigate risks and prevent fraudulent activities.
5. An overwhelming majority (80%) of respondents believe that ERP software provides effective audit trail and compliance features, while only 20% attribute these capabilities to accounting software. This highlights ERP software's ability to maintain detailed records and facilitate regulatory compliance.
6. A significant portion (70%) of respondents believe that ERP systems offer effective financial management capabilities. Additionally, 80% of respondents find that ERP systems offer budgeting and planning modules, indicating the importance of these features in helping petroleum companies to manage their financial processes efficiently.
7. While 60% of respondents engage in transaction processing within their Accounting Information System (AIS), a slightly higher percentage (65%) believe that AIS assists in tax management. This indicates that organizations value the accuracy and support provided by AIS in tax-related tasks.

Finally, the study's findings suggest that ERP software is generally perceived more favorably than accounting software across various aspects, including cost-effectiveness, financial data accuracy, timely reporting, internal controls, audit trail and compliance, financial management, budgeting and planning, and transaction processing. Organizations seem to recognize the comprehensive

nature of ERP systems in addressing multiple financial needs, such as reducing errors, improving reporting timelines, and enhancing internal controls.

### **11. Recommendations**

Based on the key findings from the study, several recommendations can be made to organizations and decision-makers:

1. Given the perception of ERP software's cost-effectiveness and potential for cost savings, petroleum companies of Bangladesh should consider investing in ERP systems. While the initial implementation costs might be significant, the long-term financial benefits and improved efficiency can outweigh these initial expenses.
2. The study highlights that ERP software is strongly associated with enhanced financial data accuracy and integrity. Petroleum companies of Bangladesh should prioritize ERP systems for their integrated approach, which can lead to fewer errors and improved reliability of financial data.
3. Recognizing the perception that ERP systems enable timely financial reporting due to real-time or near-real-time data updates, petroleum companies should lean towards adopting ERP solutions to facilitate quicker and more accurate reporting and analysis.
4. The study indicates that respondents associate ERP software with strong internal control mechanisms. Organizations should leverage these built-in capabilities of ERP systems to mitigate risks and prevent fraudulent activities, enhancing overall financial security.
5. ERP software is perceived to provide effective audit trail and compliance features. petroleum companies of Bangladesh should consider utilizing ERP systems to maintain detailed records and streamline regulatory compliance processes, reducing the risk of non-compliance penalties.
6. Respondents see ERP systems as offering effective financial management capabilities, including budgeting and planning modules. Organizations should explore ERP solutions to optimize their financial processes and efficiently manage budgets, planning, and other financial tasks.
7. While respondents engage in transaction processing within their Accounting Information System (AIS), AIS is also seen as assisting in tax management. Petroleum companies should maximize the accuracy and support provided by AIS in tax-related tasks to ensure compliance and minimize tax-related risks.
8. Given the comprehensive nature of ERP systems, petroleum companies should evaluate the integration of ERP and AIS to capitalize on the strengths of both solutions. This integration can potentially enhance data accuracy, reporting, internal controls, and compliance.
9. Petroleum companies of Bangladesh also should educate their staff about the benefits of ERP software, especially in terms of data accuracy, reporting, internal controls, and compliance. This can foster better understanding and appreciation of the systems' capabilities.
10. When implementing ERP systems, petroleum companies should customize their strategies based on specific needs and challenges. Addressing these needs during implementation can increase the likelihood of successful adoption and optimal outcomes.

### **12. Conclusion**

The analysis of this study highlights significant perceptions and insights into ERP (Enterprise Resource Planning) software and accounting software's various aspects. The findings indicate that

ERP software is widely seen as cost-effective, offering potential cost savings over time, while also excelling in terms of financial data accuracy, timely reporting, internal controls, audit trail and compliance, financial management, budgeting, and planning. Respondents view ERP systems favorably compared to accounting software in addressing these financial needs. Recommendations stemming from these findings emphasize the adoption of ERP systems for enhanced financial efficiency, data accuracy, and compliance. The integration of ERP and AIS (Accounting Information System) is also suggested to leverage their combined strengths. The petroleum companies of Bangladesh are advised to educate their staff about ERP benefits and tailor implementation strategies to specific requirements, ultimately leading to more successful adoption and improved financial processes.

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