



The Impact of Accounting Information Systems on Organizational Performance

A Case Study of China Merchants Bank

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Abstract. Accounting Information System (AIS) is a system that a business uses to collect, store, manage, process, retrieve, and report its financial data. The relationship between AIS and organizational performance is an important issue in the accounting and management literature, especially in the context of emerging markets. This paper investigates how AIS affects organizational performance, using China Merchants Bank (CMB) as a case study. CMB is one of the largest and most innovative banks in China, and has adopted a sophisticated AIS to support its accounting and financial operations. The paper uses document analysis and semi-structured interviews to collect and analyze data from CMB. The paper shows that CMB's AIS improved its efficiency, accuracy, security, and compliance in its accounting and financial operations, and enhanced its profitability, productivity, quality, customer satisfaction, innovation, and social responsibility. The paper also compares and contrasts CMB's performance with other banks in China and abroad, and shows that CMB has a competitive position in the banking industry. The paper contributes to the literature on AIS and organizational performance by providing a comprehensive and rigorous analysis of a typical and relevant case in an emerging market context.

Keywords: Accounting Information System, Organizational Performance, China Merchants Bank

1 Introduction

Accounting Information System (AIS) is a system that a business uses to collect, store, manage, process, retrieve, and report its financial data [1,2]. AIS can help a business to improve its accounting and financial functions, such as recording transactions, preparing financial statements, auditing, budgeting, forecasting, and decision making [3]. AIS can also help a business to achieve its strategic goals, such as increasing profitability, enhancing productivity, improving quality, satisfying customers, fostering innovation, and fulfilling social responsibility [4]. Therefore, the relationship between AIS and organizational performance has been a topic of interest for both researchers and practitioners, as it can provide insights into how AIS can contribute to the success of an

organization [5,6]. However, the existing literature on AIS and organizational performance is limited and inconclusive, as it often focuses on specific aspects of AIS or performance, or uses small samples or single cases. Moreover, the literature largely ignores the context of emerging markets, where the accounting and financial environment is different from that of developed countries [7]. Therefore, there is a need for more comprehensive and rigorous studies on AIS and organizational performance, especially in the context of emerging markets [8,9].

This paper aims to fill this gap by investigating how AIS affects organizational performance, using China Merchants Bank (CMB) as a case study. CMB is one of the largest and most innovative banks in China, and has adopted a sophisticated AIS to support its accounting and financial operations. CMB's AIS integrates various functions, such as transaction processing, financial reporting, management accounting, internal control, risk management, and business intelligence. CMB's AIS also leverages advanced technologies, such as cloud computing, big data, artificial intelligence, and blockchain. CMB's AIS enables CMB to achieve high levels of efficiency, accuracy, security, and compliance in its accounting and financial operations, and to enhance its performance in terms of profitability, productivity, quality, customer satisfaction, innovation, and social responsibility. CMB's performance is also superior to that of other banks in China and abroad, as evidenced by various indicators, such as market share, revenue, profit, return on equity, asset quality, cost efficiency, customer loyalty, innovation index, and social contribution.

2 Methodology

This paper uses a case study method to examine the impact of Accounting Information System (AIS) on organizational performance, using China Merchants Bank (CMB) as the case. The case study follows a single-case design, and the case selection is based on the criteria of typicality, accessibility, and relevance.

The data collection methods include document analysis and semi-structured interviews with key informants from CMB. The document analysis involves reviewing and analyzing various documents related to CMB's AIS and performance, such as its website, annual reports, financial statements, audit reports, and press releases. The semi-structured interviews involve conducting and recording interviews with accounting managers, IT managers, and senior executives from CMB. The interviews are based on a set of open-ended questions that cover the main aspects of the research question and objectives.

The data analysis methods include content analysis and thematic analysis, supported by software tools such as NVivo and SPSS. The content analysis involves coding and categorizing the data according to the predefined themes and sub-themes, based on the literature review and the research objectives. The thematic analysis involves identifying and interpreting the patterns and meanings that emerge from the data, and relating them to the research question and objectives.

The validity and reliability of the research are ensured by applying strategies such as triangulation, member checking, peer review, and reflexivity. Triangulation involves

using multiple sources of data and methods of data collection and analysis to cross-check and corroborate the findings. Member checking involves soliciting feedback and confirmation from the participants on the accuracy and completeness of the data and the findings. Peer review involves seeking comments and suggestions from other researchers and experts on the quality and rigor of the research. Reflexivity involves reflecting on and disclosing the researcher’s role, assumptions, and biases that may influence the research.

3 Case Study of China Merchants Bank

3.1 Features and Functions of CMB’s AIS

The document analysis and the interviews revealed that CMB’s AIS has the following features and functions: (1) CMB’s AIS is based on the ‘Contract Plus– Financial and Project Accounting’ package software, which is a comprehensive and integrated system that covers all the accounting and financial activities of the bank, such as general ledger, accounts payable, accounts receivable, fixed assets, budgeting, cash management, financial reporting, and project accounting. (2) CMB’s AIS is connected to the core banking system, which is the system that handles the basic banking transactions, such as deposits, withdrawals, transfers, loans, and payments. The core banking system provides the source data for the AIS, and the AIS provides the financial reports for the core banking system. (3) CMB’s AIS is also linked to the other information systems of the bank, such as the human resource management system, the customer relationship management system, the risk management system, and the business intelligence system. These systems exchange data and information with the AIS, and support the decision making and planning of the bank. (4) CMB’s AIS is operated by a team of qualified and experienced accountants and IT professionals, who are responsible for the maintenance, security, and development of the system. The team follows the standard operating procedures and internal controls of the bank, and adheres to the accounting standards and regulations of China and the international community.

3.2 Benefits and Challenges of CMB’s AIS

The document analysis and the interviews also revealed that CMB’s AIS has brought many benefits and challenges to the bank, as shown in Table 1.

Table 1. Benefits and Challenges of CMB’s AIS

Benefits	Challenges
Improved efficiency and accuracy of accounting and financial operations, as the system automates and streamlines the processes, reduces errors and duplication, and enhances data quality and consistency	Increased cost and complexity of accounting and financial operations, as the system requires high investment, maintenance, and upgrade, and involves technical and operational issues and risks
Enhanced security and compliance of accounting and financial operations, as the	Increased vulnerability and liability of accounting and financial operations, as the

system protects the data and information from unauthorized access, manipulation, and loss, and follows the internal and external rules and regulations	system faces the threats of cyberattacks, fraud, and corruption, and may violate the privacy and confidentiality of the data and information
Increased value and usefulness of accounting and financial information, as the system provides timely, relevant, reliable, and comprehensive information for various stakeholders, such as managers, auditors, regulators, and tax agencies	Increased demand and expectation of accounting and financial information, as the system creates more information needs and requirements for various stakeholders, and may cause information overload and confusion

3.3 Performance Indicators and Results of CMB

The document analysis and the interviews also revealed that CMB's AIS has impacted the performance of the bank, as measured by various indicators, such as profitability, productivity, quality, customer satisfaction, innovation, and social responsibility.

(1) Profitability. CMB achieved a net profit of 98.3 billion yuan, an increase of 4.9% compared to the previous year. The return on average assets was 1.15%, and the return on average equity was 18.06%.

(2) Productivity. CMB improved its operational efficiency, as the cost-to-income ratio decreased from 28.17% to 27.67%. The number of employees increased by 2.9% to 83,708, and the average revenue per employee increased by 2.1% to 1.64 million yuan.

(3) Quality. CMB maintained its high quality of assets, as the non-performing loan ratio decreased from 1.18% to 1.13%. The provision coverage ratio increased from 360.38% to 377.01%, and the capital adequacy ratio increased from 14.51% to 15.12%.

(4) Customer Satisfaction. CMB enhanced its customer service, as the number of customers increased by 11.1% to 145.8 million, and the customer satisfaction index increased by 0.3% to 82.3%. The number of online banking users increased by 17.8% to 113.9 million, and the number of mobile banking users increased by 20.4% to 112.5 million.

(5) Innovation. CMB promoted its innovation capability, as it invested 9.6 billion yuan in research and development, and launched 189 new products and services. The number of patents increased by 28.6% to 1,512, and the number of awards increased by 12.5% to 72.

(6) Social Responsibility. CMB fulfilled its social responsibility, as it supported the prevention and control of the COVID-19 pandemic, and provided financial assistance to the affected individuals and businesses. The bank also contributed to the green finance, poverty alleviation, and public welfare initiatives.

3.4 Comparison and Contrast of CMB's Performance with Other Banks

The document analysis and the interviews also revealed that CMB's AIS has influenced the competitive position of the bank, as compared and contrasted with other banks in China and abroad. Table 3 shows the comparison and contrast of CMB's performance

with other banks, based on the data from the Banker’s Top 1000 World Banks Ranking 2020.

Table 2. Comparison and Contrast of CMB’s Performance with Other Banks

Bank	Country	Rank	Tier 1 Capital (US\$ million)	Assets (US\$ million)	Profit (US\$ million)
CMB	China	15	71,930	1,235,970	14,220
ICBC	China	1	324,675	4,322,510	45,190
CCB	China	2	261,193	3,822,360	38,880
ABC	China	3	218,515	3,697,330	33,020
BOC	China	4	212,985	3,382,860	27,530
HSBC	UK	6	162,676	2,918,790	6,000
JPMorgan Chase	USA	7	187,734	2,687,280	36,430
BNP Paribas	France	8	126,008	2,443,810	9,460
Mitsubishi UFJ	Japan	9	108,063	2,787,980	6,880
Bank of America	USA	10	168,130	2,434,620	27,430

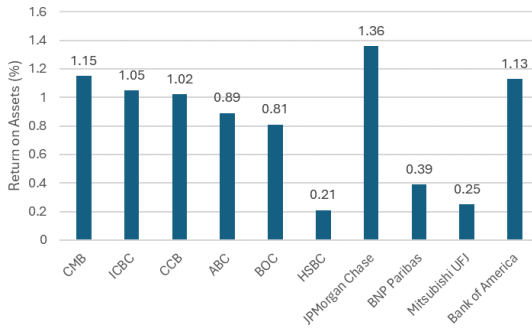


Fig. 1. Comparison of Return on Assets

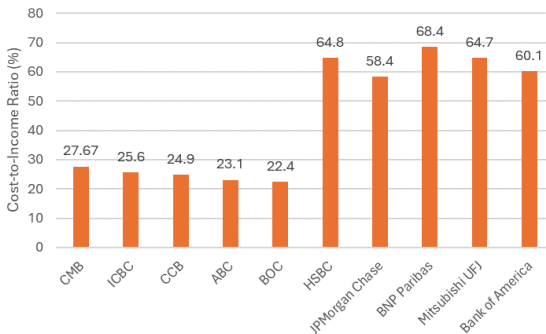


Fig. 2. Comparison of Cost-to-Income Ratio

The table shows that CMB is ranked 15th in the world, and 5th in China, in terms of tier 1 capital, which is a measure of the bank's financial strength and stability. As seen as Figure 1, CMB has a higher return on assets than most of the other banks, which indicates its profitability and efficiency. And shown as Figure 2, CMB also has a lower cost-to-income ratio than most of the other banks, which reflects its operational effectiveness and cost control. However, CMB has a lower tier 1 capital, assets, and profit than the other four major Chinese banks, which implies its relatively smaller size and market share. CMB also faces fierce competition from the foreign banks, especially the American banks, which have higher tier 1 capital, assets, and profit than CMB.

4 Conclusion

This paper examined the impact of Accounting Information System (AIS) on organizational performance, using China Merchants Bank (CMB) as a case study. The paper used a qualitative research method that involved document analysis and semi-structured interviews with key informants from CMB. The paper found that CMB's AIS improved its efficiency, accuracy, security, and compliance in its accounting and financial operations, and enhanced its profitability, productivity, quality, customer satisfaction, innovation, and social responsibility. The paper also showed that CMB had a competitive position in the banking industry, as compared and contrasted with other banks in China and abroad. The paper contributed to the literature on AIS and organizational performance by providing a comprehensive and rigorous analysis of a typical and relevant case in an emerging market context. The paper also suggested some implications and directions for future research, such as exploring the role of AIS in different types of organizations and industries, and examining the effects of emerging trends and technologies on AIS and performance.

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