

# Automation of financial reports of the commercial banks of Bangladesh: Benefits and challenges

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## Abstract

Automation has started its journey in every area after the invention of computer. Accounting is a traditional discipline from a long period of time. A rigorous development in this field has taken place in the last few decades. Now-a-days all of the functions of this discipline are almost automated. Specially, financial reporting is a crucial issue and is required by various stakeholders timely and accurately. Computerised system can ensure these qualities of financial reports. For conducting the study, data were collected by using questionnaire. Collected data were analyzed by using SPSS (version 22). KMO, factor analysis, ANOVA, regression, etc. are done on the collected and coded data. A lot of benefits of automated reports have been revealed like time-saving, cost-effective, increasing the speed and efficiency along with some challenges. The major challenges include maintaining security and the massive investment which is required for installing an automated system. Some policy implications from both bankers and customer-views are suggested to make the system sophisticated by ensuring the protection of the system.

**Keywords** Automation, Quality, Benefit, Challenge

**Paper type** Research paper

## 1. Introduction

Financial reporting is the exchange of financial data that can be used to make investment, credit, and other business decisions. Such communication can be found in financial statements such as the balance sheet, income statement, cash flow statement, equity reports, and notes to these statements. It is a method of providing financial information regarding the financial health of a company. These are often included in annual reports. The formal reports of a company's financial operations are published in financial reporting. These reports are expected to meet particular requirements or have certain qualities that make them easier to comprehend and use. Some of the characteristics are relevance, understandability, reliability, and comparability. Reports produced manually (Ahmad,



Khan, Abdullah, & Rashid, 2017; Uddin, Khan, & Mohammad, 2015) may have various problems. So, the computerization of reporting has emerged to conform the aforesaid qualities as computer processing has proven its capabilities of accuracy, speed, reliability etc. This study is aimed to explore the benefit and limitation of automated reports which have a great significance as automation is extensively practiced now-a-days. Automation has opened the door of innovation and wide scope in banking operation like other sectors. Bangladesh has lately begun its journey toward digitalization by automating the majority of its public institutions that serve the country's citizens. Private companies began automating office management even before government attempts. Most businesses are now automating their manual processes, which has ensured more speed and enabled them to keep up with the times. As the processes are still in the early stages, numerous studies should be conducted to ascertain a most efficient start to maximize the benefits and reduce the amount of time required to begin. In this approach, automating the reporting system necessitates a comprehensive consideration of its technical, accounting, and management components, as well as its profit potential.

## **2. Problem statement**

The financial reports of any company are expected to possess certain qualities that make them easily comprehensible and usable such as relevance, understandability, dependability, and comparability. Manual methods may be erroneous, time consuming, distorted quality, unreliable. All of these problems make the reports less dependable which results in confusion among the stakeholders. The emergence of IT has contributed in most of the sphere of human life including financial and economic sectors. The banks are managing all of their services and fulfilling the requirements (Uddin, Khan, & Farhana, 2014) by applying IT nowadays. Their all tasks starting from maintaining daily transaction to managing foreign exchange are accomplished by implying IT. However, reporting is significant as the stakeholders are eager to be ensured regarding the transparency of the report for the security of their investments. The problems of manual processing of data which lead to the distrust about reporting in the minds of stakeholders have been addressed by applying IT to increase the reliability of the reports. The main focus of the stakeholders is on the features of the standard FR which comprises Balance sheet, Income statement, Retained earnings etc. All these issues give an idea about the commercial side of the banks which is very much crucial for the stakeholder. The study will try to explore the role of IT in making these issues clear and trustworthy to the stake holders. There

are many other areas like objectives of financial statement which contain economic health, profit earning capacity, social bonding, accounting standards, liquidity position etc. Also, it will be examined whether these issues are perfectly reflected in the reports. Financial reports become reliable by containing some dimensions like understandably, relevance, timeliness, completeness, reliability, verifiability etc. This study also aims to assess whether all these dimensions are better addressed by using IT and the tools and techniques of core banking related information are clearly introduced in the reports. A lot of software tools are available for auditing, taxation, investment forecasting, data processing, Enterprise Resources Planning, image processing, graphical presentation of information which make the output generation flawless and easily communicable. These software build faith upon the minds of the stakeholders as the manual processing is not free from the chance of manipulation.

### Objectives

The broad objective of the study is to evaluate the process of automation of financial reports and their impacts on the banking sector.

- a. To discuss the level of satisfaction of the stakeholders regarding various aspects of automated financial reports.
- b. To find out the crucial factors of automated reports.
- c. To assess the benefits and challenges of automated financial reporting.

### 3. Literature review

The researcher went through substantial literatures which are discussed below.

In 2016, Akesinro and Adetoso conducted a study on how computerized accounting system impacted the operations of banks by collecting primary data and analyzing the data by using statistical tools. They found a number of advantages that computerized accounting systems have on the banking business. Abubakar, Gatawa, and Kebbi conducted a study in 2011 regarding how return on equity is related to IT application. They used secondary data from banks annual reports and analyzed the data by using SPSS software. They discovered that the usage of ICT in the Nigerian banking industry increased return on equity. Agbolade (2011) discovered that the banking sector's profit level increased proportionally and that the use of ICT in the banking sector resulted in a positive marginal change in the level of investment while conducting a study on the relationship between profit margin and investment on IT. Akande initiated a study in 2016 by collecting

data from 200 bankers which were tested by software package where he discovered that computerized accounting systems create timely and accurate reports by processing accounting data quickly and efficiently. Alabar and Agema (2014) in their study discovered that ICT influences customer satisfaction significantly while undertaking a study on the evaluating customer satisfaction regarding ICT application in banking sector through interview schedule. In 2011 while conducting a study on the impacts of software in banks Alzoubi showed that accounting outputs' quality and the internal control in companies can be enhanced through ERP system. He used the input output analysis method in conducting his study. Bakri (2016) in his study showed that enhancements in the financial statements' quality accelerate the companies that process the transaction by implementing Accounting Information Systems in the company. The study was conducted by collecting secondary data from 30 companies and analyzing by statistical tools. Dandago and Rufai (2014) conducted research on challenges of automated system by collecting data from bank's IT division stated that accounting information technology is important to simplify challenges and offer quality information in the Nigerian banking business. Eruemegbe (2015) conducted a study by collecting data from 50 Human Resource Managers of some selected banks of Kenya. In his study he stated that information and communication technology leads to efficient and effective bank performance, and expedites a competitive edge over competitors, hence increasing bank profitability. According to Friday and Osondu's (2013) study, there is a favorable association between ICT and bank profitability in Nigeria. Data were collected from the five years annual reports of the banks in their study conducted. Gaturu and Ngahu (2015) explored that computer-assisted auditing methodologies and internal controls influenced financial management in the WRMA. In their study, Ghasemi, Shafeiepour, Aslani, and Barvayeh (2011) claimed by interviewing the bank managers that IT-based method helps organizations create individual reports quickly and easily, which enhances management decision-making. Progressed Functionality, Advanced Accuracy, Swift Processing, and Better External Reporting are some of the other benefits of computerized accounting systems. Finally, this study discussed the advantages and disadvantages of incorporating information technology (IT) into accounting processes. Imeokparia (2013) in her study depicted that using technology improves the accuracy, usability, and quality of reports based on collected data from 100 investors. She also demonstrated that information technology does not obstruct compliance with international financial reporting standards. According to Ilo, Wilson, and Nnanyelugo (2014) who interviewed the HR managers of the banks, there is a positive association between technological

innovation and bank employee performance. On the basis of the resource-based view (RBV) of organization performance, Ringim, Razalli, and Hasnan (2012) found that IT capacity is valuably associated with bank organization performance. The findings of this study provide managers and academics in Nigeria with critical information on the impact of IT capability on organizational performance. In 2011 Mark examined the impact of computerized accounting on financial reporting at Uganda Breweries Limited in his study. When asked about the advantages of using a computerized accounting system, 67.7% of respondents agreed that it reduces errors and makes it easier to post transactions to the ledger. According to Momani and Obeidat (2012), the AIS makes reports comprehensible, relevant, reliable, comparable, and consistent in order to meet the needs of decision makers in this group of banks. According to a study done by Moorthy, Voon, Samsuri, Gopalanin, and Yew (2012), IT has a significant impact on costs because its implementation necessitates a significant investment in technology gear, software, and IT staff. This study also shows that IT ensures the efficiency of the accounting department as well as the correctness of the results with minimal work and time. This is a topic that accountants should pay special attention to. Ware (2015) conducted study and came to the conclusion that a computerized accounting system has more benefits than drawbacks, as it has a beneficial impact on bank financial reporting. As a result, businesses, particularly rural banks, must implement a computerized accounting system. According to a study conducted by Yose and Choga (2016), implementing computerized accounting information systems reduced errors, saved time, and lowered operational expenses. This resulted in the intended outcome of improved financial report presentation.

#### **4. Research gap**

Information technology has spread its application over a wide range of operation in science, business and social science areas. Above reviews show that the major researches were conducted on the accounting information systems, its applicability and benefits. These are administrative and routine jobs addressed by information technology. An important and strategic function of the banks is preparing and communicating the financial reports to the stakeholders. The stakeholders of financial reports of commercial banks in Bangladesh require fast, accurate, precise and easily communicable data to take decisions. There has been no extensive study of the role of information technology in the creation of financial reports by commercial banks. So, there lies a research gap. For fulfilling the research gap the

researcher has chosen this field and topic for his research work.

## 5. Methodology

### 5.1. Data collection

The research is carried out using primary data which are, then, obtained through questionnaire in order to investigate the amount of application of automated financial reporting.

### 5.2. Sample

There are currently 61 commercial banks operating in Bangladesh as mentioned earlier. Among these, two state owned, one private commercial, and one foreign commercial bank were surveyed by applying convenient sampling. The major users of financial reports are company management, customers, employees, government, and rating agencies. As there are five groups of stakeholders as per the below-mentioned list, a total of 240 sample from four banks i.e., 60 samples from each bank were interviewed.

Table 1: List of the Banks

Group	Bank-I	Bank-II	Bank-III	Bank-IV	Total
Company Management	12	12	12	12	48
Employee	12	12	12	12	48
Depositor/Customer	12	12	12	12	48
Govt and Regulator	12	12	12	12	48
Rating Agencies	12	12	12	12	48
Total	60	60	60	60	240

### 5.3. Sample description

The role of IT in preparing financial reports was evaluated by collecting primary data from four banks and analyzing those. The total sample size was 240. The demographic characteristics of the respondents have been brought into light as follows:

Table 2: Measurement according to gender

Particulars	Frequency	Percent	Valid percent	Cumulative percent
Male	201	83.8	83.8	83.8
Female	39	16.3	16.3	100.0
Total	240	100.0	100.0	-

Source: Field survey

It can be seen in the above table that the highest number of respondents (201) belong to male which is 83.8% followed by the female (39), amounting 16.3% that are clearly shown in the following Table.

Table 3: Measurement according to experience

Particulars	Frequency	Percent	Valid percent	Cumulative percent
Below 15 Years	219	91.3	91.3	91.3
Above 15 Years	21	8.8	8.8	100.0
Total	240	100.0	100.0	-

Source: Field Survey

As shown in Table 3, about 91.3% fall into above 15 years experience whereas about 8.8% fall into below 15 years experience that are clearly shown in the following Table:

Table 4: Measurement according to level of education

Particulars	Frequency	Percent	Valid percent	Cumulative percent
Below HSC	3	1.3	1.3	1.3
Below Bachelor Degree	34	14.2	14.2	15.4
Above Bachelor Degree	203	84.6	84.6	100.0
Total	240	100.0	100.0	

Source: Field Survey

The educational qualification has been segmented into three categories as below HSC, below Bachelor degree and above bachelor degree. As from the Table 4 we see that 1.3% respondents are below HSC, 14.2% hold below bachelor degree and the rest 86.6% is above bachelor which is presented in the table.

Table 5: Measures of reliability statistics

Bank	Cronbach's Alpha	N of items	Processed case	Interpretation
Bank -I	0.866	50	40	Good
Bank-II	0.915	50	40	Excellent
Bank-III	0.896	50	40	Good
Bank-IV	0.910	50	40	Excellent

Source: Field Survey; no items are removed; no instances are eliminated; if Cronbach's Alpha is greater than 1. > 0.9 Excellent, > 0.8 Good, > 0.7 Acceptable, > 0.6 Doubtful, > 0.5 Poor, and 0.5 Unacceptable

This Table 5 displays the reliability statistics for each of the constructs in order to examine the degree of internal consistency and intercorrelation among many assessments of the same construct. This is where Cronbach's coefficient comes in handy. It is discovered that the degree of internal consistency within a single example ranges from 0.866 to 0.956 for each of the undertaken constructs, suggesting good to exceptional in measurement.

## Hypotheses

*Hypothesis 1: There are no significant differences in perceived satisfaction levels with each of the components of standard financial reports*

*Hypothesis 2: There are no significant differences in perceived satisfaction levels regarding the qualitative characteristics of financial information*

*Hypothesis 3: There are no significant differences in the perceived satisfaction regarding the roles of IT in preparing financial reports*

*Hypothesis 4: There are no significant differences in the perceived satisfaction regarding the benefits of IT in preparing financial reports.*

## 6. Analysis and findings

### 6.1. ANOVA test

An ANOVA test is used to determine whether or not the results of a survey or experiment are significant. To put it another way, they assist in determining whether we should reject the null hypothesis or accept the alternate hypothesis.

Hypothesis H1: There are no significant differences in perceived satisfaction levels with each of the components - income statements, balance sheets, cash flow statement, and statement of retained earnings of the characteristics of standard financial reports of commercial banks in Bangladesh.

Table 6: Two-factor without replication for the components of standard financial reports

Income statements						
Source of variation	SS	Df	MS	F-cal	P-value	F-crit
Respondents	60.80	39	1.56	5.07	0.00	1.46
Banks	2.57	5	0.51	1.67	0.14	2.26
Error	59.93	195	0.31	-	-	-
Balance sheets						
Respondents	69.40	39	1.78	4.83	0.00	1.46
Banks	1.34	5	0.27	0.73	0.60	2.26
Error	71.83	195	0.37	-	-	-
Cash flow statement						
Respondents	53.65	39	1.38	4.32	0.00	1.46
Banks	4.28	5	0.86	2.69	0.02	2.26
Error	62.05	195	0.32	-	-	-
Statement of retained earnings						
Respondents	90.32	39	2.32	4.95	0.00	1.46
Banks	2.38	5	0.48	1.02	0.41	2.26
Error	91.28	195	0.47	-	-	-

Source: Field Survey; calculated using Table No. 5.5; SS stands for Sum of Squares, df for Degree of Freedom, MS for Mean Sum of Squares, F-cal for Calculated F Ratio, and F-crit for Table F Ratio.



Hypothesis H1: Examines the differences in respondents' perceived satisfaction levels with the components of standard financial reports of commercial banks in Bangladesh during the study period, including income statements, balance sheets, cash flow statements, and statements of retained earnings. The calculated values of F statistics by source of variation of the respondents for income statements, balance sheets, cash flow statement, and statement of retained earnings were found to be 5.07, 4.83, 4.32, and 4.95, respectively, with a critical value of F 1.46, according to ANOVA-two-factor without replication test. As a result, the null hypothesis was rejected at the 0.00 percent level of significance for all changes in the estimated value of F by source of variation in respondents (p-value is less or equal to 0.00). As a result, we find that there are considerable variances in respondents' reported satisfaction levels for each of the components income statements, balance sheets, cash flow statement, and retained earnings of the characteristics of regular financial reports of commercial banks in Bangladesh.

In all circumstances when a bank's source of variation is a cash flow statement [ $F\text{-cal} (2.69) > F\text{-crit} (2.26)$ ], the computed value of F is smaller than the critical value of F. Except for the cash flow statement, we accept the null hypothesis. As a result, it is projected that there is no substantial difference in the sources of bank variation across the respondents.

Hypothesis H2: There are no significant differences in perceived satisfaction levels provided by respondents of the selected banks regarding the qualitative characteristics of financial information provided by commercial banks in Bangladesh - the information is understandable, the information is relevant, the information is complete, the information is published on time, and financial data in the Bangladeshi currency.

Hypothesis H2: compares respondents' satisfaction levels with the following qualitative characteristics of commercial bank financial information in Bangladesh: the information is understandable, the information is relevant, the information is complete, the information is published on time, and the financial data in the reports are rudimentary. The calculated value of F statistics by source of variation of the respondents for the information is understandable, the information is relevant, the information is complete, the information is published timely, financial data in the reports are reliable, information is precise, and information is verifiable were found to be 3.37, 11.50, 3.84, 3 for the information is understandable, the information is relevant, the information is complete, the information is published timely, financial data in the reports are reliable, information is precise, and information is verifiable. As a result, the null hypothesis was

rejected at the 0.00 percent level of significance for all changes in the estimated value of F by source of variation in respondents ( $p$  value is less or equal to (0.00)). Thus, it can be said that there are significant differences among perceived scores of satisfaction levels provided by the respondents of the selected banks regarding the information is understandable, the information is relevant, the information is complete, the information is published timely, financial data in the reports are reliable, information is precise, information is verifiable of commercial banks in Bangladesh.

Table 7: Two-factor without replication for the qualitative characteristics of financial information

The Information is understandable						
Source of Variation	SS	Df	MS	F-cal	P-value	F-crit
Respondents	45.65	39.00	1.17	3.37	0.00	1.46
Banks	1.25	5	0.25	0.72	0.61	2.26
Error	67.75	195	0.35			
The information is relevant						
Respondents	97.46	39	2.50	11.50	0.00	1.46
Banks	1.47	5	0.29	1.35	0.24	2.26
Error	42.36	195	0.22			
The information is complete						
Respondents	60.30	39	1.55	3.84	0.00	1.46
Banks	6.69	5	1.34	3.32	0.01	2.26
Error	78.48	195	0.40			
The information is published timely						
Respondents	65.52	39	1.68	3.56	0.00	1.46
Banks	5.68	5	1.14	2.41	0.04	2.26
Error	91.98	195	0.47			
Financial data in the reports are reliable						
Respondents	77.30	39	1.98	5.31	0.00	1.46
Banks	4.77	5	0.95	2.56	0.03	2.26
Error	72.73	195	0.37			
Information is precise						
Respondents	69.32	39	1.78	6.60	0.00	1.46
Banks	6.80	5	1.36	5.05	0.00	2.26
Error	52.53	195	0.27			
Information is verifiable						
Respondents	129.27	39	3.31	10.73	0.00	1.46
Banks	4.43	5	0.89	2.87	0.02	2.26
Error	60.23	195	0.31			

Source: Field Survey; calculated using Table No. 5.6; SS stands for Sum of Squares, df for Degree of Freedom, MS for Mean Sum of Squares, F-cal for Calculated F Ratio, and F-crit for Table F Ratio.

On the other hand, the computed value of F is always greater than the critical value of F, with the exception of the information being understood [F-cal (0.72) F-crit (2.26)]. and the data is accurate [F-cal (1.35) F-crit (2.26)]. So, except if the information is intelligible and important, we reject the null hypothesis. As a result, it is anticipated that there is a considerable difference in the sources of bank variation across the respondents.

Hypothesis H3: There are no significant differences in the perceived satisfaction levels provided by respondents of the selected banks regarding the roles of IT in preparing financial reports-sharing of financial information, Enterprise Resource Planning Systems, use of computer software to perform tax processing, availability of audit software packages for auditors, and accountants' use of technology.

Table 8: Two-factor without replication for the roles of it in preparing financial reports

Sharing of financial information						
Source of variation	SS	DF	MS	F-cal	P-value	F-crit
Respondents	71.46	39	1.83	6.40	0.00	1.46
Banks	8.97	5	1.79	6.26	0.00	2.26
Error	55.86	195	0.29			
Enterprise resource planning systems						
Respondents	106.52	39	2.73	5.43	0.00	1.46
Banks	8.63	5	1.73	3.43	0.01	2.26
Error	98.03	195	0.50			
Use of computer software to perform tax processing						
Respondents	70.00	39	1.79	4.21	0.00	1.46
Banks	4.42	5	0.88	2.08	0.07	2.26
Error	83.08	195	0.43			
The availability of audit software packages for auditors						
Respondents	102.93	39	2.64	4.38	0.00	1.46
Banks	9.38	5	1.88	3.11	0.01	2.26
Error	117.62	195	0.60			
Accountants use word processing software						
Respondents	135.85	39	3.48	8.14	0.00	1.46
Banks	2.55	5	0.51	1.19	0.31	2.26
Error	83.45	195	0.43			
Use of the graphics software by accountants to graph the data in financial statements and reports						
Respondents	100.27	39	2.57	4.98	0.00	1.46
Banks	2.93	5	0.59	1.14	0.34	2.26
Error	100.73	195	0.52			
Image processing software are used to capture data						
Respondents	150.30	39	3.85	5.34	0.00	1.46
Banks	4.34	5	0.87	1.20	0.31	2.26
Error	140.83	195	0.72			

Source: Field Survey, based on Table No. 5.7; SS stands for Sum of Squares, df for Degree of Freedom, MS for Mean Sum of Squares, F-cal for Calculated F Ratio, and F-crit for Table F Ratio

Hypothesis 3: examines the differences in perceived satisfaction levels provided by respondents from the selected banks regarding the roles of IT in preparing financial reports - sharing of financial information, Enterprise Resource Planning Systems, use of computer software for tax processing, availability of audit software packages for auditors, and accountants' use of word processing software. It was discovered through ANOVA-two-factor without replication test, calculated value of F statistics by respondents' source of variation, for sharing financial information, Enterprise Resource Planning Systems, use of computer software to perform tax processing, availability of audit software packages for auditors, accountants' use of word processing software, and accountants' use of graphics software. As a result, at the 0.00 percent level of significance, the null hypothesis was rejected for all changes in the estimated value of F caused by source of variation in respondents (p-value is less or equal to 0.00). As a result, we conclude that there are significant differences in the perceived satisfaction levels provided by respondents of the selected banks regarding the roles of IT in preparing financial reports - sharing of financial information, Enterprise Resource Planning Systems, use of computer software to perform tax processing, and the availability of audit software packages for auditors, accountants, and other financial professionals.

On the other hand, except for sharing of financial information [F-cal (6.26)>F-crit (2.26)], Enterprise Resource Planning Systems [F-cal (3.43)>F-crit (2.26)], and the availability of audit software packages for auditors [F-cal (3.11)>F-crit (2.26)], the calculated value of F is less than the critical value of F in all cases source of variation of banks.

Except the exchange of financial information, Enterprise Resource Planning Systems, and the availability of audit software packages for auditors, we accept the null hypothesis in all other cases. As a result, it is projected that there is no substantial difference in the sources of bank variation across the respondents.

Hypothesis H4: There are no significant differences among perceived scores of satisfaction levels provided by the respondents of the selected banks regarding benefits of IT in preparing financial reports-IT ensures the accuracy, IT increases the speed, Easily handling the large volume of data, automated data are more accessible, better external reporting is ensured by applying IT, accounting software, consistency is ensured, information are credible, identified Key Performance Indicators (KPIs) are shown, green banking systems, compliance of the regulatory authority of commercial banks in Bangladesh.

Table 9: ANOVA: Two-factor without replication for benefits of it in preparing financial reports

Source of variation	SS	DF	MS	F-cal	P-value	F-crit
<b>IT Ensures the Accuracy</b>						
Respondents	72.67	39	1.86	6.58	0.00	1.46
Banks	2.15	5	0.43	1.52	0.19	2.26
Error	55.18	195	0.28			
<b>IT increases the speed</b>						
Respondents	28.40	39	0.73	4.05	0.00	1.46
Banks	0.95	5	0.19	1.06	0.39	2.26
Error	35.05	195	0.18			
<b>Easily handling of large volume of data</b>						
Respondents	24.30	39	0.62	2.78	0.00	1.46
Banks	0.77	5	0.15	0.69	0.63	2.26
Error	43.73	195	0.22			
<b>Automated data are more accessible</b>						
Respondents	30.92	39	0.79	3.18	0.00	1.46
Banks	2.03	5	0.41	1.63	0.15	2.26
Error	48.63	195	0.25			
<b>Better external reporting is ensured by applying it.</b>						
Respondents	109.32	39	2.80	6.59	0.00	1.46
Banks	7.68	5	1.54	3.61	0.00	2.26
Error	82.98	195	0.43			
<b>Accounting software</b>						
Respondents	24.80	39	0.64	2.59	0.00	1.46
Banks	1.57	5	0.31	1.28	0.27	2.26
Error	47.93	195	0.25			
<b>Consistency is ensured</b>						
Respondents	135.65	39	3.48	5.58	0.00	1.46
Banks	6.83	5	1.37	2.19	0.06	2.26
Error	121.50	195	0.62			
<b>Information are credible</b>						
Respondents	167.85	39	4.30	8.86	0.00	1.46
Banks	6.58	5	1.32	2.71	0.02	2.26
Error	94.75	195	0.49			
<b>Identified key performance indicators (KPIs) are shown</b>						
Respondents	182.07	39	4.67	11.18	0.00	1.46
Banks	17.90	5	3.58	8.57	0.00	2.26
Error	81.43	195	0.42			
<b>Green banking systems</b>						
Respondents	70.33	39	1.80	4.77	0.00	1.46
Banks	4.33	5	0.87	2.29	0.05	2.26
Error	73.67	195	0.38			
<b>Compliance of the regulatory authority</b>						
Respondents	21.07	39	0.54	1.87	0.00	1.46
Banks	6.43	5	1.29	4.46	0.00	2.26
Error	56.23	195	0.29			

Source: Field Survey; calculated using Table No. 5.8; SS stands for Sum of Squares, df for Degree of Freedom, MS for Mean Sum of Squares, F-cal for Calculated F Ratio, and F-crit for Table F Ratio.

Hypothesis H4: compares the perceived satisfaction levels of respondents from the selected banks when it comes to the benefits of IT in preparing financial reports: IT ensures accuracy, IT improves speed, and IT reduces costs. Easily handle large volumes of data, automated data is more accessible, better external reporting is ensured by using IT, accounting software, consistency is ensured, information is credible, identified Key Performance Indicators (KPIs) are shown, green banking systems, and regulatory authority compliance of commercial banks in Bangladesh is under review. It was discovered via ANOVA-two-factor without replication test, estimated value of F statistics by source of variation of the respondents, that IT assures correctness, IT enhances speed, and IT assures the accuracy of the respondents. As a result, the null hypothesis was rejected at the 0.00 percent level of significance for all changes in the estimated value of F by source of variation in respondents ( $p$ -value is less or equal to 0.00). Thus it can be said that there are significant differences among perceived scores of satisfaction levels provided by the respondents of the selected banks regarding IT ensures the accuracy, IT increases the speed, Easily handling the large volume of data, automated data are more accessible, better external reporting is ensured by applying IT, accounting software, consistency is ensured, information are credible, identified Key Performance Indicators(KPIs) are shown, green banking systems, compliance of the regulatory authority of commercial banks in Bangladesh.

On the other hand, the critical value of F is greater than the calculated value of F in all cases, with the exception of better external reporting, which is ensured by using IT [ $F$ -cal (3.61) $>$  $F$ -crit (2.26)], information is credible [ $F$ -cal (2.71) $>$  $F$ -crit (2.26)], identified Key Performance Indicators (KPIs) are shown [ $F$ -cal (8.57) $>$  $F$ -crit (2.26)], and green banking systems [ $F$ -cal (2.29) $>$  $F$ -crit]. So, we accept the null hypothesis except for better external reporting is ensured by applying IT, information are credible, identified Key Performance Indicators (KPIs) are shown, green banking systems and compliance of the regulatory authority. As a result, it is projected that there is no substantial difference in the sources of bank variation across the respondents.

To clarify the statement that different variables are related to different factors, Table 10 displays the rotated component matrix for the measures of role of IT in preparation of FR by bank Bank-I. In this Table, it can be observed that how rotation completes data reduction process and develops interpretability of the function of the influential variables over the selected respondents regarding perceived satisfaction of the role of IT in preparation of financial reports by the bank AB. It is found that variables Debit Card

(q51), Magnetic Ink Character Recognition (MICR) (q48), Automated Teller Machine (ATM) (q49) and the information is published timely through the reports (q17) have the highest correlation with factor-1; for factor-2, the variables Components of income statements (q4), Requirements of balance sheets (q5), Indication of cash flow statement (q6); with factor-3, Software are used to capture data (q33), Financial data in the reports are reliable (q18) and social impacts of businesses (q13) have the highest loading for the concerned factors. The variable Consistency is ensured(q40) has the highest loading for the concerned factor-4.

Table 10: Rotated component matrix for the measures of role of it in preparation of financial reports by Bank-I

Items	Component or Factor			
	Factor-1	Factor-2	Factor-3	Factor-4
Debit Card(q51)	0.93			
Magnetic Ink Character Recognition (MICR) (q48)	0.91			
Automated Teller Machine (ATM) (q49)	0.87			
The information is published timely through the reports(q17)	0.62			
Components of income statements (q4)		0.93		
Requirements of balance sheets(q5)		0.93		
Indication of cash flow statement(q6)		0.57		
Software is used to capture data (q33)			0.88	
Financial data in the reports are reliable(q18)			0.72	
The social impact of businesses(q13)			0.66	
Consistency is ensured(q40)				0.80
Eigenvalues	3.07	2.46	1.92	1.41
% of Variance	27.87	22.37	17.43	12.82

Source: Compiled from primary data by SPSS version: 22, Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 7 iterations

It has been found from the examination of above Table that four factors have been formed on the basis of inherent relationship between the variables lying in each of three factors. Accordingly, they have provided bases for conceptualization of different dimensions. On the basis of conceptualization, four factors have been identified and it can be named as Factor-I: Improved IT Product Outcome Based Report; Factor-II: Standard Financial Components Based Report; Factor III: Satisfactory Software Base Information and Factor IV: Information Consistency. The ranking of the factors indicates that improved IT product outcome-based report to be the

most influential factor which actually reflects the role of IT in preparation of financial reports by the bank-I.

The highest loading for each of the four factors Factor-1, F a c t o r - 2 , Factor-2, and Factor-4 can be selected as Debit Card (q51), Components of income statements (q4), Software are used to capture data (q33) and Consistency is ensured (q40) as the surrogated variables respectively.

Table 11: Rotated component matrix for the measures of role of it in preparation of financial reports by Bank-II

Items	Component or Factor			
	Factor-1	Factor-2	Factor-3	Factor-4
Debit Card(q51)	.943			
Automated Teller Machine (ATM)(q49)	.887			
Automated clearing house (ACH)(q52)	.877			
Magnetic Ink Character Recognition (MICR)(q48)	.831			
Accurate Economic assets and liabilities (q8)		.825		
Capacity to earn profits predictions is clear (q9)		.741		
International trades (q26)		.731		
Information is credible (q41)		.713		
Branch banking is not a major factor (q22)			.878	
Identified Key Performance Indicators (KPIs) (q42)			.819	
Automated data are more accessible(q37)				.979
Eigenvalues	3.361	2.345	1.777	1.111
% of Variance	30.556	21.323	16.151	10.098

Source: Compiled from primary data by SPSS version: 22, Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 7 iterations

Table 11 makes it more comprehensible that different variables are related to different factors. Here, we find the depiction of the rotated component matrix for the measures of role of IT in preparation of Financial Reports by Bank-II. This table further reveals that how data can be diminished through rotation and how it improves explain ability of the influential variables' function over the selected respondents regarding perceived satisfaction about the role of IT in preparation of financial reports by the bank Janata. It is found that variables Debit Card (q51), Automated Teller Machine (ATM) (q49), Automated Clearing House (ACH) (q52) and Magnetic Ink Character Recognition (MICR) (q48) have the highest correlation with factor-1; the variables that have the highest correlation with factor-2 are Accurate Economic assets and liabilities (q8), Capacity to earn profits prediction is clear (q9), International trades (q26), information is credible (q41). Furthermore, the variables Branch banking is not a major factor (q22) and Identified Key Performance Indicators (KPIs) (q42) have



the highest loading for factor 3, and lastly the variable that has the highest association with factor 4 is Automated data are more accessible (q37).

From the illustration of above table four factors can be framed based on inherent relationship between the variables under each factor. Here, they are acting as the basis of conceptualization of different dimensions. Based on this, four factors can be identified which are named as Factor-I: Well-furnished IT Product Outcome Based Report; Factor-II: Observed Objectives of Financial Statements; Factor III: Less Need of Branch banking and IT's benefits in financial reports, and Factor IV: Accessibility of Automated Data. The sequencing of the factors indicates that well-furnished IT product outcome-based report is the most influential factor which actually conveys the role of IT in preparation of financial reports by Bank-II. Here we see that the highest correlations for each of the four factors are Debit Card (q51), Accurate Economic assets and liabilities (q8), Branch banking is not a major factor (q22), Automated data are more accessible (q37) that can be termed as the surrogated variables respectively.

Table 12: Rotated component matrix for the measures of role of it in preparation of financial reports by Bank-III

Items	Component or Factor		
	Factor-1	Factor-2	Factor-3
Accurate state of economic assets and liabilities(q8)	.801		
Statement of retained earnings (q7)	.784		
The financial data are complete(q16)	.783		
Capacity to earn profits predictions is clear (q9)	.751		
Data Consistency is ensured(q40)	.726		
Automated data are more accessible(q37)	.524		
Society for Worldwide Inter-Bank Financial Telecommunication (SWIFT)(q47)		.927	
Real Time Gross Settlement (RTGS)(q53)		.897	
Electronic Funds Transfer (EFT)(q46)		.889	
Use of word processing software by the accountants (q31)			.859
Indication of cash flow statement (q6)			.722
Eigenvalues	3.368	3.018	1.688
% of Variance	30.619	27.435	15.348

Source: Compiled from primary data by SPSS version: 22, Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 7 iterations

From Table 12, it can be perceived more clearly that different variables are related to different factors. It further depicts the rotated component matrix for the measures of role of IT in preparation of Financial Reports by Bank-III. Here, we also see that how rotation helps to shorten data and thus elevates explain ability of the influential variables' function over the selected

respondents regarding perceived satisfaction about the role of IT in preparation of financial reports by the bank SCB. It is found that variables Accurate state of economic assets and liabilities (q8), Statement of retained earnings (q7), the financial data are complete (q16), Capacity to earn profits predictions is clear (q9), Data Consistency is ensured (q40), Automated data are more accessible (q37) have the highest correlation with factor-1; the variables that have the highest correlation with factor-2 are Society for Worldwide Inter-Bank Financial Telecommunication (SWIFT) (q47), Real Time Gross Settlement (RTGS) (q53) and Electronic Funds Transfer (EFT) (q46). Lastly, the variables that have the highest association with factor 3 are Use of word processing software by the accountants (q31) and Indication of cash flow statement (q6).

The above Table reveals that three factors can be made based on inherent relationship between the variables under each factor. Here, they are providing the basis of conceptualization of different dimensions. Based on this, three factors can be determined which are named as Factor-I: Observed Objectives of Financial Statements and IT's Benefits in Financial Reports; Factor-II: Well-furnished IT Product Outcome Based Report; and Factor III: Use of Software and components of Financial Report. This chronology of the factors imparts that Observed Objectives of Financial Statements and IT's Benefits in Financial Reports is the most influential factor which actually conveys the role of IT in preparation of financial reports by Bank-III.

Here, the highest associations for each of the three factors are Accurate state of economic assets and liabilities (q8), Society for Worldwide Inter-Bank Financial Telecommunication (SWIFT) (q47), Use of word processing software by the accountants (q31) that can be termed as the surrogated variables respectively.

From Table 13, we can discern more clearly that different variables are associated with different factors. It also reveals the rotated component matrix for the measures of role of IT in preparation of Financial Reports by Bank-IV. Furthermore, it explains how rotation can minimize data and thus enhances intelligibility of the influential variables' function over the selected respondents regarding perceived satisfaction about the role of IT in preparation of financial reports by the bank PB. It can be observed that variables Automated Teller Machine (ATM) (q49), Society for Worldwide Inter-Bank Financial Telecommunication (SWIFT) (q47), credit cards (q50), Magnetic Ink Corrector Recognition (MICR) (q48), Electronic Funds Transfer (EFT) (q46), debit card (q51) are mostly associated with factor-1; the variables Transactions are recorded automatically (q23), investment opportunity (q25), international trades (q26), use of word processing

software to prepare reports, billing, memos, and financial statements (q31) are associated with factor-2, and the variables Accurate state of economic assets and liabilities (q8), statement of retained earnings (q7), information is credible (q41) have the highest association with factor 3. Lastly, the variables that have the highest correlation with factor 4 are liquidity and cash requirements are clearly shown (q12), and the financial information are relevant (q15).

Table 13: Rotated component matrix for the measures of role of it in preparation of financial reports by Bank-IV

Items	Components or Factor			
	Factor-1	Factor-2	Factor-3	Factor-4
Automated Teller Machine (ATM)(q49)	.886			
Society for Worldwide Inter-Bank Financial Telecommunication (SWIFT)(q47)	.882			
Credit Cards(q50)	.872			
Magnetic Ink Character Recognition (MICR)(q48)	.867			
Electronic Funds Transfer (EFT)(q46)	.863			
Debit Card(q51)	.754			
Transactions are recorded automatically(q23)		.798		
Investment opportunity (q25)		.790		
International trades (q26)		.756		
Use of word processing software to prepare reports, billings, memos, and financial statements(q31)		.710		
Accurate state of economic assets and liabilities(q8)			.869	
Statement of retained earnings (q7)			.770	
Information is credible (q41)			.623	
Liquidity and cash requirements are clearly shown (q12)				.839
The financial information is relevant(q15)				.801
Eigenvalues	4.591	2.662	2.288	1.941
% of Variance	30.606	17.746	15.256	12.939

Source: Compiled from primary data by SPSS version: 22, Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 7 iterations

This Table further depicts that four factors can be comprised based on inherent relationship between the variables under each factor. Additionally, they are presented as the basis of conceptualization of different dimensions. Based on this, four factors can be identified which are named as Factor-I: Well-furnished IT Product Outcome Based Report; Factor-II: Core banking's Tools and Techniques; Factor III: Assets and Liabilities' Real State and Components of Financial Reports; and Factor IV: Observed Objectives of Financial Statements and Relevancy of information. This order of the

factors conveys that Well-furnished IT Product Outcome Based Report is the most influential factor which notifies, in real sense, the role of IT in preparation of financial reports by Bank-IV.

However, the highest associations for each of the four factors include Automated Teller Machine (ATM) (q49), Transactions are recorded automatically (q23), Accurate state of economic assets and liabilities (q8), and liquidity and cash requirements are clearly shown (q12) that can be identified as the surrogated variables respectively.

Table 14: Pearson correlations analysis

Items	OVM	BAS	IFRS	TDIS
OVM	1	0.566**	0.059	0.677**
BAS	0.566**	1	0.025	0.207**
IFRS	0.059	0.025	1	0.144*
TDIS	0.677**	0.207**	0.144*	1

Source: Field Survey; derived from Table No 5.13 N= 240, \*\* At the 0.01 level (2-tailed), the correlation is significant. At the 0.05 level, the correlation is significant (2-tailed).

The association between the perceived scores of overall mean satisfaction levels (OVM) and each of the perceived satisfaction scores of Bangladesh Accounting Standard (BAS), International Financial Reporting Standard (IFRS), and Trust on Disclosure Systems (TDS) provided by respondents of the selected commercial banks in Bangladesh is shown in this table. The degree of association in the case of BAS (0.566\*\*) and TDIS (0.677\*\*) indicates a substantial relationship between the perceived scores of overall mean satisfactions, but not in the case of IFRS (0.059).

## 6.2. Summary of the findings

According to the results of the research, the respondents' opinions on all twenty-nine items of the questionnaire differ significantly. So, from the respondents' viewpoints different variables for different banks are to be taken care of.

Regarding the banks some dominant factors for each bank have been identified which are very much influential. The banks are doing well in this sector. These factors are called the life blood of the banks which has brought the banks to this good position in the industry. So, this level of standards is to be hold by the banks by maintaining the status of these identified variables

For Bank I:

- a. It is found that the transactions of debit card of the customer are properly reflected in the reports prepared by the bank.

- b. Income statement is a vital part of FRs. Investors are customers who are very much keen regarding this section as it helps them to have idea about the income generated. This is properly shown in case of AB as per the view of the respondents.
- c. In this modern age everything of a bank is managed by applying IT. In the same way data are also captured by IT which is done by bank-I.
- d. Data must be consistent in the database so that an inter relationship is maintained. AB ensures the consistency of data

Bank II:

- a. It is found that the transactions of debit card of the customer are properly reflected in the reports prepare by the bank.
- b. Accuracy of Economic assets and liabilities is utmost important which is properly presented in the reports of JB.
- c. The branch performances are detailed in the reports.
- d. Data accessibility is ensured by the concerned person.
- e. Accuracy of Economic assets and liabilities is utmost important which is properly presented in the reports of bank-II
- f. The Society for Worldwide Interbank Financial Telecommunication (SWIFT) facilitates a large number of international transactions each year, which are provided as actual data.

Bank III:

- a. Automated Teller Machine has assured the withdrawals or deposit of money without visiting the branch. It has become very much popular as it saves time and hazard. It is reported with so importance in the report.
- b. Transactions are recorded automatically in the banks database so there is no chance of manipulation. So, it has a great importance to the stakeholders as they get proper scenario of the transaction whether there is any unauthorized transaction so the real transaction records are reported as it is.
- c. Accuracy of Economic assets and liabilities is utmost important which is properly presented in the reports.
- d. Liquidity and cash requirements reflect the economic health of any banks which is clearly shown.

Bank IV:

- a. Accuracy of Economic assets and liabilities is utmost important which is properly presented in the reports of bank-IV

- b. A lot of foreign transactions are occurred yearly through Society for Worldwide Inter-Bank Financial Telecommunication (SWIFT) which are presented as actual figures.

Findings from the respondent's view

- a. There is a knowledge gap between business and IT people, reporting needs accounting knowledge and business people also need technical knowledge for the better understanding of the Information System, its input and generated output so that they can check and balance.
- b. Traditionally the top level managements are suffering from the shortcomings of idea about technology.
- c. As the trend of automation is new so there is no available banking software in the local market
- d. There is a lack of in-house software developing team in the Banks.
- e. For realizing the benefit of any Information system, it is necessary to get the system user frankly.
- f. Appropriate training is not given to the system people.
- g. Hardware software infrastructures are not standard.
- h. It's a precondition to share sufficient information for optimizing the benefits of information system but due to the conservative mentality to disclose information full benefit from the system can't be gained.
- i. Traditional customers are reluctant to receive automated service which demotivates the banks to transform the old systems.
- j. There is risk of hacking and security breach.

Provided suggestions for overcoming the problems stated above.

- a. It is necessary to arrange training and correspondence among business and IT people frequently.
- b. More technical personnel in the IT departments of banks should be appointed.
- c. Seminars should be arranged with the seniors frequently.
- d. Dependency on using foreign software should be abolished.
- e. Data should be collected in accurate way.
- f. Sophisticated system security should be introduced.
- g. Database administrator should be given training.
- h. Technology friendly data collection system should be introduced.
- i. Data amalgamation and sorting should be done.

Based upon the findings, it is clear that the study came up with a lot of significant implication for various types of stakeholders like bankers,

customer, government, employees, regulatory authorities. The bank management will get policy designing ideas as per the issues like system security and employee training needs. The employees of different organizations (Khan, Ali, & Arefeen, 2014) as well as the commercial banks will be aware of the IT training need assessment to be used to with system and render technical services to the customers (Khan & Ali, 2012; Khan, Toy, & Siddique, 2010). They will also be expert in addressing risk and take measure accordingly. The compliance authority has scope to improve the centralization process and monitoring the whole sector through IT based system. NBR and other agencies of government will be using the reports for various crucial financial information. It will help the investors to make investment decision by having crucial information timely, and in precise format.

## **7. Conclusion**

The computerized reporting system has proved to be effective in providing information regarding the financial position of an entity in a timely and efficient manner. Computerized reporting system also enables data to be available instantly and be made available to different users in different locations at different time zone. Moreover, we live in the age of science and enjoy the new discoveries of science through technology. Computer has high speed processing logic that turned it into technology. However, some qualities of information that are needed to produce quality reporting for business are accuracy, timeliness, completeness, reliability etc. The study recommended that computerized accounting system actually has a positive impact on the quality of financial reports for publication purposes.

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