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## Article

# The profitability of islamic banks and voluntary disclosure: Empirical insights from Yemen

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## FINANCIAL ECONOMICS | RESEARCH ARTICLE

# The profitability of Islamic banks and voluntary disclosure: empirical insights from Yemen

Eissa A. Al-Homaidi<sup>1\*</sup>, Mosab I. Tabash<sup>2</sup> and Anwar Ahmad<sup>2</sup>

**Abstract:** This study aims to empirically examine the relationship between the extent of voluntary disclosure level and profitability of Yemeni Islamic banks. This article adopted a self-constructed disclosure index, composed of 266 items, to measure the level of voluntary disclosure information and its association with the profitability of 30 annual reports of Yemeni Islamic banks, over a ten-year reporting period from 2005 up to 2014. The results with regard to return on assets (ROA) show that background about the Islamic bank, corporate governance information, corporate social disclosure, bank size, and bank age have a negative and significant relationship with return on assets. Concerning return on equity (ROE), the outcomes reveal that background about the Islamic bank, financial ratios, corporate governance information, corporate social disclosure, zakat information, and bank size have a negative and significant effect with return on equity. With respect to profit after tax (PAT), the results indicate that background about the Islamic bank, corporate social disclosure, and bank age has a negative and significant effect with profit after tax. The research mentions that regulatory bodies and managers should develop a guideline for disclosure of information to enhance the relationship between disclosure and profitability among Yemeni Islamic banks, leading to reasonable economic decision-making. This article provides important insights into the largely unexplored voluntary publication of Islamic banks' annual reports in Yemen. The research also

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Eissa A. Al-Homaidi is currently a Ph.D. research scholar in the Commerce Department, Aligarh Muslim University, India. His research interests include financial reporting, financial performance, disclosure, corporate governance, and Islamic finance. He has published several papers in high-level journals indexed in Scopus publisher.

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### PUBLIC INTEREST STATEMENT

This article examines the link between the level of voluntary disclosure and Islamic banks' profitability in Yemen over the period 2005–2014. Different analytical models are used to test the impact of voluntary disclosure level on attributes of profitability. The results with regard to ROA show that background about the Islamic banks, corporate governance information, corporate social disclosure, bank size, and bank age have a negative and significant relationship with ROA. Concerning ROE, the outcomes reveal that background about the Islamic banks, financial ratios, corporate governance information, corporate social disclosure, zakat information, and bank size have a negative and significant effect with ROE. This article considers the first empirical study in Yemen that examines the link between voluntary disclosure and banks' profitability.

represents the first empirical inquiry into the correlation in the context of Yemen between the rate of voluntary disclosures and the attributes of profitability.

**Subjects: Corporate Finance; Banking; Business, Management and Accounting**

**Keywords: Islamic banks; voluntary disclosure; profitability; panel data; Yemen**

## 1. Introduction

The banking system represents the country's economic safety. The success of a country's economy depends mainly on the financial system's performance and quality, which in turn depends on a sound banking system and solvents (Parab & Patil, 2018). Banks have traditionally played a role in accepting deposits and lending funds. Banks have been borrowing and borrowing money to companies, industry, and people for decades, charging interest on loans and paying the interest on deposits (Hull, 2012). Banks act as brokers in this concept among securities supply and demand, Short-term investments are converted into especially for long-term loans. One of the banks' main difficulties is the lack of ability to repay the bonds at the right times. Banks were thus faced with many risks of loaning money and paying the obligation. Banks collect specialized information on financial instruments to develop investment decisions and manage risk (Gestel & Baesens, 2009). Islamic financing is recognized as one of the largest growing systems and has gained universal acceptance as a result of this development (Abdou et al., 2014). Islamic banks have demonstrated their benefits for economic growth and stability, particularly in the Middle East (Tabash & Anagreh, 2017).

The company's performance plays an important role in the economic development of countries. Yemen's banking sector is one of the country's main tools of economic growth. Its role in funding other sectors is undoubtedly important (Sapuan et al., 2013). Yemen's banking system is known as the economy's foundation and also plays a splendid role in the country's various economic operations. To any economy, finance is like blood. It is important for a society's socio-economic development. Economic performance is a subjective assessment of how well a company can use and generate revenue from assets from its primary business mode. There are several different ways of determining profitability, but in aggregate, both measures should be taken. In calculating a commercial bank's efficiency, line items such as loans and advances, deposits, total interest income, total interest expenditures, other costs, and other metrics are used. (Kimutai, 2014). Islamic banking has operated in Yemen Since 1995. 17 banks are operating in Yemen (Islamic and traditional). Of the 17 banks, only 5 are Islamic Shariah-based banks as well as the other 12 are traditional (income-based) financial institutions. (Yahya et al., 2017). The main aim of this analysis is to examine the association between the level of voluntarily disclosure and profitability of financial institutions in Yemen for the period from 2005 to 2014.

The remainder of the investigation is structured as follows. The next section describes the review of literature in general, and especially studies that looked from an Islamic perspective at the level of voluntary disclosure. Section 3 presents the research methodology of the current investigation. Section 4 discusses data analyses and results of the present research. Finally, Section 5 shows the conclusion and recommendations of the current study.

## 2. Literature review

Islamic finance is seen as an alternative to traditional (Western) finance and in recent years has caught the attention of many scholars and investors. Since 1970, it has become increasingly popular and has grown significantly over the years (Cevik & Charap, 2011). Moin (2008) classifies Islamic banking as a financial system ruled by Islam's ethics and value system. The regulations on corporate governance and risk assessment are laid down in Islamic Shariah or Islamic values.

Wajdi Dusuki (2008) explains that Islamic banking sector also includes banks selling services and products that are consistent with the Islamic principle. This provides access to finance for individuals and businesses with religious issues and thus provides financial providers to a general

population (Musleh Al-Sartawi & Sanad, 2019). Hassoune (2002) indicated that Islamic banks work on a profit-sharing or loss-sharing basis compared to traditional interest-based bank activities. He also contrasted the performance of ROA and ROE for Islamic and traditional banks in 3 GCC countries, Qatar, Saudi Arabia and Kuwait. He said since Islamic banking is focusing on benefit and loss distribution, administration should generate sufficient returns for investors because they are not prepared to accept any returns.

Bashir (2003) proposed that international banks may be successful. The regression results showed that indirect and direct taxes affect bank efficiency and performance, while favorable macroeconomic conditions have a positive effect on performance indicators. Findings showed that stock markets and financial institutions supplement each other. Azhar Rosly and Afandi Abu (2003) revealed the claim that Islamic banking, which thrives on interest-like components (credit financing), is less probable to outperform the efficiency of mainstream banks. While Islamic credit finance items may have met Shariah rules, their absence of ethical content is not supposed to motivate IBS banks to strive for productivity through economies of scale and scope. Haron (2004) found that bank-specific factors such as liquidity, overall investment, funds deposited in Islamic bonds and the proportion of the ratio of profit-sharing between the bank and the lender of funds are highly correlated with the amount of total revenue earned by Islamic banking. M. K. Hassan and Bashir (2005) showed that the development of the financial market and the concentration of the market have a strong positive influence on profitability determination. Inflation reported a strong positive effect on the profitability of Islamic banks from the macroeconomic variables, which demonstrated the different nature of Islamic and conventional banks.

Majid and Ismail (2008) reported that the size and funding of the Islamic Bank's annual report are important in determining the standard of transparency. Hassan and Harahap (2010) suggested that the issues of CSR are not of major concern to the Islamic banking. Akhtar et al. (2011) reported that all quantitative regression coefficients models of capital adequacy ratios showed a good relationship and were significant at a rate of 5 percent, while asset management was statistically significant in Model I and marginal in Model II with strong relationships in both models.

Bintawim and Saud (2011) showed that the size of banks harms profitability, while the use of capital has a positive impact on the competitiveness of Saudi banks. Increasing operating costs for banks also leads to higher net unique commissions and reduces ROA and ROE. Zubairu et al. (2012) found that Islamic financial institutions in Saudi Arabia currently have much more in popular with their traditional colleagues than they do with Shari'ah-based financial institutions. Amalina et al. (2013) indicated that disclosures relating to SSB and Zakat are still low, with about four banks reporting more than half of the SSB Index.

Darmadi (2013) demonstrated that Bank Muamalat and Bank Syariah Mandiri, the two largest and oldest Islamic financial institutions in the country, score higher than their peers. It is found to be good to report sample banks on certain measurements, such as board members and risk management. Furthermore, transparency tends to be weak in internal control and board committees. Ullah (2013) supported to increase the level of compliance to make their report more comprehensive and to reassure investors that they are doing their company by regulatory bodies' laws and regulations. Ben Slama Zouari and Boulila Taktak (2014) indicated that control is concentrated at 49% and also that the overall shareholder is institutional for 41 banks from the entire sample. Abdullah et al. (2014) stated that the amount of Islamic banking that follow corporate governance reporting in financial statements is below 50%. This research also discovered that the paired characteristics of CG and Shariah Supervisory Board (SSB) were positively linked to the transparency of voluntary CG. Furthermore, the voluntary CG disclosures are shown to be adversely linked to the degree of political and civil oppression, but the calculation and code law country, are favorably linked to voluntary CG disclosures.

Al-Damir (2014) indicated that ROE has beneficial and important relationships with management efficiency, loan and GDP. The researchers also found positive and statistically significant asset management and capital with ROA, ROE, and NIM. Inflation has had a positive impact on the productivity of banks as evaluated by ROA and NIM. Ahmad and Ben Daw (2015) suggested that the degree of accordance by the Fashlowm Islamic branch of the Gumhouria Bank with the AAOIFI guidelines for particular demonstration and transparency in the accounts was found to be weak, with a mean of 35.5 percent compliance. Abdullah et al. (2015) notified that the international discussion on the need for Islamic banks to reform corporate governance by offering insights into the role of corporate governance frameworks in promoting increased disclosure in Islamic banks' annual reports.

Harun (2016) Said that factors and implications of disclosure of CSR in the Islamic banks' sample were studied. The regression analysis showed a very weak extent of CSR disclosure among the Islamic banks' sample (39.9%). Rahman et al. (2016) found that size of the board, the Supervisory Board of Shari'ah (SSB) and the investment account holders may have a significant impact on the rate of reporting in Islamic banks. Amran et al. (2017) disclosed that the disclosure of Islamic banks' corporate social responsibility has generally increased in both Malaysia and Indonesia. More precisely, it has been shown that the workplace and group dimensions are the most commonly disclosed areas in both countries by Islamic banks. The main factors accountable for decreasing credit risk, increasing efficiency and achieving flexibility for Islamic financial institutions were discovered to be capital adequacy and bank size. They also found that, except for inflation, macroeconomic indices are capable of improving the stability of Islamic banks (Trad et al., 2017). Yahya et al. (2017) found that operating performance and investment risk have been shown to have a negative and important ROA and ROE association. The results indicated a negative and insignificant link in the Islamic banks of Yemen between capital adequacy and ROA and ROE. The connection among online disclosure forms (OFD) and performance of Islamic banking have been studied in the Gulf Cooperation Council (GCC) countries. The findings show that the total OFD of Islamic banks in the GCC is 72.5 billion and a negative and insignificant OFD-profit link (Al-sartawi & Reyad, 2019). Table 1 summarizes important studies related to Islamic banks.

According to previous studies, we have formulated the hypotheses to assess the extent of the Yemeni Islamic banks' voluntary disclosure level and its relationship with profitability to achieve the aims of this analysis.

H01. There is no significant association between background about the Islamic bank (BACG) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.

H02. There is no significant association of financial ratio (FPR) on profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.

H03. There is no significant association between corporate governance information (CGI) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.

H04. There is no significant association between financial statements information (FSI) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.

H05. There is no significant association between corporate social disclosure (CSD) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.

H06. There is no significant association between zakat information (ZAK) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.

**Table 1. Studies Related to Islamic Banks**

Author	Size/Country	Data	No. of Disclosure Items	Time limit	Analysis Techniques Used
Hassan and Harahap(2010)	7 Islamic banks/seven countries	Secondary	78 Items	2006	1-Content Analysis
Ahamed, 2017	6 Islamic banks/Indonesia and Malaysia	Secondary	78 Items	2007–2011.	1-Content Analysis 2-Disclosure Index
Farook, Kabir Hassan and Lanis. (2011)	47 Islamic banks	Secondary	32 Items	2007	1-Regression Analysis 2-Descriptive Statistics
Inten and Dewi(2017)	14 Islamic banks/Indonesia and Malaysia	Secondary	43 Items	2010–2014	1-Z test 2-ISR index 3-Content Analysis
Darmadi, 2013	7 Islamic Banks/Indonesian	Secondary	72 Items	2010	1-Content Analysis
Harun (2016)	39 Islamic banks/GCC (Gulf Countries Council)	Secondary	-	2010–2014	1-Content Analysis 2-OLS Regression 3-Disclosure Index
Ullah, 2013	7 Islamic banking/ Bangladesh	Secondary	203 Items	2011	1-Average, Percentage, 2-Standard Deviation, 3-Co-Variance
Abdullah et al., 2014	67 Islamic banks/Southeast Asian and the GCC	Secondary	81 Items	2009	1-Descriptive Statistics 2-Multiple Regression
Rahman et al., 2016	21 Islamic banks/Bahrain and Malaysian	Secondary	78 Items	2007 to 2011	1-Ethical Identity Index 2-Regression
Wardayati and Wulandari (2014)	10 Islamic banks/Indonesia and Malaysia	Secondary	-	2010–2012	1-Content Analysis 2-t-test/ Mann -Whitney.
Rini, 2014	33 Islamic Banks/Indonesia	Primary	24 questions with 8 dimensions	2011	Null
Ahmad & Ben Daw, 2015	Islamic banks/Libyan Islamic banks	Primary and Secondary	-	2010 to 2013	1-Content Analysis. 2-Questionnaire
Srairi(2015)	27 Islamic banks/five Arab Gulf countries.	Secondary	-	2011–2013	1-Content Analysis 2-Disclosure Index

H07. There is no significant association between other information (OTH) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.

H08. There is no significant association between bank size (BSIZE) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.

H09. There is no significant association between bank age (BAGE) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.

### 3. Research methodology

#### 3.1. Sample selection

In the published annual reports of Yemeni Islamic banks, this analysis will examine the effect of voluntary disclosure rate on profitability. The research is confined to the financial statements published between 2005 and 2014. It covers the entire published yearly report that normally includes financial statements, income statement, cash flow statement, the report of the board of directors of financial institutions and other financial data in Islamic Yemeni banks during that period. In addition, the study assesses the influence on profitability of seven groups of voluntary disclosure items in Yemeni Islamic banks' annual reports.

The Multivariate Ordinary Least Square (OLS) regression model is applied to investigate the extent of voluntary information disclosure in the published annual reports of Yemeni Islamic banks and to study its association with banks' profitability. In addition, the quantitative analysis was conducted to analyze and interpret the data of financial statements of Yemeni Islamic banks. The population of the study consists of 5 Islamic banks in Yemen during the period from 2005 up to 2014.

Three Islamic institutions (Tadhamon International Islamic Bank, Saba Islamic Bank and Shamil Bank of Yemen and Bahrain) have been selected as a sample of this study based on two criteria: information and banks should not be available from the commercial sector. While two banks were excluded from the sample because the data is not available which are (e.g., Alkuraimi Islamic microfinance bank and Investment (2010) and Islamic Bank of Yemen for Finance and Investment (1995)). The main aim of this study is to investigate the impact of voluntary disclosure on the profitability of Islamic banks over the period 2005–2014. The researchers develop a framework as known in Figure 1:

#### 3.2. Measurements of variables

##### 3.2.1. Dependent Variable

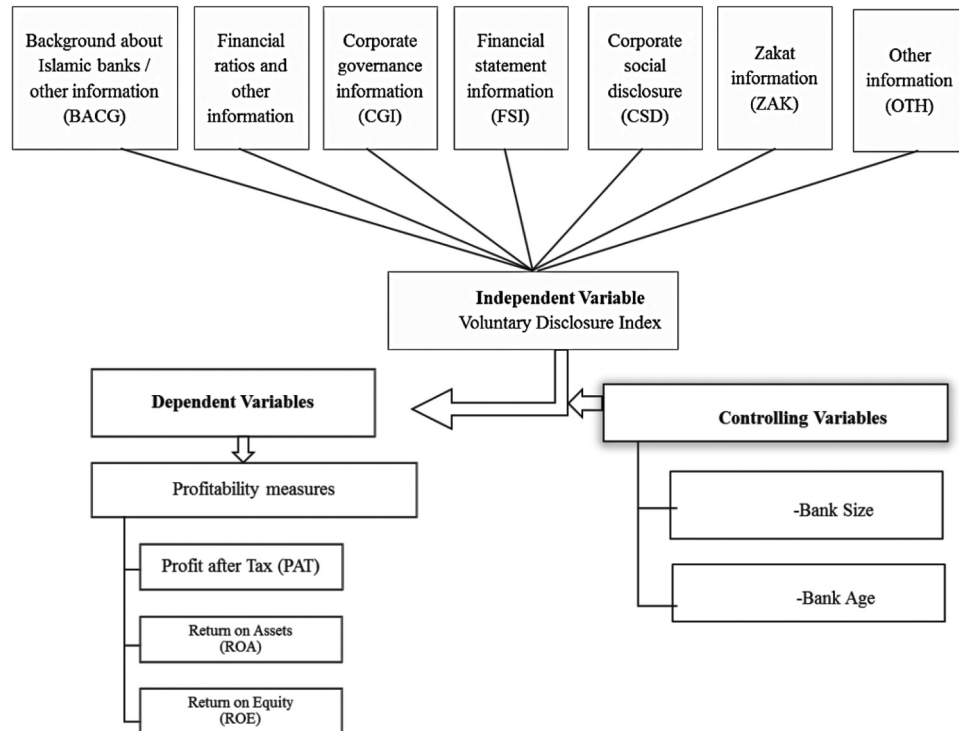
Dependent variables are measured by three variables which are (ROA, ROE, and PAT). Previous studies used different proxies to evaluate profitability. For example, Bouzgarrou et al. (2017), Finger et al. (2018), Olson and Zoubi (2017), Ozili and Uadiale (2017), Peng et al. (2017), Robin et al. (2018), Chen et al. (2017), and Javaid and Alalawi (2018) are using ROA and ROE as measures for profitability calculation, Further, Kumari and Pattanayak (2017) used profit after tax (PAT) as indicator for calculating profitability in different countries. This study measures performance by using three proxies as.

3.2.1.1. *Return on Assets (ROA)*. Return on assets (ROA) is the main test of the performance ability of financial institutions. ROA is described as a percentage ratio of net after-tax profits to total assets. The theology on bank profitability suggests that return on assets (ROA) represents management's capacity to use financial and actual expenditure to generate income (e.g., Naceur, 2003; Pasiouras & Kosmidou, 2007; Rivard & Thomas, 1997). This is a measure of the productivity and operating quality for each dollar invested capital (Pasiouras & Kosmidou, 2007). It is measured as follow:

$$\text{ROA} = (\text{Net Profits after Tax} / \text{Total Assets})$$



**Figure 1. Framework of the study.**



3.2.1.2. *Return on Equity (ROE)*. This article uses the ROE as an alternate indicator of profitability. That is a percentage ratio of net profits to assets. Return on equity (ROE) represents how its equity capital is used successfully by bank management. The level of leverage or equity ratio (equity/asset) may influence the ROE of a bank (Demirgüç & Huizinga, 1999). Morekwa Nyamongo and Temesgen (2013) assessed the influence of corporate governance on asset return (ROA) and equity return (ROE) of 37 institutions in Kenya throughout the 2005–2009 period.

$$ROE = (\text{Net Profits after Tax} / \text{Total Equity})$$

3.2.1.3. *Profit after Tax (PAT)*. After-tax profit (PAT) is a ratio of profitability defined by dividing net profit by income after taxes. It is the net amount gained by a company after deduction of all tax-related expenses. Profit after tax is always a better indication of what a company receives and can, therefore, be used in its activities than its total income.

$$PAT = (\text{Net Income} - \text{Dividends on Preferred Stock}) / \text{Average Outstanding Shares}.$$

### 3.2.2. Independent variables

Independent indicators of the current investigation examined by voluntary information disclosure groups which are ((A) background about the Islamic bank/general information; (B) financial ratios and other information; (C) corporate governance information; (D) financial statements information; (E) corporate social disclosure; (F) zakat information, and (G) other information). Table 2 gives a summary of voluntary information categories.

### 3.2.3. Controlling variables

3.2.3.1. *Bank Age*. The bank's age is a control factor used in the model, often calculated by the number of years since it was established. Old banks are generally assumed to be more

**Table 2. Voluntary Information Categories**

Category	Number of Information Items	%	References
(A) Background about the Islamic banks/general information	19	7.14	(Hossain, 2008), (Hossain& Hammami, 2009), (Kribat, 2009), (Al-Shammari, 2013), (Barros, Boubaker, & Hamrouni, 2013), and (A. A.-M. M. Hawashe, 2014).
(B) Financial ratios and other information	24	9.03	(Harahap, 2003), (Hossain & Taylor, 2007), (Hossain, 2008), (Hossain & Hammami, 2009), (Kribat, 2009), (Al-Shammari, 2013), (Barros, Boubaker, & Hamrouni, 2013), and (A. A.-M. Hawashe, 2016).
(C) Corporate governance information	72	27.06	(Harahap, 2003), (Hossain, 2008), (Hossain & Hammami, 2009), (Kribat, 2009), (Al-Shammari, 2013), (Darmadi, 2013), (Rahman & Bukair, 2013), (Barros, Boubaker, & Hamrouni, 2013), (Srairi, 2015), (A. A.-M. M. Hawashe, 2014), and (A. A. Hawashe, 2016).
(D) Financial statements information	110	41.34	(Harahap, 2003), (Hossain, 2008) (Kribat, 2009), and (A. A.-M. M. Hawashe, 2014).
(E) Corporate social disclosure	10	3.76	(Hossain, 2008), (Hossain & Hammami, 2009), (Al-Shammari, 2013), (Barros, Boubaker, & Hamrouni, 2013), and (A. A.-M. M. Hawashe, 2014).
(F) Zakat information	16	6.02	(Harahap, 2003), (Al-Shammari, 2013), and (Rahman & Bukair, 2013).
(G) Other information	15	5.65	(Hossain & Taylor, 2007), (Hossain, 2008), and (Hossain & Hammami, 2009).

competitive than newly created banks because of their knowledge and their strength. A bank's age is a proxy for its public image; old financial institutions have stronger lenders relationships that reduce debt costs (Dewaelheyns & Van Hulle, 2010). In contrast, newly created banks are focused on improving their share of the market rather than enhancing productivity. Dewaelheyns and Van Hulle (2010) reported that a positive association exists among age and profitability of the bank. Moreover, an adverse age-growth connection has been recorded (Almus & Nerlinger, 1999).

**3.2.3.2. Bank Size.** The bank's size is perceived to be an essential output determinant. Of course, a large size could lead to economies of scale that will lower the cost of information collection and storage (Boyd & Runkle, 1993). Moreover, the impact of size could be negative for enormous banks

due to agency costs, administrative and other costs associated with the management of extremely large companies (Pasiouras & Kosmidou, 2007). They have used the total asset logarithm to capture the ability of size-like multi-linear impact (Athanasoglou et al., 2008; Ben Selma Mokni & Rachdi, 2014). Number of studies revealed a positive connection between the size of the company and the extent of voluntary disclosures (e.g., Abeywardana & Panditharathna, 2016; Alturki, 2014; Efobi Uchenna et al., 2013; Haji & Ghazali, 2013). Many research found that voluntary disclosure was not significantly negative (Aljifri et al., 2014). Also, The size of the company was also positive and important with the rate of transparency (e.g., M. H. H. Mgammal, 2011; M. H. Mgammal, 2017). Zelenyuk et al. (2017) reviewed a specific corporate feature illustrating the level of voluntary disclosure of information in Nigeria. Results revealed that: The firm's size has a favorable declining effect on voluntary disclosure of information. Alanezi (2009) suggested that an annual report on the Web is significantly influenced by the size of the company.

### 3.3. Measurements of the Study Variables

The following Table 3 summarizes measurement of the indicators of the current investigation:

### 3.4. Scoring the Voluntary Information Disclosure Items

In developing scoring disclosure index, the approach by Cooke (1989) mentioned that there were two techniques to determine the financial disclosure level index, notably weighted and unweighted. According to previous studies, we found two primary methods for designing a rating scheme to assess the transparency rate which are the weighted scoring system used by (Barrett, 1977; Marston, 1986), and the approach to unweighted scoring (dichotomous scoring) used by (A. A.-M. M. Hawashe, 2014; Cooke, 1989; Hossain & Adams, 1995; Rao et al., 2016; Rouf et al., 2014). The Total Voluntary Disclosure Index Score is defined as follows for each Islamic bank per year (TVDIS) according to (Cooke, 1989):

$$TVDS = \sum_{j=1}^n \frac{dj}{n}$$

Where:

TVDS = the aggregate disclosure score for per Islamic bank;

$d_j = 1$  if the  $j$  item is disclosed or 0 if it is not disclosed; and

$n$  = the total of information items that an Islamic bank is expected to disclose.

### 3.5. Multiple Regressions

For this research, to test the connection between variables of the current examination, a multiple regression analysis is developed. The dependent variables are profitability calculated by three proxies such as (ROA, ROE, and PAT):

$$\text{Financialperformance}_{it} = \alpha_i + \beta_1 \text{BACG}_{it} + \beta_2 \text{FR}_{it} + \beta_3 \text{CGI}_{it} + \beta_4 \text{FSI}_{it} + \beta_5 \text{CSD}_{it} + \beta_6 \text{ZAK}_{it} + \beta_7 \text{OTH}_{it} + \beta_8 \text{BSIZE}_{it} + \beta_9 \text{BAGE}_{it} + \varepsilon \quad (1)$$

$$\text{ROA}_{it} = \alpha_i + \beta_1 \text{BACG}_{it} + \beta_2 \text{FR}_{it} + \beta_3 \text{CGI}_{it} + \beta_4 \text{FSI}_{it} + \beta_5 \text{CSD}_{it} + \beta_6 \text{ZAK}_{it} + \beta_7 \text{OTH}_{it} + \beta_8 \text{BSIZE}_{it} + \beta_9 \text{BAGE}_{it} + \varepsilon \quad (1a)$$

**Table 3. Measurements of the Study Variables**

Variables	Notation	Proxy/Measurement	Predicted Sign	Data source	Prior studies
<b>Dependent variables</b>					
Profitability	ROA	$ROA_{it} = \frac{\text{Net Profit}_i}{\text{Total Assets}_i}$	±	Annual reports	(Bose et al., 2017; Bouzgarrou et al., 2017; Sujane Chen et al., 2017; Djililov & Plesse, 2016; Fan et al., 2017; Ferreira, Mendonça, & Bernardo, 2018; Finger et al., 2018; Javaid & Alalawi, 2018; E. A. Al-homaidi et al., 2018; E. A. Al-homaidi et al., 2019; Al-Homaidi et al., 2019).
	ROE	$ROE_{it} = \frac{\text{Net Profit}_i}{\text{Total Equity}_i}$	±	Annual reports	(Almaqari et al., 2019; Finger et al., 2018; Fredriksson & Moro, 2014; Javaid & Alalawi, 2018; Lee & Hsieh, 2013; Louzis et al., 2012; Malichov & Mária, 2015; Olson & Zoubi, 2017; Ozili & Uadiale, 2017; Peng et al., 2017).
	PAT	PAT = (Net Income—Dividends on Preferred Stock)/Average Outstanding Shares	±	Annual reports	(Albertazzi & Gambacorta, 2010; Kumari & Pattanayak, 2017; Al-sartawi & Reyad, 2019).
<b>Independent Variables</b>					
The total voluntary disclosure index	TVDI	Disclosure index, 1 if the bank disclosed or 0 otherwise	NA	Annual reports	(Al-Shammari, 2013; Rahman & Bukair, 2013; A. A.-M. Hawashe, 2016; Darmadi, 2013; Harahap, 2003; Hossain & Taylor, 2007; Kribat, 2009; Srairi, 2015; Yuen et al., 2009).
<b>Controlling variables</b>					

(Continued)

**Table 3. (Continued)**

<b>Variables</b>	<b>Notation</b>	<b>Proxy/Measurement</b>	<b>Predicted Sign</b>	<b>Data source</b>	<b>Prior studies</b>
Bank age	BAGE	It has been in service for many years from its start until 2014	±	Annual reports	(E. A. Al-homaidi et al., 2020; Ben Selma Mokni & Rachdi, 2014; Dietrich & Wanzenried, 2011; A. -M. M. Hawashe, 2014; Kribat et al., 2013; Ben Selma Mokni & Rachdi, 2014; Raïda et al., 2017; Shi & Wu, 2017).
Bank size	BFSIZE	Natural logarithm of total assets	±	Annual reports	(Al-Homaidi et al., 2020; Köster & Pelster, 2017; Olson & Zoubi, 2017; Pasiouras & Kosmidou, 2007; Petria et al., 2015; Roman & Camelia, 2015; Soana, 2016; Shi & Wu, 2017; Trad et al., 2017).

$$ROE_{it} = \alpha_i + \beta_1 BACG_{it} + \beta_2 FR_{it} + \beta_3 CGI_{it} + \beta_4 FSI_{it} + \beta_5 CSD_{it} + \beta_6 ZAK_{it} + \beta_7 OTH_{it} + \beta_8 BSIZE_{it} + \beta_9 BAGE_{it} + \varepsilon \tag{1b}$$

$$PAT_{it} = \alpha_i + \beta_1 BACG_{it} + \beta_2 FR_{it} + \beta_3 CGI_{it} + \beta_4 FSI_{it} + \beta_5 CSD_{it} + \beta_6 ZAK_{it} + \beta_7 OTH_{it} + \beta_8 BSIZE_{it} + \beta_9 BAGE_{it} + \varepsilon \tag{1c}$$

Where, Profitability = ROA, ROE, and PAT models;  $\alpha_i$  is a constant term;  $i = 1 \dots, N$  and  $t = 1 \dots T$ , other variables presented in (Table 3).

#### 4. Data analysis and results

##### 4.1. Descriptive Statistics

The descriptive statistics used in this analysis are shown below for the dependent and independent variables. A dependent variable calculated by (ROA, ROE, and PAT) is measuring profitability, while independent variable is voluntary disclosure level which is measured by seven categories as A. background about the Islamic bank/general information, B. Financial ratios, C. Corporate governance information, D. Financial statements information, E. Corporate social disclosure, F. Zakat information, and E. Other information. To give a brief overview of our data.

Table 4 comprises inferential statistics of Islamic bank factors in Yemen between 2005 and 2014 for ten years. The results of the descriptive statistics indicate that the mean value of profitability calculated by asset return (ROA) is relatively low at 0.013 percent, and the standard deviation is 0.005 percent, suggesting that there is very small variability in the data set and similar to the average and that there is the likelihood of growing productivity in the future.

The minimum value is 0.004% while, the maximum value of ROA is 0.024%. These reveal that the Islamic banks in Yemen couldn't generate profitability from their assets and even couldn't generate their loans or financing. On the other hand, return on equity (ROE) also considered as one of the common proxies for measurements of the profitability, it shows how much profit the

Variables	Ob. No	Maximum	Minimum	Mean	Std. Dev.
ROA	30	0.02	0.00	0.01	0.00
ROE	30	0.25	0.14	0.17	0.03
PAT	30	239,890,426*	2,503,057*	13,713,339*	44,235,556*
BACG	30	0.74	0.16	0.41	0.12
FR	30	0.25	0.17	0.20	0.01
CGI	30	0.35	0.14	0.25	0.05
FSI	30	0.80	0.65	0.73	0.04
CSD	30	0.40	0.00	0.15	0.13
ZAK	30	0.40	0.27	0.31	0.05
OTH	30	0.73	0.33	0.51	0.12
BSIZE	30	23.67	16.66	18.95	1.57
BAGE	30	19	3	11.50	4.18

**Note:** ROA is the ratio of net bank income to total assets, ROE is the ratio of net profit to equity of investors, PAT is the ratio of company profit after tax, EPS is the ratio of net profit after tax to total outstanding shares (%), BACG is background of Islamic banks, FR is the financial ratios, CGI is the corporate governance information, FSI is the financial statements information, CSD is the corporate social disclosure, ZAK is the zakat information, OTH is the other information about Islamic banks, BSIZE is the ratio measured by total assets (%) and BAGE is the ratio measured by the number of years since establishment.

shareholders can generate from their shares in the bank. As it is shown above, the maximum value is 0.258% and the minimum value is 0.140%, while the mean is 0.178, and the standard deviation is 0.031%, which means that the data is slowly spread out (less reliable) from its mean. On otherwise, profit after tax (PAT) as well considered as one of the popular proxies for measuring the profitability, it reveals how much net profit earned after deducting all expenses like depreciation, and tax in the bank. As indicated above, the maximum value is 239,890,426 and the minimum value is 2,503,057, while the mean is 13,713,339, and the standard deviation is 44,235,556.

The findings from the descriptive statistics in Table 4 showed that the regression coefficient of the Islamic banks' BACG is 0.419%, with a maximum value of 0.740% and a minimum of 0.160%. FR's value is 0.206 percent with a maximum value of 0.250 percent and a minimum value of 0.170 percent with a confidence interval of 0.019. The range of corporate governance information (GGI) is approximately 0.257%, with a S.D of 0.052%, while the minimum value is 0.140% and maximum value is 0.350%, the average value of FSI, CSD, ZAK, and OTH are 0.735, 0.150, 0.313, and 0.518%, with standard deviation values are 0.047%, 0.138%, 0.057% and 0.120%, while minimum and maximum values are 0.650%, 0.000%, 0.270%, 0.330% and 0.800%, 0.400%, 0.400%, 0.730% respectively. The outcomes also indicate that the mean value of Islamic bank size is about 18.952 (as represented by log of total assets), with ranges from minimum 16.660 and maximum is 23.670, with standard deviation (1.576). The average age of Islamic financial institutions is around 12 years, with a minimum of 3 years and a maximum of 19 years from the beginning of 2005.

#### 4.2. Correlation Matrix

Correlation matrix is one of the most common and most useful statistical analyses (Field, 2005). It used to measure the association between two or more than two variables. Hauke and Kossowski (2011) stated that correlations between variables can be measured with the using of various indices (coefficients).

Table 5 shows a number of positively and negatively associations between business performance (dependent factors) and voluntarily disclosure rates in Yemen's Islamic institutions (independent variables) in terms of the financial reporting process.

Concerning return on assets (ROA), the results indicate that ROA has a negative correlation with BACG, FR, CGI, FSI, CSD, ZAK, OTH, and BAGE, while it has a positive association with BSIZE. With regard to return on assets (ROE), the findings reveal that ROE has a positive relationship with FSI, ZAK, and BSIZE, and it has a negative association with BACG, FR, CGI, CSD, OTH, and BAGE. Concerning profit after tax (PAT), the outcomes show that PAT has a positive association with OTH and BSIZE, while it has a negative correlation with BACG, FR, CGI, FSI, CSD, ZAK, and OTH. The study concluded that the extent of voluntary disclosure affects profitability in a negative direction. This may imply that the weak of voluntary disclosure in the annual reports. This also may imply that the higher the values of ROA, ROE, and PAT as profitability ratios that are generated by the banks, the less voluntary disclosure in the banks' annual report of Islamic banks working in the republic of Yemen.

Commonly, a "correlation between two independent variables of more than 0.8 or less than  $-0.8$  is a sign of multicollinearity" (e.g., Waters, 2011;; Garson, 2012). The connection among all independent indicators reveals "less than 0.8 and more than  $-0.8$  with the highest correlation between ZAK and CGI of 0.762 and the lowest correlation of  $-0.455$  between FSI and OTH".

#### 4.3. Regression Analysis

Table 6 indicates the results in this study. It shows the results of regression models that measured the profitability. The adjusted R square correlation for ROA, ROE, and PAT models are 0.81, 0.66 and 0.36 respectively which mean that the OLS regression models are capable of explaining 81%,

Table 5. Correlation Matrix

Variables	ROA	ROE	PAT	BACG	FR	CGI	FSI	CSD	ZAK	OTH	BSIZE	BAGE
ROA	1											
ROE	0.71	1										
PAT	0.48	0.21	1									
BACG	-0.44	-0.15	-0.40	1								
FR	-0.2	-0.28	-0.43	0.22	1							
CGI	-0.21	-0.02	-0.50	0.52	0.31	1						
FSI	-0.04	0.06	-0.21	0.43	0.05	0.73	1					
CSD	-0.41	-0.38	-0.25	0.26	0.33	0.16	-0.10	1				
ZAK	-0.01	0.01	-0.16	0.37	-0.00	0.76	0.70	-0.03	1			
OTH	-0.13	-0.21	0.07	-0.10	0.33	-0.39	-0.45	0.17	-0.30	1		
BSIZE	0.23	0.13	0.67	0.04	-0.41	-0.05	0.29	-0.19	0.29	-0.10	1	
BAGE	-0.43	-0.23	-0.46	0.72	0.30	0.75	0.68	0.40	0.60	-0.26	0.05	1

**Note:** ROA is the ratio of net bank income to total assets, ROE is the ratio of net profit to equity of investors, PAT is the ratio of company profit after tax, EPS is the ratio of net profit after tax to total outstanding shares (%), BACG is background of Islamic banks, FR is the financial ratios, CGI is the corporate governance information, FSI is the financial statements information, CSD is the corporate social disclosure, ZAK is the zakat information, OTH is the other information about Islamic banks, BSIZE is the ratio measured by total assets (%) and BAGE is the ratio measured by the number of years since establishment.



**Table 6. Multiples Regression Analysis**

Variables	ROA	ROE	PAT
C	0.062 (5.510)***	0.120 (2.22)**	8,353,166 (1.778)*
BACG	-0.003 (-1.880)*	-0.103 (-2.063)*	-3,760,547 (-2.138)**
FR	-0.004 (-0.680)	-0.273 (-2.37)**	-4,032,778 (-1.076)
CGI	-0.006 (-2.024)**	-0.207 (-2.094)**	-5,622,926 (-1.453)
FSI	0.055 (4.332)***	0.047 (0.302)	-5,383,100 (-0.404)
CSD	-0.002 (-2.670)**	-0.064 (-2.531)**	-1,598,530 (-2.758)***
ZAK	0.005 (1.270)	-0.227 (-2.347)**	8,887,162 (2.430)**
OTH	-0.004 (-1.429)	0.061 (1.470)	93,499 (0.035)
BSIZE	-0.001 (-2647)**	-0.007 (-3.454)***	323,417 (1.911)*
BAGE	-0.010 (-7.633)***	0.006 (4.178)***	-6,249,670 (-3.954)***
R-squared	0.88	0.78	0.58
Adjusted R-squared	0.81	0.66	0.36
Observation	30	30	30
F-statistic	13.68	6.56	2.59
Prob(F-statistic)	0.00	0.00	0.04

**Note:** \*\*\* means significant at 0.01 ( $p \leq 0.01$ ), \*\* means significant at 0.05 ( $p \leq 0.05$ ) and \* means significant at 0.10 ( $p \leq 0.10$ ). **BACG** is background of Islamic banks, **FR** is the financial ratios, **CGI** is the corporate governance information, **FSI** is the financial statements information, **CSD** is the corporate social disclosure, **ZAK** is the zakat information, **OTH** is the other information about Islamic banks, **BSIZE** is the ratio measured by total assets (%) and **BAGE** is the ratio measured by the number of years since establishment.

0.66% and 0.36% of variation in the ROA, ROE, and PAT of some selected Islamic financial institutions throughout the period of this study.

#### 4.3.1. Hypothesis ( $H_01.a$ ): Background about the Islamic Banks/general information

Pooled regression results reveal that background of Islamic banks (BACG) has a negative and significant influence on profitability measured by (ROA, ROE, and PAT). The outcomes of regression models as presented in Table 6 reveal that the coefficient of regression for the predictor variable background about the Islamic banks (BACG) is -0.003, -0.103, and -3,760,547 for the three models (ROA, ROE, and PAT) respectively. Thus, ( $H_01.a$ ): "There is no significant association between background about the Islamic bank (BACG) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen." is rejected. In short, the results can be concluded that background of Islamic banks (BACG) has a negative and significant association with profitability measured by (ROA, ROE, and PAT) in Islamic banks of Yemen.

#### 4.3.2. Hypothesis ( $H_01.b$ ): Financial Ratios and Other Information

The statistics revealed that financial ratios and other information (FR) have a negative relationship with profitability measured by three proxies (ROA, ROE and, PAT). The outcome of coefficient is -0.004, -0.2730, and -4,032,778, and the p-value is 0.505, 0.029 and 0.296 between the FR and ROA, ROE, and PAT respectively. The outcomes suggest that financial ratios have a significant correlation with ROE and an insignificant relationship with ROA and PAT. Therefore, ( $H_02.b$ ): "There is no significant association of financial ratio (FPR) on profitability (ROA, ROE, and PAT) of Islamic

banks working in Yemen” is accepted with both models ROA and PAT and was rejected by ROE. It can reveal that financial ratios and other information (FR) have a negative and significant relationship with ROE. The outcome also has a negative and insignificant influence on ROA and PAT in Islamic annual reports.

#### 4.3.3. Hypothesis ( $H_01.c$ ): Corporate Governance Information

The outcomes of regression model reveal the relationship between corporate governance information (CGI) and profitability. It indicates that corporate governance information (CGI) has a negative association with ROA, ROE, and PAT. It also shows that corporate governance information has a significant association with ROA and ROE, while it has an insignificant relationship on PAT. As a result, ( $H_02.c$ ): “There is no significant association between corporate governance information (CGI) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.” is rejected with ROA and ROE while was accepted on PAT. Moreover, the results of OLS reveal that corporate governance information (CGI) has a negative and significant relationship on ROA and ROE. Corporate governance information also shows a negative but insignificant connection on (PAT) in Islamic banks in Yemen.

#### 4.3.4. Hypothesis ( $H_01.d$ ): Financial Statements Information (FSI)

The results reveal that financial statements information (FSI) has a positive relationship with ROA and ROE models, while, it reveals a negative influence on PAT model. The coefficient results for the predictor variable (FSI) with (ROA, ROE, and PAT) are 0.056, 0.047, and  $-5,383,100$ , which means that there is a positive association with ROA and ROE models and it has a negative influence with PAT. The results also indicate that there is a highly significant 0.000 level ( $p \leq 0.01$ ) associated between the financial statement information (FSI) and the profitability measured by ROA and insignificant with ROE and PAT. Accordingly, ( $H_02.d$ ): “There is no significant association between financial statements information (FSI) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.” is rejected with ROA model and accepted with both models ROE and PAT in annual reports.

#### 4.3.5. Hypothesis ( $H_01.e$ ): Corporate Social Disclosure (CSD)

The results reveal that corporate social disclosure (CSD) has a negative and significant association with profitability measured by (ROA, ROE, and PAT). The results of OLS regression models as shown in Table 6 reveal that the coefficient of a variable (CSD) is  $(-0.002, -0.064, \text{ and } -1,598,530)$ , and the p-value is (0.02, 0.02, and 0.01) on profitability measured by (ROA, ROE, and PAT) respectively. Thus, ( $H_02.e$ ): “There is no significant association between corporate social disclosure (CSD) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.” is rejected in all models. From Linear least squares (OLS) regression outcomes, it can be suggested that corporate social disclosure (CSD) has a significant and negative influence on (ROA, ROE, and PAT).

#### 4.3.6. Hypothesis ( $H_01.f$ ) Zakat Information (ZAK)

The outcomes of multiple regression indicate that zakat information (ZAK) has a positive and insignificant influence on ROA. The results of regression coefficient for the predictor variable (ZAK) are 0.005 and the p-value is 0.26 of ROA. While ZAK information has a negative but significant relationship with ROE. The result of coefficient of (ZAK) is  $-0.227$  and the p-value is 0.03 with ROE. The (ZAK) information also shows a positive and significant influence on profit after tax (PAT). The regression coefficient value of (ZAK) information with (PAT) is 8,887,162 and the p-value is 0.03 level ( $p \leq 0.05$ ). Therefore, ( $H_01.f$ ): “There is no significant association between zakat information (ZAK) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.” is accepted with ROA model and was rejected with both ROE and PAT models in Islamic banks in Yemen.

#### 4.3.7. Hypothesis ( $H_01.g$ ): Other Information (OTH)

The results reveal that other information (OTH) has a positive association with profitability measured by ROE and PAT, and it has a negative relationship with ROA. The findings of regression coefficient for (OTH) variable show 0.061,93,499, and  $-0.004$  with ROE, PAT, and ROA respectively. The findings also indicate that other information (OTH) has an insignificant relationship with profitability (ROA, ROE, and PAT). As a result, ( $H_02.g$ ): “There is no significant association between

*other information (OTH) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen.” is accepted in all models that calculated the profitability in annual reports.*

#### 4.3.8. Hypothesis ( $H_{01.h}$ ): Bank Size (BSIZE)

The results of the first controlling factor show that the most significant Islamic banking characteristics in the annual reports of Yemeni Islamic banks. It helps to explain the differences in the degree of voluntary disclosure. The scale of the bank (BSIZE) has a detrimental and significant effect on calculated profitability (ROA and ROE), whereas BSIZE has a positive and significant relationship with PAT. The outcomes of (OLS) regression models as offered in Table 6 show the regression coefficient for the predictor variable (BSIZE) with proxies of profitability (ROA, ROE, and PAT) are  $-0.001$ ,  $-0.007$ , and  $323,417$  and p-values are  $0.03$ ,  $0.00$ , and  $0.07$ . Accordingly, ( $H_{02.h}$ ): “There is no significant association between bank size (BSIZE) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen” is rejected in all models. Substantially, with regard to linear least squares (OLS) regression outcomes, it can be indicating that bank size (BSIZE) has a negative and substantial association with profitability measured by (ROA and ROE). It also has a positive relationship with (PAT) in annual reports of Islamic banks in Yemen.

#### 4.3.9. Hypothesis ( $H_{01.i}$ ): Bank Age (BAGE)

The statistical results of the second controlling variable show that bank age (BAGE) has a negative correlation with profitability defined by (ROA and PAT) in the annual reports of Islamic banks working in Yemen, while bank age has a positive influence on ROE. The regression results show that the values are  $-0.010$ ,  $0.006$ , and  $-6,249,670$  between (BAGE) and profitability measured by (ROA, ROE, and PAT) respectively. The outcomes also indicate that banks age (BAGE) has a highly significant correlation with profitability in Yemeni Islamic banks measured by ROA, ROE, and PAT. The p-value is  $0.00$ ,  $0.00$ , and  $0.00$  at the level of  $1\%$  ( $p\text{-value} \leq 0.01$ ), which mean that there is a highly significant relationship between age of Islamic banks and profitability. Thus, ( $H_{02.i}$ ): “There is no significant association between bank age (BAGE) and profitability (ROA, ROE, and PAT) of Islamic banks working in Yemen” is rejected in all models. According to (OLS) regression results, it can be explained that bank age (BAGE) has a negative and significant influence on profitability measured by (ROA and PAT), while through annual reports, BAGE has a strong and effective association with (ROE).

The results are consistent with Rashid and Aikaeli (2015) who revealed that the size of the bank has a positive and significantly related to the level of voluntary disclosure. The outcomes are also confirmed by Mutiva et al. (2015) who found a strong positive association between the extent of voluntary disclosure and financial performance. The findings also are supported by Ompusunggu (2016) who indicated that disclosure of CSR has a significant effect on profitability measured by ROA and ROE. While, ROA and NPM have positive effects on the disclosure of CSR, while ROE negatively affects CSR disclosure.

## 5. Conclusion and recommendations

The purpose of this study is to empirically examine the relationship between the scope of the overall voluntary information disclosed and profitability in the Yemeni Islamic banks over the period 2005 to 2014. The study addresses whether there is an association between seven voluntary information disclosure groups that are (A) background about the Islamic Bank/general information; (B) financial ratios and other information; (C) information on corporate governance; (D) financial statements information;(E) corporate social disclosure; (F) zakat information, and (G) other information) with profitability or not. The results of multivariate analysis test show that the BACG, CGI, CSD, BSIZE, and BAGE have a negative and significant relationship with ROA, while FR and OTH have a negative and insignificant influence on ROA. The results also reveal that ROA has a positive and insignificant relationship with ZAK information. With regard to return on equity (ROE) model, the outcomes indicate that BACG, FR, CGI, CSD, ZAK, and BSIZE have a negative and significant association with ROE, except BAGE has a positive and significant correlation with ROE. The results also show that FSI and OTH have a positive and insignificant

influence on ROE. With respect to profit after tax (PAT), the results reveal that BACG, CSD, and BAGE have a negative and significant association with PAT, whereas FR, CG, and FSI have a negative but insignificant relationship with PAT. The outcomes also suggest that ZAK and BSIZE have a positive and significant impact on PAT, except OTH information has a positive and insignificant correlation with PAT.

This study focuses on voluntary coverage in Yemeni Islamic banking system. Moreover, the financial information system, the internal auditor and the external auditor are not considered because of availability of data. Future research may perform a comparative study, e.g., between Islamic banks and traditional banks in Yemen, or between Yemen and another country.

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