



(RESEARCH ARTICLE)



Accounting disclosure and its impact on the performance of companies and financial institutions in the Republic of Yemen

Mohammed Yahya Abdullah Aleryani * and Anand Choudhary

Department of commerce, Dr. Babasaheb Ambedkar Marathwada University, India.

International Journal of Science and Research Archive, 2023, 10(01), 1001–1009

Publication history: Received on 19 September 2023; revised on 25 October 2023; accepted on 28 October 2023

Article DOI: <https://doi.org/10.30574/ijrsra.2023.10.1.0862>

Abstract

The purpose of this study is to study the impact of accounting disclosure in terms of legal factors, culture, profitability, and size on the value of the company in Sana'a Governorate in the Republic of Yemen. Therefore, the lack of accounting disclosures in most of these companies led to a decrease in the value of the companies. The theoretical model based on agency theory was used to discover the effect of accounting disclosures on company value. A probability sampling method, which is a random sampling method, was used to collect data. Four hypotheses were tested through 86 questionnaires. Listed companies were included in the community, and all accountants were selected in the sample. This study's analysis was conducted using the partial least squares method. The findings demonstrated that size and culture variables have a positive and significant influence on firm value. Others believe that legal and financial considerations are unimportant. As a result, corporate management may be motivated and encouraged to share information that influences stakeholder decisions favorably and increases company value.

Keywords: Accounting disclosure; Performance of companies in financial institution; Smart Plus; Republic of Yemen

1. Introduction

This study investigates the implications of accounting disclosure in terms of legal, cultural, profitability, and size issues in order to ascertain the influence of accounting disclosure on firm value in private Basrah companies. These factors often have to do with management's initiatives to increase a company's value [1]. Sadly, the majority of these companies still have low values as a result of a lack of transparency [2-4], and this is because the managers or administrators either don't pay attention to these factors or just partially trust that information would be shared. Otherwise, according to them, the characteristics do not significantly affect the company's worth (Kareem et al. 2021a, 2021b). In order to increase corporate value through disclosure, the organization bases its assessment of these variables on policy-driven techniques. In order to help stakeholders determine whether to make investments, it aims to affect their perceptions (Roman, 2019). As a result, many studies looked at how much information businesses voluntarily disclosed, especially in reference to big enterprises. Companies play a significant part in accounting disclosure by proving their financial policies by displaying expenses and profits over time. This helps to reveal the accounting policy to both current and potential investors as well as to the business's current and future investors.

1.1. Background of Study

For many years, the quality of information has been a pillar of economies. The forms and substance of its disclosure have also become crucial for making decisions and building value for the organization. The company is questioned due to the absence of disclosures [2]. Therefore, stakeholders require a variety of information. Many businesses have disregarded or occasionally didn't care about disclosures. Perhaps as a result of Iraq's ongoing political and economic unrest (Assidi 2020; Jebur 2021; Kareem et al. 2021a). The number of employees or the amount of capital can be used

* Corresponding author: Mohammed Yahya Abdullah Aleryani

to gauge a company's size [3]. Therefore, in order to have a good value, management must encourage disclosure of information in the annual reports. Investors can analyze the level of profitability, financial situation, and other information linked to the operations of the firm because it is a key factor in investment decisions for a variety of companies. Consequently, can influence investors to reach wiser decisions [10]. Because it is associated in various ways depending on circumstance, the concept of culture factor is broad and vague. In order to deal with the variety of cultural conceptualizations, a group's understanding of a practice of shared fundamental assumptions is referred to as culture. On the other hand, cultures have been described as a set of values that influence people's decisions in an organization covertly and discreetly [11]. Because all businesses are subject to legal and financial requirements, this can guide administrators in taking steps to increase profitability. As a result, a company's legal responsibility is to conduct its business within the bounds of the law [12]. Additionally, a successful firm must consider the legal aspect, and these organizations might encounter difficulties.

1.2. Theoretical background and hypotheses development

The agency theory will be used in this study since it helps to explain and comprehend why a corporation shares accounting information. Cooke (1992) makes the case that disclosure can satisfy information users. Additionally, disagreements over interests between owners and administrators will exacerbate the issue of asymmetric knowledge [9]. Thus, the current study is in line with agency theory, which states that legal, cultural, profitable, and size considerations affect the decision to provide accounting disclosures [13, 14]. Financial statements must contain sufficient information for investment decisions, hence various study areas in accounting are motivated by the impact of disclosure. For instance, Assidi (2020) uses a sample of 1001 observations to explore how disclosure enhances company value through the moderating influence of a regulatory reform in France firms listed. The findings indicate a positive correlation between disclosure and firm value. It was also demonstrated that, as a moderate variable, a change in the law contributes to the growth and advancement of system governance, which in turn broadens the scope of the company's benefit. Another study for Pathirana (2019) outlined the various facets of culture and how they affect company value. The results demonstrate that corporate culture affects personnel diversity, business operations, and performance. The difficulties of accounting disclosure in the annual reports of Iraqi listed businesses are also examined by Almagtome et al. (2017). The findings showed that firm size and profitability are strongly correlated with the level of voluntary disclosure, indicating that greater accounting disclosure improves financial performance. As a result, the following four possibilities are put forth:

- Hypothesis (H1). The legal factor has a positive and significant relationship on the company value.
- Hypothesis (H2). The culture factor has a positive and significant relationship on the company value.
- Hypothesis (H3). The profitability factor has a positive and significant relationship on the company value.
- Hypothesis (H4). The size factor has a positive and significant relationship on the company value.

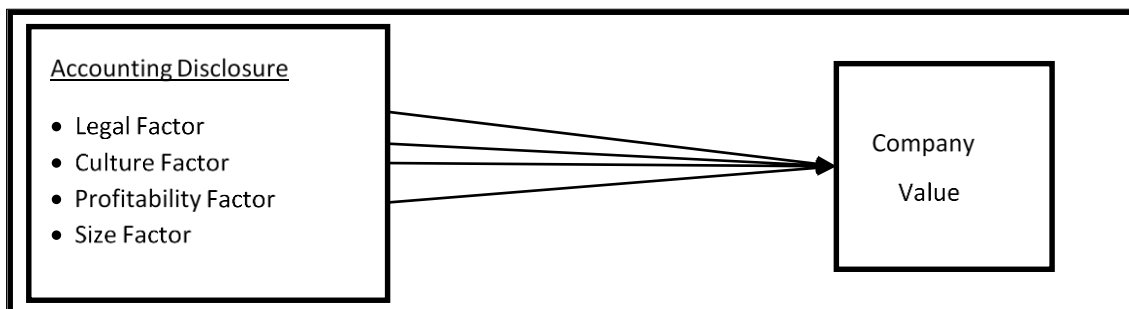


Figure 1 Demonstrates the research model

2. Research Methodology

2.1. Sample and Data Collection

314 enterprises are listed in the Sana'a Governorate, according to the Sana'a Chamber of Commerce in the Republic of Yemen. The Sana'a Governorate's listed companies were the intended audience, and all accountants were chosen to give them in-depth information about the responses in these companies. The selection of accountants was made since most of these businesses have an accounting department and accountants are knowledgeable in answering research-related concerns. First prepared in English, the questionnaire was later translated into Arabic. before releasing the survey in order to get the results. About 84 questionnaires were tested for dependability using a pilot study. The experimental

analysis's Cronbach's alpha results showed values of 0.70, which is a respectable level. 100 were given out to various businesses. In this investigation, a random sample technique was employed. Reason employed this strategy to guarantee that the company has an equal chance of being chosen [16]. This was accomplished by using Excel to produce a list of random values and a random sample. A total of 84 questionnaires were valid for this study after 16 were disregarded as being invalid.

2.2. Measures

Closed-ended inquiries were employed. This method was chosen for this study's participant feedback because it allowed for a wide sample size across the province and could also reduce error and response bias [16]. Three components of the legal factor were taken from Salmones et al. (2005). There are three criteria for measuring culture [17]. Additionally, three metrics for gauging profitability were taken from Awan and Khan (2016) and Almagtome et al. (2017). The three metrics for determining the size of a corporation were taken from Sawan and Alsaqqa (2013). Moreover, appendix A's five items (20) for company value. The first section dealt with demographic data, while the second section dealt with measuring components, such as accounting disclosures related to legal, cultural, profitable, and size considerations. The study used a 5-point Likert scale with the categories "1-strongly disagree—5 strongly agree" to measure all of the constructs. The 5-point scale was chosen because it is simple to use and comprehend, and because creating high score tables requires less time and work. On the other hand, it will fit on mobile device screens and give respondents options without overwhelming them.

2.3. Data Analysis

2.3.1. Respondents Features and Demographic Profiles

The demographic information for all respondents is shown in Figure 1 (see appendix B). The respondents who were over 40 years old had the lowest frequency (19.7%), per the results for respondent age. While respondents aged between 31 and 35 years had the highest frequency (29.7%), respondents aged 36 to 40 years came in second (26.1%). Results for years of experience showed that more than 4 years (42.6%) had the highest frequency, followed by 3 to 4 years (29.9%), and less than a year (11.3%), had the lowest frequency. The general trade sector was found to have the highest frequency (28.4%), followed by the construction sector (22.6%), while the agriculture sector had the lowest frequency (6.7%) (see Figure).

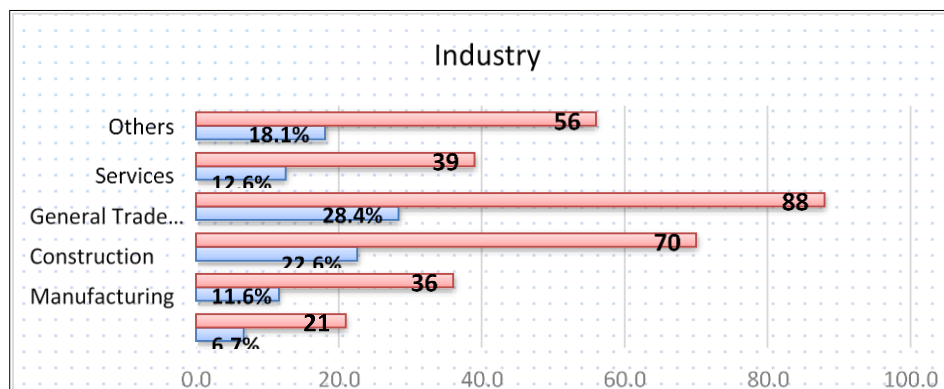


Figure 2 Demonstrated different Industry

2.3.2. Measurement Model Analysis

Validity convergence in Table 1. shown when a substantial fraction of variance or convergence is shared by all the measurements (indicators dependability) of a particular construct. Three metrics—Cronbach's alpha, composite reliability, and average extracted variance—are used to assess convergent validity. The findings demonstrate that all average extracted variances (AVE) exceed the threshold of acceptance (0.50) [21–23]. Additionally, given that the composite reliability is above 0.70, which is the typically advised range, all of the measurements for convergent validity are considered to be valid [23]. Cronbach's alpha scores for the constructs were also acceptable; according to Sekaran (2003), a Cronbach's alpha of 0.60 is considered to be poor, 0.70 is acceptable, and 0.80 or more is considered to be good. As a result, the measurement score's internal consistency reliability can be regarded as good in this study.

Table 1 Construct Reliability and Validity

Constructs	Cronbach's Alpha	CompositeReliability	Average Variance Extracted(AVE)
Culture	0.876	0.924	0.803
Legal	0.799	0.880	0.711
Profitability	0.828	0.896	0.743
Size	0.818	0.916	0.845
Value	0.890	0.919	0.693

When compared to other constructs, all of the constructs share higher variation by their indicators, according to the results in Table 2 for discriminant validity. As a result, the constructions were sufficiently discriminatory [21, 23, 24].

Table 2 Discriminant Validity Fornell-Larcker Criterion

	Culture	Legal	Profitability	Size	Value
Culture	0.896				
Legal	0.577	0.843			
Profitability	0.726	0.548	0.862		
Size	0.684	0.543	0.620	0.919	
Value	0.676	0.556	0.572	0.811	0.832

After eliminating one item related to "size1" from the initial measurement model because it had a low loading factor of less than 0.5, the internal consistency reliability of the measurement score used in Table 3 can be deemed good in this study.

Table 3 Loading and Cross-loading of Constructs for Discriminant Validity Assessment

Items	Culture	Legal	Profitability	Size	Value
Culture 1	0.892	0.483	0.606	0.648	0.601
Culture 2	0.941	0.555	0.689	0.667	0.656
Culture 3	0.852	0.514	0.657	0.515	0.554
Legal 1	0.521	0.859	0.470	0.475	0.543
Legal 2	0.408	0.817	0.481	0.475	0.392
Legal 3	0.518	0.853	0.438	0.425	0.448
Profitability 1	0.640	0.554	0.877	0.574	0.537
Profitability 2	0.668	0.468	0.902	0.594	0.532
Profitability 3	0.560	0.374	0.804	0.407	0.389
Size 2	0.623	0.480	0.574	0.908	0.692
Size 3	0.636	0.517	0.567	0.931	0.793
Value 1	0.659	0.546	0.611	0.809	0.866
Value 2	0.640	0.445	0.479	0.753	0.841
Value 3	0.416	0.371	0.271	0.561	0.809
Value 4	0.533	0.440	0.532	0.611	0.824
Value 5	0.509	0.488	0.430	0.579	0.821

As shown in Table 4. The f^2 indicated if there was a strong or weak link between the two variables. According to the f^2 results for the exogenous constructions of company value, the size factor had the largest effect size at 0.616, followed by the culture factor at 0.046, and the legal factor at 0.025, all of which had medium to large effect sizes. While the profitability component had the least impact on the value of the company, with $f^2 = 0.001$.

Table 4 Results of Effect Size (f^2) for Both Endogenous Variables

	Endogenous variable
Exogenous variable	Company Value
Culture Factor	0.046
Legal Factor	0.025
Profitability Factor	0.001
Size Factor	0.616

According to Hair et al. (2010), the Heterotrait-Monotrait Ratio (HTMT) value must be between 0.85 and 0.90 to indicate that the two constructs are distinct. The HTMT values for each construct in this study are shown in Table 5. With the exception of the size component, the constructs demonstrated sufficient discriminant validity.

Table 5 Heterotrait-Monotrait Ratio (HTMT)

	CultureFactor	Legal Factor	ProfitabilityFactor	Size Factor	CompanyValue
CultureFactor					
Legal Factor	0.682				
ProfitabilityFactor	0.848	0.665			
Size Factor	0.804	0.670	0.740		
CompanyValue	0.748	0.640	0.640	0.928	

2.4. Coefficient of Determination (R2) and (Q2)

The R^2 shows the combined impact of the exogenous variables on the endogenous variable and is used to analyze the mode of predictive accuracy. R^2 of (0.25) is characterized as having a low level of predictive accuracy, (0.5) as being moderate, and (0.75) as being high. The R^2 values in Table 6 demonstrate that the modified R^2 for company value in this model was (0.682), indicating that two factors linked to culture and legal factors could account for (68.2%) of the company value. A structural model's ability to assess the model's predictive usefulness is another crucial feature. The outcomes also showed that the corporate value for Q^2 was (0.453). were greater than zero, suggesting that the independent components are relevant predictors of the dependent constructs being studied in this work (Hair et al. 2014; Hair et al. 2016; Wong 2013).

Table 6 Results of Coefficient of (R^2) and Predictive Relevance

Endogenous LatentVariable	R^2	Adjusted R^2	Q^2
Company Value	0.692	0.682	0.453

The p-values for each path are shown in the bootstrapping method's results. The impact of the culture component on company value was statistically significant, according to the findings. These findings indicated that was both favorable and significant (= 0.196, p 0.05). The size factor also had a favorable and substantial impact on firm valuation (=0.629, p0.001). However, according to the bootstrapping results, the impact of legal and profitability aspects on firm value is negligible, with p-values of 0.095 and 0.798, respectively (>0.05), therefore the mean H3 and H4 are not supported. Table 7 displays the linkages that support the relationships suggested by this study and lists the hypotheses that are supported and unsupported. Additionally, Figures 3 and 4 display the PLS-SEM results.

Table 7 List of Hypotheses

Path	β	SE	T Values	P Values	Results
H1 Legal -> Company Value	0.113	0.067	1.687	0.095	No Supported
H2 Culture -> Company Value	0.196	0.075	2.594	0.012	Supported
H3 Profitability -> Company Value	- 0.022	0.083	0.263	0.798	No Supported
H4 Size -> Company Value	0.629	0.072	8.693	0.000	Supported

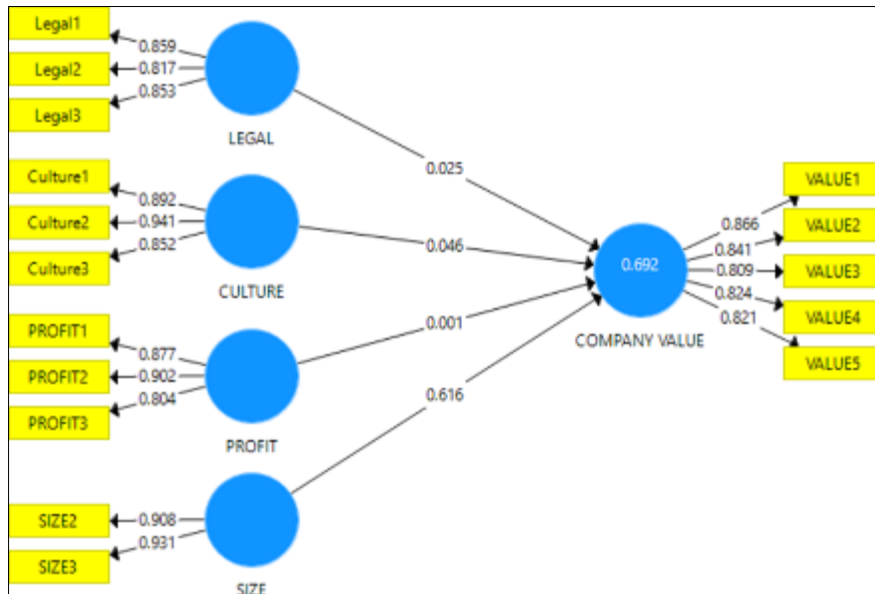


Figure 3 Results of smart PLS-SEM R2 and f2

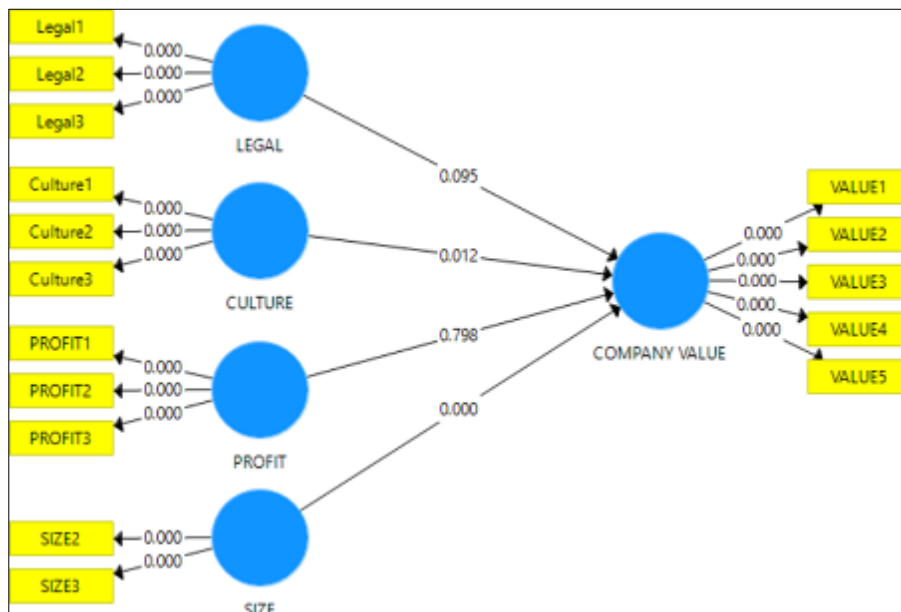


Figure 4 Results of smart PLS-SEM Path Coefficients

2.5. Importance-Performance Map Analysis (IPMA)

With their average latent variable scores reflecting their performance, IPMA "is interpreted as the predecessor constructs importance in shaping a specific target construct" [23, 28]. In order to prioritize managerial tasks, both important and performance-based, decisions could be made on two dimensions (importance and performance) (Völckner et al. 2010). As a result, it draws attention to key areas where management operations should be improved. The results of Table 8 show that the culture factor, which had above moderate performance (more than 50%) and 78.402 explaining a target construct performance, is the most significant factor. As a result, the significance of this construct is extremely high. Additionally, when managers want to improve their performance at the company, they should prioritize the culture factor first because it is the most significant construct. Next, size factors should be the second target performance, with a target performance of 78.186, and profitability factors should be the third target performance, with a target performance of 75.575. Legal considerations were found to be of the least relevance and performed the worst (72.898) (Figure 5).

Table 8 Values and Total Effects for the IPMA

Importance	Performances
Culture factor	78.402
Size factor	78.186
Profitability factor	75.575
Legal factor	72.898

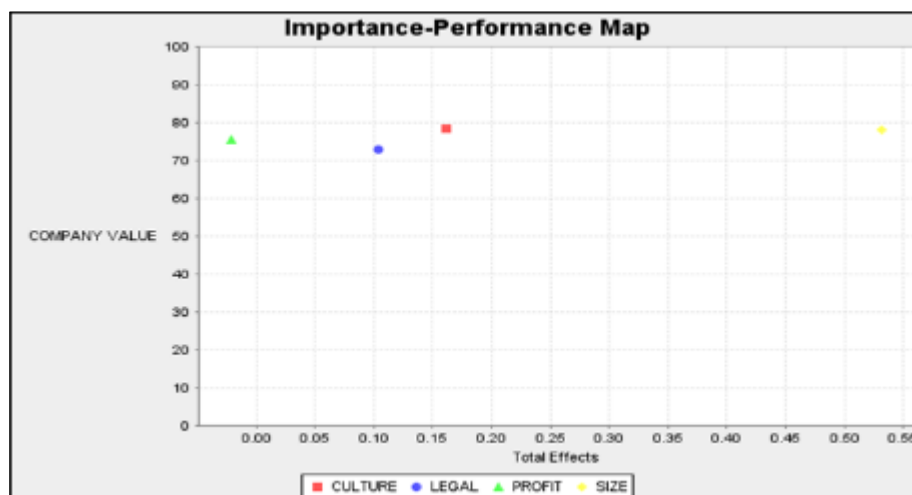


Figure 5 IPMA Representation of Model

3. Discussion

Based on Table 7's findings, which showed that the legal component H1 had a non-significant link with company worth, this result is in contrast to Assidi (2020), who discovered a positive and substantial relationship between the law and a firm value. This is as a result of several changes to the legal factors. The second reason is that these businesses may be impacted by the government sector because it frequently issues new directives. This study suggests that the need to reinforce values in support of legal factors can be addressed and understood in order to make improvements. The corporation must balance its commitments in terms of legal, social, and economic factors while also taking into account how to discharge its obligations to a variety of stakeholders, according to Lawrence and Weber (2020). According to Nikpour (2017), who discovered that organizational culture might affect performance, the second hypothesis H2 culture component was found to have a positive and substantial relationship with firm value. The basis for this supposition is that these organizations' employees support their employers in many ways, such as marketing, sales, and distribution, in order to help them improve. Because of this, accounting transparency plays a crucial role in boosting a company's worth through cultural factors. In contrast to the findings of Akhmadi and Januarsi's study from 2021, which found a

positive relationship between profitability factor and company value, the H3 result for profitability factor shows non-significant with the company value. This result may be due to these companies' fears of disclosing their profitability. The H4 results indicate a positive and significant relationship between the size factor and firm value. Our results build on earlier studies like Nursetya and Nur Hidayati (2021), whose outcomes demonstrate a favorable impact on the firm value. This outcome is the consequence of employees taking accounting data into consideration together with business size and capital structure in order to increase company value.

4. Conclusion Implications, Limitations, and Future Work

As data indicated a true need to increase the value of the company, the study's focus was on determining the impact of accounting disclosure linked to legal, cultural, profitability, and size aspects on the value of the company. According to the report, most corporations failed to disclose information that would have given shareholders a bad impression of them. Additionally, this study's findings showed that accounting disclosure closes the communication gaps between these businesses and shareholders. Based on the findings, it was discovered that, in contrast to the other two hypotheses, culture and size characteristics had a positive association with firm value. This could be because of the sensitive information connected to legal considerations and profitability. In order to increase the value of the company, corporate management can use this conclusion to their advantage by taking essential financial disclosure into account through legal considerations, culture, profitability, and company size. restrictions on this research. Data were only gathered in Yemen's Sana'a Governorate, making it challenging to extrapolate to other developing nations. Only accountants were included in the sample, and they were chosen by a straightforward random selection procedure. Through in-depth interviews, future research must assess how accounting disclosure affects legal, cultural, profitability, and size aspects.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

- [1] Roman AG, Mocanu M, Hoinaru R (2019) Disclosure style and its determinants in integrated reports. *Sustain* 11:1–16. <https://doi.org/10.3390/su11071960>
- [2] Hussain AM, Kareem HM (2018) The Relationship between the Disclosure of Environmental Costs, Economic and Social Effects. *Adm Econ Coll J Econ Adm Financ Stud* 10:1–23
- [3] Kareem HM, Aziz KA, Maelah R, et al (2019) Enterprises Performance Based Accounting Information System: Success Factors. *Asian J Sci Res* 12:29–40. <https://doi.org/10.3923/ajsr.2019.29.40>
- [4] Kareem HM, Aziz KA, Maelah R, et al (2019) Organizational Performance in Iraqi SMEs: Validity and Reliability Questionnaire. *Acad Account Financ Stud J* 23:1–16
- [5] Kareem H, Dauwed M, Meri A, et al (2021) The role of accounting information system and knowledge management to enhancing organizational performance in iraqi smes. *Sustain* 13:. <https://doi.org/10.3390/su132212706>
- [6] Kareem HM, Aziz KA, Maelah R, et al (2021) The influence of accounting information systems, knowledge management capabilities, and innovation on organizational performance in Iraqi SMEs. *Int J Knowl Manag* 17:72–103. <https://doi.org/10.4018/IJKM.2021040104>
- [7] Al-Dmour AH, Abbod M, Al Qadi NS (2018) The impact of the quality of financial reporting on non-financial business performance and the role of organizations demographic' attributes (type, size and experience). *Acad Account Financ Stud J* 22:1–18
- [8] Jebur HS (2021) The difficulties and benefits of environmental cost accounting application. *J Stat Manag Syst* 24:825– 840. <https://doi.org/10.1080/09720510.2020.1860507>
- [9] Assidi S (2020) The effect of voluntary disclosures and corporate governance on firm value: a study of listed firms in France. *Int J Discl Gov* 17:168–179. <https://doi.org/10.1057/s41310-020-00090-1>
- [10] Almagtome A, Almusawi I, Aureaar K (2017) Challenges of Corporate Voluntary Disclosures Through the Annual Reports : Evidence from Iraq. *World Appl Sci J* 35 35Almagtom:2093–2100. <https://doi.org/10.5829/idosi.wasj.2017.2093.2100>

- [11] Pathiranage YL (2019) Organizational Culture and Business Performance: An Empirical Study. *Int J Econ Manag Stud* 6:1–12. <https://doi.org/10.14445/23939125/ijems-v6i6p101>
- [12] Salmones DLMDMG, Crespo AH, Del Bosque IR (2005) Influence of corporate social responsibility on loyalty and valuation of services. *J Bus Ethics* 61:369–385. <https://doi.org/10.1007/s10551-005-5841-2>
- [13] Cooke TE (1992) The Impact of Size, Stock Market Listing and Industry Type on Disclosure in the Annual Reports of Japanese Listed Corporations. *Account Bus Res* 22:229–237. <https://doi.org/10.1080/00014788.1992.9729440>
- [14] Inchausti BG (1997) The influence of company characteristics and accounting regulation on information disclosed by Spanish firms. *Eur Account Rev* 6:45–68. <https://doi.org/10.1080/096381897336863>
- [15] Commerce B chamber of (2020) <https://basrachamber.org/en/about-chamber/organizational-structure/>. In: <https://basrachamber.org/en/about-chamber/organizational-structure/>
- [16] Sekaran U (2003) *Research Methods For Business, A Skill Building Approach, Fourth Edi.* John Wiley & Sons, Inc., New York.
- [17] Gorondutse AH, Hilman H (2019) Does organizational culture matter in the relationship between trust and SMEs performance. *Manag Decis* 57:1638–1658. <https://doi.org/10.1108/MD-05-2018-0557>
- [18] Awan AG, Khan FUH (2016) Impact of Management Information System on the Performance of the Organization (Profitability, Innovation, and Growth). *An Int Peer-reviewed J* 21:1–8
- [19] Sawan N, Alsaqqa I (2013) Audit Firm Size and Quality: Does Audit Firm Size Influence Audit Quality in the Libyan Oil Industry? *African J Bus ...* 7:213–226. <https://doi.org/10.5897/AJBM12.1276>
- [20] Chung H, Judge WQ, Li YH (2015) Voluntary disclosure, excess executive compensation, and firm value. *J Corp Financ* 32:64–90. <https://doi.org/10.1016/j.jcorpfin.2015.04.001>
- [21] Fornell C, Larcker DF (1981) Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and statistics
- [22] Gefen D, Straub D, Boudreau M-C (2000) Structural Equation Modeling and Regression: Guidelines for Research Practice. *Commun Assoc Inf Syst* 4:1–77. <https://doi.org/10.17705/1CAIS.00407>
- [23] Hair JF, Hult GTM, Ringle CM, Sarstedt M (2016) *A Primer on Partial Least Squares Structural Equation Modeling (PLS- SEM), Second Edi.* SAGE Publications
- [24] Chin WW (1998) The Partial Least Squares Approach to Structural Equation Modeling. *Mod Methods Bus Res* 2:295– 336
- [25] Hair Jr JF, Black WC, Babin BJ, Anderson RE (2010) *Multivariate Data Analysis, 7th ed. A global perspective*
- [26] Hair. Jr JF, Sarstedt M, Hopkins L, Kuppelwieser VG (2014) Partial least squares structural equation modeling (PLS- SEM): An emerging tool in business research. *Eur Bus Rev* 26:106–121. <https://doi.org/10.1108/eb-10-2013-0128>
- [27] Wong KK (2013) Partial Least Squares Structural Equation Modeling (PLS-SEM) Techniques Using SmartPLS
- [28] Ringle CM, Sarstedt M (2016) Gain More Insight from Your PLS-SEM Results: The Importance-Performance Map Analysis. *Ind Manag Data Syst* 116:1865–1886. <https://doi.org/10.1108/imds-10-2015-0449>
- [29] Völckner F, Sattler H, Hennig-Thurau T, Ringle CM (2010) The Role of Parent Brand Quality for Service Brand Extension Success. *J Serv Res* 13:379–396. <https://doi.org/10.1177/1094670510370054>
- [30] Lawrence AT, Weber J (2020) *Business and Society Stakeholders, Ethics, Public Policy, Sixteenth.* McGraw-Hill Education New York
- [31] Nikpour A (2017) The impact of organizational culture on organizational performance: The mediating role of employee’s organizational commitment. *Int J Organ Leadersh* 6:65–72. <https://doi.org/10.33844/ijol.2017.60432>
- [32] Akhmadi A, Januarsi Y (2021) Profitability and firm value: Does dividend policy matter for Indonesian sustainable and responsible investment (SRI)-KEHATI listed firms? *Economies* 9:. <https://doi.org/10.3390/economies9040163>
- [33] Nursetya RP, Nur Hidayati L (2021) How Does Firm Size and Capital Structure Affect Firm Value? *J Manag Entrep Res* 1:67–76. <https://doi.org/10.34001/jmer.2020.12.01.2-7>