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# Sustainability Reporting Disclosure in Islamic Corporates: Do Human Governance, Corporate Governance, and IT Usage Matter?

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**Abstract:** In developing countries, particularly South Asia, there is scarce research on corporate governance and sustainability reporting disclosure. This study considers several insightful theories, including Stakeholder Theory, Agency Theory, and the TOE Framework, to understand the relationships and drivers of sustainability reporting. The study examines Indonesian Islamic corporates using data from the ISSI (Indonesia Shariah Stock Index). We gathered annual reports and sustainability reports from the ISSI database for the year 2019. The study investigates how human governance (HG), Islamic corporate governance (ICG), and information technology usage (ITU) are related to sustainability reporting disclosure (SR). The findings showed that the sustainability reporting disclosure was significantly influenced by human governance and Islamic corporate governance with firm size and leverage. Furthermore, the research showed that profitability was not significantly related to sustainability reporting disclosure, that Islamic corporate governance had a significant negative influence on SR, and that IT usage was only significant when human governance was not present. Finally, the results showed that human governance is the main driver of sustainability reporting disclosure. Therefore, we conclude that human governance is the best predictor for sustainability reporting disclosure.

**Keywords:** corporate governance; digitalization; human governance; IT usage; sustainability reporting disclosure

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## 1. Introduction

Following the Great Recession of 2008, many people sought a remedy to the economy due to high unemployment and associated labor market problems [1,2], and Islamic finance has since received much attention. Corporate governance is one of the critical areas that has received much attention because it is a tool for steering the economy [3–6]. Questions on Islamic corporate governance were answered differently with three approaches [7,8]: "decision making by consultation (shura)", "decision making for which end in Allah through the institution of hisba and muhtasib to ensure Shari'a law compliance", and "accountability to Allah as human trustee to resources given through religious audit".

Islamic finance is expanding, with Indonesia as one of the two Asian countries with a large Muslim population actively promoting the Islamic capital market. To remain competitive in the global digitalization era, a company must implement human governance. Human governance is a theory that serves as a foundation and guides everyone in a business or organization to act according to values and ethics [9]. Human governance can result

in beneficial relationships for the company. It can be used to address corporate governance failure or as a form of corporate control [10]. Corporate governance focuses on external regulations intended to regulate the company's operations [11,12]. As a result, human governance is required to strengthen corporate governance to prevent failures, specifically in terms of humanity. The current situation is changing and uncertain, as the digitalization process is unstoppable, requiring IT usage to bridge this relationship. Islamic businesses are chosen in this study because the majority of the population in Indonesia is Muslim. Shariah businesses maintain obedience to Shariah law, or the Islamic system as detailed in the Quran and hadith. All Shariah company employees must work under existing Islamic law, ensuring that there is no violation of Islamic law that Shariah companies must follow. As companies implement human governance in Shariah companies, human governance will assist them in regulating every employee to be ethical, qualified, and committed to working according to the existing rules of the Shariah companies. The Shariah companies, on the other hand, have interests in turning the businesses into a place of worship, wherein religion acts as a reward for the employees and shareholders.

The industrial revolution 4.0 has encouraged every company to fully use information and communication technology (ICT) such as internet platforms to effectively address disruptions and ensure the sustainability of professional knowledge in the field by establishing policy-compliant technologies and incorporating environmentally friendly IT requirements [5]. ICT usage has become a significant managerial asset for measuring, monitoring, promoting, and communicating organizational objectives, both financially and socially. ICT is a helpful tool to increase employees' collective knowledge, expand communication with customers and suppliers, improve employee performance, and provide benefits [13]. IT can develop sustainable capabilities [14–18].

The benefits of using ICT can be in the form of saving processing time, including adopting policies that take a long time [19,20] and promoting work efficiency [21–24]. Based on the arguments about ICT benefits for corporate social responsibility (CSR), and the synergistic interactions between the use of ICT and the disclosure of CSR, companies can use ICT resources to acquire unique capabilities [25,26]. Previous studies have investigated the impacts of IT infrastructure capabilities and big data analytics on enterprise responses to rapid disruptions and changes [27]. Using a resource-based view as a theoretical foundation to develop an integrated sustainability framework, human governance integration and IT usage enable companies to build sustainability capabilities and help companies deliver sustainable value to relevant stakeholders [10]. To our knowledge, there is no comprehensive use of ICT that specifically investigates the impact of ICT implementation on sustainability reporting disclosures. Therefore, to fill the gap, we developed a measurement of general ICT capabilities to measure the level of ICT usage in companies.

The expansion of Shariah business organizations is dominated by Islamic banking and other listed companies that operate under Shariah. Indonesia responded to the development by establishing a Shariah-based capital market in 2003 (ISSI—Indonesia Shariah Stock Index). Shariah-compliant businesses should operate on Islamic moral foundations, particularly in terms of accountability and transparency, which are fundamental values to consider when conducting business operations. Shariah-compliant companies, such as Islamic banks, are expected to fully disclose all required information to all stakeholders [28,29].

However, studies on the extent of the information contained in annual reports revealed that such data are still limited [6,30,31]. The purpose of this paper is to contribute to the discussion on sustainability reporting disclosure in Indonesia. Sustainability reporting has grown in importance in today's business world [30,32–34]. As a result, businesses are becoming more interested in reporting on their social and environmental initiatives [35]. Companies also demonstrate a commitment to sustainability efforts to achieve the Sustainable Development Goals (SDGs) [4,36].

This research looks into the influence of Islamic corporate governance, information technology usage, and human governance on sustainability reporting disclosure [37].

Two new indices based on secondary data were created: the technology usage index and the human governance index. These data would help the Indonesian stock exchange identify the factors that will help increase sustainability [38]. The study contributes to understanding sustainability reporting disclosure among Indonesian Shariah-compliant companies, which has not been widely studied because most research has focused on Islamic financial institutions [39].

This research argues that sustainability reporting is also influenced by technology and the external environment [40]. However, the scarcity of disaggregated environmental data limits the ability of firm-level analyses to include such variables in their analyses. As a result, this study seeks to fill such gaps in the literature by expanding on an existing theoretical framework that combines firm-specific characteristics and technological–environmental factors, known as the "technology–organization–environment" (TOE) framework, and using Stakeholder's Theory [41,42] to support the human context. [40] developed this framework to describe the factors influencing a firm's technological innovation decisions. The Resource-Based View Theory [43–45] allows this study to test which variables are the key drivers of sustainability reporting supported by the TOE Framework, Stakeholder Theory, and Agency Theory.

This study focuses on Shariah-compliant companies that are publicly traded in Indonesia. Furthermore, the purpose of this research is to determine whether human governance, Islamic corporate governance, and the use of technology can improve the level of sustainability reporting disclosure of companies. This study focuses on the manufacturing industry. Indonesia is an emerging Asian economy that aspires to be a technology-driven and a high-tech producer. As a result, high-tech manufacturing firms have a stronger incentive to incorporate sustainability reporting initiatives into their operations to raise their social profile and attract new customers [33]. Thus, the purpose of this study is to investigate how Shariah-compliant companies in the manufacturing industry influence sustainability reporting.

According to Stakeholder Theory, all stakeholders have a right to be treated fairly, and managers should manage the organization in their best interests [46]. A company cannot exist without the support of its stakeholders. Businesses should provide benefits to their stakeholders to garner this support. This demonstrates the emergence of Stakeholder Theory as a dominant paradigm, further solidifying the concept that companies are accountable to stakeholders in addition to shareholders.

Stakeholder Theory is critical for comprehending the concept of a company's diversification strategy; it explains how the company will conduct business responsibly and sustainably [47]. Diversification is believed to improve the company's financial performance, and it is hoped that it will be better able to implement and disclose corporate sustainability programs. This action undoubtedly has a positive effect on the company's sustainability. Diversification of the business, which improves financial performance, will expand the business's social activities, as the extent of CSR disclosure is determined by the company's performance and concern for stakeholders who are not directly related to the business. From a business perspective, the evaluation results can present an objective picture of the company's social performance, which is highly beneficial to the company's sustainability [48].

Stakeholder Theory is being advanced as a viable alternative to the shareholder value model, particularly in the aftermath of the global financial crisis and the growing importance of government in industries critical to economies' national interests [49,50]. Focusing on longer-term returns is acceptable in stakeholder economies because investors have a long-term relationship with the firm, resulting in a more balanced relationship between labor and capital than under the shareholder value model [51]. [52] also postulates a positive relationship between sustainable business practices and firm performance. Therefore, this research uses Stakeholder's Theory as the leading theory to describe the relationship between the variables in sustainability reporting disclosure.

In summary, this research answers the following research questions:

1. Does human governance influence sustainability reporting disclosure?
2. Does Islamic corporate governance influence sustainability reporting disclosure?
3. Does information technology usage (IT) influence sustainability reporting disclosure?

## 2. Literature Review and Hypotheses Development

### *2.1. Theories Related to This Research*

#### 2.1.1. Stakeholder Theory

The dominant theory influencing the development of corporate governance is Stakeholder Theory, which considers a broader range of environmental constituents [53]. According to Stakeholder Theory, a firm's responsibility is not limited only to its owners but also to various stakeholders, including any individual or group that can influence or be influenced by its decision-making process. However, the theory addresses issues concerning company stability by focusing on their efforts and performance in terms of their ability to uphold agreements entered into with multiple parties in their areas of business endeavors [54]. Nonetheless, the latter view contradicts the belief that a firm is solely responsible for enhancing shareholder wealth [55]. [56] argue that a business is accountable to both itself and the groups it interacts with to ensure the effectiveness and efficiency necessary to legitimize its right to exist in the business world.

Additionally, researchers have used this theory to evaluate the differences between previous performance circumstances and outcomes. This theory provides a comprehensive framework for determining performance, as one group or the other can have their satisfaction affirmed on one or more of the aforementioned bases [55]. The stakeholder approach determines how the firm's various stakeholders exert competing demands and influence firm behavior [57]. According to the theory, an organization's performance improves when owner-shareholders exert significant influence over management. As a result, it is assumed that a firm's value is greater in jurisdictions with the strongest protection for minority shareholders' interests. The governance structure is predicated on the premise that managers must be strictly regulated to ensure that their actions do not jeopardize shareholders' interests [58].

According to Stakeholder Theory, businesses must implement stakeholder engagement processes to establish and strengthen the firms' legitimacy to operate [33,41,42,59]. In addition to ensuring the inflow of capital, labor, and customers, organizational legitimacy is required for the company's viability [60]. Organizational legitimacy can also reduce the likelihood of product boycotts and other disruptive actions. It benefits top management because it allows for some flexibility in how and where business is conducted. Furthermore, the financial, social, and environmental information disclosure (i.e., corporate sustainability disclosure—CSD) is part of the dialogue between a company and its stakeholders, and it provides information on a company's activities that legitimize its behavior and educates, informs, and changes perceptions and expectations.

Previous research has looked into the factors that influence financial, social, and environmental disclosure, emphasizing corporate characteristics (such as size, industry grouping, and financial performance) or general contextual factors (such as the country of origin, or the socio-political and cultural context). Indeed, there is a growing discussion about the possibility of other complex and diverse internal contextual factors influencing information disclosure practices [61–63]. While the effects of financial disclosure have received a lot of attention [30,64], we still have a lot to learn about the impact of governance on voluntary disclosure, particularly sustainability disclosure [33,65].

Stakeholder Theory offers a framework for linking corporate governance and sustainability disclosure, arguing that each improves stakeholder engagement and, as a result, organizational legitimacy [66,67]. Thus, being more transparent and accountable by disclosing relevant information about the organization's activities provides a competitive advantage [55,68,69].

#### 2.1.2. Agency Theory

Agency Theory has been widely used to explain the relationships between parties in banking and financial institutions [4,70]. The theory is based on a relationship in which the primary party delegates work to agents. However, Agency Theory anticipates that an agency problem will arise as a result of the ownership separation [71]. When the principals and the agents have opposing agendas, and it is difficult or costly for the principals to authenticate what the agents perform, an agency dilemma occurs [72]. [73] used Agency Theory to investigate the impact of board characteristics on integrated reporting quality. The findings, which are based on a sample of 134 worldwide corporations, reveal a positive relationship between the size, independence, diversity, and activity of a board of directors and the quality of integrated reporting. The link between the agent and the principal is central to Agency Theory. The separation problem between ownership and control of a company is defined by this notion. The principal (owner) usually delegates management and control to the agent (manager) in order for the agent to work in the best interests of the owner. Due to the nature of company policy and the firm's short- and long-term strategy; however, there is a conflict between both parties. The short-term benefits and opportunities of management are extremely motivating. The board, according to the theory, is also in charge of overseeing management's long-term policy and strategy (environmental and social policy, strategic CSR, environmental investment, and information availability) [33]. An independent board of directors and the preparation of additional reporting are important monitoring mechanisms that help to mitigate the problems associated with the separation of ownership and control in public companies by ensuring that managers' actions serve the interests of outside shareholders [74,75].

#### 2.1.3. Technology–Organization–Environment Theory (TOE)

For managing technology, several frameworks, models, and theories have been developed, including the Technology Acceptance Model (TAM), Task Technology Fit (TTF), Diffusion of Innovation (DOI), and others. However, most of these models or theories are designed for technology adoption and do not address organizational or environmental issues. On the other hand, TOE frameworks take a more holistic approach by considering all three aspects. As a result, they are better suited for corporate governance issues, as investigated in this study [76].

Reference [77] stated that before implementing any IT governance framework, an SME would be better positioned for successful IT governance if the components of the key pillars are carefully analyzed. [78] gathered survey data from small service enterprises with a strong presence in Port Harcourt, Nigeria. The findings indicate that technological, organizational, and environmental factors have a statistically significant relationship with adoption; thus, TOE factors drive adoption more than individual factors. Individually, the social aspect was statistically supported, whereas the hedonistic drive was not.

The decision to use information technology in corporate governance has a complex nature and involves various stakeholders. Therefore, this research must not rely only on the characteristics of the technology, the organization, and the environment—the human context must also be considered in using any technology. This is said to be the overlap in the TOE Framework, as the TOE Framework does not have a "human" category [79]. This research discusses the three dimensions of Technology–Organization–Environment Theory and adds the human context in the human governance variable to bridge this gap. Such effort intends provide a comprehensive evaluation of sustainability reporting in corporate governance.

### *2.2. Variables Related to This Research*

#### 2.2.1. Islamic Corporate Governance (ICG)

Corporate governance is a collection of processes, habits, policies, rules, and institutions that influence how a business is directed, managed, and controlled. Corporate governance also refers to the relationship between the various stakeholders involved in

the company's management objectives. Stakeholder Theory is a fundamental concept of corporate governance. It is defined as the relationship or interaction between a company's internal and external stakeholders to advance each party's interests. By taking into account the interests of other stakeholders, the effectiveness of these interactions can result in relationships that can influence the increase in company value. As a result, sound corporate governance can help companies perform better by monitoring management performance and holding managers accountable to shareholders and stakeholders [48].

Corporate governance is a set of regulations governing the relationship between shareholders, corporate management (managers), creditors, governments, employees, and other internal and external stakeholders regarding their rights and obligations, or in other words, a system that regulates and controls the company [3,31,55,80]. The corporate governance monitoring mechanism is divided into two groups, namely internal and external mechanisms. Internal mechanisms control the company by using internal structures and processes such as the general meeting of shareholders, composition of the board of directors, composition of the board of commissioners, and meetings with directors. In comparison, external mechanisms are ways to influence companies and use internal mechanisms, such as corporate control and market mechanisms.

Islamic corporate governance (ICG) seeks to find a way to direct the legal system and governance according to moral values based on Islamic law (Shariah). In general, a company can be considered Shariah-compliant if it meets two criteria: first, it eliminates companies that are involved in products and services that are deemed to be prohibited under Islamic law, such as conventional financial institutions, alcohol, and pork-related products, and excludes companies with liquidity [5]; second, any income that is not entitled to the company is reduced and then donated to charity.

#### 2.2.2. Sustainability Reporting (SR) Disclosure

According to [33,34], a sustainability report is a report that contains financial and non-financial information that usually consists of various details on social and environmental activities that enable the company to develop sustainability/sustainable performance. Creating a sustainability report necessitates a set of guidelines. The Global Reporting Initiative/GRI is a widely used set of guidelines in Indonesia [33,81]. According to the GRI, sustainability reporting disclosure provides several benefits, such as becoming a benchmark for company performance, demonstrating the company's commitment to long-term development, and comparing the company's performance over time.

Sustainability reporting implements sustainability activities and practices that are essential for a company to ensure that its business runs sustainably and that sustainable methods maintain its environment. For the past few years, some of the companies have made significant economic and technological contributions. Still, at the same time, they have been targeted to create problems of unsustainability. From this arises issues such as waste, sources of pollution, unethical product problems, controlled resource mining, human rights, and companies that monopolize the market. To solve the problem is to include sustainability practices that incorporate values and culture [34,82].

The role of sustainability reporting is critical for an organization to communicate sustainability performance and its impact to stakeholders (e.g., to employees, consumers, investors, regulators, and suppliers). The Global Reporting Initiative's sustainability report is an essential report that contains performance indicators, including social, economic, and environmental aspects. As a pioneer of sustainability reporting, the Global Reporting Initiative has triggered the GRI Standard as a reference indicator in the disclosure of sustainability reports. However, this standard only applies to conventional companies [30]. To overcome this limitation, Islamic Social Reporting (ISR) was developed. ISR is a performance reporting standard based on the Islamic Social Reporting Index. The index is based on the Accounting and Audit Organization for Islamic Financial Institutions (AAOIFI) developed by previous researchers [83]. Good corporate governance is one of the indicators in GRI and ISR sustainability reporting standards. According to the regulation, there are

principles of corporate governance, such as responsibility and transparency. Responsibility reflects the company's management system responsive to the clarity of functions and business ethics that carry out social responsibility. Transparency defines that companies can provide relevant information and materials in a form that is easy to understand, freely available, and directly accessible to stakeholders.

A sustainability report is a form of voluntary reporting to further a company's social and environmental responsibility. The stakeholders, including the public, need the sustainability report in order to know all forms of corporate responsibility to the community and the environment. The company can report the accomplished responsibilities related to the environment in a sustainability report. According to the Global Reporting Initiative (GRI), the term sustainability report refers to a report published by a company or organization related to economic, environmental, and social impacts resulting from the company's daily operations. The sustainability report also presents a value and governance model of a company or organization and shows the relationship between the company's strategy and commitment to a sustainable global economy.

#### 2.2.3. Human Governance

Human governance is about guiding human behavior through internal, inside-out, and value-based conviction. It focuses on axiology, including values, religion, belief systems, culture, and ethics, to promote trust [11].

According to [11], human governance has eight dimensions, based on Exploratory Factor Analysis (EFA): leadership, integrity, religiosity, spirituality, culture, training and development, recruitment and selection, and internal policy control. Meanwhile, human governance is measured by board independence, the board size, board education, and ownership structure, according to [84] in a study titled "Exploring the effects of corporate governance and human governance on management commentary disclosure". In a nutshell, corporate governance is a structured system used to meet the needs of customers and the business as a whole. Human governance embodies the idea that specific human values are eternally true, transcending man-made rules and regulations and representing an untainted science of consciousness. Nonetheless, consciousness is not simply that of the body or brain but a core soul outside the human physical structure. The soul is concerned with consciousness, values, and ethical behavior [58].

### *2.3. Hypotheses Development*

Since 2008, researchers and practitioners have focused on broadening and achieving the goal of human governance. Aside from corporate governance, human governance is critical, emphasizing the spirit of the law to guide humans. Eight elements of human governance are proposed: leadership, integrity, religiosity, spirituality, culture, recruitment, training, and internal control policy [11]. According to [58], human governance is religious-based governance that guides leaders' perspectives on nature, thought, decision making, and behavior. Human governance examines the axiology, which includes values, religion, belief systems, culture, and ethics, to foster a culture of trust. The human within the organization is viewed as the organization's soul.

From the explanation, we argue that the eight elements of human governance indeed provide a reflection to guide leaders' perspectives in the firm's activities and therefore lead to sustainability reporting disclosure. As human governance employs trust, religion, and belief systems, the implementation of human governance will increase the sustainability reporting disclosure. Therefore, we present the first hypothesis:

**Hypothesis 1**: *Human governance has a significant positive effect on sustainability reporting.*

The corporate governance literature universally recognizes the determination to improve transparency and consistency in organizational operations. CG also plays a critical role in economic growth, social well-being, and environmental protection. For example,

disclosing information about corporate sustainability performance has evolved and become an important subject for top management. As a result, the current study establishes a link between Islamic corporate governance and sustainability performance. This research investigates the theoretical relationship between Islamic CG mechanisms and the three dimensions of sustainability performance. This study suggests that Islamic CG mechanisms significantly influence sustainability performance, consistent with theories and previous research [4]. [6] used a quantitative approach with secondary data in the period 2010–2015 in nine Islamic banks and revealed that ICG has a significant effect on financial performance, ICG has no significant impact on sustainability, and Islamic financial performance has a significant effect on sustainability.

According to [30], the findings of a study on the social role of Islamic banks show inconsistency both domestically and internationally; they conducted a survey to re-explain the Islamic corporate governance (ICG) and Islamic social reporting (ISR) relationship models. The purpose of the study was to investigate the indirect effect of ICG disclosure on ISR disclosure in Indonesian Islamic banking, using financial performance as a moderating variable. Likewise, the study on Islamic banking in Indonesia employed secondary data from annual report data sources and financial statements. The result showed that financial performance mediates the effect of ICG disclosure on ISR; this demonstrates that proper management of Islamic banks will produce high financial performance, allowing them to perform well in their social roles [85]. The present study's contribution is to create a new model of financial performance that mediates the effect of ICG disclosure on ISR to benefit scientific development. Based on the above explanation, we formulated the following hypothesis:

**Hypothesis 2**: *Islamic corporate governance has a significant positive effect on sustainability reporting*.

Previous studies have shown that the technological factors represented by a higher percentage of skilled workforce and based in technologically intensive sectors appear to be critical elements for innovation decisions. The organizational factors of "firm size" and "ownership" significantly affect innovation decisions. Concerning ownership, a surprising finding is the lack of innovative activities in wholly foreign-owned firms, contrasting with other studies. Furthermore, regarding the environmental factors, the results show that the financial support from the local government is unrelated to the innovation engagement [86]. The findings are presented in the form of a model that quantifies the effects of ICT on sustainability in construction project delivery. The results indicate that process optimization, media substitution, and control externalization are methods for achieving sustainability through ICT. On various levels, information and communication technologies (ICT) have relevant positive and negative impacts on environmental sustainability: first-order effects such as increased electronic waste streams; second-order effects such as improved energy efficiency of production; and third-order effects such as a shift in consumption from product to service or rebound effects in transportation. All known relevant impacts on all three levels were modeled using a System Dynamics Approach in conjunction with scenario techniques and expert consultations in the simulation study described in this article. Technology and sustainability cannot be addressed separately. Technology is a driving force behind long-term economic and social development. Engineers understand that sustainability entails being economically viable, environmentally responsible, socially responsible, and culturally appropriate [87]. These aspects, however, fail to address the significance of "technology" as a component of the climate change and sustainability debate. In this context, the term "technology" refers to any system humans can use to modify nature to meet their needs and desires [14,16,20,88]. Because sustaining a legacy system necessitates extending its value, the first step is to define the value.

Legacy systems should be evaluated using a sustainability approach throughout the system's lifecycle, not just when reengineered. Firms in the high sustainability group use far more sophisticated information technology systems to assess non-financial performance.

For the most part, the results are marginally significant, but having an external third party conduct an audit of the company's corporate sustainability report—which reports on its environmental, social, and governance performance—provides explicit support for our hypothesis. A company is considered sustainable in a corporate environment when it promotes gains in three pillars: economic, environmental, and social [32,89,90]. A company can also create new business opportunities due to the development of new technologies [91,92]. The term "sustainable IT" refers to information software, hardware, resources, disposal, care, storage, and networks [93]. As such, the third hypothesis is formulated as follows:

**Hypothesis 3**: *Information technology usage has a significant positive effect on sustainability reporting*.

From the literature studies, the above three hypotheses were formulated based on the research framework used to form this study. Three independent variables are used in this research, namely human governance (HG), Islamic corporate governance (ICG), and information technology usage (ITU). We tested these three variables for their links to sustainability reporting disclosure (SR). The research framework is shown in Figure 1.

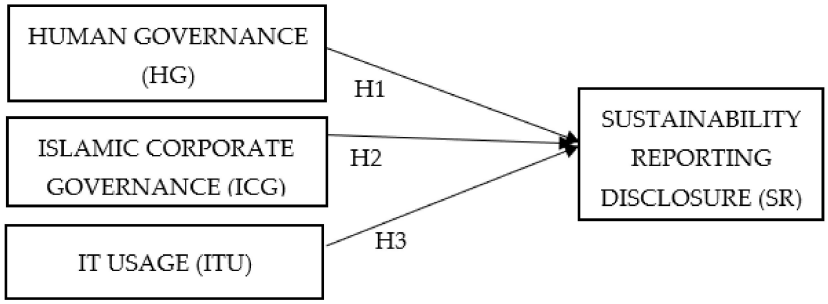



**Figure 1.** Research framework.

The regression analysis can be written as follows:

$$SR = \alpha + \beta_1 HG + \beta_2 ICG + \beta_3 ITU \quad (1)$$

From the equation, we can see that in every one-point increase in human governance (HG), Islamic corporate governance (ICG), or information technology usage (ITU), there will be a one-point increase in sustainability reporting disclosure (SR), as well. Therefore, we argue that human governance (HG), Islamic corporate governance (ICG), and IT usage (ITU) positively influence sustainability reporting disclosure (SR).

## 3. Research Methodology

This study makes use of publicly available secondary data from annual reports and related websites. Hypotheses testing was carried out to determine which variable has a positive and significant relationship with sustainability reporting disclosure. The total number of Shariah-compliant companies listed in the Indonesia Shariah Stock Index (ISSI) is 421. Because this research focuses on manufacturing companies, the final number of studied companies was 70. Using systematic random sampling, the final sample included 30 basic industry and chemical firms, 19 firms from various industries, and 21 firms from the consumer goods industry.

### *3.1. Index of Sustainability Reporting*

The SR index in this study used the 48 GRI-adapted items with a six-point scale employed in the study by [94] to assess the quality of sustainability reporting. We focused on the presence of Shariah-compliant companies' sustainability reporting in the manufac-

turing industry. As a result, the nominal score was used to record the absence (represented by "0") or presence (represented by "1") of sustainability items. The firms' sustainability reporting score was calculated in percentages using the unweighted approach, where each score of a company is divided by total scores. The higher the SR index score, the higher the company's SR. The SR index score is measured by three dimensions: environmental performance (EVP), economic performance (ECP), and social performance (SP) adapted from the work by [94] (Table 1).

$$\mathrm{SR} = \frac{\sum EVP + ECP + SP}{48} \quad (2)$$

**Table 1.** Sustainability reporting index score measurements [94].

| Variable | Measurements | Number of Items |
|---|---|---|
| **Sustainability Reporting Disclosure** | Content Analysis, 1 for disclose and 0 not disclose | Total: 48 items |
| | Economic Performance | 7 items |
| | Economic Performance | 4 items |
| | Market Presence | 2 items |
| | Indirect Economic Impact | 1 |
| | Environmental Performance | 16 items |
| | Materials | 2 items |
| | Energy | 2 items |
| | Water | 1 item |
| | Biodiversity | 2 items |
| | Emission, effluent and waste | 6 items |
| | Products and Service Compliance | 3 items |
| | Social Performance | 25 items |
| | Labor practices and decent work | 9 items |
| | Human rights | 6 items |
| | Society | 6 items |
| | Health and Safety | 4 items |

### *3.2. Index of Islamic Corporate Governance*

Islamic corporate governance consists of four components: (i) the percentage of Muslims on the board of directors (BOD); (ii) the percentage of Muslim independent non-executive directors (INED); (iii) the presence of a Muslim chairperson (COD); and (iv) the presence of a Muslim chief executive officer (CEO). The four components were adapted from the study by [95], which investigated the impact of culture and governance on corporate social reporting. The presence of a Muslim leader is given a score of 1 if they are present and 0 if they are not. These four items (Table 2) are used to calculate the index:

$$\mathrm{ICG} = \frac{\sum BOD + INED + COD + CEO}{4} \quad (3)$$

**Table 2.** Islamic corporate governance index score measurements [95].

| Variable | Measurements | Number of Items |
|---|---|---|
| **Islamic Corporate Governance** | | Total: 4 items |
| | Number of Muslims on BOD | Number of Muslims on BOD/Total number of people on BOD |
| | Number of Muslim independent non-executive directors (INEDs) | Muslim INEDs/Total number of INEDs |
| | Muslim chairperson | 1 if Muslim chairperson, 0 if not |
| | Muslim CEO | 1 if Muslim CEO, 0 if not |

### *3.3. Index of Human Governance*

Human governance has four dimensions: (i) leadership, (ii) company integrity, (iii) training and development, and (iv) internal control system quality. The board's leadership consists of five components: (i) work experience, (ii) educational background, (iii) educational level, (iv) age, and (v) gender diversity. These five components are combined to create a leadership index (5 items). Meanwhile, the integrity index is based on five components: corporate ethical values, ethical actions, code of ethics, ethical committee, and whistleblowing activity. When the component was disclosed, a score of 1 was given; otherwise, it received 0. The quality of control system dimension consists of six components: (i) internal control disclosure content (five items), (ii) internal control system implementation (six items), (iii) internal control system role (five items), (iv) internal control system objectives (three items), (v) internal control system framework (one item), and (vi) a dedicated internal control system (comprising 1 item). If an item was disclosed, it received a score of 1; otherwise, it received a score of 0. This component generates an internal control system index. The human governance index is calculated by adding these four components—leadership (LD), integrity (IT), training and development (TND), and internal control system quality (IC) adapted from the study by [96]—divided by a total of 37 items (Table 3).

$$\mathrm{HG} = \frac{\sum LD + IT + TND + IC}{37} \quad (4)$$

**Table 3.** Human governance index score measurements [96].

| Variable | Measurement | Number of Items | |
|---|---|---|---|
| **Human Governance** | | 37 Items | |
| | Leadership of BOD | 5 items | |
| | Job experience | Score 1 if >10 years, otherwise 0 | |
| | Education background | Business 1, Non-Business 0 | |
| | Education Level | Ph.D. | 4 |
| | | Master | 3 |
| | | Professional Certification | 2 |
| | | Degree | 1 |
| | | Below Degree | 0 |
| | Age | $\geq$ 60 years | 3 |
| | | 50–59 years | 2 |
| | | 40–49 years | 1 |
| | | $\leq$ 39 years | 0 |

**Table 3.** *Cont.*

| Variable | Measurement | Number of Items |
|---|---|---|
| **Human Governance** | Gender Diversity | Percentage of Female BOD/Total BOD<br>Female 1, Male 0 |
| | Integrity | Disclose, 1, Not Disclosed, 0; 10 items |
| | Corporate Ethics Value, | 1 item |
| | Action to promote ethics | 3 items |
| | Code of ethics | 2 items |
| | Ethics Committee | 2 items |
| | Whistleblowing policy | 2 items |
| | Training and Development of BOD | More than 5, score 1 is given<br>Less than 5, score 0 is given |
| | Internal Control Quality | Disclose, 1, Not Disclosed, 0; 21 items |
| | Content of internal control disclosure | 5 items |
| | Implementation of ICS | 6 items |
| | ICS and its role | 5 items |
| | Objective of ICS | 3 items |
| | Framework of ICS | 1 item |
| | A separate section of ICS | 1 item |

### *3.4. Index of IT Usage*

The IT usage index is measured using five items adapted from [25]. A score of 1 was given when ICT was used in the following processes: HRM (human resources management), SCM (supply chain management), accounting and finance (AF), customer relationship management (CRM), manufacturing (M), and the corporate communication platform, such as the company website or portal (CW) (Table 4). A score of 0 was given when ICT was not used in the processes.

$$\text{ITU} = \frac{\sum HRM + SCM + AF + CRM + M + CW}{6} \quad (5)$$

**Table 4.** IT usage index score measurements [25].

| Variable | Measurement | |
|---|---|---|
| **IT Usage** | 1 if disclosed and 0 if not | 6 items |
| | Using ICT for Corporate Information and Communication (such as website/portal/social media/official email) (CW) | 1 item |
| | Using ICT for Human Resources Management (such as digital app/HRIS/payroll/etc.) (HRM) | 1 item |
| | Using ICT for Supply Chain Management (SCM) | 1 item |
| | Using ICT for Accounting/Finance (AF) | 1 item |
| | Using ICT for Customer Relationship Management (CRM) | 1 item |
| | Using ICT for Manufacturing (M) | 1 item |

### *3.5. Control Variables*

This research used three control variables: firm size, profitability, and leverage. The values were taken from the annual reports with the following conditions: (1) the firm size

is counted by the natural log of total assets; (2) the profitability is counted by the return on assets; and (3) the leverage is counted by the total liabilities compared to total assets.

### *3.6. Data Instrument*

A panel of experts, including academics and industry professionals, validated the instrument, and inter-rater consistency was performed to ensure the validity of the research instrument before data collection. Descriptive analysis and multiple regression analysis were used to test the hypotheses of the study. All the basic assumptions of multiple regression analysis were met. Hypotheses testing was undertaken to understand which variable had a positive and significant relationship with the SR of Shariah-compliant companies in Indonesia for 2019.

## 4. Results

Table 5 shows the descriptive analysis of variables and indicators used in this research. Descriptive analysis is important to understand the data dispersion of each variable.

**Table 5.** Descriptive analysis of variable indicators.

| | N | Range | Minimum | Maximum | Sum | Mean | | Std. Deviation |
|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic |
| SR | 70 | 0.74 | 0.00 | 0.74 | 22.02 | 0.3146 | 0.02151 | 0.18000 |
| HG | 70 | 0.59 | 0.19 | 0.78 | 27.55 | 0.3936 | 0.01749 | 0.14636 |
| ICG | 70 | 0.75 | 0.00 | 0.75 | 9.10 | 0.1300 | 0.02341 | 0.19584 |
| ITU | 70 | 0.83 | 0.17 | 1.00 | 35.50 | 0.5071 | 0.03278 | 0.27428 |
| P | 70 | 0.76 | −0.40 | 0.36 | 2.88 | 0.0411 | 0.01105 | 0.09248 |
| S | 70 | 9.50 | 8.88 | 18.38 | 1013.92 | 14.4845 | 0.20466 | 1.71233 |
| L | 70 | 0.76 | 0.07 | 0.83 | 27.96 | 0.3994 | 0.02078 | 0.17384 |
| SR1 | 70 | 1.00 | 0.00 | 1.00 | 26.71 | 0.3816 | 0.02859 | 0.23920 |
| SR2 | 70 | 0.69 | 0.00 | 0.69 | 18.50 | 0.2643 | 0.02563 | 0.21445 |
| SR3 | 70 | 0.88 | 0.00 | 0.88 | 20.86 | 0.2980 | 0.02078 | 0.17389 |
| HG1 | 70 | 0.52 | 0.28 | 0.80 | 39.94 | 0.5705 | 0.01259 | 0.10535 |
| HG2 | 70 | 0.80 | 0.00 | 0.80 | 26.60 | 0.3800 | 0.02271 | 0.19004 |
| HG3 | 70 | 1.00 | 0.00 | 1.00 | 11.00 | 0.1571 | 0.04381 | 0.36656 |
| HG4 | 70 | 0.95 | 0.00 | 0.95 | 32.67 | 0.4667 | 0.03014 | 0.25218 |
| ICG1 | 70 | 0.75 | 0.00 | 0.75 | 9.23 | 0.1318 | 0.02422 | 0.20265 |
| ICG2 | 70 | 1.00 | 0.00 | 1.00 | 13.17 | 0.1881 | 0.04262 | 0.35658 |
| ICG3 | 70 | 1.00 | 0.00 | 1.00 | 9.00 | 0.1286 | 0.04030 | 0.33714 |
| ICG4 | 70 | 1.00 | 0.00 | 1.00 | 5.00 | 0.0714 | 0.03100 | 0.25940 |
| ITU1 | 70 | 0.00 | 1.00 | 1.00 | 70.00 | 1.0000 | 0.00000 | 0.00000 |
| ITU2 | 70 | 1.00 | 0.00 | 1.00 | 46.00 | 0.6571 | 0.05714 | 0.47809 |
| ITU3 | 70 | 1.00 | 0.00 | 1.00 | 23.00 | 0.3286 | 0.05654 | 0.47309 |
| ITU4 | 70 | 1.00 | 0.00 | 1.00 | 31.00 | 0.4429 | 0.05980 | 0.50031 |
| ITU5 | 70 | 1.00 | 0.00 | 1.00 | 21.00 | 0.3000 | 0.05517 | 0.46157 |
| ITU6 | 70 | 1.00 | 0.00 | 1.00 | 22.00 | 0.3143 | 0.05589 | 0.46758 |
| Valid N | 70 | | | | | | | |

Tables 5 and 6 show the descriptive analysis of the control variables and dimensions of the sustainability reporting index. The standard deviation is around 0.09 up to 0.2. Data normality is a critical issue in multiple regressions, particularly in SEM. The skewness and kurtosis statistics were also checked, and the skewness–kurtosis value was within the acceptable range of ± 1.96. The data distribution was normal, according to the Shapiro–Wilks test. Multicollinearity, another threat to multiple regressions, was not present.

**Table 6.** Descriptive analysis of variables.

| | N | Range | Mean | Std. Deviation | Variance | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic |
| SR | 70 | 0.74 | 0.3146 | 0.18000 | 0.032 | 0.285 | −0.852 |
| HG | 70 | 0.59 | 0.3936 | 0.14636 | 0.021 | 1.141 | 0.560 |
| ICG | 70 | 0.75 | 0.1300 | 0.19584 | 0.038 | 1.411 | 1.057 |
| ITU | 70 | 0.83 | 0.5071 | 0.27428 | 0.075 | 0.371 | −1.070 |
| P | 70 | 0.76 | 0.0411 | 0.09248 | 0.009 | −0.756 | 8.565 |
| S | 70 | 9.50 | 14.4845 | 1.71233 | 2.932 | −0.038 | 0.780 |
| L | 70 | 0.76 | 0.3994 | 0.17384 | 0.030 | 0.052 | −0.682 |
| Valid N | 70 | | | | | | |

The correlation coefficient between the independent variables was not very high, as seen in Table 7. We deduced that the data had a normal distribution and avoided the multicollinearity problem. Autocorrelation indicates a cross-sectional data collection problem. The result showed no autocorrelation (threshold range is 1.50–2.50). The scattered residual plots indicated that the residual value terms were dispersed around the regression line. As a result, the data were proven free from homoscedasticity.

**Table 7.** Correlation analysis of variables.

| | | SR | HG | ICG | ITU | P | S | L |
|---|---|---|---|---|---|---|---|---|
| SR | Pearson Correlation | 1 | 0.316 ** | −0.183 | 0.155 | 0.184 | 0.429 ** | 0.184 |
| | Sig. (2-tailed) | | 0.008 | 0.129 | 0.199 | 0.126 | 0.000 | 0.126 |
| | N | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| HG | Pearson Correlation | 0.316 ** | 1 | 0.084 | 0.113 | 0.125 | 0.359 ** | 0.267 * |
| | Sig. (2-tailed) | 0.008 | | 0.488 | 0.354 | 0.304 | 0.002 | 0.025 |
| | N | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| ICG | Pearson Correlation | −0.183 | 0.084 | 1 | −0.084 | 0.105 | −0.112 | −0.038 |
| | Sig. (2-tailed) | 0.129 | 0.488 | | 0.489 | 0.386 | 0.357 | 0.752 |
| | N | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| ITU | Pearson Correlation | 0.155 | 0.113 | −0.084 | 1 | 0.045 | 0.111 | −0.004 |
| | Sig. (2-tailed) | 0.199 | 0.354 | 0.489 | | 0.709 | 0.359 | 0.971 |
| | N | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| P | Pearson Correlation | 0.184 | 0.125 | 0.105 | 0.045 | 1 | 0.265 * | −0.021 |
| | Sig. (2-tailed) | 0.126 | 0.304 | 0.386 | 0.709 | | 0.026 | 0.860 |
| | N | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| S | Pearson Correlation | 0.429 ** | 0.359 ** | −0.112 | 0.111 | 0.265 * | 1 | 0.092 |
| | Sig. (2-tailed) | 0.000 | 0.002 | 0.357 | 0.359 | 0.026 | | 0.447 |
| | N | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| L | Pearson Correlation | 0.184 | 0.267 * | −0.038 | −0.004 | −0.021 | 0.092 | 1 |
| | Sig. (2-tailed) | 0.126 | 0.025 | 0.752 | 0.971 | 0.860 | 0.447 | |
| | N | 70 | 70 | 70 | 70 | 70 | 70 | 70 |

** Correlation is significant at the 0.01 level (2-tailed); * correlation is significant at the 0.05 level (2-tailed).

### *4.1. Relationship Analysis of Human Governance, Islamic Corporate Governance, and Information Technology Usage with Sustainability Reporting Disclosure*

Table 8 shows the regression analysis results from the independent variables of human governance, Islamic corporate governance, and information technology usage, along with the control variables (profitability, size, and leverage), as they relate to sustainability reporting disclosure as the dependent variable. The results show that HG is significantly positive in relation to SR, with a significance value of 0.004 < 0.05. Second, ICG is significantly negative in relation to SR, with a significance value of 0.003 < 0.05. Third, ITU is not significant in relation to SR, with a significance value of 0.108 > 0.05. As for the control variables, profitability was found to be not significant in relation to SR. Meanwhile, size and leverage were found to be significant in relation to SR, with significance values of 0.000 and 0.048, respectively. The regression result was obtained after a bootstrapping process of 300 samples from the original 70 samples. During the first regression analysis with 70 samples, we found that the only significant relationship was between human governance and sustainability reporting disclosure. However, after the bootstrapping result, the relationships between HG and SR, and ICG and SR become significant.

**Table 8.** Regression analysis no. 1.

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | −0.292 | 0.086 | | −3.405 | 0.001 *** |
| HG | 0.209 | 0.072 | 0.170 | 2.910 | 0.004 *** |
| ICG | −0.149 | 0.049 | −0.162 | −3.037 | 0.003 *** |
| ITU | 0.056 | 0.035 | 0.085 | 1.611 | 0.108 |
| Profitability | 0.191 | 0.106 | 0.098 | 1.800 | 0.073 * |
| Size | 0.032 | 0.006 | 0.304 | 5.221 | 0.000 *** |
| Leverage | 0.111 | 0.056 | 0.107 | 1.982 | 0.048 ** |
| R-square | 0.265 | | | | |
| Adjusted R-square | 0.249 | | | | |
| F-statistic | 0.000 [a] | | | | |

[a] Dependent variable: sustainable reporting index. *** Indicates the significance of the correlation coefficient at 0.01; ** indicates the significance of the correlation coefficient at 0.05; * indicates the significance of the correlation coefficient at 0.1.

Table 9 shows that human governance, Islamic corporate governance, and IT usage are significantly related to sustainability reporting, each with a value of 0.000 < 0.05. From the table, we can write the linear equation model as follows:

$$SR = 0.170 \times HG - 0.162 \times ICG + 0.085 \times ITU \quad (6)$$

**Table 9.** ANOVA test results no. 1.

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 2.369 | 6 | 0.395 | 16.395 | 0.000 [a] |
| | Residual | 6.573 | 273 | 0.024 | | |
| | Total | 8.942 | 279 | | | |

[a] Dependent variable: SR.

From the linear equation, we can see that human governance has the strongest beta coefficient. Therefore, we can conclude that human governance has the most significant influence on sustainability reporting disclosure.

### *4.2. Relationship Analysis between Information Technology Usage and Sustainability Reporting Disclosure*

Table 10 shows the regression analysis result from the independent variables of information technology usage and the control variables (profitability, size, and leverage) and sustainability reporting disclosure as the dependent variable. The result shows that ITU was significantly positively related to SR with a significance value of 0.041 < 0.05. As for the control variables, the profitability was found to be not significant to SR. Meanwhile, size and leverage were found to be significant to SR, with significance values of 0.000 and 0.005, respectively.

**Table 10.** Regression analysis no. 2.

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | −0.371 | 0.085 | | −4.364 | 0.000 *** |
| ITU | 0.072 | 0.035 | 0.110 | 2.056 | 0.041 ** |
| Profitability | 0.159 | 0.107 | 0.082 | 1.478 | 0.140 |
| Size | 0.040 | 0.006 | 0.381 | 6.837 | 0.000 *** |
| Leverage | 0.157 | 0.055 | 0.152 | 2.836 | 0.005 ** |
| R-square | 0.223 | | | | |
| Adjusted R-square | 0.176 | | | | |
| F-statistic | 0.002 [a] | | | | |

[a] Dependent variable: sustainability reporting index. *** Indicates the significance of the correlation coefficient at 0.01; ** indicates the significance of the correlation coefficient at 0.05.

Table 11. shows that the interactions of IT usage and all control variables were found to be significant to sustainability reporting, with values of 0.002 < 0.05.

**Table 11.** ANOVA test results no. 2.

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 0.499 | 4 | 0.125 | 4.674 | 0.002 [a,**] |
| Residual | 1.736 | 65 | 0.027 | | |
| Total | 2.235 | 69 | | | |

[a] Dependent variable: SR. ** Indicates the significance of the correlation coefficient at 0.05.

### *4.3. Relationship Analysis between Islamic Corporate Governance and Sustainability Reporting Disclosure*

Table 12 shows the regression analysis results for the independent variable of Islamic corporate governance (ICG), along with the control variables (profitability, size, and leverage) with sustainability reporting disclosure as the dependent variable. The result shows that ICG was significantly negatively related to SR with a significance value of 0.07 < 0.05. As for the control variables, the profitability was found to be not significant to SR. Meanwhile, size and leverage were found as significant to SR with significance values of 0.000 and 0.006, respectively.

**Table 12.** Regression analysis no. 3.

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | −0.302 | 0.086 | | −3.508 | 0.001 *** |
| ICG | −0.135 | 0.049 | −0.147 | −2.738 | 0.007 *** |
| Profitability | 0.204 | 0.108 | 0.105 | 1.887 | 0.060 * |
| Size | 0.039 | 0.006 | 0.371 | 6.667 | 0.000 *** |
| Leverage | 0.152 | 0.055 | 0.147 | 2.762 | 0.006 *** |
| R-square | 0.232 | | | | |
| Adjusted R-square | 0.221 | | | | |
| F-statistic | 0.000 [a] | | | | |

[a] Dependent variable: sustainability reporting index. *** Indicates the significance of the correlation coefficient at 0.01; * indicates the significance of the correlation coefficient at 0.1.

Table 13 shows that the interaction of ICG and all control variables are found to be significantly related to sustainability reporting, with a value of 0.000 < 0.05.

**Table 13.** ANOVA test results no. 3.

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 2.078 | 4 | 0.519 | 20.812 | 0.000 [b] |
| Residual | 6.864 | 275 | 0.025 | | |
| Total | 8.942 | 279 | | | |

[b] Predictors: (constant), leverage, profitability, ICG, size.

### *4.4. Discussion*

The results of the relationship analyses in Sections 4.1–4.3 show that human governance has a significant positive effect on sustainable reporting disclosure. In other words, we can say that the four dimensions of human governance used in this research, leadership, integrity, training, and internal control, will increase a company's sustainability reporting disclosure. This finding correlates with a previous study on leadership as belonging to the person who influences others and guides the firm's direction [97] and who shows integrity and control [11]. Agency Theory also posits that the board members, as leaders, are responsible for monitoring management's sustainable policy and strategy (environmental and social policy, strategic CSR, environmental investment, and information availability) [33]. Therefore, human governance was proven in this research to be significant positively related to sustainability reporting disclosure. Thus. Hypothesis 1 is accepted.

Next, the regression analysis results show that even though Islamic corporate governance has a significant influence on sustainability reporting disclosure, the effect is negative. In other words, the higher the percentage of Muslim leaders in corporate governance, the less likely it is that the sustainability reporting will be disclosed. This result opposes those of previous studies on Islamic corporate governance, which claim that the value of Islamic law enforced transparency and honesty.

There are several possible reasons for this finding. First, there is no Islamic Shariah committee to supervise the implementation closely. Therefore, the on-field conduct does not reflect the correct code of conduct for the Islamic corporate governance leaders. Second, based on [98], Islamic corporate governance does not affect the "Islamicity performance index". [98]'s study was conducted on Islamic banks disclosed in annual reports. Moreover, [99] found that the larger the Shariah supervisory board (SSB), the more sustainability practices carried out by the Islamic financial institutions. Another study in a reporting

disclosure activity showed that board size, number of meetings, and board independence are significant corporate governance characteristics to establish the link with corporate social responsibility disclosure [100]. Therefore, the existence of independent directors on the board will influence the management's decision and encourage the organization to disclose more of their business activities

On the contrary, [101] found no evidence in Ireland that the separation of the CEO and chairperson, or the ownership structure, is linked to voluntary disclosure. The stakeholder approach acknowledges that, in addition to shareholders and creditors, a wide range of agents are interested in a company's sustainability views [102]. From a sample of 159 banks, [103] discovered that independent directors and gender diversity boost the sharing of CSR data. However, the national culture system moderates these findings, which we did not include in this research. This argument is strengthened by [104], who used data from 29 countries from 2006 to 2014 and found that board independence is negatively related with disclosure procedures. Hence, these conclusions support the hypothesis that Islamic corporate governance has a negative effect on sustainability reporting disclosure. As a result, Hypothesis 2 is rejected.

Though the previous studies stated that ICT is a driving factor for sustainability, this does not seem to be working in the same way with sustainability reporting disclosure. The result proved that when human governance is present, as shown in Table 9, the relationship between ITU and SR is insignificant. However, when human governance is not present, as shown in Table 11, the IT usage has a significant positive effect on sustainability reporting disclosure. This condition can be explained by the presence of good human governance skills in leadership, integrity, training, and internal control, whereby these skills greatly influence sustainable reporting disclosure. When these skills are present, IT usage is not significant in driving the sustainable reporting disclosure. Meanwhile, when the firm does not have good human governance skills, IT usage will significantly influence the sustainability reporting disclosure. Therefore, Hypothesis 3 is accepted.

Finally, one control variable, profitability, was not significant in any of the regression analysis results. The TOE Framework supports this finding, which reveals that the social aspect was statistically supported, whereas the hedonistic drive was not. Likewise, [105] employed a regression model to show how integrated reporting quality is significantly and positively connected with stakeholders' pressures, based on Stakeholder Theory. Customers, environmental protection organizations, employees, shareholders, and governments all exert pressure on integrated reporting quality. Thus, it can be concluded that profitability has no considerable impact on sustainability reporting disclosure.

## 5. Conclusions

Based on our findings, the present research shows that profitability was the only insignificant variable in each hypothesis. The results prove that sustainability reporting disclosure is not influenced by profitability. However, it is worth noting that when profitability interacts with other variables with or without human governance and information technology usage, the result is significant.

In addition, the results show that human governance is an essential factor in driving the sustainable reporting index. Furthermore, there is less information technology usage when a firm has good human governance skills. Meanwhile, when a firm does not have good human governance skills, the IT usage variable becomes significant.

In conclusion, this research contributes to the study of corporate governance by showing that when human governance and information technology are present, their relationship with sustainability reporting disclosure is significant. In other words, when the dimensions of human governance, namely leadership, integrity, training, and internal control, are present, IT usage is less significant to drive sustainable reporting disclosure in corporate governance. On the contrary, when corporate governance lacks human governance dimensions, namely leadership, integrity, training, and internal control, IT usage becomes significant in driving sustainable reporting disclosure. This reflects the

urgent need of corporates to pay attention to human governance skills first. Even though previous studies on IT usage have shown that IT is crucial for a company's success, the present research indicates that IT usage will not have a significant impact if good human governance skills do not support it.

Moreover, the results also prove that IT usage becomes less critical when corporates have good human governance skills. Therefore, we recommend that corporates concentrate on building good human governance skills as their main priority. Moreover, in the achievement of sustainable reporting disclosure, profitability does not have any significant effect. Hence, profitability is not an essential factor in predicting sustainable reporting disclosure.

This research comes with several limitations. First, the data collection regarding the Islamic corporate index, such as the percentage of Muslim commissioners, Muslim independent commissioners, Muslim chairpersons, and Muslim CEOs, was mostly taken from browsing through websites and social media, such as Facebook and LinkedIn. This might not be as accurate compared to individual interviews. Second, this research was conducted in 2019, right before COVID-19 pandemic. The results should be enhanced with the newest updated data from 2020 and 2021. Nevertheless, the contribution of this research is clear as to enrich the study of sustainability in Islamic corporate governance, especially in Indonesia.

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