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RESEARCH ARTICLE

Does foreign ownership affect corporate sustainability disclosure in Pakistan? A sequential mixed methods approach

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Abstract

The objective of this study is to investigate the potential impacts of foreign ownership on the corporate sustainability disclosure of leading non-financial companies in the context of an emerging economy of Pakistan. The study employed data from the year 2006 to 2018 gathered from the Pakistan stock exchange. Further, the data on foreign ownership and corporate sustainability disclosure obtained from the firm's annual reports and the global reporting initiatives (GRI) database. This study employed a sequential mixed methods technique. The empirical results indicate that foreign ownership has a significant impact on total sustainability disclosure (TCSRI). Whereas having an individual assessment, we found that foreign ownership is positively associated with each component (economic, social, and environmental) disclosure respectively. Moreover, our findings prove that firm size and growth are positively related to foreign ownership, TCSRI, and its aspects. In contrast, the study reveals a negative relationship among financial leverage, TCSRI, and economic, social, and environmental sustainability exposure. Summing up, the study indicates that foreign ownership effectively improves sustainability governance mechanism, and at the same time, it is also found that higher financial leverage restricts the sustainability disclosure capacity of firms. Results from this study have technical, theoretical, and policy implications for regulatory institutions, corporate management, and investors in emerging economies. Hence, we put forward the policy implications that the regulatory institutions need to reconsider the policy guidelines subject to diversification of ownership and activism of foreign shareholders in both small/large size firms to enhance the sustainability disclosure practices. Also, reduce the increasing level of financial leverage, which is curbing the firm's economic, social, and environmental reporting activities.

Keywords Sustainability disclosure · Foreign ownership · Sustainability governance · GRI · Financial leverage

Introduction

Corporate sustainability disclosure is an effective channel to interact with various stakeholders (Bae et al. 2018). Nowadays, corporate entities are progressively struggling for the sustainability of governance and sustainability disclosure to attract potential shareholders. The study of Blowfield and Murray (2008) indicates that corporate sustainability comprises "intra-generational and intergenerational equity and the impression of eco-justice and eco-efficiency." Sustainability reporting is defined by GRI (Global Reporting Initiative) as, "the report produced by a company about the economic, environmental and social effects generated by its rear operations" (GR1 2010).

Ownership mechanism is an essential component in sustainability disclosure (Eyigege 2018). Firms in which ownership concentration is robbing into domestic influences, sustainability disclosure inclined to be miserable (Katmon et al. 2017). Corporate ownership explains the share of left-over claims and a decision rule that has effects on company behavior and delimits the association between stakeholders and outside directors (Katmon et al. 2017; Jensen and Meckling 1976). In the case of foreign ownership by international firms, compliance with sustainability exposure principles is anticipated to be high,

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due to the lack of acknowledgment of sustainability reporting voluntarily. Such as studies by Jensen and Meckling (2012) and Gill et al. (2011) argued that disclosure of other aspects, i.e., economic, social, and environmental, is a widespread activity in the globe. Similarly, there is a new tendency of companies reporting on nonfinancial elements of the business (Ali et al. 2017a, b; Kumar and Prakash 2019).

Even though extensive research has been conducted to assess the complementarities of corporate sustainability disclosure (CSRD) and corporate governance (CG) relationship. But, the focus of the research remained towards developed countries. Still, there is a lack of empirical study addressing the individual and country-wise examination of CSA economies corporate foreign ownership (FOWN) and sustainability disclosure in the context of emerging economies. To extend the existing knowledge, this study emphasizes the economy of Pakistan.

The reason for selecting Pakistan is that in the past, the economy has undergone worse governance, sustainability, and economic challenges, as Lu et al. 2015), and Waluyo (2017) argued that Pakistan is tackling worse governance and management issues. The existing literature addresses a variety of governance challenges, the major challenge includes firstly, fragile governance reforms (i.e., amendments in company law 1984, inconsistency of corporate governance code 2002 due to weak overlapping regulatory provisions) which support the concentrated family business instead of protecting minority stakeholders (Gul et al. 2017; Ali et al. 2017a, b; Javid and Iqbal 2010; Draz 2014).

Secondly, weak enforcement mechanism and lack of investors protection (e.g., minority rights protection, insider trading protection) were reported by Ashraf and Ghani (2005). Most of the businesses were owned by the concentration of single or multiple groups (Eyigege 2018; Kouser et al. 2012); domination of family ownership, e.g., family-owned business including "textile sector, leather industry, construction companies, chemicals" (Fatima 2016; Khan and Nouman 2017; Khan and Hassan 2019); (Ullah et al. 2014) and lack of transparency and accountability, integrated board of directors, cross-shareholding mechanism, and amplified system (Ashraf and Ghani 2005; Mahmood et al. 2018; Masud et al. 2018). Thirdly, Fatima et al. (2018) and Fatima (2016) reported that inappropriate compliance with CG standards and violations of CG principles is the root cause of recent failures of corporate governance (CG) in Pakistan for example; violations of CG codes in "Pakistan International Airlines (PIA), Pakistan Telecommunication Company Limited (PTCL), mal-governance in National Bank of Pakistan (NBP), and 28 million corruption scandal of National Insurance Company Limited (NICL)" is the big governance mala fides in Pakistan. Similarly, the privatization of PTCL is another CG failure in Pakistan, which created a significant financial gap (Fatima et al. 2018).

On the other side, the economy is also going through sustainability challenges, for example, climate change, environmental pollution, and deforestation (Masud et al. 2018; Shouket et al. 2019). According to Global Climate Risk Index (GCRI) (2018), Pakistan is among 10 economies suffered most from climate changes. In addition, Pakistan is ground zero for global warming effects and the minimum rate of greenhouse gases (GHG) and CO_2 emission globally (World Bank Climate Change Report 2018). However, in the private sector, many firms with quality sustainability reporting policies and consciousness are not good at full sustainability disclosure (PICG (Pakistan Institute of Corporate Governance) 2013). Therefore, other sustainability issues involve lack of green transportation and eco-friendly transportation policies (Hassan et al. 2019); unsustainable energy policy and energy shortage (Salahuddin and Gow 2019; Shah et al. 2018); food production, water scarcity, and biodiversity (Khan and Hassan 2019); and changing demographics, geopolitical instability, and inequality (Kanwal et al. 2019).

Lastly, the main economic challenges encountering Pakistan among others for instance increasing trade deficit of goods and services, devaluation, and monetary uncertainty are decreasing economic sustainability in Pakistan (Hassan et al. 2017; Almas 2008), decrease in economic growth, rising debt exhibiting significant vulnerabilities towards tightening of internal/extrinsic financing situation (World Bank 2018), increasing dependence on imported energy sources (Naeem Nawaz and Alvi 2018), insufficiency of intra-regional trade and investment, advance technology, stable macroeconomic policies, and sound institutional governance (Husain 2018). Similarly, the governmental potential is not enough to meet long-term development goals (World Bank 2015).

Sustainability reporting remains an evasive target in Pakistan (Mahmood et al. 2018). The reform in governance and managerial conditions is needed to deliver the sustainable development targets of the economy (Faisal 2017). However, currently, the economy started improving its global image according to recent World Bank Doing Business Report (2019); the shareholder's power index is 7.0, and investor protection index is 6.7 in Pakistan, as higher than developed economies (e.g., USA and Germany) and neighboring CSA countries. After all these issues and changing governance order, the sustainability governance needs more to be explored in Pakistan. Moreover, it can be stated that the existing state of the knowledge neglects and overlooks the presence of corporate foreign ownership as an essential component of corporate governance influencing corporate sustainability disclosure practices at all levels.

In light of these theoretical shortcomings, the issue is whether the firm's ownership structure (foreign ownership) has any influence on sustainability disclosure in the context of an emerging economy like Pakistan? How does foreign ownership assure sustainability reporting in the presence of

concentrated family ownership? Whether foreign shareholders can exercise their power to control management decisions in the interest of society and environment? How foreign shareholders show involvement and activism to disclose more information? There is ample need to analyze the possible complementarities between external ownership and sustainability disclosure in the business environment of an emerging economy. However, no study addresses the association and effects of foreign ownership on sustainability disclosure in the context of Pakistan.

To fill the aforementioned research gaps, the present study first empirically examines the impact of foreign ownership (FOWN) on different aspects of sustainability (Economic, Social, and Environmental) disclosure. Second, the study investigates the perceptions of corporate management about the effect of foreign ownership on sustainability disclosure. This study contributes to the existing literature by addressing the theoretical and empirical shortcoming and assess the effect of foreign ownership on the corporate sustainability disclosure of listed Pakistani firms, by the integration of both qualitative and quantitative aspects. The remaining paper is organized into four sections. "Theoretical significance, literature review, and hypotheses development" explains the theory, literature review, and hypothesis development and conceptual framework; "Materials and methods" represents the research methodology. Furthermore, "Empirical results" exhibits the empirical analysis and discussion. Finally, "Conclusion and policy recommendations" constitutes the conclusion and policy implications of the research.

Theoretical significance, literature review, and hypotheses development

Theoretical significance

This study nestles upon four dominant theories of corporate governance and sustainability disclosure, i.e., agency theory (AT), resource dependency theory (RDT), legitimacy theory (LT), and stakeholder's theory (ST). These are the most leading doctrines employed to understand the process of information disclosure regarding economic, social, and environmental issues and role of foreign ownership (Bae et al. 2018; Masud et al. 2018). Similarly, agency theory proposes that increasing sustainability reporting practices overcome agency issues between management and foreign stakeholders, as they own a large proportion of shares, distinct cultural values, and understanding (Jensen and Meckling 1976; J. H. 2011). Comparatively, the resource dependency theory states that foreign shareholders with diverse experience and cultural background play a decisive role in the managerial selection and quality information exposure (Khan et al. 2013; Oh et al. 2011).

Subject to resource dependency, Masud et al. (2018) argued that like an influential group of diversified stakeholders, foreign shareholders also play the role of firm monitoring and liaising with domestic and international environmental activist organizations. Moreover, foreign shareholder reservations on environmental issues affect local firm management to obey ecological laws and report more sustainable and environmental friendly information to reduce political expenses (Delgado-Márquez et al. 2016). In contrast, the legitimacy theory posits a company as a social agreement, which associates societal anticipations with corporate interests (Martínez-Ferrero and García-Sánchez 2017). Coherent to legitimacy theory, firms can only be sustained if their activities are accepted legitimate by independent stakeholders (Rossi and Tarquinio 2017). So, the logic behind the relationship between corporate sustainability reporting and legitimacy theory is that firms reporting strategies practically react to environmental occurrences and social intentions (Momin and Parker 2013). In this context, firms disclose sustainability information to attain legitimacy for business activities (Ching and Gerab 2017).

Comparatively, the stakeholder's theory concentrates on specific groups within society, i.e., investors, stakeholders, customers, employees, and non-governmental organizations (NGOs) (Reverte 2009). According to stakeholder's theory, firms struggle to integrate its activities with "stakeholder's expectations" by CSR disclosure (Barako and Brown 2008). In this way, disclosure of CSR information gives a chance to establish strong linkages with stakeholders by proving the firm's loyalty towards responsible business activities (Jain and Winner 2016). Moreover, stakeholder's theory considers CSR disclosure as a source of reaction to critical pressure by external stakeholders of firm (Katmon et al. 2017; Odriozola and Baraibar-Diez 2017).

Stakeholder's theory has inclusive importance relative to agency theory as it extends the inclination of principal (management) to all stakeholders instead of only shareholders. In this way, the stakeholder's doctrine primarily deals with the recognition and obligation of the relationship between company activities and its impact on different stakeholders (Gray et al. 1995). Consequently, good corporate governance activities enhance the association between company and stakeholders by promoting sustainability (Hussain et al. 2016), hence relevant to stakeholder's theory sustainability reporting act as a mean of communication between firms and their stakeholders regarding different economic, social, and environmental components (Jiang and Fu 2019; Vijayakumaran 2019; Bae et al. 2018; Masud et al. 2018).

Coherent to agency, legitimacy, stakeholders, and resource dependency theory, the prior studies also indicate that foreign shareholders can pressurize domestic firms to set up and sustain transparent, stable corporate governance standards, and force them to expose environmentally and socially sustainable information (Katmon et al. 2017; Sharif and Rashid 2014). In

relation to theoretical underpinning, our study claims that the activism of foreign ownership, corporate transparency, and firms attitude towards responsible business practices enhance sustainability (economic, social, and environmental) disclosure.

Theoretically, our study employed four different theories to establish a relationship between foreign ownership and sustainability reporting decisions regarding different dimensions, such as economic, social, and environmental. The previous studies focus on different theories to explain the association between environmental reporting and ignored other components of sustainability reporting. Subject to theoretical significance and contribution, firstly the present study extends the existing literature on triple bottom line reporting (i.e., economic, social, and environmental) practices in an emerging market are having weak governance enforcement system. Secondly, our study is the first to integrate four different governance doctrines (school of thoughts) to express the association between foreign ownership and all sustainability reporting dimensions. Thirdly, our study has managerial inputs, as it contributes to the ownership diversification, shareholders activism, and management sensitivity towards sustainable (social, environmental, and economic) and eco-responsible investment decisions.

Literature review and hypothesis development

Sustainability reporting

Sustainability disclosure is essential for the viability of firms and the stakeholders, and ownership mechanism has a particular role in the board that pushed the firms to sustainability disclosure (Bae et al. 2018). The existing state of the artwork has similar as well as divergent outcomes regarding the association between foreign ownership and sustainability disclosure. Andrew et al. (1989), Adeniyi and Adebayo (2018), Mahmood et al. (2018), and Wang and Wang (2015) reported a positive and significant association between foreign ownership and reporting disclosure. Further, Brown et al. (2009) and Mirza (2016) reported a positive association between foreign ownership and CSR in Bangladesh.

Similarly, Ganapathy (Ganapathy and K. K. 2017) argued that foreign shareholders are dedicated in their sustainability reporting in India. Previous studies propose that the frequency of CSRD differ from firm to firm; although the investors, stakeholders, rely on the management goodwill (Ullah and Rahman 2015), ownership is a robust and persuasive component in influencing company execution in Pakistan (Khan and Nouman 2017), CSRD is an efficient alternative for control through institutional shareholders (Whetman 2018), total sustainability disclosure has a significant association with ownership (Bae et al. 2018), there is higher sustainability disclosure in firms with "majority foreign ownership" that confirms the existence of higher transparency in firm activities (Stojanovic-Aleksic and Boskovic 2017). The higher the deviation between ownership and control, the higher the capacity of the extreme controllers exercised their dominant behavior in entities. Following previous research outcomes, we assumed that foreign ownership (FOWN) has a significant association with corporate sustainability disclosure. Hence, we hypothesize that:

H1: There is a positive relationship between the extent of foreign ownership and corporate sustainability disclosure (Total sustainability disclosure).

Comparatively, some studies reported a negative relationship between foreign ownership and CSR, as (Gulzar et al. 2019) foreign ownership has no significant impact on corporate social responsibility engagement, (Haladu and Beri 2016) revealed mixed association between ownership mechanism and environmental information disclosure, government and foreign shareholding have no positive impact on CSR (Hartikayanti and Siregar 2018), and Ntim et al. (2013) and Nazari et al. (2015) argued that negative relationship could be due to long-run aspects of investment operations. However, (Masud et al. 2018) external factors act as motivators and internal control acts as supporters to improve sustainability disclosure.

Furthermore, our study intends to measure individual effects and relationship between foreign ownership and various components of sustainability such as economic, social, and environmental disclosure. Additionally, foreign shareholders also push management to make socially responsible investments and report valid environmental information to reduce the risk of loses or to acquire profit maximization (Adeniyi and Adebayo 2018; Sharif and Rashid 2014; Brown et al. 2009). Similarly, Masud et al. (2018) reported a positive association between foreign ownership and environmental sustainability disclosure. We further hypothesize that:

H1a: There is a positive relationship between the extent of foreign ownership and economic sustainability disclosure.

H1b: There is a positive relationship between the extent of foreign ownership and social sustainability disclosure.

Environmental reporting

Nowadays, indicating efficient sustainability governance and assuring eco-friendly environmental practices are the main challenges encountered by firms to protect their sustainability (Bae et al. 2018). The term "Environmental reporting (ER)" is defined as reporting by firms regarding the environmental responsiveness of their activities (Deegan and Rankin 2006), as ER extends the role of the companies above the traditional role of disclosing financial information by presuming the extensive environmental practices of the entities (Gray and Owen 1987). Similarly, ER facilitates the firms to inform

stakeholders that their business activities and investment decisions are environmentally sustainable (Masud et al. 2018).

Environmental reporting enable firms to boost stakeholder's trust, to assess possible risks associated with the execution of business activities, and to mitigate the worse environmental effects of these activities. The demand for the exposure of environmental reporting is rising to help the investors to assess the firm's performance effectively (Bhalla 2018; Sekerez 2017). Hence, we hypothesize that:

H1c: There is a positive relationship between the extent of foreign ownership and environmental sustainability disclosure.

In case of Pakistan, the concept of environmental reporting is comparatively new (Ali et al. 2017a, b), where prevailing law and order mechanism pervades the governance of the economy (Mahmood et al. 2018). The regulatory framework usually focuses on the disciplinary behavior of firms, instead of supporting them with a smooth environment for active cooperation on environmental and social principles (Mahmood et al. 2018; Rashid and Naseer 2016). Firms in Pakistan are under "public review" and are bound to report information on their environmental activities. Subject to firm-level ER, still, there are plenty of environmental reporting issues in Pakistan addressed by prior literature. As Eljayash (2017) and Ismail and Rahman (2016) indicated, the emerging economies suffer from dearth of stakeholder demand and social pressure regarding the awareness of environmental issues; firms need to disclose complete information to communicate with stakeholders, and to assure accountability for environmental concerns (Lodhia 2018; Mansor et al. 2017).

Furthermore, Aldrugi and Abdo (2014) revealed that voluntary environmental and sustainability reports published by firms exhibit insufficient information regarding the effect of their environmental activities. Similarly, a recent study by Bhalla (2018) indicated that firms report their environmental and social activities for the sake of reputation. Another recent study on Pakistan by Mahmood et al. (2017) suggested that to change the public awareness regarding differences between disclosure levels, "voluntary disclosure theory" can better elaborate the increasing exposure of good performers and the "legitimacy theory" portray the increasing information exposure of bad performing firms. Likewise, Arshad et al. (2015) reported that due to the lack of environmental and social reporting, the firms went through the financial crisis in 2008. Moreover, Bae et al. (2018) and (Ibrahim, 2015) indicated that the external factors (i.e., economic, political, and social) contingently affect environmental reporting disclosure in developing countries. Further, a new study by Ali et al. (2017a, b); (Li et al. 2018) revealed that institutional investors and lack of women directors negatively influence environmental disclosure in Pakistan. Also, Khan and Hassan (2019) argued that the firms environmental reporting disclosure increased after implementation of SECP voluntary disclosure codes.

Furthermore, consistent to foreign ownership, some studies reported mixed effects of CG characteristics on environmental reporting practices, likewise, Ismail and Rahman (2016) reported a negative relationship between family ownership and environmental exposure. Also, Haddad et al. (2015) reported that the majority of shareholders and foreign ownership do not affect voluntary reporting. Likewise, Wise and Ali (Wise and M. A. 2008) found a negative association between disclosed "environmental information" and "environmental performance." Some studies focused on gender diversity and environmental reporting. Similarly, Majeed et al. (2015) and Khan et al. (2019a, b) indicated that women directors are comparatively very efficient to corporate social responsibility disclosure, as Lone et al. (2016) revealed differences in CSR reporting between sectors and found that "Oil and gas" industry has the highest CSR exposure level.

Another primary concern is that in Pakistan, the firms are reporting simulated green issues, but there is no theoretical/literature support. The previous studies focused on the aggregate multiplicity of environmental exposure of performance, such as Patten (2002) that implied that firms voluntarily report specific environmental information, which maintains their corporate image in front of stakeholders. Also Patten (1991, 1992) revealed the lack of a proper regulatory mechanism, and large discrepancies in the environmental exposure process create difficulties for the shareholders to make decisions regarding the company. Similarly, Rashid and Naseer (2016) indicated that Pakistani companies do not report crucial environmental practices, i.e., executive reward allied with environmental conduct, review of monetary savings from environment program, estimation of contingent obligations, and penalties regarding environmental affairs.

Notably, in developing economies, the environmental problems related to "industrial activities" have increasing public reservations regarding financial and non-financial disclosure of company environmental activities (Alhaj 2019). Therefore, the manufacturing industry is contributing too many of green and brown environmental issues in Pakistan, i.e., "increasing industrial production level, industrial chemical discharge, pollution, irregular firms emission, other industrial wastes, unsustainable projects, and business practices" (Ali et al. 2017a, b; Khan and Hassan 2019; Faruqee and Kemal 2016). However, many accidents/hazards in the oil and gas firms destroy the natural resources and environment. For example, in 2003, an incident of "Greek oil tanker spillage on the Karachi Sea Beach" affected the workers and the legitimacy of the company indicated by Meo et al. (2008) and Janjua et al. (2006).

Also, the industrial sector discharges toxic chemicals waste directly into rivers, threating lives, and biodiversity (Ullah, and R.,, and Qadir, A. 2009). In this situation, firms respond with disclosing voluntary environmental information; explicitly, oil and gas exploration and refinery companies are

disclosing more environmental activities, because of higher chances of the adverse effects of their operations on the environment (Kirat 2015). Now, the government forces firms to fulfill and strictly follow transparency in information disclosure (Sari and Tjen 2016). The discussion above indicates that the environmental reporting regime in Pakistan still needs more attention and policy consideration of firms, policy makers, and regulatory institutions.

Moreover, we are also interested in measuring the relationship between intervening variables (firm size, growth, and financial leverage) and sustainability disclosure. As Gallo and Christensen (2011); (Belal 2000) argued that a firm's size and ownership structure significantly associated with sustainability disclosure, company size and ownership are fundamental drivers of sustainability disclosure (Dienes et al. 2016); (Faller and Zu 2016), foreign shareholders have a significant influence on the performance of registered firms (Soufeljil et al. 2016), and company growth and size have a positive impact on sustainability disclosure of companies (Lucia and Ria 2018), although highly leveraged companies report more environmental and social information (Eyigege 2018).

Furthermore, firm size is an essential measure of a firm's profitability (Hall and Weiss 1967; Marcus 1969; Abiodun 2013). Prior literature exhibits the direct relationship between CSR disclosure and the firm size, such that Andrew et al. (1989), Teoh and Thong (1984), and Trotman and Bradley (1981) indicated that larger firms have more CSR activities and significant effect on society. Also, large entities are prone to environmental information disclosure due to higher visibility and social image (Lu et al. 2015; Comyns 2016; Khan et al. 2013). Moreover, (Khan et al. 2013) and Dissanayake et al. (2016) argued that large firms involve in more sustainability exposure due to high pressure and anticipations, as Waluyo (2017) demonstrated that company size positively influences CSR. Hence, we hypothesize that:

H2: Firm size has a positive relationship with corporate sustainability disclosure (Total sustainability disclosure).

H2a: Firm size has a positive relationship with ECSRI.

H2b: Firm size has a positive relationship with SocCSRI.

H2c: Firm size has a positive relationship with EnvCSRI.

However, company growth and size have a positive impact on sustainability disclosure (Soufeljil et al. 2016). Size and growth are interrelated and have a significant influence on firm operation (Kouser et al. 2012), whereas Ulfa (2009) argued that firm growth shows an improvement in financial performance, although high growth firms have more chances for social disclosure. Another study by Sari (2012) reported negative effects of firm growth on CSR. Moreover, a study by Swandari and Sadikin (2017) reveals that growth has a substantial impact on CSR, and firms with higher growth have enough funds for the implementation of CSR projects. Hence, we further hypothesize that

H3*:* Growth has a positive relationship with corporate sustainability disclosure (Total sustainability disclosure).

H3: Growth has a positive relationship with ECSRI.

H3: Growth has a positive relationship with SocCSRI.

H3: Growth has a positive relationship with EnvCSRI.

Furthermore, the existing literature regarding financial leverage reported both positive and negative outcomes such as Reverte (2009) and Branco and Rodrigues (2008) that found an inverse association between leverage and CSR activities, as Waddock and Graves (1977) argued that the negative association between debt (leverage ratio) and CSR is due to the concentration of high leverage firms on short-run profit-making, rather than the long-run performance. Furthermore, Jensen and Meckling (1976) revealed that the presence of massive debts and the corporate leveraging process could be a cause of conflict between managers and stakeholders, and Gill et al. (2011) corporate leveraging increases the risk of debt default. Similarly, Swandari and Sadikin (2017) argued that financial leverage influences CSR negatively; firms with higher leverage generally prefer to concentrate on business risk and give up CSR activities.

On the other hand, some studies reported positive association such as Fernández-Gago et al. (2018) and Kim et al. (2015) indicated that highly leveraged firms tend to disclose more sustainability information to reduce agency cost. Similarly, highly leveraged entities prefer full disclosure to meet stakeholders demand (Myers 1977; Schipper 1981), and Ashmarina et al. (2016) and Modugu and Eboigbe (2017) reported a positive association between leverage and CSR; highly leveraged companies report more environmental and social information. As Clarkson et al. (2008) revealed, highly leveraged firms prefer to expose environmental information. Comparatively, financial leverage significantly influences social disclosure rather than economic and environmental exposure (Adeniyi and Adebayo 2018). Hence, following literature outcomes, we hypothesize that:

H4: Leverage has a positive relationship with corporate sustainability disclosure (Total sustainability disclosure).

H4: Leverage has a positive relationship with ECSRI.

H4: Leverage has a positive relationship with SocCSRI.

H4: Leverage has a positive relationship with EnvCSRI.

Conceptualization

Based on the research questions and theoretical justification, we constructed the following conceptual framework. This framework of foreign ownership and sustainability disclosure proposes a new idea and uniquely integrate them in specifying that foreign ownership is an essential driver of sustainability governance. Figure 1 exhibits the relationship between dependent and independent variables, which are estimated in terms of multiple aspects that are perceived from the literature. Moreover, the formulated hypothesis is based on these

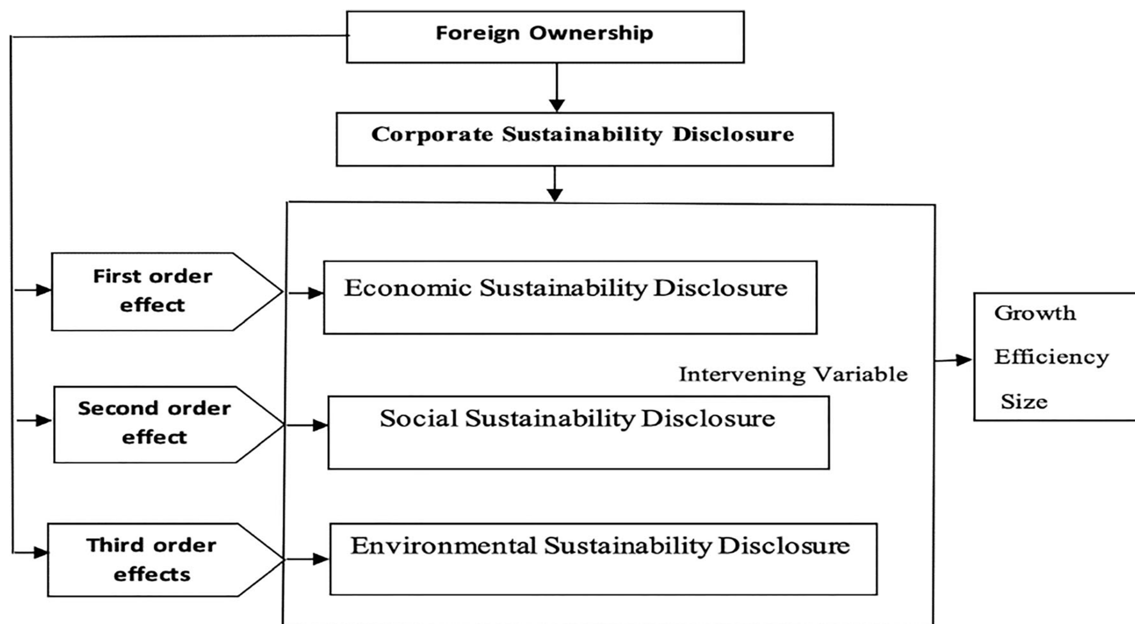

Fig. 1 Conceptual framework. Source: Self-extracted

variables and the prior literature outcomes. The increase in the share of foreign ownership enhances stakeholders demand for more information and forces firms to expose more economic information related to economic activities which generate the first-order effect. The first-order effect may, in turn, accelerate the second-order social sustainability disclosure (i.e., information regarding social activities of the firm to benefit the society). Subject to legitimacy doctrine, it is a vital component to change the social image of the firm. Moreover, the second-order effect generates the third-order environmental disclosure effect. Theoretically, all components of sustainability disclosure (i.e., economic, social and environmental) have significant reciprocity to ensure full sustainability disclosure.

Materials and methods

Sampling and data collection

The initial sample size of this research study consisted of the top 200 firms listed on the Pakistan Stock Exchange (PSX) with sub trading floors in (Karachi, Lahore, and Islamabad). Based on data availability, firms were selected to compose the sample size of the study. Therefore, the final sample of this study includes 100 firms. The data for selected firms is collected form the period 2006–2018 as during this period initially, the firms started following GRI standards and prepared/disclosed CSR reports. According to GRI (2019) reporting map, "Chemicals, Energy, Textiles and Apparel, Conglomerates, and Automotive" are the top reporting industries from Pakistan. On the other hand, during 2010–2015, the Securities and Exchange Commission of Pakistan (SECP) and Pakistan Institute of Corporate Governance (PICG) actively induced and implemented corporate sustainability structure coherent to Mahmood et al. (2018).

Methods (sequential mixed methods approach and content analysis)

Our research study employed "mixed methods approach (MMA)" to assess the impact of foreign ownership on sustainability disclosure. The mixed-method approach is considered as an ideal technique to measure research complexities (Homer et al. 2008; Nutting et al. 2009). Mixed method research needs a meaningful mixture of techniques in data collection, assessment, and elaboration of the results. The term "mixed" is an essential component in the mixed methods approach in data assimilation at a suitable level in research methods (Ivankova et al. 2006). Mixed method technique can be employed within one study to attain an understanding of linkages and inconsistencies between qualitative and quantitative data. MMA gives chances to target respondents for experience sharing and enhances various passages of exploration which improve the information and induce crux of question responses (Creswell 2013).

There are different types of mixed method designs; we employed the "Sequential Mixed Method Approach (SMMA)." According to SMMA, the data collection and estimation is divided into two stages. In the first stage, quantitative data was collected and estimated. The outcomes of the first stage were therefore employed to compose the qualitative feedback in the second stage. The qualitative questions to probe from respondents and also the sampling technique were estimated by quantitative outcomes (Masud et al. 2018; Rossi

Table 1 Descriptive statistics

Variable	CSRI (Eco)	CSRI (Env)	CSRI (Soc)	FOWN	Size	Growth	*L*
Mean	0.581	0.327	0.351	5.65	6.229	7.28	5.78
Median	0.683	0.37	0.381	10.81	0.681	0.652	− 0.76
Std.	0.155	0.077	0.079	20.1	54.81	55.2	37.1
Range	0.497	0.229	0.293	0.86	10.85	94.2	77.7
Maxi	0.760	0.445	0.415	0.87	11.83	92.5	48.4
Mini	0.262	0.216	0.122	− 30.6	− 1.82	− 25.7	− 29.3
Skew.	0.817	0.141	1.912	3.49	1.325	1.59	3.21
Kurt.	0.652	1.486	2.738	1.24	3.18	1.79	3.92
Sample *t*	14.47	16.52	17.12	10.3	4.40	5.11	6.03

$ECSRI_{it}$ economic sustainability disclosure index, $SocCSRI_{it}$ social sustainability disclosure index, $EnvCSRI_{it}$ environmental sustainability disclosure index, $FOWN_{it}$ foreign ownership, $Size_{it}$ firm size, Lev_{it} financial leverage ratio of firm, $Growth_{it}$ an annual increase in the growth rate of firm *i* in time

and Tarquinio 2017). Employing "Explanatory Sequential Mixed Methods Technique," at the first stage, the quantitative data of foreign ownership is gathered from the financial reports of the firms. The data regarding various components of sustainability disclosure was collected by using "Content Analysis Method (CAM)." The content analysis includes the coding of the data into different classes/groups based on selected principles (Kumar and Prakash 2019; Bae et al. 2018; Mahmood et al. 2018).

To achieve objectives of this study, firstly corporate sustainability disclosure index is constructed by using "Global Reporting Initiatives (GRI)" descriptive and quantitative sustainability reporting indicators. GRI indicators employed in this study regarded as the global benchmark for sustainability disclosure (Brown et al. 2009) number of firms practicing GRI standards for sustainability reporting exposure are increasing in Pakistan, similar to other developing economies (Mirza 2016). Content analysis is used to identify the existence and non-existence of a specific exposure in the year wise sustainability reports, by the disclosure index constructed in the first stage.

Furthermore, for empirical results, we employed regression analysis on quantitative data, to estimate the effects of foreign ownership on components of sustainability disclosure. The outcomes of the first stage (quantitative stage) respectively instructed the pattern of the second stage (qualitative). We interviewed six different management and ownership representatives (two internal directors, two independent directors, and two foreign shareholders) and inquired them about the positive and negative outcomes for the sake of their sentiments. Then, we estimated qualitative data to confirm the findings of quantitative data, to portray the essence and understanding of the quantitative outcomes. However, we used purposive sampling method for the selection of interviewees, as purposive sampling is mostly used to identify the selection of information-rich objects related to the issues under consideration (Duan and Hoagwood 2015). Purposive sampling methods are employed explicitly in qualitative research for choosing objects "such as a single person, groups and organizations" based on particular objectives associated with responding to research problems and queries (Teddlie and Yu 2007).

Similarly, mixed method purposive sampling is the rational selection of specific settings, individuals, and events for quality information (Maxwell et al. 1997). Our interviews concentrate on the anticipated functions and influence of foreign ownership on respective components of sustainability disclosure to explore and investigate the perception of the different outcomes. In this study, the crux of the qualitative approach is

Table 2 Pearson correlation matrix

Variables	$ECSRI_{it}$	$EnvCSRI_{it}$	$SocCSRI_{it}$	$FOWN_{it}$	$Size_{it}$	$Growth_{it}$	$Leverage_{it}$	VIF
ECSRIit	1							2.10
$EnvCSRI_{it}$	(0.848)*****	1						1.76
$SocCSRI_{it}$	(0.817)***	(0.781)**	1					1.64
$FOWN_{it}$	(0.081)**	(0.099)***	(0.067)*	1				1.26
$Size_{it}$	(0.332)*	(− 0.356)*	(− 0.253)*	(0.262)*	1			1.50
$Growth_{it}$	(0.380)*	(0.506)*	(0.171)*	(0.336)*	(− 0.112)*	1		1.36
$Leverage_{it}$	(0.254)*	(− 0.299)*	(0.151)*	(− 0.455)*	(0.543)*	(− 0.257)*	1	1

**p* value = 0.01; ***p* value = 0.02; ****p* value = 0.03; *****p* value = 0.04; ******p* value = 0.05

Table 3 Regression results of foreign ownership and economic sustainability disclosure

Variables	Coef.	S.E.	*t*-values	*p*
$FOWN_{it}$	0.046	0.019	0.235	0.02
$Size_{it}$	0.093	0.073	1.265	0.01
$Growth_{it}$	0.085	0.073	1.167	0.01
$Leverage_{it}$	− 0.055	− 0.011	− 0.050	0.23
β	0.579	0.043	13.66	0.05
R^2	0.51			

to confirm the findings of the quantitative analysis and represent conclusive interpretations of the problem identification.

Measurement of variables

Independent variables

Our study uses foreign ownership as an independent variable. Many studies likewise (Camilleri 2017; Modugu and Eboigbe 2017) measured the impact of foreign ownership with a dummy variable. However, we followed the most recent studies proposed by Sharif and Rashid (2014), Gulzar et al. (2019), Khan and Khan (2011), and Uwuigbe et al. (2011) in which foreign ownership is measured by the firm's total shares held by foreign shareholders.

Dependent variable-corporate sustainability disclosure (economic, social, environmental) index

The present study employed GRI (Global Reporting Initiative) standards for economic, environmental, and social sustainability exposure. An accumulative disclosure index is constructed for total corporate sustainability disclosure (TCSRI) and single index for each dimension, i.e., (economic (ECSRI), social (SCSRI), and environmental (EnvCSRI)) of sustainability exposure and then employed in regression analysis. The detail of GRI standards of sustainability reporting and measures of sustainability disclosure are given in Table 7 (see Appendix). We followed the content analysis method indicated by Mahmood et al. (2018), Ganapathy (Ezhilarasi and Kabra 2017), and Kumar and Prakash (2019) to assess the existence and non-existence of keywords explaining various components of sustainability disclosure.

Table 4 Regression results of foreign ownership and environmental sustainability disclosure

Variables	Coef.	S.E.	*t*-values	*p*
$FOWN_{it}$	− 0.023	0.095	− 0.240	0.02
$Size_{it}$	0.048	0.036	1.347	0.03
$Growth_{it}$	0.068	0.026	1.912	0.05
$Leverage_{it}$	− 0.052	0.053	− 0.976	0.33
β	0.325	0.021	155.0	0.01
R^2	0.44			

Table 5 Regression results of foreign ownership and social sustainability disclosure

Variables	Coef.	S.E.	*t*-values	*p*
$FOWN_{it}$	− 0.024	0.099	− 0.243	0.05
$Size_{it}$	0.036	0.038	0.970	0.03
$Growth_{it}$	0.025	0.037	0.654	0.05
$Leverage_{it}$	− 0.034	0.055	− 0.616	0.54
β	0.352	0.022	160.7	0.01
R^2	0.630			

Control variables

To control the influence of other factors, the present study employed firm Size, Growth, and Leverage as control variables suggested by recent studies (Khan et al. 2012; Delgado-García et al. 2010; Adeniyi and Adebayo 2018) and prior literature. The firm $Size_{it}$ is measured by Ln (natural log) of total assets, as company size has a positive impact on sustainability disclosure of companies (Khan et al. 2013). Growth is estimated by using the percentage annual increase in assets (Swandari and Sadikin 2017; Modugu and Eboigbe 2017). However, Financial Leverage (Lev_{it}) is calculated by the ratio of total debt to total assets, as indicated by Adeniyi and Adebayo (2018) that highly leveraged companies report more environmental and social information.

Research model specification

The present study employed regression analysis to assess the relationship between foreign ownership and firms' sustainability disclosure. The formulated regression models are specified below.

Table 6 Regression results of foreign ownership and total sustainability disclosure

Variables	Coef.	S.E.	*t*-values	*p*
$FOWN_{it}$	− 0.052	2.070	− 0.249	0.01
$Size_{it}$	0.098	0.079	1.250	0.05
$Growth_{it}$	0.011	0.078	1.290	0.02
$Leverage_{it}$	− 0.017	− 0.012	− 0.144	0.32
β	− 0.012	0.046	− 0.253	0.04
R^2	0.230			

$$TCSRI_{it} = \alpha + \beta_1 FOWN_{it} + \beta_2 Size_{it} + \beta_3 Leverage_{it} + \beta_4 Growth_{it} + \varepsilon_{it} \quad (1)$$

$$ECSRI_{it} = \alpha + \beta_1 FOWN_{it} + \beta_2 Size_{it} + \beta_3 Leverage_{it} + \beta_4 Growth_{it} + \varepsilon_{it} \quad (2)$$

$$SocCSRI_{it} = \alpha + \beta_1 FOWN_{it} + \beta_2 Size_{it} + \beta_3 Leverage_{it} + \beta_4 Growth_{it} + \varepsilon_{it} \quad (3)$$

$$EnvCSRI_{it} = \alpha + \beta_1 FOWN_{it} + \beta_2 Size_{it} + \beta_3 Leverage_{it} + \beta_4 Growth_{it} + \varepsilon_{it} \quad (4)$$

In the present model, *i* indicates cross sections and *t* indicates time period. We employed panel data. $TCSRI_{it}$ represents total corporate sustainability disclosure index as a dependent variable, β is coefficient, and $FOWN_{it}$ indicates that foreign ownership is an independent variable in the model (see "Measurement of variables" for detail of variables). The total sustainability exposure further divided into three components defined as "economic sustainability $ECSRI_{it}$," "Social sustainability $SocCSRI_{it}$," and "environmental sustainability $EnvCSRI_{it}$" exposure. Furthermore, $Size_{it}$ represents the firm size. Lev_{it} indicates a financial leverage ratio of firm *i* in time *t*. $Growth_{it}$ shows an annual increase in growth of firm *i* in time *t*.

Empirical results

Descriptive statistics

Table 1 exhibits the descriptive statistics of all variables used in the model. The mean economic sustainability score is 58%, whereas the mean value of social sustainability reporting is 35%. Similarly, the average score of environmental disclosure improved from 32%. The data description posits a significant change in sustainability awareness and disclosure trends in the business sector of Pakistan. The mean differences indicate that firms disclosing more information related to economic and social sustainability activities compared to environmental practices. Further, the means value of shares held by foreign shareholders in Pakistani firms is (5.65%) showing an increasing trend.

Multivariate analysis

The results of the correlation analysis of all variables are shown in Table 2. Foreign ownership ($FOWN_{it}$) positively correlated with economic, social, and environmental sustainability disclosure; comparatively, the control variables such as Size and Growth are also significantly correlated with all components of sustainability exposure. Financial leverage has mixed effects on $FOWN_{it}$ and all three dimensions of sustainability disclosure. The total sustainability disclosure (economic, social, and environmental) is positively correlated with $FOWN_{it}$. As Dohoo et al. (1997) and O'Brien (2007) suggested, both correlation coefficient (*r*) and the variance inflation factor are used to find out multicollinearity. The variance inflation factor (VIF) is (< 10) for all dependent and independent variables coherent to Lin (2008) and Uwuigbe et al. (2018). Hence, there is no multicollinearity in the model.

Estimation results of regression analysis

Foreign ownership and economic sustainability disclosure

We employed regression analysis to measure the relationship between corporate sustainability disclosure and foreign ownership. To assess individual effects of sustainability exposure, the first component we used as an outcome variable is "economic sustainability disclosure ($ECSRI_{it}$)," and the experimental variable is Foreign Ownership ($FOWN_{it}$). The regression outcomes of $ECSRI_{it}$ and foreign ownership are shown in Table 3. Economic sustainability has a positive and significant relationship with foreign ownership. Relatively, the association between control variables indicates that economic sustainability disclosure is positively associated with firms $Size_{it}$, $Growth_{it}$, and negatively related to financial $Leverage_{it}$.

Foreign ownership and environmental sustainability disclosure

The second component of sustainability reporting we assessed is environmental sustainability disclosure ($EnvCSRI_{it}$). The regression outcomes of the association between foreign ownership and $EnvSCRI_{it}$ are shown in Table 4. The results indicate that foreign ownership is positively associated with environmental sustainability disclosure consistent to Masud et al. (2018), whereas the firm size and growth have a positive relationship with environmental exposure and financial leverage has no significant association with $EnvSCRI_{it}$ coherent to Masud et al. (2018) and Khan et al. (2013).

Foreign ownership and social sustainability disclosure

The third component of sustainability reporting we assessed is social sustainability disclosure ($SocCSRI_{it}$). The regression outcomes of the association between foreign ownership and $SocCSRI_{it}$ are shown in Table 5. The results indicate that foreign ownership is positively associated with social sustainability disclosure, whereas the firm size and growth have a positive relationship with social sustainability disclosure and

financial leverage has no significant association with $SocCSRI_{it}$.

Foreign ownership and total sustainability disclosure

The regression outcomes of the association between foreign ownership ($FOWN_{it}$) and total sustainability disclosure are shown in Table 6. To measure the aggregate effects of sustainability disclosure, we constructed a weighted index ($TCSRI_{it}$) of all dimensions of sustainability reporting (economic, environmental, and social). The results indicate that foreign ownership is positively associated with $TCSRI_{it}$, whereas the firm size and growth have a positive relationship with total sustainability disclosure and financial leverage has no significant association with $TCSRI_{it.}$

Qualitative findings

To justify the reliability of quantitative results, we conducted interviews of internal management, independent directors, and foreign shareholders. The interview questionnaire was based on the findings of the quantitative analysis. The point of interest was the positive impact of foreign ownership on corporate sustainability disclosure practices. We divided our interviewees into three categories such as category A that includes internal directors, the category B that includes independent/external directors, and the category C that has foreign owners (foreign shareholders). The opinion of all interviewees portrays the positive contribution of foreign ownership in the assurance of sustainability disclosure practices. The crux of interviewee's perception is given below:

> **(Interviewee 1)** Foreign ownership is playing a crucial role in corporate sustainability disclosure [. . .]Foreign shareholders have pro-social attitude and sustainability behavior that pressurize the board of directors and management to make economically, socially and environmentally responsible investment [. .] then to maximize shareholders return. Firms [with high proportion] of foreign ownership leads to more sustainability disclosure.

> **(Interviewee 2)** Foreign owners are well aware of sustainability reporting . . . Having professionalism, knowledge and different cultural values [. . .] engage local and concentrated owners to focus more on the [disclosure of financial and non-financial information]. The adoption of sustainability practices enhances the role of both foreign and local owners in managerial decisions. Foreign owners prefer to invest in firms which are socially responsible and environmentally friendly; this trend increases the tendency of firms and directors towards sustainability disclosure.

The perception and sentiments of category (A) interviewees are that in the presence of concentrated ownership environment, still, the external ownership is playing a significant role in the sustainability disclosure. In this way, both management and foreign owners are prioritizing social and environmental concerns without conflicts.

> **(Interviewee 3)** The foreign owners are good [monitor] and ensure [transparency] . . . Force the company to take [responsibility] of their [actions] and business activities. Specifically, in developing economies like Pakistan, the higher proportion of foreign ownership influence the decisions of directors. Foreign shareholders greatly use their legal power [in] monitoring the effects of management activities on society and environment carefully. Even though [some] companies restrict the activism of foreign owners due to [managerial conflicts] and [family ownership]. Mostly [large and leading firms] give preference to foreign shareholders [involvement] in board and also outside directors.

> **(Interviewee 4)** In collaboration with domestic owners and directors, the foreign ownership put real efforts to incorporate sustainability [economic, social and environmental] information in all investment decisions to promote [pro-sustainability culture] in companies.

The category (B) interviewees have mixed opinion which posits that relative to domestic ownership, the foreign owners measure the sustainability of a company differently. They focus on the effects of company investment decisions, actions/business activities on the community and environment. According to interviewees, the foreign ownership establishes a sustainable relationship between the company and external stakeholders by focusing more on sustainability disclosure. Additionally, large companies prefer to ensure the activism of foreign shareholders and directors to enhance responsible investment.

> **(Interviewee 5)** I agree that the flexibility of extremely concentrated family ownership and management attitude towards socially responsible investment enhance activism of foreign ownership [in] decision making [. . .] gives a chance to foreign shareholders to oppose irresponsible actions of management. The protection and participation of foreign shareholders have positive [role] in sustainability disclosure.

> **(Interviewee 6)** Yes, foreign ownership has a significant relationship with sustainability reporting . . . [is] getting more recognition in Pakistan due to the changing business environment. The board of directors [independent directors] . . . Although they have limited power [are]

> playing a pivotal role in [engagement] of foreign ownership. We have the right [shareholders induced mechanism] to exercise our power in the interest of stakeholders. The management is meeting investor's demand for disclosing more information [financial and non-financial]. Now the governance scenario is changing in developing economies. The internal management needs to show [flexibility] towards [eco and social friendly] investment decisions.

The perception of category C interviewees highlighted the importance of Pakistani business environment and notable contributions in ensuring corporate sustainability disclosure. Even in the presence of family ownership, foreign shareholders are performing a decisive role in assuring sustainability reporting. The qualitative exploration from interviews logically explained the quantitative outcomes of the present study. Therefore, the effect of foreign ownership is considered favorable as a result of their involvement, activism and sustainability assurance, and investment ethics. Moreover, in the case of the weak relationship between foreign ownership and sustainability disclosure, it is due to the existence of strict family ownership culture in Pakistani firms, which restrict the freedom and participation of foreign shareholders in board decision making, information exposure, and sustainability governance. After all, the foreign shareholders are positively promoting sustainability exposure to achieve the target of responsible investment rather than profit-making.

Discussion

Foreign ownership and its influence on sustainability disclosure, including the disclosure of economic, social, and environmental information to stakeholders, is an evasive target in the corporate environment of Pakistan. The present study attempted a unique approach to identify the effects of foreign ownership on corporate sustainability disclosure practices. A considerable research gap exists concerning sustainability-oriented foreign ownership in developing economies, specifically in Pakistan. Our study findings show that collectively foreign ownership has a positive effect on total sustainability disclosure (H1) as well as singularly such as economic (H1a), social (H1b), and environmental (H1c) sustainability disclosure (see Table 8 in Appendix for hypothesis results).

These research outcomes have important implications that majority of Pakistani firms are family-owned and politically influenced (Khan 2010; Clarkson et al. 2008; Adeniyi and Adebayo 2018), and so the foreign shareholders exercise their limited freedom of (activism and involvement) to pressurize the board of directors and management to concentrate more on pro-sustainability disclosure strategy and disclose more economic, social, and environmental information to external and internal stakeholders. Contrarily, the current scenario of governance structure is changing in CSA economies (Masud et al. 2018; Sharif and Rashid 2014; Khan and Nouman 2017) due to reforms in governance principles and corporate laws. The era of family ownership (concentrated groups) is shifting to diversified shareholders, and stakeholders induced ownership (Bae et al. 2018a; Pérez-López et al. 2015). In this case, the foreign investors prefer an exclusionary approach which restricts the companies and management to invest in non-socioeconomic and anti-environmental projects.

Additionally, the foreign shareholders have the confidence to stand against management decisions and force the management to be accountable and responsible for the economic, societal, and environmental effects of irresponsible company investment. As consistent to (Camilleri, 2017), the author argued that socially responsible business activities generate economic and social worth by re-adjusting their corporate preferences with stakeholders control and environmentally friendly behavior. Our study outcomes complement the previous state of the artwork; Jensen and Meckling (1976), Odriozola and Baraibar-Diez (2017), and Katmon et al. (2017) argued that majority (more) of foreign shareholders intently monitor management interests and investment decisions, and a larger group of diversified shareholders advocate the company management to focus on sustainable information disclosure.

Furthermore, in the present study, we did not find any positive association between financial leverage ($Leverage_{it}$) and dimensions of sustainability disclosure (economic, social, and environmental) and also total sustainability disclosure. The significance of this outcome is that firms with comparatively low financial leverage will have enough monetary resources for funding social and environmental responsibility and exposure of information to stakeholders. Corporate sustainability disclosure enables the management to decrease the burden from creditors. Although highly leveraged firms are probably to give up corporate sustainability principles, it can induce them to disclose their corporate economic, social, and environmental activities to concerned stakeholders. Hence, our study indicates that companies should involve in corporate sustainability disclosure regardless of the position of financial leverage. These outcomes are consistent with Eyigege (2018) and Khan et al. (2013) who argued that firms with higher debt ratio always have a high degree of risk, which affects CSR financing.

Our study outcomes regarding firm size and growth signify the $Growth_{it}$ and $Size_{it}$ have a positive association with corporate sustainability disclosure. Findings imply that the size of the firm and growth are stand-alone drivers of sustainability disclosure relatively financial leverage coherent to Haladu and Beri (Haladu and Haliru Beri 2016), and firms with higher growth level have more chances to do CSR disclosure (Ikpor and Agha 2016). The size and growth influence sustainability disclosure (economic, social, and environmental) positively.

Here, our outcomes contradict Bae et al. (2018) they found an insignificant association between environmental sustainability disclosure and firm size. Similarly, large size companies intend to disclose more information to decrease agency cost, build an image, public acceptability, and attract investment. Similarly, it indicates that highly profitable and large size companies prefer more information disclosure due to their capacity to invest more in social and environmental activities, thus taking benefits of information exposure; these findings are coherent to Al-Gamrh and Al-Dharnari (2016).

Conclusion and policy recommendations

This study examines the effect of foreign corporate ownership on corporate sustainability disclosure (economic, social, and environmental) in the top 100 firms listed on the Pakistan Stock Exchange (PSX). The empirical outcomes exhibited that foreign ownership is positively and significantly associated with total sustainability disclosure "H1" and three components of sustainability disclosure "H1a: Economic, H1b: Social, H1c: Environmental" (see Table 8 in Appendix for hypothesis summary). These results are coherent with Ullah and Rahman (2015) who reported a positive relationship between foreign ownership and total sustainability disclosure in South Asian firms, and also Bae et al. (2018), Masud et al. (2018), and Sharif and Rashid (2014) who reported a positive relationship between environmental sustainability disclosure and FOWN conjointly, although our study outcomes contradict with Khan and Nouman (2017), Stojanovic-Aleksic and Boskovic (2017), and Brown et al. (2009), who argued that foreign ownership adds no value to CSR and firm performance.

Moreover, the second hypothesis (H2) and its sub-hypothesis (H2a, b, c), firm "Size" likely to have more corporate sustainability disclosure are accepted in all dimensions of sustainability disclosure (economic, social, and environmental). The outcomes are similar to (Haladu and Beri 2016), Ntim et al. (2013), and Nazari et al. (2015); they found that highly profitable and large size companies prefer more information disclosure. The third hypothesis (H3) and its sub-hypothesis (H3a, b, c), firm "Growth" likely to have more corporate sustainability disclosure, are also accepted in all dimensions of sustainability disclosure (economic, social, and environmental). The results are consistent with Uwuigbe et al. (2011) who found that firms with higher growth level have more chances to do CSR disclosure. The fourth hypothesis (H4) and its sub-hypothesis (H4a, b, c), financial "Leverage" likely to have more sustainability disclosure, are rejected in all dimensions of sustainability disclosure (economic, social, and environmental). These outcomes are consistent with Myers (1977) and Eyigege (2018) who argued that firms with higher debt ratio always have a high degree of risk and affect CSR financing.

Further, the qualitative findings of our interviews with management and shareholders highlighted unique aspects. However, the interviewees accentuate a positive association between foreign shareholders and quality sustainability exposure, as signified by empirical outcomes. The quantitative findings can be interpreted by the particular context of Pakistan, which is controlled and owned by different ownership groups, i.e., family owners, block holders, and institutional owners. Family control limits the disclosure of financial and nonfinancial information for the sake of business interests. As a consequence, family control restricts the power and freedom of foreign shareholders, relative to large-scale and leading companies, where foreign ownership has more opportunities and is performing well. So, foreign ownership, under family control, loses the confidence to oppose board decisions. The interviewees expressed the sustainability-oriented role of foreign shareholders (i.e., ethical values, attitude towards responsible investment, monitoring, experience, knowledge, and other factors) that are driving firms towards more sustainability exposure. The interviews demonstrate that foreign ownership enhances a firm's visibility and assist the management in communicating with external stakeholders through sustainability disclosure means (disclosing more information on economic, social, and environmental activities).

Inclusively, our outcomes signify that foreign ownership increases sustainability disclosure and its performance has improved rapidly. Our study sums up that a higher proportion of foreign shareholders responsibly promote transparency, monitoring, and controlling board decisions to assure sustainability governance. Similarly, corporate management is adopting shareholder- and stakeholder-directed corporate governance strategies (Bae et al. 2018; Masud et al. 2018; Myers 1977; Kouser et al. 2012), so there is limited domination of ownership concentration groups.

This study expands the present state of the artwork on foreign ownership and sustainability exposure in the context of an emerging economy. This study has both conceptual, methodological, and managerial contributions. Firstly, our study assessed the value addition of foreign ownership in sustainability governance. Secondly, we estimated individual and overall effects by the integration of both quantitative and qualitative data/aspects. Thirdly, our study documented the visible shifting of sustainability governance and concentrated management behavior towards ownership diversification and sustainable business activities. Fourthly, this study also emphasized on the market attributes of firms (size, growth, and leverage) and reveal that higher domestic debt is an obstacle for sustainability disclosure in emerging economies.

Similarly, the qualitative method intends to justify or confirm the positive and negative outcomes and to explore logical support for those associations; purposive sampling technique

was employed, and interviews with quality responses and information were contacted/approached. Future research can expand these outcomes by conducting quantitative and qualitative research on cross country effects of ownership structure on the assurance of governance sustainability. Also, the research can be directed to identify factors affecting foreign ownership activism, other than family ownership. Our study has the following four limitations: Firstly, we employed content analysis approach to collect data of corporate sustainability disclosure (economic, social, and environmental) that is contingent to any minor error. Secondly, this study measured both quantitative and qualitative components of corporate sustainability disclosure (i.e., economic, social, and environmental), so the results are unbiased. Thirdly, the sample size consists of 100 non-financial firms, including small and large size firms continuously reporting sustainability practices. Fourthly, the study cannot postulate to all the population, like the number of interviews is comparatively smaller than the sample firms included in the empirical analysis.

Our study findings have practical and theoretical implications for company management, policymakers, and regulatory institutions. Foreign ownership, as an essential component of corporate governance and driver of sustainability disclosure, should be promoted and supported by internal control as well as influential ownership groups. The involvement of foreign shareholders on corporate board's decision making and information disclosure should be encouraged, and all top-bottom management including outside management (independent directors) should be proactive to tackle sustainability issues by adopting stakeholder-driven mechanism and responsible investment decision making.

Appendix

Table 7 Sustainability indicators (with the keyword) derived from GRI (G4) for coding and content analysis

Code	Performance indicators	Key words
Economic performance		
ECO1	a. The direct economic value generated and distributed on an accruals basis	Revenue, cost, employee wages
	b. Financial implications and other risks and opportunities for the organization's activities due to climate change	Retirement plans, pension fund
	c. Estimated values for plans liabilities, and separate funds to pay pension liabilities; the percentage of salary contributed by the employee or employer	Tax relief, subsidies, investment grants,
	d. Financial assistance received from the government	Tax research and development grants
Market presence		
ECO2	a. The ratio of standard entry-level wages by gender compared to local minimum wage at the significant location of operation	Local minimum wage rate by gender
	b. The percentage of senior management at significant locations of operation that are hired from the local community	Senior management, local
Indirect economic impacts		
ECO3	a. Development and impacts of significant infrastructure investments and services supported	The positive or negative impact of investment, local communities or local economies
	b. Significant indirect economic impacts the organization including the extent of the impact	Economic development in areas of high poverty, the economic impact
Procurement practices		
ECO4	a. The proportion of spending on local supplier at significant locations of operation	procurement budget, local suppliers, spending
Environmental performance		
Materials		
ENV1	a. Materials used by volume or weight	Weight, volume, material, renewable,
	b. Percentage of Materials used that are recycled input materials	Non-renewable, recycled.
Energy		
ENV2	a. Energy consumption within the organization	Joules, watt-hours, electricity consumption,
	b. Indirect energy consumption outside the organization	heating consumption, cooling consumption,
	c. Energy intensity	steam consumption; electricity sold, heating sold,
	d. Reduction of energy consumption	cooling sold, steam sold
	e. Reductions in the energy requirements of products and services	Intensity ratio
		reductions in energy consumption, fuel, electricity,
		heating, cooling, and steam Reduction in energy
Water		
ENV3	a. Total Water withdrawal	Surface water
	b. Water sources significantly affected by the withdrawal of water	Groundwater

Table 7 (continued)

Code	Performance indicators	Key words
	c. Percentage and total Volume of water recycled and reused	Size of water source Recycled or reused water
Biodiversity		
ENV4	a. Organization sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Geographical location, biodiversity, protected
	b. Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	Areas, habitat, conservation, species.
Emissions		
ENV5	a. Direct greenhouse gas emissions	GHG emissions, Reduction, Reduce, Emissions,
	b. Energy indirect greenhouse gas emissions by weight	Air, ozone.
	c. Reduction of greenhouse gas GHG emission	
	d. Emissions of ozone-depleting substances	
	NOx, SOx, and other significant air emissions	
Effluents and waste		
ENV6	a. Total water discharge by quality and destinations	Water discharge
	b. Total weight of waste by type and disposal method	waste, reuse, recycling composting, recovery,
	c. Total number and volume of the significant spill (leak)	energy recovery, spill
Products and services		
ENV7	a. The extent of impact mitigation of environmental impacts of products and services	impact mitigation
	b. Percentage of products sold and their packaging materials that are reclaimed by category	Percentage of reclaimed product
Compliance		
ENV8	a. The monetary value of significant fines and the total number of non-monetary sanctions for noncompliance with environmental laws and regulations	Fines, sanctions, monetary value, non-compliance
Transport		
ENV9	a. Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce	environmental impact, transporting, transport
Overall		
ENV10	a. Total environmental protection expenditures and investment by type	environmental protection expenditures
Supplier environmental assessment		
ENV11	a. Percentage of new suppliers that were screened using environment criteria	New suppliers, environment criteria, screening, screened impact
	b. Number of supplier subject to environment impact and assessment as potential negative environmental	
Environment grievance	Mechanism	
ENV12	a. Number of grievance about environment impact	Complaints, grievance
Social performance		
Employment		
SOC1	b. Total number and rates of new employee hire and employee turnover by age group gender, or region	Total workforce by employment type, employment contract, or region
Labor/management relation		
SOC2	*A. minimum* notice period(s) about significant operational changes, including whether it is specified in collective agreements; percentage of employees covered by collective bargaining agreements	Notice period, collective bargaining, agreements
Occupational health and safety		
SOC3	a. Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor or advice on occupational health and safety programs	Health and safety committee
	b. Total injury and rate of injury, occupational diseases, lost days or absenteeism and the total number of work-fatalities, by region and by gender	Injury, injuries,
	c. Workers with high incidence or diseases related to their occupation	health and safety employee training work-fatalities
	d. Health and safety topics covered in formal agreements with trade unions	
Employees training and education		
SOC4	a. Average hours of training per year per employee	Types of the program on upgrade skills
	b. Training programs for skills management or lifelong learning that support the continued employability of employees and assist them in managing career endings	Skill management Career development
	c. Percentage of employees receiving rear performance or career development reviews	Lifelong learning
Diversity and equal opportunity		
SOC5		

Table 7 (continued)

Code	Performance indicators	Key words
	a. The composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, or other indicators of diversity	Percentage of the employee, Gender, minority groups, diversity, equal opportunity
Customer health and safety		
SOC6	a. Percentage of significant product and service categories for which health and safety impacts are assessed for improvement	impact of the product on health and safety
	b. Total number of incidents of non-compliance with reactions or voluntary codes concerning health and safety impacts of products or services during their life cycle	fines, penalties, warnings related to health and safety
Product and service labeling		
SOC7	a. Type of product or service information required by procedures or percentage of significant products or services subject to such information requirements	Components, safe use and dispose of the product and environmental impact of product
	b. Total number of incidents of non-compliance with reactions or voluntary codes concerning product or service information or labeling	Fines or penalty and warnings in case of non-compliance of product labeling
	c. Practice relating to surveys measuring customer satisfaction	Surveys, customers satisfaction
Marketing communication		
SOC8	a. Sale of banned or disputed products Banned, disputed, products	impact of the product on health and safety fines, penalties, warnings related to health and safety
Customer privacy		
SOC9	a. Total number of substantiated complaints regarding breaches of customer privacy or loss of customer data	Complaints, breaches, customer privacy
Investment and procurement practices		
SOC10	a. Percentage or total numbers of significant investment agreements that include human rights clauses or that have undergone human rights screening	investment agreements, human rights, training about human rights
	b. Total hours of employee training on policies or procedures about aspects of human rights that are relevant to operations or percentage of employees trained	
Non-discrimination		
SOC11	a. Total number of incidents of discrimination or actions taken and corrective action taken Incidents, discrimination, corrective action is taken	Incidents, discrimination, corrective action
Child labor		
SOC12	a. Operations identified as having significant risk for incidents of child labor Measures taken to contribute to the elimination of child labor	Child labor
Forced and compulsory labor		
SOC13	a. Operations identified as having significant risk for incidents of forced or compulsory labor, measures to contribute to the elimination of forced or compulsory labor	Risks, forced labor, compulsory labor
Local community		
SOC14	a. Percentage of operations with implemented local community engagement, impact assessments, and development programs	Social impact, environmental impact assessments,
	b. Operations with significant actual and potential negative impacts on local communities	local community development programs
Anti-corruptions		
SOC15	a. Percentage or the total number of operations assessed for risks related to corruption	Risks, corruption
	b. Communications and training on anti-corruption policies or procedures	employees training, anti-corruption policies
	c. Confirmed incidents of corruptions and actions taken	Actions were taken in response to incidents of corruption
Public policy		
SOC16	a. The total value of political contribution by country and recipient/beneficiary	The monetary value of financial or in-kind contributions to political parties, politicians
Anti-competitive behavior		
SOC17	a. Total number of legal actions for anti-competitive behaviors, anti-trust, or monopoly practices and their outcomes	Legal actions, anti-competitive, monopoly practices

From GRI Standards (www.globalreporting.org/standards), Mahmood et al. (2018) and Kumar and Prakash (2019)

Table 8 Summary of tested hypothesis

Hypothesis tested	Relationship	Literature consistency	Decision
H1	FOWN → TCSRI (+)	[Ganapathy (2017); Masud et al. 2018]	Accepted
H1a	FOWN → ECSRI (+)	No	Accepted
H1b	FOWN → SocCSRI (+)	No	Accepted
H1c	FOWN → EnvCSRI (+)	[Masud et al. 2018]	Accepted
H2	SIZE → TCSRI (+)	[Khan and Muttakin (2013); Lu and Abeysekera (2015); Comyns (2016); Waluyo 2017]	Accepted
H2a	SIZE → ECSRI (+)	No	Accepted
H2b	SIZE → SocCSRI (+)	No	Accepted
H2c	SIZE → EnvCSRI (+)	[Khan and Muttakin (2017); Lu and Abeysekera (2015); Comyns (2016)	Accepted
H3	Growth → TCSRI (+)	[Swandari and Sadikin (2017); Eyigege (2018); Ulfa (2009)]	Accepted
H3a	Growth → ECSRI (+)	No	Accepted
H3b	Growth → SocCSRI (+)	No	Accepted
H3c	Growth → EnvCSRI (+)	No	Accepted
H4	Leverage ↓ FOWN, TCSRI, SocCSRI, EnvCSRI, ECSRI (−)	[Swandari and Sadikin 2017; Jensen and Meckling, (1976); Reverte 2009; Uwuigbe et al. 2011]	Rejected
H4a	Leverage ECSRI (−)	No	Rejected
H4b	Leverage SocCSRI (−)	[Adeniyi and Adebayo (2018); Uwuigbe et al. 2011]	Rejected
H4c	Leverage EnvCSRI (−)	[Adeniyi and Adebayo (2018); Uwuigbe et al. 2011; Branco and Rodrigues (2008)]	Rejected

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