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# Internationalization channels and firm financial performance among Asia-Pacific Corporations. Does ESG integration in business matter?

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**Abstract**
Growing global cooperation between nations and organizations regarding sustainability concerns has led to increased emphasis on research into firm internationalization (INT). The purpose of this study is to examine the impact of different dimensions of firm internationalization on firm financial performance (FFP), particularly emphasizing the moderating role of environmental, social, and governance (ESG) performance of multinational corporations. Using a panel data set comprising 1708 corporations from the Asia-Pacific region from 2002 to 2023, the findings of Panel OLS, along with robust two-stage least square estimations, reveal that the firm internationalization significantly and positively affects FFP. The study also highlights how sustainability performance potentially moderates the relationship between INT and FFP. The study offers practical implications for managers, regulatory authorities, and other policymakers for sustainable development business models. By choosing the right international channel and sustainability initiative, firms can maximize the benefits of internationalization.

**Keywords** Firm internationalization · Sustainability · ESG · Multinational enterprises · Firm financial performance

## 1 Introduction

In today's fiercely competitive marketplace, enterprises are increasingly diversifying their portfolio models as a strategy for risk mitigation and sustainability. One such diversification strategy is firm internationalization. The intensity with which a firm engages in international trade and thus covers the degree of internationalization involvement (intensity, diversity, distance) is known as firm internationalization (Hussain et al., 2024). Firm internationalization not only affects an organization's value in one way but also interconnects in a complex way that significantly influences overall corporate performance (Geringer et al., 2000). MNCs can gain competence in the global market arena, gradually reduce overseas risk, strengthen international competitiveness, and capture resources that improve the firm's

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long-term profitability (Papanastassiou et al., 2020). Recently, many corporations have started expanding and competing globally to acquire competitiveness (Anand et al., 2021; Cao et al., 2022) by responding to world sustainability issues. Consequently, internationalization has become a crucial strategy for companies aiming to tap into new markets, access resources, and mitigate risks.

This is why there is a growing focus on the international dimensions of MNCs in the context of emerging economies. In particular, the intensity of exports as part of an international trade mechanism (Ietto-Gillies, 2009) plays an important role in determining the organization's performance. Studies have shown that geographic diversity allows corporations to gain exploration benefits (Toukabri & Al Adawi, 2023). However, the link between corporate internationalization and FFP is context-specific, depending on how and where the organization exerts its efforts, and which mode of internationalization is most suitable for profitability by considering the Sustainable Development Goals (SDGs) 2030 agenda. Companies may opt for different approaches such as exporting, licensing, joint ventures, or wholly owned subsidiaries. Each international strategy presents unique opportunities and risks, which can influence FFP differently.

Although internationalization as a diverse approach has received increasing attention from academics and scholars, existing studies based on resource-based view and institutional settings provide varied findings on firm internationalization and FFP (Tongurai & Vithessonthi, 2022). Some researchers discovered a positive association between internationalization and FFP (Cuervo-Cazurra et al., 2018) however, others yielded negative or unfavourable relationships between them (Singla & George, 2013). Studies used numerous approaches; however, the true relationship remains unanswered (Zainudin et al., 2021). Internationalization as a diverse strategy needs further exploration (Deng et al., 2022). Furthermore, several scholars acknowledge that, unlike in developed markets, the positive impact of firm internationalization on FFP is ambiguous and perhaps less pronounced in frontier markets (Geleilate et al., 2016; Shin et al., 2021). Similarly, sampling size, data choices, time frame, and methodological approach (Busch et al., 2016) as well as the use of various performance measures of the firm (Wu et al., 2024) can significantly influence the relationships under investigation. This supports the need for a more comprehensive and thorough assessment considering the initial stages of internationalization in growing markets, particularly the Asia Pacific (APAC) region.

Similarly, other than financial factors the non-financial indicators can also affect the internationalization and firm performance relationship (Freixanet & Renart, 2020). The lack of definitive evidence largely originates from ignoring potential elements that may mediate or moderate the existing connection between global expansion and FFP (Lin et al., 2017; Wu et al., 2022). Recently, escalating fears about, community rights, environmental devastation, biodiversity, economic instability, and the principles of reliability and accountability allow stakeholders to compel organizations to address these crucial concerns in their operations (Toukabri & Al Adawi, 2023). In order to addressing these challenges through carbon neutrality policies, and implementing corporate social responsibility practices, emerging market multinational corporations can gain a competitive edge over competitors in developing resources in foreign countries. This enables the acquisition of legitimacy from consumers and local authorities, which subsequently contributes to the realization of economic benefits. Thus, ESG initiative is an essential channel in strengthening the firm internationalization and firm performance association. However, research has not considered how ESG

affects the INT-FFP association, particularly how it moderates the association between INT and FFP which was extensively overlooked by earlier studies. In addition, stakeholder and institutional theoretical framework supports the interaction effect of ESG on the association between firm internationalization and FFP (Rana, 2011). To comprehend the significance of these concepts we formulate our research questions. How does firm internationalization influence FFP of MNCs? In what manner does the ESG initiative act as a moderator in shaping the connection between internationalization and FFP?

To address the INT-FP debate, this research uses data specific to the Asia-Pacific region, motivated by the following reasons. The region is witnessing rapid internationalization trends and sustainability initiatives, thus understanding how internationalization affects FFP in this diverse landscape is important for both local and multinational companies. The White & Case report highlights key ESG developments in the Asia-Pacific region for 2024. In June 2023, the ISSB issued standards for sustainability-related disclosures, prompting Hong Kong, Japan, and Singapore to consider these guidelines for adoption by 2025. It is important to understand how regulations related to sustainable development goals affect the profitability of MNCs which will offer fresh insights for companies trying to maintain sustainable long-term growth.

The study substantially adds to the current literature on the connection between INT-FFP in several aspects. Multinational companies from emerging markets (EMNCs) have increased their business operations in terms of exchange of ideas, information, capital, people, services, and technology across national boundaries during the last ten years (Luo & Tung, 2018). For this reason, researchers are keen to understand the parameters, processes, patterns, and trends of globalization (Sun et al., 2018), and their respective impacts on the performance of MNCs. In this regard, our research addresses an important void in current literature by centring on the link between INT, ESG integration and FFP, particularly in the Asia-Pacific context. The current study focuses empirically on the international business activities of MNCs, to evaluate the true effects of internationalization on FFP, which will provide new insights. Secondly, the Asia-Pacific region is committed to achieve the United State (US) sustainable development goals. In this context, our study uses ESG factors as a moderating variable that play an important role in determining how companies pursue global expansion while addressing ESG concerns. Finally, this study makes an important contribution precisely with its large sample size and approach, which employs 2-stage least squares to tackle the potential endogeneity issue. Part 2 comprises the following sections: In Part 2, we outline the theoretical framework along with prior literature, part 3 explains the data and methodology Sect. 4 presents the main results and discussion while part 5 concludes and suggests useful implications.

## 2 Literature review and hypothesis development

### 2.1 Theoretical framework

The literature provides several theories based on specific aspects of international expansion and specific factors involved. The present study examines the influence of internationalization and ESG integration on FFP in the context of Asia Pacific. Thus, a combination of resource-based view (RBV), stakeholder and institutional frameworks would be an appropriate

theoretical framework. Resource-based view is a foundational theory that underscores the organization's internal capabilities and strengths, such as brand reputation, international experience, and ESG integration, to gain a competitive edge and superior financial returns in an international market. Whereas institutional theory provides a contextual framework necessary to understand the foreign regulatory pressures and expectations that organizations encounter in global markets (Morrish & Earl, 2021). Finally, stakeholder theory proposed by Freeman in 1984 emphasizes the need for alignment of corporate practices with the expectations of internationally diverse stakeholders and ethical standards, which potentially influence firm performance in global ESG- oriented markets.

According to Wernerfelt (1984) resources are an essential organizational strength. For a business to succeed, the organization must develop and utilize a set of resources over time through various strategies that its competitors are unable to obtain or copy directly from the market (Barney, 1991). When it comes to the impact of INT, ESG on FFP, institutional theory can provide valuable insight into how the restriction or alignment of institutional pressures positively impact a firm's success in an international market. For example, organizations face liability of foreignness (LOF) and legitimacy issues (Rugman & Oh, 2013) leading them to high environmental commitments (Amer, 2023) in foreign country. Thus, MNCs are expected to adopt environmental regulations and employ socially responsible business models in their operations. MNCs can cultivate resources and gain a competitive advantage by addressing these pressures through ESG integration into their business operations in foreign market. According to Li and Fleury (2020)Li and Fleury (2020) Li and Fleury (2020)Li and Fleury (2020) gaining insights from overseas stakeholders in overseas markets is pivotal to gain success as a newcomer in the market. In summary, prioritizing stakeholder concerns is imperative for corporations seeking long-term sustainability and profitability, especially in international markets. Engaging in global markets enables organizations to learn diverse cultural settings, institutional frameworks, consumer demographics, and governance structures, which is essential for stability and success in the long run.

## 2.2 Hypothesis development

### 2.2.1 Firm internationalization and firm financial performance

According to the resource-based view, a firm can acquire, manage and leverage valuable internal and external resources to gain competitive advantages. Internationalization allows companies to utilize their internal resources and capabilities on a global scale, gaining advantages from scale and scope of economy (Kogut, 1985). Multinationals corporations from emerging markets often utilize shared resources, technology, and gains through shared knowledge in different countries. Through internationalization strategy such as exporting and making foreign investment, MNCs avail multiple market segments and sales opportunities across the globe. It also diversifies the portfolio and mitigates risk by reducing dependence on a single country, allowing MNCs to capitalize on growth opportunities and earn higher profitability(Guillén & García-Canal, 2009). Emerging market companies have made significant progress in recent years in terms of the strategies they use to expand internationally. These companies have become increasingly multinational due to a deliberate emphasis

on acquiring essential assets in the developed countries where they operate (Cuervo-Cazurra et al., 2018; Fleury & Fleury, 2011). The aim of the international business literature is to find out the association between corporate internationalization and FFP (Zainudin et al., 2021). However, the true link between firm internationalization and FFP is solely based on the mode of internationalization and the relative efforts of the multinational's corporations. In Asia-pacific region, many emerging economies have started their business operations across different regions beyond their own segments specifically by adopting the primary mode of international entry through exports. Current study utilizes the foreign sales ratio and foreign assets ratio to measure the degree of firm internationalization. Figure 1 shows the export and foreign asset values of selected Asia-Pacific companies from 2013 to 2022. Despite the increasing internationalization efforts of MNCs in the last decade, statistics show that the values of their foreign assets are lower than their export values. This suggests that the region is still in the initial phases of the internationalization journey.

Studies have shown that the exports involve lower risks and act as the fastest route for corporations to achieve international expansion compared to other modes of internationalization such as FDI, venturing in abroad, mergers and acquisitions (M&A), and greenfield investments (Agnihotri & Bhattacharya, 2015). It allows firms to maximize their foreign sales activities, gain first-mover advantage, and provide a means to avoid negative market dynamics in their home country (Yiu et al., 2007) which potentially improves FFP. This assertion aligns with the research outcome of (McDougall & Oviatt, 1996). Prochnik and Araujo (2007) show that exporting corporations have substantially enhanced production compared to the firms that refrain from participating in foreign investment or exports. Furthermore, under the institutional perspective, MNCs can sell their products in those international markets that have relatively stable institutions. Firms can reduce their costs and improve their financial performance through institutional arbitration and accessing a favourable regulatory environment. Additionally, Xie et al. (2018) observe that exporting emerging market companies (EMCs) typically exhibit high levels of innovation. This increased creativity is often the result of higher standards of quality and technology in developed countries (Ghoshal, 2000). As a result, this flexible approach creates a strong, positive relationship with financial outcomes. Thus, our first hypothesis is:

**H1** Firm internationalization has a significant and positive impact on FFP.

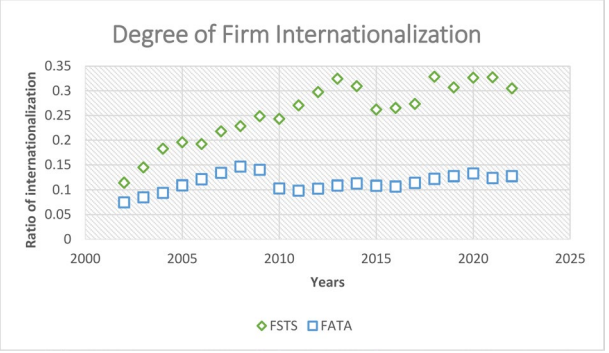


**Fig. 1** Firm Internationalization (Asia-Pacific selected economies). Source: DataStream

### 2.2.2 Moderating role of ESG integration

Most of the existing research emphasizes the direct relationship, ignoring potential moderating variable that may strengthen the connection between INT and FFP (Lin et al., 2017; Wu et al., 2022). However, the association between internationalization and FFP in ESG domain has not been extensively studied (Ruan & Liu, 2021). According to the institutional theory, MNCs face formal (e.g., statutes, rules, constitutions, laws) and informal (e.g., beliefs, conventions, moral standards, and culture) pressures in the overseas market (Pejovich, 1999; Peng, 2003). The significance of regulations, standards, and principles related to sustainability has increased globally in the last decade (Lotfi et al., 2024). Figure 2 shows the ESG (sustainability) initiatives taken by selected Asia-Pacific firms over the twenty-two years which is increasing persistently. Escalating demand from stakeholders (NGOs, media, consumers) and national level institutions persistently push towards the adoption of ESG compliance (Guo & Yang, 2024). Furthermore Gao et al. (2022) emphasized that the companies should promote ESG practices during firm internationalization. Broad geographic diversification of corporate activities and making sales under strict regulations drive pro-environmental behaviour(Hussain et al., 2024). To sustain foreign sales uninterrupted, internationalized firms must comply with various laws and regulations, which demand uniform packing, shipping, and selling. These initiatives help reduce carbon footprints and the efficient use of scarce resources. As internationalization faces a politically, culturally, and economically diverse operating environment, it must adopt ESG criteria that enables firms to acquire the legitimacy and reduce the liability of foreignness in the host country. According to Rahat et al. (2023) proactively pursuing socially responsible activities can help businesses develop and maintain unique resources competitiveness. Such practices also promotes legitimacy among foreign consumers which ultimately contribute to economic benefits (Ren et al., 2023). Thus, committing to prioritize ESG agenda in global markets serves as a strategic asset that provides acceptance from host regulatory authorities and acquire consumer loyalty (Fatima et al., 2023) that in turn contribute in the financial indicators of the firm.

In addition, stakeholder theory is becoming increasingly popular among sustainability scholars because it widens the business perspective by considering the firm as part of a larger social and ecological system (Ahmad et al., 2024). Due to multi-stakeholder pressures into global market (Persakis et al., 2023) firms tend to high environmental commitments (Amer, 2023). By applying (ESG) criteria, stakeholders can determine whether a company plays an active role in creating a sustainable economy (Amer, 2023; Khan & Liu, 2023).

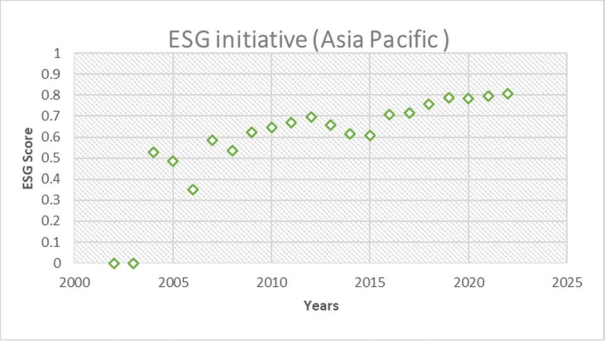


**Fig. 2** ESG performance of selected Asia pacific listed firms. Source: DataStream

Adoption of ESG initiatives reduces the cost of debt by promoting green innovation, increasing a company's sustainability, and enhancing its reputation (Alsayegh et al., 2020) among various stakeholders, which eventually helps to increase the profitability of the company (Bhaskaran et al., 2020). According to Arshad et al. (2012) companies that include ESG in their plans can potentially capture value in terms of stakeholders' loyalty and receive positive financial returns in their business strategies. ESG and firm performance have a strong positive correlation. Thus, our second hypothesis is:

**H2** ESG integration significantly and positively moderates the association between firm internationalization and FFP.

Based on the discussion above, Fig. 3 shows the theoretical framework for the INT-ESG-FFP relationship.

## 3 Methodology

### 3.1 Sample and data collection

We have chosen the economies of the Asia-Pacific region (Malaysia, India, China, Hong Kong, Singapore, Japan, Indonesia, Australia, New Zealand, Taiwan, South Korea, Thailand, and Philippines) for our research because they are considered key players in the region and exhibit typical characteristics of emerging and developed economies. As an integral part of the world, Asia-Pacific has increased its share of consumers in foreign markets in recent years through internationalization. Considering a 22-year sample period from 2002 to 2023, we collected comprehensive data on financial metrics and ESG (environmental, social, and governance) indicators by utilizing Refinitiv Eikon-DataStream database. The initial sample consisted of 31,642 publicly traded corporations, of which 1708 were selected that have an international setup (foreign sales, foreign assets) and report ESG data. In the final analysis, we identify 1,708 companies with 37,576 firm-year observations over 22 years for the current examination. We treated missing cases for ESG score as 0 for model consistency, following the approach used by (Mittoo & Zhang, 2008). Currently, Refinitiv Eikon-DataStream is a unique and extensive database that provides a variety of information,

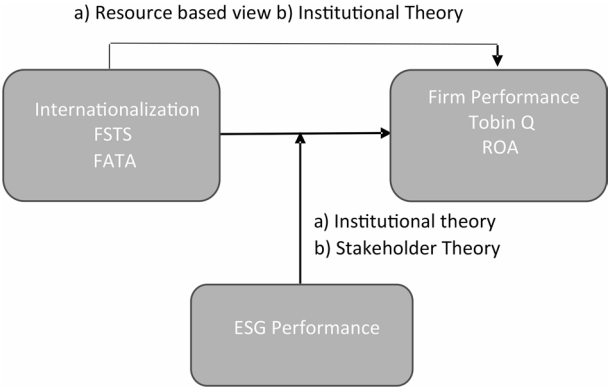


**Fig. 3** Theoretical Framework. Source: Authors' processing

including financial and non-financial. It is an important database that provides information on ESG compliance (Wu et al., 2024). The ESG score rating is divided by 100 (Bissoondoyal-Bheenick et al., 2023). As the companies started reporting ESG data from 2002, to avoid sample biasedness, we collected data from year 2002 to 2023.

## 3.2 Variables measurement

### 3.2.1 Firm performance (dependent variable)

Both market based and accounting based measures have been employed to assess the performance of company as utilized by many existing studies (Gull et al., 2022; Wu et al., 2024). Market-based indicators specifically Tobin's Q is determined as the book value of total assets plus the market value of equity less the book value of equity divided by the book value of total assets (Bhandari et al., 2022). Market based measure (Tobin's Q) is a financial indicator of an organization's performance that reflects investors' expectations while incorporating considerations about potential growth prospects with expected future operating performance (Claessens et al., 2002). Return on assets (ROA) is an accounting-based measure and is computed by dividing the net profit by total assets. According to Mohr and Batsakis (2017) ROA is typically utilized as the primary metric to assess how effectively a company utilizes its assets. It also serves as a useful indicator of an organization's growing economies of scale.

### 3.2.2 Firm internationalization (independent variable)

Firm internationalization is an extent to which an organization engages in trade across borders, including three dimensions of internationalization involvement: intensity, diversity, and distance (Hussain, Khan, Hussain et al., 2021a; Mac & Evangelista, 2016). Based on the respective dimensions and stages of firm internationalization, different scholars employed varied proxies to measure the degree of international involvement. For example, the number of nations in which the organization is active, export intensity/foreign sales ratio to that of total sales, foreign assets ratio to that of total assets, total overseas subsidiaries of firm (Hussain, Khan, Gemici et al., 2021). As, most of the firms in Asia-Pacific are still at their early stages of internationalization, the current study employed the export/foreign sales ratio to total sales to gauge the first stage of international entry. Foreign assets ratio to that of total assets is also used as an alternative proxy for the measurement of internationalization.

### 3.2.3 ESG performance

ESG is defined as a corporation's commitment to promote equitable and sustainable long-term prosperity for its stakeholders while also improving social well-being of the community (Jamali & Carroll, 2017). The ESG score derives from a wide range of sources, which are generally classified into three distinct categories such as environmental (e.g. gas emissions, resource use, innovation), social (e.g., workforce conditions, human rights, ethnic diversity, society) and governance (e.g., management CSR, strategy, executive pay, shareholder-leadership engagement) (Lee & Raschke, 2023). The score combines objective and subjective metrics to create an aggregate rating that reflects a company's overall ESG performance and transparency. Prior research has made extensive utilization of Refinitiv

Eikon scores as a reliable source (Bruna et al., 2022). These Scores range from 1 to 100 with high scores reflecting improved sustainability performance.

#### 3.2.4 Control variables

Following earlier studies (Singla & George, 2013), we included several firm level and macro level control variables which may affect firm financial performance. Leverage is computed by dividing total liabilities by total assets (Aydoğmuş et al., 2022). Leverage is a measure of idiosyncratic risk, because firms with higher leverage ratios may experience higher financial risk and lower financial performance. Firm age is proxied as current year less year of incorporation plus 1 (Abdullah & Tursoy, 2021).Older firms can have good relations with the government and official authorities that support gaining networking advantage which can affect positively on firm performance. Firm size is computed as the natural logarithm of the total assets to control the effect of size. We also included property, plant and equipment scaled by total assets to control the effect of fixed assets because firms with a larger portion of fixed assets tend to have higher costs and risk, thus affecting financial performance. Firms that are more efficient in generating revenue can affect financial performance, hence we controlled the assets turnover proxied as net sales divided by total assets. Cash flow is calculated as funds from operations scaled by total assets. To control the effect of firm liquidity, the current study used the liquidity ratio, and is proxied as the value of current assets divided by the current liabilities (Wu et al., 2024). Higher cash flow and liquidity ratios enable firms to invest more frequently in technologies to adopt innovative business models (in production and selling) and thus enhance corporate performance. The study also included macro country level control variables to capture the potential effect of country variations. Inflation is measured using the Consumer price index whereas GDP per capita is calculated as gross domestic product divided by the midyear population to capture the effect of the level of economic development, cost, overall economic stability, and purchasing power of the market because these indicators can affect the firm revenue and expenses (CPI, GDP taken directly from world development indicators). A summary of the measurement variables utilized in the research is given in Table 1.

### 3.3 Research methodology

The study used different models to empirically estimate the relationship between INT-ESG-FP for Asia-Pacific multinational corporations. Numerous prior investigations confirmed employing the robust model rather than relying on random and fixed effect models. The study used a panel ordinary least square (OLS) regression using robust standard errors clustered at the firm level (Baseline results), a commonly used panel-type statistical approach in prior research studies (Rabab'a et al., 2024). A robust standard error method mitigates the potential issues of heteroscedastic, serial correlation, and endogeneity issues. To handle the omitted variables problem, the study included several industry, firm and country-level control variables that can potentially affect the firm financial performance. Industry fixed effect is included to control for unobserved time-variant industry-level factors (using Refinitiv 4-digit GICS code). We checked and found missing SIC-2 and SIC-4-digit codes in the Refinitiv database, hence, we rely on the GICS code for industry effect. In the model, we incorporate year-fixed effects to control for unobserved, time-varying macroeconomic shocks at both country and global levels that could impact firms in the sample and influence

**Table 1** Operationalization of variables

| Variable | Acronym | Measurement |
|---|---|---|
| Dependent variable | | |
| Tobins Q | Tobins Q | (Total assets' book value - equity's book value + equity's market value)/Book value of total assets |
| Return on assets. | ROA | net profit/total assets |
| Covariate variables: | | |
| Internationalization | INT | (i) foreign sales/Total revenue, (FSTS)<br>(ii) foreign assets/total assets, (FATA) |
| ESG combines scores. | ESG | environmental, social, and corporate governance reported scores |
| Firm Size | SIZE | log of total assets |
| Leverage | LEV | total liabilities/total assets |
| Firm Age | AGE | current year -year of incorporation + 1 |
| Property plant and Eq. | PPE | property plant and equipment/total assets |
| Asset Turnover | ASTVR | net sales/total assets |
| Cash flow | CFO | funds from operations/ total assets |
| Liquidity | LIQ | current assets/current liabilities |
| Inflation | INFL | Consumer price index |
| Gross Domestic Product | GDP | GDP per capita (Natural logarithm) |

corporate performance. In addition, Country-fixed effects are also included in the regressions to control for unobserved, country-specific factors that remain constant over time. Year and country effects were included by incorporating year and country dummies. To handle data outliers, all variables are winsorized at the 1% and 99% confidence levels.

Previous research (Buckley et al., 2016) has shown that a firm internationalization is a function of firm-level variables such as firm leverage, liquidity, size profitability, and cash flows. There is a significant concern about endogeneity in the model. To address the potential endogeneity problem between INT-ESG-FP, the study treats firm internationalization as endogenous by applying two-stage least-squares approach (Chiou & Shu, 2019). The endogeneity problem can potentially be addressed with this robust statistical methodology (Waddock & Graves, 1997). In the first stage of regression, we treated FSTS as a dependent variable and regressed it on instrumental variables, along with a set of control variables. The instrumental variables used are KOF globalization index (taken 2023 version from KOF Swiss Economic Institute website) developed by (Dreher et al., 2008). KOF globalization index covers three dimensions including economic, social and political dimension of globalization. It ranges from 1 to 100, 1 indicates the low and 100 indicates the high level of globalization. The study treats it as an instrumental variable because it reflects the broader global and national context that facilitates or hinders firms' expansion beyond domestic borders that is directly correlated with firm internationalization (endogenous) but is unrelated

with the error term. The second instrumental variable is sustainability regulatory pressures. A dummy variable that is assigned 1 to reflect high regulatory pressures and 0 otherwise. The country specific sustainability pressures are uncorrelated with firm performance but is directly correlated with ESG and firm internationalization. In additions study further conducted other robustness test such as sample sensitivity analysis and feasible generalized least square methods to strengthen the findings.

*Internationalization and firm performance*.

1) $FFP\ (Tobin's\ Q)_{i,t} = \beta_0 + \beta_1 INT_{i,t} + \beta_2 CONTROLS_{i,t} + \beta_3 YearFE_{i,t} + \beta_4 IndustryFE_{i,t} + \beta_5 CountryFE_{i,t} + \varepsilon_{i,t}$.
2) $FFP\ (ROA)_{i,t} = \beta_0 + \beta_1 INT_{i,t} + \beta_2 CONTROLS_{i,t} + \beta_3 YearFE_{i,t} + \beta_4 IndustryFE_{i,t} + \beta_5 CountryFE_{i,t} + \varepsilon_{i,t}$.

*ESG moderation on INT-FFP relationship*.

3) $FFP\ (Tobin's\ Q)_{i,t} = \beta_0 + \beta_1 INT_{i,t} + \beta_2 ESG_{i,t} + \beta_3 ESG{*}INT_{i,t} + \beta_4 CONTROLS_{i,t} + \beta_5 YearFE_{i,t} + \beta_6 IndustryFE_{i,t} + \beta_7 CountryFE_{i,t} + \varepsilon_{i,t}$.
4) $FFP\ (ROA)_{i,t} = \beta_0 + \beta_1 INT_{i,t} + \beta_2 ESG_{i,t} + \beta_3 ESG{*}INT_{i,t} + \beta_4 CONTROLS_{i,t} + \beta_5 YearFE_{i,t} + \beta_6 IndustryFE_{i,t} + \beta_7 CountryFE_{i,t} + \varepsilon_{i,t}$.

## 4 Results and discussion

### 4.1 Descriptive statistics

Descriptive statistics for explanatory and response variables is presented in Table 2. The statistical measures including, standard deviation, minimum and maximum values are to be discussed in descriptive statistics to examine data's normality. The mean value of dependent variable Tobin's Q is 3.414, with standard deviation of 0 0.219. The value of Tobin's Q reflects that the prevailing market value of the corporation's assets exceeds than the replacement cost. The average value of ROA is 2.248 and the minimum observed return is 35%.

**Table 2** Descriptive statistics

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| TOBINS Q | 29,036 | 3.414 | 0.219 | 2.984 | 3.657 |
| ROA | 27,328 | 2.248 | 0.751 | 0.35 | 3.256 |
| FSTS | 37,576 | 0.257 | 0.06 | 0.114 | 0.329 |
| FATA | 37,576 | 0.114 | 0.017 | 0.075 | 0.147 |
| ESG | 37,576 | 0.197 | 0.265 | 0 | 0.93 |
| SIZE | 30,558 | 9.056 | 0.192 | 4.927 | 10.053 |
| LEV | 24,727 | 0.485 | 0.236 | 0.019 | 1.034 |
| AGE | 36,944 | 2.877 | 1.195 | 0 | 4.82 |
| PPE | 24,124 | 0.347 | 0.023 | 0.305 | 0.387 |
| ASTVR | 33,137 | 0.998 | 0.096 | 0.845 | 1.192 |
| CFO | 22,403 | 0.107 | 0.021 | 0.088 | 0.157 |
| LIQ | 22,401 | 2.569 | 0.172 | 2.223 | 2.899 |
| INFL | 37,576 | 2.753 | 2.528 | −1.353 | 10.882 |
| GDP | 37,576 | 9.346 | 1.403 | 6.299 | 11.13 |

A high ROA value indicates that firms are effectively allocating and managing stakeholder assets. The average value is more than 50% which shows that most of the companies are earning high profit. The average values of export/foreign sales ratio to total sales and foreign assets ratio to total assets are 0.257, 0.114 respectively. ESG has a mean average value of 19 with a lowest score of 0 and a highest score of 93. The mean average value of firm size is 9.056 which indicates that on average the total assets of firm included in the Asia Pacific sample study have total assets of around $8.5 million. The average PPE value of 0.347 suggests that fixed assets constitute 34.7% of the total assets on average. while the average value of asset turnover is 0.998 which represents high assets efficiency. The average inflation rate, with a mean of 2.753, suggests that the inflation rate across the sample generally hovers around 2.75%. It is a moderate level and in general, represents a stable economy. GDP represents the natural logarithm of GDP per capita for which the mean value is 9.346. when converting from log terms, the average value is approximately $11,500. This suggests that the sample represents middle-income to higher-income economies. Our sample consists of both developing and developed economies in the Asia Pacific region.

### 4.2 Correlation matrix

The study employed a correlation matrix serves as an initial diagnostic test to identify the potential issue of multicollinearity among the variables. If two or more independent variables are correlated highly then there is an issue of multicollinearity (Wooldridge, 2015). Ideally, the value of correlation should be less than 0.8 (Kennedy, 2008). Table 3 shows that there is no correlation between the predictors as all the coefficients are less than 0.8. Furthermore, we also employed the VIF (Variance inflation factor), and the VIF mean is less than the prescribed limit (Matsumura et al., 2014).

### 4.3 Firm internationalization and firm performance

The current research evaluates the link between firm internationalization and financial performance of the firm (Tobin's Q, ROA) to test Hypotheses 1 employing the OLS robust standard error method in Table 4. The coefficient values of independent and dependent variables are given in the above four models. Model 1 shows that the firm internationalization (FSTS) has a significant (1%) and positive effect on Tobin's Q. The findings also indicate that the FSTS and ROA are significantly and positively nexus with each other as the coefficient value is positive ($\beta = 1.541$) and statistically significant ($p < 1\%$). It suggests that an increase in one unit of (FSTS) the value of ROA increases by 1.541 units. Thus, findings support our proposed (H1). The results are consistent with research conducted by (Debicki et al., 2020; Wei & Lin, 2021), that internationalization leads to higher firm returns in the first stage (exports) of international expansion. FATA is also significantly ($p < 1\%$) and positively ($\beta = 2.877$) associated with Tobin's Q as shown in model 2. This reflects that an increase in one unit of (FATA) would improve Tobin's q by 2.877 units. While model 4 demonstrates that the FATA has a significant and positive impact on firm's assets (ROA) as the coefficient value is positive ($\beta = 3$) and statistically significant at 1% thus supporting alternative proxy of firm internationalization. These findings are supported by (Buckley & Tian, 2017).

In terms of control variables, the results reveal that the firm size, Firm age and Assets turnover are insignificant in relation to both Tobin's Q and ROA, whereas leverage has a

**Table 3** Correlation matrix

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) TOBINS Q | 1.000 | | | | | | | | | | | | | |
| (2) ROA | 0.700 | 1.000 | | | | | | | | | | | | |
| (3) FSTS | 0.714 | 0.340 | 1.000 | | | | | | | | | | | |
| (4) FATA | −0.237 | −0.391 | 0.494 | 1.000 | | | | | | | | | | |
| (5) ESG | 0.347 | 0.203 | 0.422 | 0.208 | 1.000 | | | | | | | | | |
| (6) SIZE | 0.041 | 0.011 | 0.084 | 0.075 | 0.051 | 1.000 | | | | | | | | |
| (7) LEV | −0.018 | −0.014 | −0.048 | −0.021 | −0.041 | −0.010 | 1.000 | | | | | | | |
| (8) AGE | 0.134 | 0.066 | 0.124 | 0.063 | 0.067 | 0.014 | −0.004 | 1.000 | | | | | | |
| (9) PPE | 0.524 | 0.486 | 0.362 | 0.034 | 0.216 | 0.030 | −0.006 | 0.090 | 1.000 | | | | | |
| (10) ASTVR | 0.235 | 0.220 | 0.156 | −0.020 | 0.106 | 0.012 | −0.016 | 0.023 | 0.150 | 1.000 | | | | |
| (11) CFO | 0.311 | 0.182 | 0.295 | 0.110 | 0.200 | 0.038 | −0.122 | 0.041 | 0.199 | 0.090 | 1.000 | | | |
| (12) LIQ | −0.132 | 0.280 | 0.294 | −0.286 | 0.057 | −0.030 | −0.024 | −0.010 | −0.281 | 0.062 | −0.083 | 1.000 | | |
| (13) INFL | −0.220 | −0.180 | 0.088 | 0.122 | 0.009 | 0.016 | −0.047 | −0.004 | −0.252 | −0.037 | −0.161 | 0.108 | 1.000 | |
| (14) GDP | 0.132 | 0.081 | 0.245 | 0.118 | 0.150 | 0.029 | −0.016 | 0.060 | 0.056 | 0.042 | 0.174 | 0.079 | −0.547 | 1.000 |

**Table 4** Baseline (Panel OLS) INT on FFP

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Tobins Q | Tobins Q | ROA | ROA |
| FSTS | 1.61*** | | 1.541*** | |
| | (0.127) | | (0.061) | |
| FATA | | 2.877*** | | 3*** |
| | | (0.318) | | (0.145) |
| SIZE | 0.007 | 0.011 | 0.001 | 0.003 |
| | (0.007) | (0.007) | (0.006) | (0.006) |
| LEV | −0.006** | −0.006* | 0.002 | 0.002 |
| | (0.003) | (0.003) | (0.002) | (0.002) |
| AGE | 0.002*** | 0.002*** | −0.001* | 0 |
| | (0.001) | (0.001) | (0) | (0) |
| PPE | −0.414*** | 0.427*** | −1.392*** | −0.576*** |
| | (0.084) | (0.071) | (0.051) | (0.057) |
| ASTVR | 0.002 | −0.01 | −0.004 | −0.015*** |
| | (0.007) | (0.008) | (0.004) | (0.005) |
| CFO | −10.599*** | −13.292*** | 2.309*** | −0.305*** |
| | (0.334) | (0.194) | (0.149) | (0.095) |
| LIQ | −0.251*** | 0.014 | 0.075*** | 0.349*** |
| | (0.009) | (0.031) | (0.005) | (0.015) |
| INFL | −0.018*** | −0.018*** | 0.015*** | 0.014*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| GDP | −0.012 | 0.014 | 0.029*** | 0.053*** |
| | (0.007) | (0.011) | (0.004) | (0.004) |
| Year effect | Y | Y | Y | Y |
| Industry effect | Y | Y | Y | Y |
| Country effect | Y | Y | Y | Y |
| _cons | 4.932*** | 4.034*** | −0.41*** | −1.339*** |
| | (0.159) | (0.181) | (0.074) | (0.091) |
| Observations | 10,460 | 10,460 | 10,460 | 10,460 |
| R-squared | 0.921 | 0.914 | 0.577 | 0.49 |
| F-stat | 3275.651 | 5471.268 | 435.202 | 196.909 |
| Mean VIF | 1.896 | 2.28 | 1.896 | 2.28 |
| Robust standard errors are in parentheses | | | | |

*** $p<.01$, ** $p<.05$, * $p<.1$

significant and negative effect on Tobin's Q and is uncorrelated with ROA. This reflects that a higher leverage ratio tends to reduce firm performance due to an increment in the cost of capital associated with international operations. Excessive debts in connection with exports can reduce financial returns (Triki & Abid, 2023). CFO and PPE is significantly and negatively associated with financial performance. It suggests that a higher portion of fixed assets maximizes the operating cost which reduces the corporate profitability. Liquidity indicates that the overall relationship is significant and negative with FFP. In models 1 and 2 the inflation is significantly and negatively associated with Tobin's q. It suggests that when inflation rises the profitability of certain firms reduces due to an increase in prices. This is due to the recessionary phase of the economy when most of the firms cannot bear the operating costs. On the other hand, in models 3 and 4 inflation is associated positively with ROA, which reflects that when inflation rises the profitability of the firm also rises. In the boom or prosperity phase,

even though the economy is observing an inflationary trend, however, the firms generate profitability. GDP is insignificant with Tobin's q and has a significant positive impact on ROA.

### 4.4 Moderating role of ESG performance

The results based on Eqs. 3 and 4 are shown in Table 5. The table depicts the moderating role of ESG (combine score) between INT and FFP. Model 1 reflects that ESG significantly

**Table 5** Baseline (Panel OLS) moderation of ESG between INT and FFP

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Tobins Q | Tobins Q | ROA | ROA |
| FSTS | 1.466*** | | 1.542*** | |
| | (0.138) | | (0.067) | |
| C.FSTS#C.ESG | 0.375*** | | 0.045 | |
| | (0.084) | | (0.055) | |
| FATA | | 2.627*** | | 2.921*** |
| | | (0.319) | | (0.14) |
| C.FATA#C.ESG | | 0.764*** | | 0.49*** |
| | | (0.173) | | (0.121) |
| ESG | −0.083*** | −0.058*** | −0.02 | −0.059*** |
| | (0.025) | (0.02) | (0.017) | (0.016) |
| SIZE | 0.008 | 0.011 | 0.001 | 0.003 |
| | (0.006) | (0.007) | (0.006) | (0.006) |
| LEV | −0.006* | −0.005* | 0.002 | 0.002 |
| | (0.003) | (0.003) | (0.002) | (0.002) |
| AGE | 0.002*** | 0.002*** | −0.001** | 0 |
| | (0.001) | (0.001) | (0) | (0) |
| PPE | −0.444*** | 0.359*** | −1.391*** | −0.586*** |
| | (0.083) | (0.073) | (0.051) | (0.056) |
| ASTVR | −0.002 | −0.012 | −0.003 | −0.015*** |
| | (0.007) | (0.008) | (0.004) | (0.005) |
| CFO | −10.642*** | −13.12*** | 2.291*** | −0.293*** |
| | (0.341) | (0.202) | (0.152) | (0.095) |
| LIQ | −0.245*** | 0.007 | 0.074*** | 0.349*** |
| | (0.009) | (0.031) | (0.005) | (0.015) |
| INFL | −0.018*** | −0.018*** | 0.015*** | 0.014*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| GDP | −0.012 | 0.013 | 0.03*** | 0.053*** |
| | (0.007) | (0.011) | (0.004) | (0.004) |
| Year effect | Y | Y | Y | Y |
| Industry effect | Y | Y | Y | Y |
| Country effect | Y | Y | Y | Y |
| _cons | 4.966*** | 4.1*** | −0.409*** | −1.327*** |
| | (0.158) | (0.176) | (0.075) | (0.091) |
| Observations | 10,460 | 10,460 | 10,460 | 10,460 |
| R-squared | 0.922 | 0.915 | 0.577 | 0.491 |
| F-stat | 3350.637 | 5767.402 | 466.447 | 216.449 |
| Mean VIF | 1.839 | 2.196 | 1.839 | 2.196 |
| Robust standard errors are in parentheses | | | | |

*** $p<.01$, ** $p<.05$, * $p<.1$

($p < 1\%$) and positively ($\beta = 0.375$) moderates the association between the (FSTS) and FFP (Tobin's Q). It indicates that an increase of one unit in ESG performance is associated with a 0.375 unit increase in Tobin's Q, reflecting improved firm financial performance. Thus, the positive coefficient ($\beta = 0.375$) indicates that higher ESG performance strengthens the positive effect of internationalization (FSTS) on firm performance. Moreover, model 2 shows that the relationship between firm internationalization with an alternative proxy (FATA) and FP (Tobin's Q) is significantly ($p < 1\%$) and positively ($\beta = 0.764$***) interacting with firm ESG integration. In terms of the accounting-based measure (ROA) and the (FSTS) internationalization, model 3 also shows significant and positive moderation outcomes with ESG performance. Model 4 depicts that the ESG performance enhances the internationalization process that in turn improves return on assets through effectively allocating and managing the organization's assets (FATA) as coefficients ($\beta = 0.49$) and ($p < 1\%$) are both statistically significant and positive. Thus, the results show that the inclusion of sustainability indicators (ESG) as a potential moderating variable strengthens the association between corporate internationalization and firm performance measures including market-based and accounting based metrices. Hence, the results support the H2. The findings are consistent with, Blinkhorn (2020)Blinkhorn (2020)Blinkhorn (2020)Blinkhorn (2020) who argues that MNCs support sustainability goals and in turn receive higher profitability. Overall, ESG is moderated between both proxies of firm internationalization and firm financial performance.

### 4.5 Robustness check

The study conducted several robustness tests including, 2sls, sample sensitivity analysis, and the feasible generalized least square methodology to confirm the baseline results. Table 6 shows the robustness findings of two-stage least square methodology to address the endogeneity issue (Ullah et al., 2021) on the relationship between INT-FFP of emerging Asia-Pacific multinational corporations. Whereas Table 7 depicts the findings of two-stage least square approach on moderating role of ESG on INT-FFP. This is likely due to endogeneity problems between corporate internationalization and firm performance (Khalid et al., 2021). For example, to avoid financial penalties, MNCs with excellent ESG scores are likely to choose highly rated economies for their internationalization processes, while firms with weak ratings are likely to choose poorly rated economies (Yang et al., 2020). Regression predictors that are inconsistent due to endogeneity lead to unreliable results (Barros et al., 2020). Therefore, the potential endogeneity problem associated with INT-ESG, and FFP should be further addressed. We used KOF index and country sustainability pressures as instrumental variables in both overall and sample sensitivity analysis. In line with the overidentification test recommended by (Bouslah et al., 2018), the study applies the Hansen J statistic to evaluate the validity of the instrumental variables chosen. For conciseness, we only present the results from the second-stage regression. We did not find any contrasting results as the robustness findings are consistent with our baseline findings. Firm internationalization is significantly and positively affected emerging markets MNCs. While the results also prove that ESG (sustainability initiatives) positively moderates the internationalization and FP relationship.

**Table 6** Internationalization and FFP (Robust two stage least square)

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Tobins Q | Tobins Q | ROA | ROA |
| FSTS | 1.58*** | | 1.9*** | |
| | (0.065) | | (0.039) | |
| FATA | | 16.861*** | | 16.402*** |
| | | (0.494) | | (0.698) |
| SIZE | 0.009*** | −0.011** | −0.006*** | −0.024*** |
| | (0.003) | (0.005) | (0.002) | (0.005) |
| LEV | −0.006 | −0.003 | 0.001 | 0.004 |
| | (0.004) | (0.006) | (0.002) | (0.005) |
| AGE | 0.002*** | −0.001 | −0.001 | −0.003*** |
| | (0.001) | (0.001) | (0) | (0.001) |
| PPE | −0.436*** | 0.865*** | −1.474*** | −0.039 |
| | (0.049) | (0.063) | (0.029) | (0.056) |
| ASTVR | −0.004 | −0.048*** | −0.005 | −0.049*** |
| | (0.008) | (0.013) | (0.005) | (0.011) |
| CFO | −10.749*** | −15.367*** | 2.9*** | −2.082*** |
| | (0.116) | (0.14) | (0.07) | (0.144) |
| LIQ | −0.244*** | 1.187*** | 0.081*** | 1.478*** |
| | (0.006) | (0.042) | (0.003) | (0.059) |
| INFL | −0.016*** | −0.025*** | 0.013*** | 0.004*** |
| | (0.001) | (0.001) | (0) | (0.001) |
| GDP | −0.004 | −0.035*** | 0.015*** | −0.006 |
| | (0.005) | (0.008) | (0.003) | (0.007) |
| Year effect | Y | Y | Y | Y |
| Industry effect | Y | Y | Y | Y |
| Country effect | Y | Y | Y | Y |
| _cons | 4.853*** | 0.161 | −0.344*** | −4.93*** |
| | (0.067) | (0.171) | (0.04) | (0.21) |
| Observations | 7196 | 7196 | 7196 | 7196 |
| R-squared | 0.785 | 0.54 | 0.813 | 0.913 |
| $Chi^2$ | 75324.623 | 31213.495 | 8180.22 | 1740.542 |
| Standard errors are in parentheses | | | | |

*** $p<.01$, ** $p<.05$, * $p<.1$

### 4.5.1 Entropy balancing method (endogeneity)

Our results may be attributed to the bias arising from disparities in observable characteristics in the control and treatment items. To address this, we conducted entropy-balanced sample techniques by following (Rabab'a et al., 2024). Under this approach, the impact of the deviations in firm characteristics is lessened, minimising the chance that the results are driven by these imbalances rather than by firm value. A logit regression technique has been used that regresses FSTS and FATA on covariates to compute the propensity scores, thus ensuring proportional study between HIGH_FSTS and LOW_FSTS and HIGH_FATA and LOW_FATA groups. After adjusting, the covariates are standardized across the measures of distribution (mean, variance, and skewness). By employing this method, a greater weight is given to the under-observed observations, whereas the over-observed receive less weight, which generates pseudo- control group that decreases the covariate

**Table 7** Moderation of ESG between INT and FFP (Robust two stage least square)

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Tobins Q | Tobins Q | ROA | ROA |
| FSTS | 1.408*** | | −8.2*** | |
| | (0.29) | | (1.642) | |
| C.FSTS#C.ESG | 0.513** | | 7.707*** | |
| | (0.207) | | (1.3) | |
| FATA | | −5.095* | | 1.911* |
| | | (3.001) | | (1.142) |
| C.FATA#C.ESG | | 4.749*** | | 0.963* |
| | | (1.407) | | (0.541) |
| ESG | −0.118* | −0.514*** | −2.186*** | −0.114* |
| | (0.06) | (0.162) | (0.367) | (0.062) |
| SIZE | 0.009 | 0.023** | 0.032** | 0 |
| | (0.007) | (0.009) | (0.013) | (0.006) |
| LEV | −0.005 | −0.004 | 0.007 | 0.002 |
| | (0.004) | (0.005) | (0.008) | (0.002) |
| AGE | 0.002*** | 0.004*** | 0.002 | 0 |
| | (0.001) | (0.001) | (0.002) | (0.001) |
| PPE | −0.494*** | −0.018 | 1.753*** | −0.629*** |
| | (0.102) | (0.141) | (0.526) | (0.061) |
| ASTVR | −0.012 | −0.009 | −0.096*** | −0.009 |
| | (0.009) | (0.012) | (0.023) | (0.006) |
| CFO | −10.778*** | −11.965*** | −9.139*** | 0.144 |
| | (0.476) | (0.455) | (1.941) | (0.201) |
| LIQ | −0.238*** | −0.568** | 0.219*** | 0.284*** |
| | (0.007) | (0.229) | (0.026) | (0.087) |
| INFL | −0.016*** | −0.012*** | 0.013*** | 0.008*** |
| | (0.001) | (0.002) | (0.002) | (0.001) |
| GDP | −0.005 | 0.044*** | 0.209*** | 0.027*** |
| | (0.005) | (0.013) | (0.033) | (0.005) |
| _cons | 4.913*** | 6.059*** | −0.121 | −0.735** |
| | (0.133) | (0.822) | (0.175) | (0.309) |
| Year effect | Y | Y | Y | Y |
| Industry effect | Y | Y | Y | Y |
| Country effect | Y | Y | Y | Y |
| Observations | 7196 | 7196 | 7196 | 7196 |
| R-squared | 0.869 | 0.581 | 0.433 | 0.915 |
| F-stat | 3470.548 | 1425.084 | 18.506 | 199.394 |
| Robust standard errors are in parentheses | | | | |

*** $p<.01$, ** $p<.05$, * $p<.1$

imbalances between firms in the control and treatment groups. Table 8, panels A and B, shows the descriptive statistics for the control and treatment firms. Treatment firms have a higher FSTS and FATA values than the sample median level of the FSTS and FATA adjusted for year, industry, and country (HIGH_FSTS = 1, HIGH_FATA = 1). Similarly, control firms have a lower value than the sample median (HIGH_FSTS = 0, HIGH_

**Table 8** Entropy Balancing analysis

| Panel A: Descriptive Statistics for the FSTS model after Entropy Balancing | | | | | | |
|---|---|---|---|---|---|---|
| | Treatment (HIGH_FSTS=1) | | | Control (HIGH_FSTS=0) | | |
| | mean | variance | skewness | mean | variance | skewness |
| SIZE | 9.078 | 0.049 | -17.160 | 9.078 | 0.272 | -5.869 |
| LEV | 0.478 | 0.055 | 0.190 | 0.478 | 0.047 | 0.625 |
| AGE | 3.025 | 1.354 | -0.542 | 3.025 | 1.399 | -0.283 |
| PPE | 0.354 | 0.001 | -0.248 | 0.354 | 0.001 | -0.218 |
| ASTVR | 1.031 | 0.010 | -0.006 | 1.031 | 0.009 | 0.134 |
| CFO | 0.095 | 0.000 | 1.831 | 0.095 | 0.000 | 1.316 |
| LIQ | 2.613 | 0.026 | 0.426 | 2.613 | 0.018 | 0.783 |
| INFL | 1.595 | 2.158 | 0.488 | 1.595 | 3.740 | 0.778 |
| GDP | 10.060 | 0.693 | -0.472 | 10.060 | 0.861 | -0.873 |
| Panel B: Descriptive Statistics for the FATA model after Entropy Balancing | | | | | | |
| | Treatment (HIGH_FATA=1) | | | Control (HIGH_FATA=0) | | |
| | mean | variance | skewness | mean | variance | skewness |
| SIZE | 9.079 | 0.038 | -19.200 | 9.079 | 0.966 | -3.406 |
| LEV | 0.483 | 0.055 | 0.201 | 0.483 | 0.059 | 0.299 |
| AGE | 3 | 1.333 | -0.493 | 3 | 1.308 | -0.462 |
| PPE | 0.355 | 0.001 | -0.566 | 0.355 | 0.001 | -0.526 |
| ASTVR | 1.015 | 0.012 | 0.127 | 1.015 | 0.008 | 0.071 |
| CFO | 0.104 | 0.000 | 0.873 | 0.104 | 0.000 | 1.531 |
| LIQ | 2.508 | 0.008 | 0.531 | 2.508 | 0.023 | -0.235 |
| CFO | 0.104 | 0.000 | 0.873 | 0.104 | 0.000 | 1.531 |
| INFL | 1.862 | 3.228 | 0.925 | 1.862 | 2.107 | 0.074 |
| | (1) | (2) | (3) | (4) | | |
| | Tobins Q | Tobins Q | ROA | ROA | | |
| FSTS | 3.772*** | | -1.211*** | | | |
| | (.382) | | (.355) | | | |
| FATA | | 5.439*** | | -1.118 | | |
| | | (.477) | | (.906) | | |
| | (.057) | (.016) | (.06) | (.027) | | |
| _cons | 1.623*** | 1.892*** | -.861 | 1.225** | | |
| | (.392) | (.206) | (.533) | (.579) | | |
| Control Variables | Y | Y | Y | Y | | |
| Year effect | Y | Y | Y | Y | | |
| Industry effect | Y | Y | Y | Y | | |
| Country effect | Y | Y | Y | Y | | |
| Observations | 10460 | 10460 | 10460 | 10460 | | |
| R-squared | .697 | .892 | .385 | .285 | | |
| INFL | 1.862 | 3.228 | 0.925 | 1.862 | 2.107 | 0.074 |
| GDP | 9.963 | 0.816 | -0.717 | 9.963 | 0.818 | -0.513 |
| Panel C: Regression Results between INT and FFP using Entropy-balancing Sample | | | | | | |
| | (1) | (2) | (3) | (4) | | |
| | Tobins Q | Tobins Q | ROA | ROA | | |
| FSTS | 3.772*** | | -1.211*** | | | |
| | (.382) | | (.355) | | | |
| FATA | | 5.439*** | | -1.118 | | |
| | | (.477) | | (.906) | | |
| | (.057) | (.016) | (.06) | (.027) | | |

**Table 8** (continued)

| | | | | |
|---|---|---|---|---|
| _cons | 1.623*** | 1.892*** | -.861 | 1.225* |
| | (.392) | (.206) | (.533) | (.579) |
| Control Variables | Y | Y | Y | Y |
| Year effect | Y | Y | Y | Y |
| Industry effect | Y | Y | Y | Y |
| Country effect | Y | Y | Y | Y |
| Observations | 10460 | 10460 | 10460 | 10460 |
| R-squared | .697 | .892 | .385 | .285 |
| Panel D: Regression results of the moderating role of the ESG between INT and FFP using entropy-balancing | | | | |
| | Tobins Q | Tobins Q | ROA | ROA |
| FSTS | 4.273*** | | -.806** | |
| | (.398) | | (.383) | |
| C.FSTS#C.ESG | -2.868** | | -1.955 | |
| | (1.106) | | (1.371) | |
| FATA | | 5.15*** | | -.296 |
| | | (.502) | | (.953) |
| C.FATA#C.ESG | | .594 | | -4.134*** |
| _cons | 1.49*** | 1.994*** | -.947* | 1.116* |
| | (.358) | (.197) | (.486) | (.565) |
| Control Variables | Y | Y | Y | Y |
| Year effect | Y | Y | Y | Y |
| Industry effect | Y | Y | Y | Y |
| Country effect | Y | Y | Y | Y |
| Observations | 10460 | 10460 | 10460 | 10460 |
| R-squared | .712 | .896 | .396 | .298 |

FATA = 0). The entropy balancing regression analysis is shown in Table 8, panels C and D. The coefficients of FSTS and FATA are significant and positive with Tobin's Q as shown in models (1)-(2) in panel C. We also analyse the entropy-balancing for the interaction terms (FSTS×ESG) and (FATA×ESG). Even though the results of the moderating variable deviate from our expectations, they are still significant and robust to our baseline findings. Hence, it is unlikely that our model suffers from endogeneity problem.

### 4.5.2 Sample sensitivity analysis

Sample sensitivity analysis is used to assess the robustness of the regression results by examining how changes in the sample, such as excluding outliers or influential countries, affect the findings. In current study, Japan, being the dominant country in terms of sample size and having extreme values, could potentially skew the results. To address this, we performed a sensitivity analysis by excluding Japan from the sample.

Tables 9 and 10 report the direct impact of INT on FFP and the moderating role of ESG between INT and FFP, respectively, based on the sub-sample analysis. The results are consistent with our baseline findings, which confirm the robustness of the baseline model

**Table 9** Baseline (OLS) INT on FFP (Sample sensitivity excluding Japan)

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Tobins Q | Tobins Q | ROA | ROA |
| FSTS | 1.576*** | | 1.544*** | |
| | (.12) | | (.086) | |
| FATA | | 2.583*** | | 2.91*** |
| | | (.306) | | (.215) |
| SIZE | .009 | .012 | 0 | .003 |
| | (.007) | (.009) | (.008) | (.009) |
| LEV | -.002 | -.001 | 0 | .002 |
| | (.003) | (.004) | (.002) | (.002) |
| AGE | .002*** | .003*** | -.001*** | -.001** |
| | (.001) | (.001) | (0) | (0) |
| PPE | -.528*** | .254*** | -1.311*** | -.526*** |
| | (.088) | (.042) | (.054) | (.021) |
| ASTVR | .003 | -.006 | -.008 | -.017*** |
| | (.008) | (.01) | (.005) | (.005) |
| CFO | -9.744*** | -12.111*** | 1.903*** | -.483*** |
| | (.345) | (.325) | (.203) | (.056) |
| LIQ | -.231*** | .012 | .066*** | .336*** |
| | (.009) | (.027) | (.003) | (.021) |
| INFL | -.019*** | -.02*** | .015*** | .013*** |
| | (.001) | (.001) | (.001) | (.001) |
| GDP | .042*** | .074*** | .004 | .034*** |
| | (.009) | (.016) | (.004) | (.002) |
| _cons | 4.245*** | 3.35*** | -.09 | -1.066*** |
| | (.171) | (.162) | (.096 | (.103) |
| Year effect | Y | Y | Y | |
| Industry effect | Y | Y | Y | Y |
| Country effect | Y | Y | Y | Y |
| Observations | 8061 | 8061 | 8061 | 8061 |
| R-squared | .918 | .91 | .564 | .474 |
| F-stat | 3382.313 | 5882.167 | 615.306 | 286.207 |

Robust standard errors are in parentheses

in the Asia-Pacific context. This strengthens the validity of the conclusions drawn from the overall sample.

### 4.5.3 Feasible generalized leased square (FGLS)

The study also employed FGLS methodology to correct for heteroskedasticity and potential autocorrelation in error terms, to ensure more efficient and unbiased coefficient estimates. Tables 11 and 12 present the generalized least squares methodology for the direct impact of INT on FFP and the moderating role of ESG between INT and FFP, respectively. The results are consistent with our baseline findings, indicating that our model is not likely to suffer from the heteroskedastic issue.

**Table 10** Baseline (OLS) Moderation of ESG between INT and FFP (Sample sensitivity excluding Japan)

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Tobins Q | Tobins Q | ROA | ROA |
| | 1.433*** | | 1.544 | |
| | (.131) | | (.075) | |
| C.FSTS#C.ESG | .376*** | | .059 | |
| | (.094) | | (.058) | |
| FATA | | 2.351*** | | 2.826*** |
| | | (.351) | | (.17) |
| C.FATA#C.ESG | | .685*** | | .529*** |
| | | (.217) | | (.139) |
| ESG | -.082*** | -.046* | -.024 | -.064*** |
| | (.028) | (.026) | (.018) | (.018) |
| SIZE | .009 | .012* | 0 | .003 |
| | (.007) | (.007) | (.007) | (.007) |
| LEV | -.002 | 0 | 0 | .001 |
| | (.003) | (.003) | (.002) | (.002) |
| AGE | .003*** | .003*** | -.001*** | -.001* |
| | (.001) | (.001) | (0) | (0) |
| PPE | -.56*** | .188** | -1.31*** | -.537*** |
| | (.088) | (.079) | (.057) | (.055) |
| ASTVR | 0 | -.009 | -.007 | -.017*** |
| | (.008) | (.009) | (.005) | (.005) |
| CFO | -9.791*** | -11.958*** | 1.883*** | -.475*** |
| | (.355) | (.286) | (.175) | (.109) |
| LIQ | -.224*** | .005 | .065*** | .335*** |
| | (.009) | (.033) | (.005) | (.017) |
| INFL | -.019*** | -.02*** | .015*** | .014*** |
| | (.001) | (.001) | (.001) | (.001) |
| GDP | .041*** | .071*** | .004 | .034*** |
| | (.009) | (.014) | (.005) | (.005) |
| _cons | 4.289*** | 3.43*** | -.089 | -1.052*** |
| | (.172) | (.193) | (.086) | (.094) |
| Year effect | Y | Y | Y | Y |
| Industry effect | Y | Y | Y | Y |
| Country effect | Y | Y | Y | Y |
| Observations | 8061 | 8061 | 8061 | 8061 |
| R-squared | .919 | .912 | .565 | .475 |
| F-stat | 3653.92 | 5815.472 | 352.568 | 140.179 |

Robust standard errors are in parentheses

*** $p<.01$, ** $p<.05$, * $p<.1$

## 5 Discussion

For diverse goals, including acquiring valuable resources, expanding into new markets, and engaging with more established multinationals in developed countries, companies in emerging markets are internationalizing faster than established companies (Deng & Yang, 2015; Zhang et al., 2021). Firm internationalization is a multifaceted strategy, and although previous research has explored its performance implications from a variety of paradigms, there has been a flaw of systematic examination of the mechanisms that underlie its diverse aspects. By following various theoretical framework (e.g., three stage, four stage, Uppsala

**Table 11** Impact of INT and FFP (FGLS)

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Tobins Q | Tobins Q | ROA | ROA |
| FSTS | 1.627*** | | 1.518*** | |
| | (.128) | | (.062) | |
| FATA | | 2.787*** | | 2.989*** |
| | | (.288) | | (.14) |
| SIZE | .007 | .01 | .001 | .003 |
| | (.007) | (.007) | (.006) | (.006) |
| LEV | -.005* | -.005* | .002 | .002 |
| | (.003) | (.003) | (.002) | (.002) |
| AGE | .002*** | .002*** | -.001* | 0 |
| | (.001) | (.001) | (0) | (0) |
| PPE | -.394*** | .435*** | -1.39*** | -.596*** |
| | (.074) | (.055) | (.05) | (.045) |
| ASTVR | .001 | -.009 | -.004 | -.015*** |
| | (.007) | (.008) | (.004) | (.005) |
| CFO | -10.496*** | -13.195*** | 2.247*** | -.325*** |
| | (.324) | (.195) | (.142) | (.075) |
| LIQ | -.246*** | .009 | .074*** | .346*** |
| | (.007) | (.027) | (.004) | (.014) |
| INFL | -.017*** | -.018*** | .014*** | .014*** |
| | (.001) | (.001) | (.001) | (.001) |
| GDP | -.01 | .016 | .028*** | .051*** |
| | (.007) | (.011) | (.004) | (.004) |
| _cons | 4.886*** | 4.036*** | -.381*** | -1.291*** |
| | (.155) | (.172) | (.072) | (.084) |
| Year effect | Y | Y | Y | Y |
| Industry effect | Y | Y | Y | Y |
| Country effect | Y | Y | Y | Y |
| Observations | 10460 | 10460 | 10460 | 10460 |
| Overall $R^2$ | .921 | .914 | .577 | .49 |

Standard errors are in parentheses

*** *p*<.01, ** *p*<.05, * *p*<.1

model) prior studies found S-shaped, U-shaped, and linear positive relationship between INT and FFP. In three stage model firms focus on market knowledge, market commitment, and market performance, whereas in four stage model firms' extent the three-stage model by adding a step that involves increasing resource commitment and operational integration in foreign markets. The Uppsala Model emphasizes gradual internationalization, where firms start with low commitment in foreign markets and gradually increase their involvement as they gain more experience. Current study examines the internationalization and firm financial performance and found that the firm internationalization is significantly and positively associated with both proxies of firm performance (Tobin's Q, ROA).

This is because, meeting the needs, wants, and demands of overseas customers globally can expand the market portfolio in host countries and maximize foreign sales revenue (Farooq et al., 2021) which potentially improves firm performance. From an economic perspective, increased international sales enhance production levels by opening wider foreign markets, which enables firms to gain from the scale and scope of the economy (Love & Roper, 2015). Furthermore, in the context of the resource-based view, MNCs utilize their

**Table 12** Moderation of ESG between INT and FFP (FGLS)

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Tobins Q | Tobins Q | ROA | ROA |
| FSTS | 1.627*** | | 1.518*** | |
| | (0.128) | | (0.062) | |
| FATA | | 2.787*** | | 2.989*** |
| | | (0.288) | | (0.14) |
| SIZE | 0.007 | 0.01 | 0.001 | 0.003 |
| | (0.007) | (0.007) | (0.006) | (0.006) |
| LEV | −0.005* | −0.005* | 0.002 | 0.002 |
| | (0.003) | (0.003) | (0.002) | (0.002) |
| AGE | 0.002*** | 0.002*** | −0.001* | 0 |
| | (0.001) | (0.001) | (0) | (0) |
| PPE | −0.394*** | 0.435*** | −1.39*** | −0.596*** |
| | (0.074) | (0.055) | (0.05) | (0.045) |
| ASTVR | 0.001 | −0.009 | −0.004 | −0.015*** |
| | (0.007) | (0.008) | (0.004) | (0.005) |
| CFO | −10.496*** | −13.195*** | 2.247*** | −0.325*** |
| | (0.324) | (0.195) | (0.142) | (0.075) |
| LIQ | −0.246*** | 0.009 | 0.074*** | 0.346*** |
| | (0.007) | (0.027) | (0.004) | (0.014) |
| INFL | −0.017*** | −0.018*** | 0.014*** | 0.014*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| GDP | −0.01 | 0.016 | 0.028*** | 0.051*** |
| | (0.007) | (0.011) | (0.004) | (0.004) |
| _cons | 4.886*** | 4.036*** | −0.381*** | −1.291*** |
| | (0.155) | (0.172) | (0.072) | (0.084) |
| Year effect | Y | Y | Y | Y |
| Industry effect | Y | Y | Y | Y |
| Country effect | Y | Y | Y | Y |
| Observations | 10,460 | 10,460 | 10,460 | 10,460 |
| Overall $R^2$ | 0.921 | 0.914 | 0.577 | 0.49 |

Standard errors are in parentheses

*** $p<.01$, ** $p<.05$, * $p<.1$

internal strengths and capabilities, such as excess financial resources, international experience, and skilled employees on the one hand and gain shared technology, knowledge, and cheap labour on the other hand. Entering in an international market through a flexible approach (exporting) allows firms to learn advanced technology, marketing, and other management-level skills at a relatively low cost. Most of the emerging MNCs in Asia-Pacific are still in the initial phases of internationalization (Hussain et al., 2024) adopting export intensity as the primary mode of foreign entry. In this context, firms avoid incurring substantial costs such as acquisition costs, employees, foreign corporate networks costs, external management systems and setup costs. Avoiding such cost potentially enhance firm profitability (Wei & Lin, 2021).

Portfolio diversification through international channel reduces risk, gains innovative knowledge and experience, global competitive advantage, access to growing markets which can ultimately enhance FFP. Many scholars (proponents of S-shaped and U-shaped relationships) (Wu et al., 2012) argue that after certain level of internationalization, the disadvantages of internationalization outweigh the benefits of diversification due to set up costs

and liabilities of foreignness. However, this happens in fourth stage of internationalization when firms build its new business units in other countries and change the line of business by adopting product diversity and distance dimensions of internationalization. Thus, firms need to meet regulatory requirements and the cost of hiring experts to deal with the complexities of a changed business line. However, at initial stages of internationalization (FSTS, FATA) firms still receive positive financial returns. Overall, firm internationalization through its various aspects significantly and positively affects the FFP of Asia-Pacific emerging markets. Recent research have also identified positive connection between internationalization and firm performance (Bhandari et al., 2023; Correa da Cunha et al., 2023).

The findings in our study also indicate that ESG practices significantly and positively moderate the INT-FFP relationship. Corporations that expand internationally encounter pressure from a variety of institutions and stakeholders that are more diverse than those in their home country in terms of politics, culture, economy, and social structure. Hence, MNCs face liability of foreignness and legitimacy issues in overseas markets. In stakeholder theoretical perspective, stakeholders expect that their financial resources be used in projects that promote ethical behavior, operate in accordance with public principles, and support sustainable strategic goals that promise product quality (Cao et al., 2023). In such circumstances, MNCs, meet a wide range of stakeholder demands at a high level, by demonstrating ESG commitments and maintain trust and a positive reputation to avoid the risk of litigation or sanctions (Chen et al., 2023). Steyn (2014)Steyn (2014)Steyn (2014)Steyn (2014) delineated that ESG initiative contributes to businesses with greater financial performance. Thus, meeting sustainability requirements at the international level leads to legitimacy, green customer loyalty, and legality from host countries. It reduces risk, enhances goodwill, and competitive advantage, and brings sustainable development which ultimately improves the overall performance of MNCs.

## 6 Conclusion

Organizations adopt international diversification strategies because these policies create value by de-risking assets that potentially lead toward multi-business portfolio, product penetration, market penetration, and transnational structures (Denis et al., 2002; Hitt et al., 1997; Markusen, 1995). Utilizing the framework of resource-based theory as our foundational basis, we examine the trend of APAC firms' international channels and the association between internationalization and FFP. The study employs panel data comprising 1708 listed firms in the APAC region spanning 2002 to 2023. Taking sustainability (ESG) into consideration as a potential moderating factor, we tackle endogeneity challenges by employing two-stage least squares and entropy-balancing methodology. In addition, we employed numerous robustness analyses (sample sensitivity, FGLS) to further validate the findings.

The analysis shows that firm internationalization significantly and positively affect the performance of Asia-Pacific corporations in all models, indicating that MNCs expanding internationally has led to significant improvements in FFP. In addition, emerging firms are facing hostile threads from the entry of MNCs from advanced economies into their home countries (Nuruzzaman et al., 2019). Hence to tackle such challenges, emerging MNCs are increasingly relying upon global market to counter the competition on one hand and gain knowledge, innovative technology, strategic assets, economies of scale and

competitive advantage on the other hand. Thus, internationalization opens new revenue streams by expanding customer base which potentially contributes to FFP. ESG integration into business has a significant and positive link between firm internationalization and FFP. This reinforces the notion that MNCs possessing substantial financial resources are more inclined to implement ESG practices internationally (Attig et al., 2014) allowing them to effectively integrate their processes with the host's regulations, beliefs, culture, and norms, thereby increasing the overall performance of the organization and global sustainability.

### 6.1 Theoretical implications

In examining the internationalization-firm performance relationship, the findings have important theoretical implications. Despite existing studies tested the INT-FFP relationship (Bıçakcıoğlu-Peynirci & Morgan, 2022; Zhai & Ghosal, 2022) however, these studies have overlooked the incorporation of suitable theoretical framework that aligns with the distinct stages of internationalization. Thus, our study improves knowledge by taking a large sample size (37,576 firm-year observations) in Asia pacific context about the initial stages of internationalization by examining the internationalization on firm performance and identifying the relevant theoretical framework (e.g., resource-based view, institutional theory). Investors and decision makers in the Asia Pacific region are increasingly considering sustainability (ESG) factors and are implementing regulations such as the Task Force on Climate-Related Financial Disclosures (TCFD) and the Global Reporting Initiative Standard (GRI). Our study incorporates sustainability indicators (ESG) as potential moderating factors that underlie how multinational corporations improve financial indicators by promoting a fair and just economy into diverse economic structures and regulatory environments. Therefore, by integrating ESG factors as moderators in this study, it offers more compelling evidence of the positive link between INT and FFP. Finally, the study adds to the international business literature by using two-stage least squares and entropy balancing in a panel setting to control endogeneity issues and sample sensitivity analysis to strengthen the outcome obtained.

### 6.2 Managerial implications

The study also provides managerial insights for multinational corporations, particularly in the adoption of international channels and strategy formulation during international expansion. First, the findings evident that the first stage of international involvement (export) is less costly and provides a wider customer base, the manager should therefore, take into consideration both the cost and benefits of overseas entry modes while formulating and implementing international strategy. After successfully establishing and opening the first phase, the firm should move to the second phase to avoid the potential negative consequences of internationalization due to setup costs, resource and technology acquisition costs, and compliance with regulatory requirements. Second, MNCs expanding internationally must interact with foreign communities and regulatory authorities by implementing ESG strategies to avoid legitimacy and LOF issues. Firms mostly, face LOF and legitimacy issues during the second and third stage of internationalization hence, prioritizing ESG integration as a part of SDGs 2030 agenda in business significantly reduces LOF and legitimacy problems. International standard-setting bodies should also strictly implement ESG regulations

globally and offer preferential treatment to the firms for ESG initiative to foster sustainable development globally.

### 6.3 Limitations and future research

While our research has made valuable contributions to the existing literature of internationalization and MNCs performance along with sustainable business models, it is crucial to acknowledge certain limitations within our study. First, the generalizability of the study is limited to only few corporations that have foreign setups (exports, foreign assets) as included in the present study. Based on sustainability factors only selected corporations were included in our sample. Second, due to databases and time constraints the study examines only the first stage of internationalization while overlooking the potential other channel such green field investment, inward and outward FDI, and merger and acquisitions. Thus, the future research can be conducted by considering the second and third stage of internationalization data pertaining to Asia-Pacific. Furthermore, the present study also opens the way for new research in the context of APAC by presenting the individual pillars of ESG and green CSR as moderators. Each pillar can have a different effect which will provide new insights by utilizing the other databases such as Customer Data Platform (CDP) Sustainalytics and Fact Set.

**Author contributions** Authors' contributions: Preparation of material, data collection, analysis, introduction, literature review of the draft was performed by Waleed Hussain. Ong Tze San review and approved and Boon Heng Teh, worked on methodology and Sohail Ahmad Javeed gave Concluding remarks.

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**Data availability** The data can be provided upon request.

## Declarations

Confirm that this manuscript has not been submitted for publication or published elsewhere.

**Compliance with ethical approval** Not applicable.

**Consent to participate** not applicable.

**Consent to publish** not applicable.

**Competing interests** No competing interest.

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