



Gender-Diverse Boards, ESG Engagement, and Accounting Conservatism: Evidence from Southeast Asia

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ABSTRACT

This study examines how board gender diversity (BGD) influences accounting conservatism (AC) and whether this relationship is moderated by firms' Environmental, Social, and Governance (ESG) engagement in the context of Southeast Asia. Using listed firms domiciled in Malaysia, Indonesia, Singapore, and Thailand over the 2012-2022 period and applying the C-Score measure of conditional conservatism. We test the direct and interactive effect of BGD and ESG engagement on AC. Our findings reveal that the relationship between gender-diverse boards and conservative accounting is context-dependent. While Singapore exhibits a direct positive association between BGD and AC, the relationship insignificant moderator: in Malaysia, strong ESG commitment activates the latent positive effect of BGD on conservatism, whereas in Singapore, high ESG scores weaken this relationship, suggesting a potential "dark side" of ESG as a legitimacy mechanism that substitutes for prudent reporting. This study contributes to the literature by integrating gender diversity, ESG engagement, and accounting conservatism into a unified framework. It demonstrates that the governance impact of board diversity is contingent on a firm's ethical environment and institutional setting, offering important implications for policymakers, regulators, and investors seeking to promote substantive rather than symbolic sustainability practices.

Keywords: Board Gender Diversity, Accounting Conservatism, ESG Engagement, Southeast Asia, Financial Reporting Quality

JEL Classifications: M14, M41

1. INTRODUCTION

The relationship between board gender diversity (BGD) and financial reporting quality remains one of the most widely investigated yet persistently inconclusive topics in corporate governance research (Adams and Ferreira, 2009; Srinidhi et al., 2011). While social role theory suggests that female directors' higher ethical sensitivity and risk aversion should consistently promote prudent decision-making and more conservative accounting practices (Croson and Gneezy, 2009), empirical findings have been mixed and context dependent (Gull et al., 2018; Orazalin, 2020). Such inconsistency signals that the effects of gender diversity are not uniform across institutional environments, but rather conditional upon contextual factors

such as governance quality, regulatory framework, and cultural norms. Recent evidence from Sahu et al. (2025) further emphasizes the critical role of ESG engagement in unveiling the true impact of board gender diversity on firm outcomes.

Furthermore, recent multi-country evidence on board diversity and environmental, social, and governance (ESG) engagement reinforces this view. Prior studies report that the impact of gender-diverse boards on ESG performance varies across countries due to institutional and cultural heterogeneity (Odriozola et al., 2024). This suggests that the governance influence of female directors cannot be fully understood without considering the ethical and institutional environment in which they operate. The unresolved question, therefore, is not whether

gender-diverse boards improve financial reporting quality, but under what conditions they do so.

This study addresses that gap by proposing a paradigm shift, that is, the impact of board gender diversity on financial reporting outcomes is fundamentally moderated by the firm's ESG engagement, which reflects its ethical culture and stakeholder orientation. Drawing on resource dependence theory (RDT) and social role theory (SRT), we argue that female directors' potential to enhance financial reporting prudence depends on whether the firm's broader governance environment supports transparency, accountability, and ethical behavior. ESG engagement, therefore, is not merely a control variable but a contextual enabler that activates (or suppresses) the influence of gender-diverse boards on accounting conservatism.

Using 1,643 firm-year observations from 2012 to 2022 across Malaysia, Indonesia, Singapore, and Thailand, we find that the relationship between BGD and accounting conservatism (AC) is highly context-dependent. Specifically, strong ESG engagement amplifies the positive influence of gender-diverse boards in Malaysia, but attenuates it in Singapore, where high ESG scores appear to function as a legitimacy mechanism that substitutes for conservative reporting, a "dark side" effect consistent with symbolic ESG disclosure (Lyon and Maxwell, 2011; Walker and Wan, 2012). These findings challenge the assumption that ESG engagement universally strengthens governance quality and underscore the importance of institutional and cultural context in shaping the outcomes of board diversity initiatives.

Southeast Asia offers an especially compelling setting for this inquiry. The region's institutional diversity, spanning common law and civil law systems, varying investor protection regimes, and distinct cultural attitudes toward gender and governance, provides a rich testing ground for examining how female directors' governance influence interacts with ESG orientation. Differences in regulatory enforcement, board quotas, and market maturity across Malaysia, Singapore, Indonesia, and Thailand create naturally varying conditions under which gender diversity and ethical commitment intersect to affect accounting outcomes.

This study makes several key contributions to corporate governance and financial reporting literature. Theoretically, it advances understanding of the mechanisms through which board gender diversity (BGD) affects accounting conservatism (AC) by integrating resource dependence theory and social role theory within an ESG-oriented framework. We reconceptualize ESG engagement not as a control variable but as a contextual moderator that conditions the effectiveness of gender-diverse boards. This perspective introduces a new theoretical pathway, ESG as an enabling ethical environment, that helps explain why the influence of female directors on financial reporting outcomes varies across institutional contexts. By showing that BGD's effect is contingent rather than universal, the study extends both theories to emerging market settings and contributes to a more nuanced understanding of the interaction between internal board dynamics and external ethical pressures.

Empirically, this study provides robust cross-country evidence from Southeast Asia, a region that remains underrepresented in governance research despite its institutional heterogeneity and growing global importance. The results reconcile previously mixed findings in the literature by demonstrating that female directors enhance accounting conservatism only when operating within firms genuinely committed to ESG principles. Furthermore, the evidence of a counterintuitive "dark side" effect in Singapore, where strong ESG performance weakens conservative reporting, highlights the risks of symbolic ESG practices and questions the assumption that ESG engagement always strengthens governance. Together, these findings add to the discussion on how gender diversity and sustainability influence financial reporting quality, providing new insights for regulators, investors, and policymakers aiming to promote meaningful rather than superficial governance reforms.

The remainder of this paper proceeds as follows. Section 2 provides an overview of the institutional setting in Southeast Asia. Section 3 develops our theoretical framework and presents our hypotheses. Section 4 describes our data, methodology, and empirical results. Section 5 provides an in-depth discussion of our findings. Finally, Section 6 concludes with a summary of our contributions and specific recommendations for policymakers, firms, and investors.

2. INSTITUTIONAL SETTING

The selection of Southeast Asia as the research location is strategically driven by the region's unique institutional features, which generate specific pressures and incentives for accounting conservatism. This study focuses on firms from four Southeast Asian countries, i.e., Malaysia, Indonesia, Singapore, and Thailand, that collectively exhibit meaningful heterogeneity in legal systems, governance frameworks, and financial market development. Such variation provides an ideal context for investigating how board gender diversity influences accounting conservatism across differing institutional environments.

Malaysia and Singapore, both influenced by the British common law system, feature stronger investor protection, market-based financing, and higher litigation risk. In contrast, Indonesia and Thailand operate under civil law systems, where bank financing and concentrated ownership structures dominate. Prior research has highlighted that legal origins play a significant role in shaping accounting conservatism, with common law countries generally exhibiting greater conservatism (Watts, 2003). Financial market sophistication further differentiates the region, with Singapore's highly developed markets contrast with the more emerging characteristics of Indonesia and Thailand, while Malaysia occupies an intermediate position. Boonlert-U-Thai and Suttipun (2023) find that audit quality has a significant impact on financial reporting quality in Thailand, underscoring the importance of external governance mechanisms that complement internal board structures.

The regulatory landscape in Southeast Asia has undergone significant evolution. Malaysia has been notably proactive, with

the Malaysian Institute of Accountants introducing a Competency Framework for CFOs in 2016, making them personally accountable for the quality of financial reporting (Ismail et al., 2021). Singapore adopts a more market-driven regulatory approach, while Indonesia and Thailand have implemented governance reforms largely in response to past financial crises. At the same time, the region has become increasingly relevant in global ESG discussions, reflecting heightened stakeholder expectations for corporate responsibility and transparency. This convergence of regulatory development, governance reform, and ESG engagement creates a fertile setting for examining the intersection of board gender diversity and accounting conservatism.

Prior research suggests that female executives often adopt a more stakeholder-oriented and risk-averse approach to decision-making (Francis et al., 2015). In light of evidence that female CFOs tend to exhibit more conservative financial reporting behavior (Francis et al., 2015) and that CFO attributes play a crucial role in shaping conservatism in emerging markets (Ismail et al., 2021), the institutional diversity of Southeast Asia offers an especially valuable context to explore how gender-diverse boards influence accounting conservatism within varied legal, governance, and market environments.

3. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Board gender diversity has become a focal point of contemporary corporate governance research, reflecting growing interest in how the inclusion of women on boards affects firm behaviour, ethical standards, and financial outcomes. A diverse board enhances decision-making by introducing varied cognitive perspectives, reducing groupthink, and improving the board's monitoring and advisory capacity (Jayaraman et al., 2024). In particular, female directors contribute unique behavioral and cognitive attributes, such as greater diligence, ethical sensitivity, and stakeholder orientation, that can strengthen the board's oversight role and encourage more transparent financial reporting (Guizani and Abdalkrim, 2023). In the same vein, (Adams and Ferreira 2009; Ishak et al., 2016) argue that female directors' participation can enhance governance efficiency. However, empirical findings on the relationship between board gender diversity and corporate outcomes remain mixed. While studies from developed markets report positive associations between female representation and financial reporting quality or accounting conservatism (Alves, 2023; Francis et al., 2015; Ho et al., 2015), others find weak or inconclusive results, particularly in emerging economies (Orazalin, 2020). These inconsistencies suggest that the effectiveness of gender-diverse boards is not universal but highly context-dependent, influenced by institutional quality, regulatory enforcement, and cultural norms that shape women's participation in governance.

Accounting conservatism represents one of the most enduring principles in financial reporting, capturing the asymmetric recognition of economic gains and losses where potential losses are recognised more promptly than gains (Basu, 1997; Ball and Shivakumar, 2005). Conditional conservatism, in particular,

reflects managers' timely loss recognition in response to unfavourable news and is widely regarded as a core indicator of financial reporting quality (Mehmood et al., 2024). Conservative reporting reduces information asymmetry and managerial opportunism by constraining income overstatement, thereby enhancing credibility for external stakeholders (Ahmed and Duellman, 2007). However, the level of conservatism varies across firms and countries, reflecting differences in legal systems, enforcement strength, ownership structures, and governance mechanisms (Bertomeu et al., 2017). In emerging markets, where investor protection is weaker and external monitoring less effective, board characteristics such as gender diversity can serve as an important internal governance mechanism to promote prudence in reporting.

The role of Environmental, Social, and Governance engagement adds a further dimension to this debate. ESG represents a firm's ethical and strategic commitment to sustainability, accountability, and long-term value creation (Chen et al., 2023). Strong ESG performance enhances stakeholder trust (Das et al., 2025), mitigates risk, and lowers capital costs, but beyond these benefits, it also signals the strength of a firm's ethical culture, the environment in which board decisions are made. While prior studies often treat ESG as an outcome of good governance, emerging evidence suggests that ESG also serves as an enabling infrastructure that shapes the effectiveness of governance. Firms with authentic ESG commitment institutionalise ethical values and stakeholder awareness, providing a supportive context in which female directors can exercise influence consistent with their ethical and risk-averse orientation (Friede et al., 2015; Moisello et al., 2025). Conversely, when ESG practices are symbolic or driven by impression management, they may substitute for rather than complement prudent reporting (Lyon and Maxwell, 2011; Walker and Wan, 2012). Hence, ESG engagement may either amplify or weaken the effect of board gender diversity on accounting conservatism, depending on whether the commitment is substantive or superficial.

This theoretical reasoning draws upon two complementary perspectives, i.e., resource dependence theory (RDT) and social role theory (SRT), to explain the mechanisms through which female directors influence financial reporting outcomes and the conditions under which these mechanisms operate. RDT (Salancik and Pfeffer, 1978; Hillman et al., 2000) views the board as a conduit for securing critical external resources and legitimacy. Female directors, by virtue of their diverse experiences and social capital, strengthen a firm's legitimacy and stakeholder engagement, thereby encouraging conservative reporting that safeguards long-term credibility. In parallel, SRT (Eagly and Karau, 2002; Koenig and Eagly, 2014) emphasises behavioural differences arising from gender socialisation: Women tend to be more ethical, risk-averse, and stakeholder-oriented, qualities conducive to prudent accounting and reduced earnings manipulation. However, both theoretical perspectives imply that these potential benefits are conditional rather than automatic. Female directors' capacity to influence governance outcomes depends on the organizational and institutional environment that either empowers or constrains their voice. In this sense, ESG engagement acts as a contextual

catalyst, a form of ethical infrastructure that translates the latent potential of gender diversity into observable improvements in financial reporting quality.

Taken together, the literature suggests a complex interplay between board gender diversity, ethical context, and reporting behavior. Female directors bring resources and ethical orientations that can promote accounting conservatism, but their influence materializes primarily when supported by strong institutional and organizational commitments to ESG principles. The integration of RDT and SRT thus provides a comprehensive explanation for the conditional nature of the BGD–AC relationship, framing ESG engagement as the moderating force that determines whether gender diversity enhances or merely symbolizes sound governance.

3.1. Hypotheses Development

Drawing on the integrated framework of resource dependence theory and social role theory, this study proposes that board gender diversity influences accounting conservatism both directly and conditionally through a firm's Environmental, Social, and Governance engagement. RDT suggests that directors supply organizations with vital resources, expertise, legitimacy, and connections that assist them in managing environmental dependencies (Salancik & Pfeffer, 1978; Hillman et al., 2000). Female directors broaden these resources by bringing new perspectives, stakeholder networks, and reputational capital, thereby enhancing the board's ability to monitor management and uphold transparent financial reporting. Conservative accounting, which demands timely loss recognition and limits managerial discretion, complements these oversight functions and signals prudence to investors and creditors. Accordingly, firms with more gender-diverse boards are expected to exhibit higher levels of accounting conservatism.

SRT provides a behavioral explanation for this relationship. It argues that gender socialisation fosters differences in risk tolerance and ethical judgment (Eagly and Karau, 2002; Koenig and Eagly, 2014). Women are generally more risk-averse and ethically attuned, preferring cautious strategies that prioritize long-term stability over short-term gain. Within the boardroom, such traits translate into stronger demands for reliable, verifiable financial information and greater scepticism toward aggressive accounting choices. Empirical evidence across different jurisdictions supports this view: female directors, chief financial officers, and chief executive officers have been shown to promote more conservative financial reporting and higher earnings quality (Francis et al., 2015; Alves, 2023; Makhoul et al., 2018). Therefore, we hypothesize:

- H_1 : A positive relationship exists between board gender diversity and accounting conservatism in Southeast Asian firms.

While gender diversity enhances board monitoring capacity and ethical orientation, its effectiveness depends on the organizational environment in which directors operate. A firm's ESG engagement provides that broader ethical and cultural infrastructure. From an RDT perspective, high ESG performance demonstrates commitment to stakeholder relationships, legitimacy, and long-

term value creation, all of which reinforce the influence of female directors. From an SRT perspective, an ESG-oriented culture aligns closely with the ethical values and risk aversion of women directors, allowing these traits to translate into tangible accounting outcomes. Conversely, in firms with weak or symbolic ESG practices, female directors may lack institutional support to challenge opportunistic reporting, and ESG activities may even be used to obscure aggressive accounting through legitimacy signaling or "greenwashing" (Lyon and Maxwell, 2011; Walker and Wan, 2012).

Accordingly, ESG engagement is expected to function as a moderating mechanism that amplifies or weakens the relationship between BGD and AC. When ESG commitment is substantive and embedded within corporate culture, the ethical orientation and stakeholder focus of female directors are likely to strengthen conservative reporting. However, when ESG is merely symbolic, the expected benefits of board diversity may fail to materialize or could even reverse. Hence, we posit:

- H_2 : ESG engagement strengthens the positive relationship between board gender diversity and accounting conservatism.

4. RESEARCH METHODOLOGY AND DATA

4.1. The Data

This study empirically examines the relationship between board gender diversity, ESG engagement, and accounting conservatism, utilizing a sample of publicly listed firms from four Southeast Asian countries: Indonesia, Malaysia, Singapore, and Thailand. The study spans the period from 2012 to 2022, a decade characterized by a heightened focus on ESG practices and corporate governance reforms across the region. Data were obtained from the Refinitiv Eikon database, which offers comprehensive financial, governance, and ESG information for global listed companies. The initial sample included all non-financial firms listed on the main boards of the respective stock exchanges. Consistent with prior studies (e.g., Chi et al., 2009), financial institutions, such as banks and insurance companies, were excluded due to their distinct regulatory and accounting frameworks, which may bias the measurement of accounting conservatism. Missing observations for the variables of interest were also removed. The final sample consists of 1,643 firm-year observations, forming an unbalanced panel dataset for empirical analysis.

4.2. Measurement of Variables

Following Hemmings et al. (2024) and Ball and Shivakumar (2005), this study employs the net income approach to measure accounting conservatism, which captures the asymmetric timeliness of earnings in recognizing economic gains versus losses. Accounting conservatism is conceptualized as the propensity to require a higher degree of verification for recognizing favorable news than for unfavorable news in financial statements (Basu, 1997). This definition highlights conditional conservatism, i.e., the timely recognition of economic losses in relation to gains.

Although numerous proxies for conditional conservatism have been proposed in prior research, many are market-based measures

that depend on stock returns or market valuations, which may be unavailable or unreliable in emerging market settings due to inefficiencies and limited trading activity. In line with Ball and Shivakumar (2005), this study adopts an accrual-based accounting measure that relies solely on financial statement information, rendering it particularly appropriate for the Southeast Asian context, where capital markets vary in depth and liquidity.

The methodology follows a test for transitory components in net income, distinguishing between deferred and timely recognition of economic gains and losses. Timely recognition, especially of losses, creates income components that are more likely to reverse in future periods, while deferred recognition yields more persistent earnings. Thus, greater reversals following income decreases, relative to increases, indicate conditional conservatism.

This approach is well-suited to Southeast Asian firms. In settings with high information asymmetry, financial statements serve as a key source of verifiable information for contracting and monitoring purposes. Conditional conservatism strengthens credibility by constraining managerial discretion and signaling prudence through timely loss recognition. Moreover, recognizing losses early provides stakeholders with advance warning, a particularly valuable feature in markets where investor protections are relatively weak and reliance on financial reports is high.

We estimate conditional conservatism using the following regression model:

$$\frac{\Delta NI_t}{Assets_{t-1}} = \alpha_0 + \alpha_1 \frac{\Delta NI_{t-1}}{Assets_{t-1}} + \alpha_2 D\Delta NI_{t-1} + \alpha_3 D\Delta NI_{t-1} \left(\frac{\Delta NI_{t-1}}{Assets_{t-1}} \right) + \varepsilon_t \quad (1)$$

Where ΔNI_t is the year-on-year change in net income for firm i at time t . ΔNI_{t-1} is the Change in Net Income at time $t-1$ (lagged). $D\Delta NI_{t-1}$ is a Dummy variable equal to 1 when $D\Delta NI_{t-1}$ is negative, and 0 otherwise. $Assets_{t-1}$ represents lagged total assets used as a deflator.

The model captures changes in net income as an autoregressive function while discriminating between positive and negative past earnings innovations. The coefficient α_1 reflects the persistence of positive changes in net income, while α_3 measures any differential persistence in negative changes in net income.

Under conditional conservatism, negative changes in net income are expected to be relatively less persistent than positive changes, as conservative accounting practices result in the more timely recognition of losses, which may subsequently be reversed if the underlying economic conditions improve. Therefore, conditional conservatism is indicated by a significantly negative α_3 coefficient. A more negative α_3 indicates higher levels of accounting conservatism.

To examine how accounting conservatism varies with ESG Engagement and board gender diversity, we augment the base model to include interaction terms:

$$\begin{aligned} \frac{\Delta NI_t}{Assets_{t-1}} = & \alpha_0 + \alpha_1 \frac{\Delta NI_{t-1}}{Assets_{t-1}} + \alpha_2 D\Delta NI_{t-1} \\ & + \alpha_3 D\Delta NI_{t-1} \left(\frac{\Delta NI_{t-1}}{Assets_{t-1}} \right) + \alpha_4 FemaleonBoard \\ & + \alpha_5 FemaleonBoard \left(\frac{\Delta NI_{t-1}}{Assets_{t-1}} \right) \\ & + \alpha_6 D\Delta NI_{t-1} * FemaleonBoard \\ & + \alpha_7 D\Delta NI_{t-1} * \left(\frac{\Delta NI_{t-1}}{Assets_{t-1}} \right) * FemaleonBoard \\ & + \sum_{i=1}^I FirmControls + \varepsilon_t \end{aligned} \quad (2)$$

Where the model components, including the base model (the previous equation) were α_0 is the intercept, α_1 is the lagged earnings persistence, α_2 is the decline dummy effect, and α_3 is the conditional conservatism (asymmetric persistence). In addition to the base model, we incorporate BGD effects as α_4 is the direct effect of BGD, α_5 is how BGD moderates earnings persistence, α_6 is how BGD affects the decline dummy, and the coefficient α_7 captures how the BGD influences the degree of conditional conservatism. A negative α_7 indicates that the BGD increases conditional conservatism, while a positive α_7 suggests that the BGD decreases conservatism.

This approach allows us to test our hypotheses regarding the direct effect of board gender diversity on accounting conservatism (H_{1a} and H_{1b}) and the moderating role of ESG Engagement (H_2). The methodology is particularly well-suited for our Southeast Asian sample, as it does not rely on market-based measures that may be affected by regional market development differences.

Board gender diversity (FemaleonBoard) is measured as the percentage of female directors on the board of directors. This measure is widely used in the literature (e.g., Adams and Ferreira, 2009; Alves, 2023) and provides a continuous measure of the extent of female representation on boards.

Our moderating variable, ESG Engagement (ESGScore), is measured using the ESG score provided by Refinitiv Eikon. This score reflects a company's performance on a wide range of environmental, social, and governance factors. The ESG score is a composite measure based on publicly reported data, designed to provide a comprehensive assessment of a company's commitment to sustainability. A higher ESG score indicates better ESG Engagement.

To isolate the effect of board gender diversity and ESG Engagement on accounting conservatism, this study controls for a number of firm-specific characteristics that have been shown to influence accounting conservatism in prior research (e.g., Ahmed and Duellman, 2007; Chi et al., 2009). These control variables include: Firm Size (SIZE), measured as the natural logarithm of total assets. Larger firms are subject to greater scrutiny from stakeholders and may be more likely to adopt conservative accounting practices. Leverage (LEV) is calculated as total debt divided by total assets. Highly leveraged firms may have incentives to adopt more conservative accounting policies to reduce the risk of debt covenant

Table 1: Variables definitions

Variable	Definition
Dependent variable	
C_Score	A 1-year measure of conditional accounting conservatism that reflects how much a company's accounting practices recognise bad news (losses) more quickly than good news (gains). Higher values denote greater accounting conservatism.
Independent variables	
FemaleonBoard	Proportion (%) of women on the board of directors, measuring board gender diversity. Alternative specification uses dummy variable equal to 1 if there is at least one female director on the board, 0 otherwise.
ESGScore	Firm's Environmental, Social, and Governance performance score from Refinitiv, ranging from 0 to 100. Higher scores indicate better overall ESG Engagement and stronger commitment to sustainability practices.
ESG_ENV	Environmental pillar score from Refinitiv ESG database, measuring firm's environmental performance, resource efficiency, and environmental impact management.
ESG_SOC	Social pillar score from Refinitiv ESG database, measuring firm's social responsibility, stakeholder relations, and human capital management.
ESG_GOV	Governance pillar score from Refinitiv ESG database, measuring firm's corporate governance practices, board effectiveness, and management accountability.
Interaction variables	
FemaleonBoard×ESGScore	Interaction term between board gender diversity and overall ESG Engagement, capturing the moderating effect of ESG on the relationship between female board representation and accounting conservatism.
FemaleonBoard×ESG_ENV	Interaction term between board gender diversity and environmental performance, testing the moderating role of social responsibility initiatives.
FemaleonBoard×ESG_SOC	Interaction term between board gender diversity and social Engagement, testing the moderating role of social responsibility initiatives.
FemaleonBoard×ESG_GOV	Interaction term between board gender diversity and governance Engagement, testing the moderating role of governance practices.
Control variables	
BoardSize	Total number of directors serving on the board of directors, controlling for board size effects on decision-making processes.
SIZE	Firm size measured as the natural logarithm of total assets (in millions USD), controlling for firm size effects on accounting practices.
LEV	Financial leverage ratio calculated as total debt divided by total assets, controlling for debt-related incentives for conservative reporting.
INV	The proportion of assets represented by inventory, calculated as inventory divided by total assets.
ROA	Return on assets calculated as net income divided by total assets, measuring firm profitability and controlling for Engagement effects.
ZSCORE	The Taffler (1983) Z-score, calculated as: $3.2 + 12.18 * \text{profit before tax} / \text{current liabilities} + 2.5 * \text{current assets} / \text{total liabilities} - 10.68 * \text{current liabilities} / \text{total assets} + 0.029 * (\text{quick assets} - \text{current liabilities}) / \text{daily operating expenses}$.
GROWTH	Asset growth rate calculated as the proportional change in total assets from the previous year, controlling for growth-related accounting choices.
AGE	Firm age measured as the number of years since incorporation or listing, controlling for firm maturity effects on accounting practices.
Fixed effects	
Country	Country fixed effects controlling for country-specific institutional, regulatory, and cultural factors affecting accounting conservatism.
Industry	Industry fixed effects controlling for industry-specific factors that may influence accounting practices and conservatism levels.
Year	Year fixed effects controlling for time-varying macroeconomic and regulatory changes that may affect accounting conservatism across all firms.

violations. Investment (INV): Calculated as capital expenditures divided by total assets. Firms with high investment levels may have more opportunities for earnings management and may therefore be less conservative. Return on Assets (ROA): Measured as net income divided by total assets. Profitability may be related to accounting conservatism, as more profitable firms may have less need to engage in aggressive accounting practices. Financial Distress (ZSCORE): Measured using the Altman Z-score. Firms in financial distress may have incentives to manipulate earnings and may therefore be less conservative. Growth (GROWTH): Measured as the annual growth in sales. High-growth firms may have incentives to adopt more aggressive accounting practices to meet market expectations. Detailed definitions and measurements for all variables are provided in Table 1.

To test the hypotheses, this study uses a multiple regression model with industry, country, and year fixed effects. The fixed effects control for unobserved heterogeneity across industries, countries, and years that may affect the relationship between the variables of interest. The following regression model is used to test the first hypothesis (H_{1a} and H_{1b}):

$$AC = \beta_0 + \beta_1 \text{FemaleonBoard} + \sum_{t=1}^i \text{Firm Controls} + \sum_{t=1}^i \text{Country Fixed} + \sum_{t=1}^t \text{Year} + \sum_{t=1}^i \text{Industry} + \varepsilon_{it} \quad (3)$$

To test the second hypothesis (H_2), which posits that ESG Engagement moderates the relationship between board gender

diversity and accounting conservatism, an interaction term between FemaleonBoard and ESGScore is added to the model:

$$AC = \beta_0 + \beta_1 FemaleonBoard_{it} + \beta_2 ESGScore_{it} + \beta_3 FemaleonBoard_{it} * ESGScore_{it} + \sum_{t=1}^i Firm\ Controls + \sum_{t=1}^i Country\ Fixed + \sum_{t=1}^t Year + \sum_{t=1}^i Industry + \varepsilon_{it} \quad (4)$$

In this model, a positive and significant coefficient on the interaction term (β_3) would indicate that ESG Engagement strengthens the positive relationship between board gender diversity and accounting conservatism, supporting H_2 .

5. RESULTS AND DISCUSSION

5.1. Descriptive Statistics

Table 2, Panel A reports the descriptive statistics for the full sample of 1,643 firm-year observations. The mean accounting conservatism measure (C_Score) of 0.223, with a standard deviation of 0.195, indicates a moderate level of conditional conservatism across the sample, suggesting variation in firms' timeliness in recognizing economic losses relative to gains.

The average proportion of female directors on the board is 15.12%, with values ranging from 0% to 50%, reflecting both progress and continuing disparities in gender representation across firms. The

mean ESG score of 45.09 (SD = 19.42) further reveals substantial heterogeneity in firms' sustainability engagement, consistent with differing regulatory and institutional environments in the region. The control variables exhibit patterns typical of listed firms in emerging and transitional economies. Average board size is 8.76 directors, mean leverage is 0.25, and return on assets averages 6.5%, indicating moderate profitability and financial stability.

Panels B–E highlight notable cross-country variation in accounting conservatism, board gender diversity, and ESG engagement among firms in Indonesia, Malaysia, Singapore, and Thailand. Indonesian firms show the highest accounting conservatism (mean C_Score = 0.291) but lowest female board representation (8.8%), consistent with a more traditional governance environment and smaller board structures. Malaysian firms, exhibiting the lowest conservatism (0.167), have the highest female representation (19.8%), reflecting policy-driven gender inclusion; however, ESG engagement remains modest (mean = 42.1). Singaporean firms demonstrate relatively high conservatism (0.274) and moderate diversity (11.3%), supported by strong legal enforcement and mature capital markets. Thai firms combine moderate conservatism (0.246) with the highest ESG scores (54.4) and largest boards (12.6 members), reflecting an institutional emphasis on sustainability and disclosure. Overall, the results indicate substantial heterogeneity across Southeast Asia, with conservatism being strongest in less developed markets (Indonesia) and weakest in those with the highest board diversity (Malaysia).

Table 3 presents the correlation matrix for the study variables. Accounting conservatism (C_Score) is negatively correlated with

Table 2: Descriptive statistics

Panel A: Full sample								
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	n	Mean	SD	Min	p25	p50	p75	Max
C_Score	1.643	0.223	0.195	-0.443	0.057	0.221	0.370	0.552
FemaleonBoard	1.643	15.121	12.865	0.000	0.000	14.290	25.000	50.000
ESGScore	1.643	45.092	19.424	6.930	29.250	43.290	60.370	86.730
BoardSize	1.643	8.760	2.938	3.000	7.000	8.000	10.000	18.000
csr	1.643	42.968	22.681	2.780	25.120	41.505	61.145	91.805
SIZE	1.643	14.210	1.405	10.012	13.185	14.472	15.387	15.927
LEV	1.643	0.246	0.171	0.000	0.103	0.243	0.363	0.717
INV	1.643	0.134	0.131	0.000	0.034	0.102	0.193	0.687
ROA	1.643	0.065	0.080	-0.355	0.022	0.051	0.093	0.325
ZSCORE	1.643	15.435	13.224	-38.232	8.962	12.938	18.622	78.221
GROWTH	1.643	0.075	0.225	-0.389	-0.037	0.037	0.126	1.594
Panel B: Descriptive statistics for individual country								
Variables	ID	MY	SG	TH				
	n	Mean	n	Mean	n	Mean	n	Mean
C_Score	336	0.291	770	0.167	281	0.274	256	0.246
FemaleonBoard	336	8.803	770	19.842	281	11.263	256	13.450
ESGScore	336	46.366	770	42.149	281	43.126	256	54.428
BoardSize	336	6.315	770	8.401	281	9.189	256	12.578
csr	336	46.073	770	38.648	281	40.495	256	54.601
SIZE	336	14.675	770	13.675	281	14.780	256	14.582
LEV	336	0.221	770	0.229	281	0.238	256	0.341
INV	336	0.145	770	0.123	281	0.126	256	0.166
ROA	336	0.089	770	0.062	281	0.051	256	0.056
ZSCORE	336	15.826	770	16.386	281	16.964	256	10.383
GROWTH	336	0.098	770	0.062	281	0.069	256	0.090

Table 1 contains complete variable definitions. We report heteroskedasticity-robust t-statistics in parentheses. Asterisks indicate statistical significance: *(10%), **(5%), and ***(1%) using two-tailed tests. All regressions incorporate control variables alongside industry, country, and year fixed effects

Table 3: Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) C_Score	1.000									
(2) FemaleonBoard	-0.212*	1.000								
(3) ESGScore	0.150*	0.088*	1.000							
(4) BoardSize	0.176*	0.022	0.192*	1.000						
(5) SIZE	0.604*	-0.225*	0.289*	0.318*	1.000					
(6) LEV	-0.022*	0.004	0.120*	0.228*	0.319*	1.000				
(7) INV	-0.063*	-0.002	-0.088*	-0.065*	-0.029*	0.086*	1.000			
(8) ROA	0.283*	-0.006	0.053*	-0.153*	0.083*	-0.302*	0.056*	1.000		
(9) ZSCORE	0.091*	-0.021	-0.090*	-0.171*	-0.094*	-0.428*	-0.096*	0.458*	1.000	
(10) GROWTH	0.102*	-0.046	-0.076*	-0.028	0.015	0.012	-0.011	0.241*	0.107*	1.000

The *, **, and *** indicate statistical significance at the 0.10, 0.05, and 0.01% levels, respectively

board gender diversity (-0.212) and positively correlated with ESG engagement (0.150), suggesting that stronger ESG performance aligns with more conservative reporting, whereas gender diversity alone does not necessarily lead to higher conservatism. Correlations among control variables such as firm size, leverage, and profitability are moderate and within acceptable thresholds. As all correlation coefficients are well below 0.70, there is no indication of multicollinearity concerns, confirming the suitability of the variables for regression analysis.

5.2. Multivariate Results

Table 4 presents the baseline regression results for the first hypothesis. For the full sample, the coefficient on FemaleonBoard is positive (0.001) but insignificant, indicating no uniform direct relationship between board gender diversity and accounting conservatism across Southeast Asia. This suggests that, while Resource Dependence Theory and Social Role Theory predict that female directors' resources and ethical orientation enhance conservatism, their influence depends on institutional and cultural context. The result aligns with prior studies showing mixed evidence across markets (Alves, 2023; Muhammad et al., 2024).

Cross-country comparison shows strong contextual variation. In Singapore, BGD is positive and significant ($P < 0.10$), supporting H1 and both theoretical frameworks: female directors' risk aversion and oversight improve financial prudence in a mature, well-regulated environment. In Malaysia, Indonesia, and Thailand, coefficients are insignificant, implying that gender diversity alone is insufficient without supportive governance or ESG culture. Malaysia's result, despite higher female representation, reflects latent potential that only emerges when ESG commitment is high (as confirmed in Table 5). In Indonesia, high conservatism but low female participation suggests that institutional and ownership structures, not diversity, drive prudence. In Thailand, symbolic diversity and compliance-oriented ESG limit women's influence. Taken together, Table 4 provides partial support for H₁, that is BGD promotes conservatism only in conducive institutional environments. The findings underscore that the positive effects predicted by RDT and SRT are context-dependent, reinforcing the need for ESG engagement (H₂) as a catalyst enabling female directors to translate their values and resources into more conservative accounting practices.

For the full sample, Table 5 shows that FemaleonBoard becomes negative and significant, but its interaction with ESGScore is

positive and highly significant, indicating that the relationship between board gender diversity (BGD) and accounting conservatism (AC) is conditional on ESG engagement. This confirms H₂, showing that female directors enhance conservatism only when operating within strong ESG-oriented firms. Consistent with Resource Dependence Theory (RDT) and Social Role Theory (SRT), ESG provides an enabling ethical and institutional environment that allows women directors' risk aversion and ethical sensitivity to translate into more prudent reporting. This pattern explains the insignificant direct effect observed in Table 4, revealing that ESG commitment "activates" the governance benefits of gender-diverse boards.

Cross-country results further underscore institutional context. In Malaysia, ESG significantly strengthens the BGD-AC link, suggesting that sustainability-oriented firms provide a conducive culture for female directors to influence accounting practices. In Singapore, the BGD coefficient remains positive and significant, as in Table 4, showing that in a mature regulatory setting, diversity alone promotes conservatism, while ESG adds little incremental effect. Conversely, Indonesia and Thailand show no meaningful moderation; conservatism there is shaped more by institutional conservatism or symbolic ESG compliance. Overall, Table 5 emphasizes that ESG engagement acts as the key driver transforming gender diversity into true accounting conservatism. This aligns with H₂ and explains the mixed direct effects observed in the baseline results.

5.3. Additional Analyses

The additional analysis in Table 6 decomposes ESG into its three pillars, i.e., environmental (Panel A), social (Panel B), and governance (Panel C), to examine which component most strongly moderates the link between board gender diversity (BGD) and accounting conservatism (AC). For the full sample, the results show that only the social pillar (Panel B) yields a consistently positive and significant moderating effect: FemaleonBoard×SocPillar is positive ($t = 3.83$, $P < 0.01$). This suggests that firms with strong social responsibility practices enable female directors to promote more conservative reporting, which is fully consistent with Social Role Theory (SRT), which posits that women's stakeholder orientation and ethical sensitivity align with socially responsible environments. The environmental (Panel A) and governance (Panel C) interactions are insignificant for the region overall, suggesting that the social dimension, through employee welfare, human rights, and community relations, is the key ESG driver that activates the positive gender-conservatism effect observed earlier in Table 5.

Table 4: The impact of FemaleonBoard on AC

Country	(1)	(1)	(2)	(3)	(4)
	Full sample	Malaysia	Indonesia	Singapore	Thailand
FemaleonBoard	0.001 (1.03)	-0.001 (-0.78)	0.001 (1.64)	0.001* (1.78)	-0.001 (-0.25)
SIZE	0.067*** (26.27)	0.061*** (16.65)	0.073*** (9.68)	0.076*** (10.59)	0.050*** (5.66)
LEV	-0.205*** (-7.63)	-0.146*** (-3.96)	-0.390*** (-5.24)	-0.175*** (-3.59)	-0.184*** (-3.08)
INV	-0.047** (-2.29)	-0.023 (-0.62)	-0.101* (-1.86)	-0.062 (-1.20)	-0.040 (-1.00)
ROA	0.607*** (10.07)	0.733*** (8.18)	0.414*** (3.19)	0.412*** (2.98)	0.508*** (3.07)
ZSCORE	-0.001* (-1.92)	-0.001 (-0.99)	-0.003* (-1.95)	-0.001 (-0.79)	0.001 (0.88)
GROWTH	0.047*** (3.75)	0.074*** (4.05)	0.022 (0.80)	0.085*** (3.09)	-0.064** (-2.17)
Constant	-0.467*** (-11.49)	-0.405*** (-6.86)	-0.441*** (-3.85)	-0.629*** (-5.64)	-0.208 (-1.57)
Observations	1.643	770	336	281	256
R-squared	0.699	0.719	0.646	0.710	0.754
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes				

Table 1 contains complete variable definitions. We report heteroskedasticity-robust t-statistics in parentheses. Asterisks indicate statistical significance: *(10%), ** (5%), and *** (1%) using two-tailed tests. All regressions incorporate control variables alongside industry, country, and year fixed effects

Table 5: The moderating role of ESG on the relationship between FemaleonBoard and AC

Variables	(1)	(2)	(3)	(4)	(5)
	Full sample	Malaysia	Indonesia	Singapore	Thailand
FemaleonBoard	-0.001** (-2.44)	-0.002*** (-3.04)	-0.001 (-0.79)	0.003* (1.71)	-0.001 (-0.05)
ESGScore	0.000 (0.76)	0.001* (1.82)	-0.001** (-2.18)	0.002*** (3.66)	0.001 (0.13)
FemaleonBoardXESG	0.001*** (3.04)	0.001** (2.28)	0.001 (1.58)	-0.001 (-1.49)	-0.001 (-0.04)
SIZE	0.062*** (21.52)	0.052*** (12.49)	0.075*** (9.75)	0.063*** (7.61)	0.050*** (4.91)
LEV	-0.207*** (-7.82)	-0.154*** (-4.40)	-0.407*** (-5.41)	-0.200*** (-4.12)	-0.184*** (-2.98)
INV	-0.032 (-1.52)	-0.013 (-0.36)	-0.112* (-1.91)	-0.056 (-1.12)	-0.039 (-0.91)
ROA	0.542*** (9.33)	0.595*** (7.08)	0.448*** (3.47)	0.341** (2.50)	0.508*** (3.04)
ZSCORE	-0.001* (-1.71)	-0.001 (-0.53)	-0.003** (-2.07)	-0.001 (-0.75)	0.001 (0.87)
GROWTH	0.055*** (4.49)	0.089*** (5.08)	0.012 (0.41)	0.087*** (3.17)	-0.063** (-2.09)
Constant	-0.389*** (-8.90)	-0.275*** (-4.46)	-0.425*** (-3.67)	-0.493*** (-3.98)	-0.206 (-1.38)
Observations	1.643	770	336	281	256
R-squared	0.705	0.737	0.651	0.724	0.754
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes				

Table 1 contains complete variable definitions. We report heteroskedasticity-robust t-statistics in parentheses. Asterisks indicate statistical significance: *(10%), ** (5%), and *** (1%) using two-tailed tests. All regressions incorporate control variables alongside industry, country, and year fixed effects

At the country level, results again reveal sharp contextual contrasts. In Malaysia, both environmental and social pillars significantly strengthen the BGD-AC relationship, reaffirming H2 and Resource Dependence Theory (RDT): Sustainability-oriented institutions help female directors leverage their oversight capacity and stakeholder networks. In Singapore, the environmental pillar exhibits a negative moderating effect, suggesting that

high environmental engagement may serve as an impression-management substitute for conservative reporting, aligning with the “dark side” ESG mechanism discussed earlier. The social pillar in Singapore, however, is positive but insignificant, while an overemphasis on environmental issues appears to crowd out prudence. For Indonesia and Thailand, none of the ESG pillars significantly moderate the BGD-AC relationship, underscoring

Table 6: The Moderating Role of Individual ESG Pillars on the BGD-AC Relationship

Panel A: The moderating role of EnvPillar on the relationship between FemaleonBoard and AC					
Variables	(1) Full sample	(2) Malaysia	(3) Indonesia	(4) Singapore	(5) Thailand
FemaleonBoard	-0.001 (-0.28)	-0.001 (-1.63)	0.001 (0.12)	0.004*** (3.57)	-0.001 (-0.03)
EnvPillar	0.000** (2.32)	0.001*** (2.86)	-0.001 (-1.33)	0.002*** (4.15)	0.000 (0.15)
FemaleonBoardXEnvPillar	0.001 (1.20)	0.001 (0.88)	0.001 (0.88)	-0.001*** (-3.20)	-0.001 (-0.14)
Controls	Yes	Yes	Yes	Yes	Yes
Constant	-0.387*** (-8.61)	-0.272*** (-4.26)	-0.432*** (-3.63)	-0.499*** (-4.07)	-0.209 (-1.46)
Observations	1.643	770	336	281	256
R-squared	0.704	0.734	0.648	0.732	0.754
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes				
Panel B: The moderating role of SocPillar on the relationship bet FemaleonBoard and AC					
FemaleonBoard	-0.002*** (-2.99)	-0.003*** (-3.69)	-0.001 (-0.62)	0.002 (1.09)	-0.001 (-0.19)
SocPillar	0.000 (0.69)	0.001* (1.74)	-0.001 (-1.57)	0.001*** (3.49)	0.001 (0.38)
FemaleonBoardXSocPillar	0.001*** (3.83)	0.001*** (3.30)	0.001*** (1.29)	-0.001 (-0.63)	0.001 (0.27)
Constant	-0.370*** (-8.40)	-0.242*** (-3.83)	-0.426*** (-3.72)	-0.491*** (-4.07)	-0.171 (-1.17)
Observations	1,643	770	336	281	256
R-squared	0.707	0.742	0.649	0.723	0.755
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes				
Panel C: The moderating role of GovPillar on the relationship between FemaleonBoard and AC					
FemaleonBoard	-0.001 (-0.90)	-0.002* (-1.91)	-0.001 (-0.41)	0.001 (0.64)	0.003 (1.36)
GovPillar	-0.001 (-0.88)	-0.001 (-0.45)	-0.001 (-1.64)	0.001 (1.00)	0.001 (1.06)
FemaleonBoardXGovPillar	0.001 (1.50)	0.001 (1.59)	0.001 (1.54)	-0.001 (-0.15)	-0.001* (-1.69)
Controls	Yes	Yes	Yes	Yes	Yes
Constant	-0.457*** (-11.04)	-0.387*** (-6.51)	-0.430*** (-3.76)	-0.610*** (-5.36)	-0.271* (-1.83)
Observations	1.643	770	336	281	256
R-squared	0.699	0.721	0.649	0.712	0.758
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes				

Table 1 contains the variable definitions. We report heteroskedasticity-robust t-statistics in parentheses. Asterisks indicate statistical significance: * (10%), ** (5%), and *** (1%) using two-tailed tests. All regressions incorporate control variables alongside industry, country, and year fixed effects

that weak institutional enforcement and symbolic ESG compliance constrain the influence of female directors. Overall, Table 6 highlights that the social dimension most consistently enhances conservatism, whereas environmental engagement can produce mixed or even adverse effects in highly regulated contexts, such as Singapore.

6. CONCLUSION AND IMPLICATIONS

This study provides new evidence on how board gender diversity and ESG engagement jointly influence accounting conservatism in Southeast Asia, offering a nuanced, context-dependent perspective grounded in resource dependence theory and social role theory.

Across 1,643 firm-year observations from Malaysia, Indonesia, Singapore, and Thailand, our results reveal that the relationship between gender-diverse boards and conservative financial reporting is not universal but contingent on institutional quality and ESG orientation.

The baseline analysis shows that BGD alone does not uniformly enhance conservatism, albeit significantly only in Singapore, where strong governance institutions and transparent markets allow female directors’ ethical sensitivity and risk aversion to translate into prudent reporting. The moderating analysis (Table 5) demonstrates that ESG engagement activates this latent effect: In Malaysia, firms with higher ESG commitment exhibit a strong positive BGD-AC relationship, whereas ESG has no or even

adverse effects elsewhere. The disaggregated analysis (Table 6) confirms that the social dimension of ESG—through human capital, stakeholder relations, and community orientation—most consistently complements the behavioral traits of female directors, while the environmental pillar may induce symbolic or “greenwashing” behavior, particularly in Singapore. Collectively, the findings confirm H_1 only under supportive institutional conditions and strongly support H_2 , underscoring ESG as the contextual catalyst that enables gender-diverse boards to enhance financial reporting prudence.

Our findings have several important implications for various stakeholders. For Corporate Boards and Management: The results highlight that the benefits of board gender diversity are not automatic. To leverage the potential for female directors to enhance financial reporting quality, firms should cultivate a strong and authentic commitment to ESG. The positive synergy observed in Malaysia suggests that integrating sustainability into the core business strategy can create an environment where diverse boards are most effective. Companies should be wary of a “check-the-box” approach to both diversity and ESG, as our findings suggest this may not yield the desired governance outcomes.

- For Investors and Analysts: This study provides a more sophisticated lens for evaluating corporate governance. Investors should look beyond simple metrics like the percentage of women on the board and consider the interplay with the firm’s ESG performance. A high ESG score in a firm with a diverse board may be a stronger signal of prudent financial management, particularly in certain national contexts. Conversely, the negative interactions found in some cases suggest that investors should be critical and question whether strong ESG performance is genuinely integrated or merely a superficial “greenwashing” effort.
- For Policymakers and Regulators: Our research suggests that policies aimed at promoting board gender diversity are a positive step, but they may not be sufficient on their own to improve financial reporting quality. Regulators should consider a more holistic approach that also encourages meaningful ESG adoption and disclosure. The country-specific differences imply that a one-size-fits-all regulatory approach is unlikely to be effective. Instead, policies should be tailored to the unique institutional and cultural context of each nation. For example, in countries where a positive BGD-ESG synergy is observed, regulators could create incentives for firms that excel in both areas.

Despite robust evidence, several limitations remain. First, the C-Score captures only one aspect of reporting quality; incorporating complementary measures, such as earnings management, accrual quality, or financial statement comparability, would deepen the understanding of the nexus between gender, ESG, and conservatism. Second, the cross-sectional nature of ESG data limits causal inference; future studies could adopt longitudinal or dynamic panel approaches to capture the evolution of ESG practices. Third, Refinitiv ESG scores may not clearly distinguish substantive from symbolic disclosure; integrating textual or assurance-based ESG data could refine measurement validity. Finally, future research could address potential endogeneity issues

related to unobserved firm characteristics by applying dynamic or instrumental variable methods. In sum, this study shows that gender-diverse boards can enhance accounting conservatism only within supportive ESG and institutional environments. The integration of gender inclusion and genuine sustainability orientation emerges as a cornerstone for credible, stakeholder-centred financial reporting in Southeast Asia and beyond.

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