

ESG and Financial Performance in Asia-Pacific Gaming Tourism

Industry: Pandemic Resilience and Recovery

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Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Abstract

After the epidemic, recovery has been a dynamic process, with people prioritizing ‘rational’ consumption before returning to ‘irrational’ activities like gambling. As one of the industries hardest hit by COVID-19, gaming companies were eager to find viable solutions to weather the storm. This study examines all 29 gaming companies in the Asia-Pacific region to assess the impact of environmental, social, and governance (ESG) initiatives on financial performance from 2018 to 2024. We find that while ESG enhances firm value, it also increases uncertainty—a paradox heightened during the pandemic. The crisis served as a litmus test: ESG fostered resilience in developed markets, while short-term survival pressures suppressed its value in emerging economies until a post-crisis convergence. Additionally, effects varied by market focus, underscoring the context-dependent nature of ESG in controversial industries. These insights are vital for practitioners and policymakers seeking effective recovery strategies in the gaming tourism industry.

Keywords: ESG, financial crisis, gaming tourism industry, Asia-Pacific region

1. Introduction

The outbreak of Covid-19 has quickly triggered a grand challenge to society, demonstrating overwhelmingly disruptive impacts on both organizational and societal systems. As one of the industries that are particularly vulnerable to global risks, the tourism industry has borne the brunt of Covid-19 (Song et al., 2024), suffering a loss of almost \$4.5 trillion to reach \$4.7 trillion in 2020, with the contribution to GDP dropping by a staggering 49.1% compared to 2019 (World Travel & Tourism Council, 2021)^[1]. Being a unique component of the tourism industry, casino gambling is used as a major tourist attraction in many jurisdictions to promote local economic growth (Tsai and Gu, 2006). Inevitably, the gaming sector has also been hit hard by the epidemic. For example, South Korea's gaming sector experienced an 82.4% plunge in its total tax contribution in 2020 compared to 2019^[2]. Similarly, according to the Statistics and Census Service (DSEC), the total contribution of Macau's gaming sector to the local economy fell by 79.6% year-on-year to approximately \$5.22 billion in 2020. However, the sector has shown significant recovery, with gross gaming revenue rebounding to MOP226.78 billion (~\$28.1 billion) in 2024, reaching 77.5% of pre-pandemic 2019 levels (Gaming Inspection and Coordination Bureau, 2024)^[3]. Therefore, how to tackle the grand challenge posed by the epidemic in the gaming tourism industry has become an important issue for both policymakers and academics.

Recent studies indicate that solutions aligned with Sustainable Development Goals (SDGs) can be instrumental in guiding the tourism industry's fight against the pandemic and its subsequent recovery (Turk et al., 2024). ESG, which stands for Environmental, Social, and Governance, was first introduced in 2004 by the United Nations Global Compact (Compact,

2004). It refers to a set of criteria used to measure the environmental and societal impact of an organization^[4]. Companies that integrate ESG factors into their operations tend to foster sustainable growth and address uncertainties, thereby outperforming their peers (Cotterell et al., 2019). This trend is underscored by the substantial inflows into ESG funds, which reached \$185.3 billion in the first quarter of 2021, with assets under management in sustainable development funds nearing the \$2 trillion mark^[5].

In the literature, there are two competing theories regarding the relationship between corporate ESG engagement and financial performance. According to the agency theory and trade-off theory (Barnea and Rubin, 2010), corporate ESG activities often generate a lot of additional costs and reduce the efficiency of resource usage, which may damage the financial status of enterprises. In contrast, stakeholder theory and resource-based view suggest that companies can create heterogeneous resources by considering the externalities of pollution and attempting to adopt sustainable activities to build social capital and benefit their stakeholders (Barney, 2001, Freeman, 1999). Particularly, when stakeholders' overall trust in companies is low (e.g., during the 2008 financial crisis), ESG activities can mitigate conflicts between them (Bouslah et al., 2018), and then investors may consider companies with more ESG activities to be more trustworthy and worthy of a higher valuation (Guiso et al., 2008).

Focusing on the tourism industry, there is a growing literature empirically examining the importance of corporate ESG performance for sustainable development (Buallay et al., 2022, McCain et al., 2019, Uyar et al., 2022, Kim and Lee, 2019). In particular, recent studies investigate how the tourism industry can recover from the effect of the pandemic, including strategies taken by hotel managers (Howe-Walsh et al., 2023, Ghazi et al., 2024), virtual

tourism (Zhang et al., 2022), large-scale focus on safety and hygiene (Dash and Sharma, 2021) and ecotourism (Gossling et al., 2021, Strzelecka et al., 2023). However, such a critical issue in the gaming sector is under-researched (Liu et al., 2021, Loi et al., 2021, Im et al., 2021).

Gaming, a pivotal segment of the tourism industry, possesses inherent characteristics that are often deemed sinful. While the industry has made strides in ESG initiatives and there's a growing acceptance of gambling as a legitimate leisure pursuit, it continues to confront heightened challenges compared to other sectors (Lee and Park, 2009). For instance, the unethical provision of unregulated gambling is a significant concern, and there is an expectation for gambling companies to demonstrate a higher degree of social responsibility to affirm their legitimacy. Meanwhile, the promotion of ESG by casino companies can sometimes lead to stakeholder skepticism, potentially rendering their performance susceptible to reputational uncertainties (Oh et al., 2017). It's essential to recognize that generic recovery strategies employed by the broader tourism industry may not be directly applicable to the gaming sector, necessitating tailored approaches to ESG integration and crisis management.

The gaming sector in the Asia-Pacific region, in contrast to the mature market model of the United States, represents an emerging market replete with unique opportunities and challenges (PwC, 2011). This burgeoning landscape is marked by an increasing trend among Asian-listed gaming companies to embrace sustainable development strategies and to be more transparent in their ESG disclosures. Concurrently, there is a notable rise in Asian investors who are integrating ESG considerations into their investment analyses. According to a recent report by Baker McKenzie International Law Firm titled 'Putting Strategy into Action- Advancing ESG in the Asia-Pacific Region', nearly half of the 800 surveyed business leaders

in the Asia-Pacific region (46%) have indicated a heightened focus on sustainable development post-pandemic^[6]. This shift underscores the potential for the Asia-Pacific gaming sector to serve as a valuable platform for understanding the impact of ESG engagement on post-pandemic recovery efforts.

Our paper examines the gaming sector's response to the outbreak in the Asia-Pacific region through the lens of ESG. We analyze the financial impact of ESG activities across 29 listed gaming companies from January 2018 to December 2024^[7]. The study also contrasts the effects before, during, and after the epidemic and stratifies the sample by the economic development and operational regions of the companies to explore heterogeneity in outcomes.

We find that ESG simultaneously enhances firm value and increases uncertainty—effects amplified by the pandemic, which acted as a litmus test by revealing ESG's role as a resilience factor in developed markets and its initial suppression in emerging economies due to short-term survival pressures, followed by post-crisis convergence. Market focus further shaped outcomes, with overseas operators benefiting most consistently, underscoring the context-dependent nature of ESG in controversial industries.

Our paper offers substantial contributions to theory, empirical research, and data analytics within the gaming industry's ESG landscape. Theoretically, we offer a novel framework that outlines the gaming industry's potential for superior recovery amidst crises, thereby enriching management theory. We pinpoint ESG as a pivotal catalyst for the gaming tourism sector's rebound during the pandemic, highlighting its strategic value. Simultaneously, our research underscores the dual advantages of ESG for investors, who stand to gain higher financial returns but also face altered exposure to uncertainties, thus substantiating the effectiveness of

ESG investment strategies and advancing investment theory. Empirically, this study offers a novel perspective by examining the role of ESG in the recovery of the gaming tourism industry in the Asia Pacific region under the unique conditions of the pandemic. In addition, we integrate the data of gaming companies in the Asia-Pacific region for the first time, which means our samples are more representative and our findings can provide useful implications for other emerging gaming markets (e.g., South Africa and Eastern Europe).

2. Literature review

2.1. ESG/CSR and firm performance in the tourism industry

ESG, as a framework for corporate development and evaluation, focuses on non-financial aspects critical to assessing corporate sustainability. It has become a key metric in international research (Kumar, 2024)^[8]. Empirical studies have yielded mixed conclusions regarding the linearity of the relationship between ESG factors and corporate performance. Early research by Kang et al. (2010) investigated the link between CSR and financial performance across tourism sectors, revealing a positive correlation for hotels and restaurants. This finding aligns with the value enhancement theory, supported by subsequent studies within the tourism industry (Leonidou et al., 2013, Lee and Park, 2009, Theodoulidis et al., 2017, Lee et al., 2023). These studies suggest a direct positive impact of CSR on hospitality performance, with financial performance enhancing ESG investments, thus creating a virtuous cycle (Singal, 2014). However, Kim and Kim (2014) found that while CSR activities in restaurants correlated with returns on equity, they did not mitigate systemic business risk. Conversely, Bodhanwala and Bodhanwala (2021) reported that ESG negatively affected Tobin's Q in transport and hospitality.

A subset of literature has explored non-linear relationships, with Park and Lee (2009) proposing a U-shaped impact of CSR on firm performance, suggesting a time lag for stakeholders to recognize and reward CSR efforts. Buallay et al. (2022), on the other hand, posited an inverted U-shaped relationship between sustainability performance and firm profitability. Some scholars, such as Uyar et al. (2020), found no significant link between CSR performance and financial outcomes.

In controversial industries such as tobacco, gambling, and alcohol, findings are limited and inconsistent. While Cai et al. (2012) and Jo and Na (2012) found that CSR in these sectors can enhance firm value and reduce uncertainty, Oh et al. (2017) argued that such companies' CSR advertising could backfire by raising stakeholder suspicion. For the casino industry specifically, Lee and Park (2009) found no definitive link between CSR and financial performance.

2.2. ESG/CSR and firm performance of the tourism industry under crisis

The connection between ESG/CSR and corporate performance within the tourism industry during crises is a growing area of interest. Early findings, such as those by Tse et al. (2003), suggest that companies like Banyan Tree Hotels & Resorts could maintain positive financial performance during crises, potentially due to robust CSR strategies. This was further supported during the 2008-2009 financial crisis, where Lins et al. (2017) found that CSR contributed to investor trust and firm value.

The Covid-19 pandemic has emerged as a new crucible for evaluating ESG/CSR's efficacy in crisis management. Jones and Comfort (2020) noted that the pandemic exposed the authenticity of corporate commitments to CSR. Shin et al. (2021) found that sustainable

investments, particularly those with lower carbon and fossil fuel risks, exhibited resilience during Covid-19. Lin et al. (2024) discovered that ESG provides insurance-like protection for the Chinese hotel industry during the pandemic. Similarly, Broadstock et al. (2021) and Kumar (2023) also observed that ESG performance mitigated financial uncertainty during the pandemic.

Within the tourism sector, Qiu et al. (2021) observed that CSR activities, particularly those focused on community relations, elevated stock returns and stakeholder engagement for hotel companies during the pandemic. Torres and Augusto (2021) posited that travel companies concentrating on social issues and with active CEO involvement could achieve greater resilience. Jin et al. (2023) corroborated that CSR alleviated the adverse effects of Covid-19 on the performance of listed tourism companies.

However, Wang et al. (2024) identified that inconsistencies in CSR actions before and during the pandemic could diminish firm value, particularly for firms under intense stakeholder scrutiny. Additionally, Shin et al. (2021) reported a short-term negative impact of CSR on hotel performance and booking behavior during pandemic.

2.3. Hypotheses development

2.3.1. ESG and firm performance

The impact of ESG on company performance is a subject of debate. Agency theory and trade-off theory suggest potential negative impacts by focusing on the interests of shareholders. The over-investment view posits that corporate social responsibility investments are resource wasteful, potentially driven by managers seeking personal gain or reputation (Barnea and Rubin, 2010). Managers may also engage in such activities to secure support from social

activists and retain their positions, increasing company uncertainties (Cespa and Cestone, 2007). Trade-off theory argues that ESG activities are inefficient uses of resources that can harm financial performance and diminish shareholder wealth in the short term (Friedman, 1970).

Conversely, stakeholder theory and the resource-based view emphasize the positive effects of ESG. Freeman (1999) argues that focusing on stakeholders can improve company performance. ESG disclosures can enhance stakeholder relationships, reduce information asymmetry, and improve reputation, leading to lower financing costs, better productivity, and increased corporate value (Spence, 1974). Barney (1986) suggests that social responsibility can create competitive advantages by generating heterogeneous resources, such as environmental protection (Wernerfelt, 1984).

Legitimacy theory, rooted in organizational legitimacy management, posits that companies in controversial industries like gaming use ESG disclosures as a legitimization tool (Suchman, 1995). Ethical investors often exclude stocks from industries like gambling, pornography, and tobacco, expecting higher ESG standards from such companies (Kassinis and Vafeas, 2006). Therefore, gaming companies' ESG engagement can enhance their reputation, attract investors, and increase firm value, while could also introducing additional uncertainties (Odriozola and Baraibar-Diez, 2017, Chuah et al., 2022).

Based on this analysis, the following hypotheses are proposed:

H1a: ESG participation can increase the firm value of gaming companies.

H1b: ESG participation may increase the uncertainties faced by gaming companies.

2.3.2. Grand challenges, ESG, and firm performance

George et al. (2016) conceptualize grand challenges as global issues that require coordinated and collaborative efforts for resolution. This perspective is particularly pertinent to the Covid-19 pandemic, which Howard-Grenville (2021) categorizes as a grand challenge, necessitating collective action across economic, social, and health domains. In this context, the rebranding of destination imagery as a key factor in the recovery of short-haul markets, as highlighted by Zhang et al. (2021), becomes a strategic response to the crisis. Gaming companies, severely impacted by the pandemic, have aligned with community stakeholders—governments, and civil groups—to address the crisis across environmental, social, and governance dimensions. For instance, Sands China's contributions included donating epidemic prevention materials, providing financial aid to vulnerable families, and supporting elderly and rehabilitation homes, benefiting over 110,000 individuals.

The grand challenge framework implicates stakeholders as integral to solution implementation, suggesting that concerted efforts among diverse stakeholders are essential for grand challenge resolution. Integrating stakeholder theory, Godfrey et al. (2009) propose that ESG initiatives function as an 'insurance' against stakeholder backlash, fostering goodwill and mitigating negative perceptions. During crises like Covid-19, ESG activities can reduce stakeholder conflict, though they may simultaneously heighten operational and financial uncertainties in the medium to long term (Bouslah et al., 2018). OECD (2020) emphasizes the need for recovery strategies that avoid perpetuating destructive patterns, advocating for 'better than before' economic recovery models. Financially, firm value and uncertainty are critical metrics for assessing the efficacy of recovery strategies. The gaming industry's recovery plans should aim to demonstrate improved financial performance amidst evolving uncertainties.

Building on H1, we further hypothesize that gaming firms' ESG engagement during the pandemic could amplify financial uncertainties, particularly during and after the health crisis.

Specifically:

H2a: During and post-pandemic, ESG engagement enhances firm value versus pre-pandemic levels.

H2b: During and post-pandemic, ESG engagement results in greater firm uncertainty versus pre-pandemic levels.

3. Data and methodology

3.1. Sample and data source

Our study analyzes listed casino companies in the Asia-Pacific region. The sample was sourced from the World Casino Directory (<https://www.worldcasinodirectory.com/>), which provides global data on land-based casinos, including locations, operators, and gambling activities, as well as updates on openings/closures. We collected Asia-Pacific (non-US) casino company data, then verified listing status. We excluded non-listed firms, cruise ship casinos, inactive companies, those with operations primarily outside the region, and non-gambling-focused businesses, yielding a final sample of 29 companies.

Monthly data from January 2018 to December 2024 (84 months) was compiled. This timeframe encompasses the pre-pandemic period, the full duration of the Covid-19 pandemic, and the subsequent recovery phase, providing a comprehensive basis to assess ESG's influence during and after the crisis (Zhang et al., 2021). Primary data came from Thomson Reuters Eikon; additional sources are in Table 1.

[Table 1 About Here]

3.2. Methodology and variables

To assess the impact of casino companies' involvement in ESG activities on their corporate value and uncertainty (Hypothesis 1a and Hypothesis 1b), the following models are constructed.

$$tobinq_{it} = \alpha_0 + \alpha_1 lnesg_{it} + \alpha X_{it} + \lambda_i + \mu_t + \varepsilon_{it} \quad (1)$$

$$stdev_{it} = \beta_0 + \beta_1 lnesg_{it} + \beta X_{it} + \lambda_i + \mu_t + \varepsilon_{it} \quad (2)$$

Where *tobinq* and *stdev* respectively represent the value and uncertainty of corporate. *lnesg* represents the ESG score of the company and it is the independent variable. X_{it} is a matrix of control variables reflecting the characteristics of the corporate's economic situation, containing corporate size (*size*), corporate age (*lnage*), the gearing ratio (*lev*) and return on equity (*roe*). To alleviate the problem of omitted variable bias, all models in this paper fix year effects and individual effects. λ_i represents individual effects and μ_t represents year effects. ε_{it} is a random perturbation term.

Then, we split the ESG score (*lnesg*) into three factors – environmental (*lne*), social (*lns*), and corporate governance (*lng*) – to examine the impact of the company's efforts in each of the three areas on its performance.

To further examine the impact of corporate efforts in ESG on firm value and uncertainty before, during, and post the epidemic (Hypothesis 2a and Hypothesis 2b), following Lins et al. (2017), model 3 and model 4 are set up^[9]. Similarly, the ESG score (*lnesg*) is split into three factors to examine in depth the impact of corporate efforts on firm performance.

$$tobinq_{it} = \gamma_0 + \gamma_1 pre \times lnesg_{it} + \gamma_2 during \times lnesg_{it} + \gamma_3 post \times lnesg_{it} + \gamma X_{it} + \lambda_i + \mu_t + \varepsilon_{it} \quad (3)$$

$$stdev_{it} = \delta_0 + \delta_1 pre \times lnesg_{it} + \delta_2 during \times lnesg_{it} + \delta_3 post \times lnesg_{it} + \delta X_{it} + \lambda_i + \mu_t + \varepsilon_{it} \quad (4)$$

where *pre*, *during*, and *post* are all dummy variables: *pre* is set to 1 for the period January 2018 to December 2019 and 0 otherwise; *during* is 1 from January 2020 to April 2023 and 0 otherwise; *post* is 1 from May 2023 to December 2024 and 0 otherwise^[10]. Taking model (3) as an example, γ_1 , γ_2 , and γ_3 denote the impact of casino companies' participation in ESG on the firm value before, during, and post the epidemic, respectively. The other variables are set in line with models (1)-(2), whose definitions and measurements can be found in Table 1.

4. Empirical results

4.1. ESG and firm performance

4.1.1. Baseline regression

The baseline regression results, presented in Table 2, indicate that higher ESG scores significantly enhance firm value while simultaneously increasing firm-level uncertainty. Each component of ESG—environmental, social, and governance—exerts a statistically significant positive influence on both firm value and uncertainty at the 1% level, supporting Hypotheses 1a and 1b. These findings align with Cai et al. (2012), who linked CSR in controversial industries (e.g., gambling) to higher firm value, but contrast with Fu et al. (2020), who found that ESG reduced equity uncertainty in Macau casinos. Despite differences in samples, timeframes, and data sources, the overall consistency in the positive effect on firm value—coupled with divergent outcomes regarding uncertainty—underscores the potential context-dependent nature of ESG impacts.

[Table 2 About Here]

4.1.2. Robustness tests

Economic conditions significantly impact corporate development. Governments in high-income regions often support businesses to stimulate growth and industrial transformation (Haber and Reichel, 2007), boosting performance. However, classical foreign direct investment (FDI) and cost theories suggest internationalization may harm performance. Song et al. (2012) notes that FDI is particularly relevant to the tourism industry, which includes gaming companies. For robustness, Panel A of Table 3 controls for GDP and FDI, confirming that ESG scores consistently enhance firm value while increasing uncertainty, with only minor coefficient changes.

Cross-listed firms can strengthen reputation by complying with foreign regulations (Jo and Harjoto, 2012), reducing litigation risks (Koh et al., 2014), and improving social responsibility (Boubakri et al., 2016), though such cross-border operations may also increase return volatility (Lin et al., 2018). Developed markets may also offer higher valuations (Lins et al., 2005). Panel B of Table 3, controlling for listing markets and time, reaffirms that all ESG dimensions positively affect value and elevate uncertainty, demonstrating cross-market robustness^[11].

[Table 3 About Here]

4.2. ESG and firm performance in the pre-, during-, and post-Covid-19 periods

Table 4 compares the impact of ESG on firm value and uncertainty across the pre-, during-, and post-pandemic periods. The results show that ESG significantly enhanced firm value throughout all phases, with coefficients increasing from 0.089 (pre) to 0.115 (during) and 0.108 (post), all significant at the 1% level. A consistent strengthening pattern is observed across all ESG dimensions. These results confirm that the value-enhancing effect of ESG intensified

during and after the health crisis, consistent with Qiu et al. (2021), thus validating Hypothesis 2a.

Concurrently, ESG engagement elevated firm uncertainty, with a clearly rising trend: the overall uncertainty coefficient grew from 0.022 (pre) to 0.026 (during) and further to 0.029 (post), all significant at the 1% level. Each component exhibited a similar upward trajectory. This indicates that while ESG bolstered firm value, it also introduced escalating uncertainties, especially in the post-pandemic phase, likely due to heightened stakeholder and regulatory scrutiny. These findings contrast with earlier studies that suggested an uncertainty-mitigation effect (e.g., Broadstock et al., 2021; Bouslah et al., 2018), underscoring the context-dependent nature of ESG outcomes.

A comparison with other tourism and hospitality sectors reveals both similarities and critical distinctions. Similar to hotels, airlines, and restaurants, gaming firms experienced significant value enhancement from ESG activities during the pandemic crisis, aligning with the broader trend of ESG serving as a resilience factor in tourism (Chen et al., 2022; Wang et al., 2024). However, the escalating uncertainty effect post-pandemic sets gaming apart. While studies on general tourism firms have indicated that ESG practices can stabilize operations and reduce uncertainty post-crisis (e.g., Kumar, 2024), our findings show that for gaming firms, ESG introduces significantly higher and growing uncertainties. This divergence likely stems from the industry's unique 'sin' nature, which subjects it to intensified and evolving regulatory pressures and deeper societal skepticism even during recovery phases (Hong & Kacperczyk, 2009). Thus, while the value-enhancing role of ESG is consistent across tourism, its uncertainty implications appear to be profoundly shaped by industry-specific legitimacy challenges.

[Table 4 About Here]

4.3. ESG and firm performance across economies: pre-, during-, and post-pandemic

Differences in social, economic, cultural, and industrial development between developed and developing economies can significantly influence the impact of ESG activities on casino companies' performance. Song et al. (2018) note the rising importance of developing economies in the global context, a trend accentuated by crises. This dynamic may alter the effectiveness of ESG initiatives across various economic settings. To explore this, we segmented our sample based on economic development and re-estimated regressions with firm value and uncertainty as outcomes, as presented in Tables 5 and 6.

Table 5 reveals that in developed economies, only the environmental pillar showed a significant positive association with firm value in the pre-pandemic period ($pre \times lne = 0.080$, $p < 0.01$). During the pandemic, ESG exerted a strong positive influence in developed economies (e.g., $during \times lnesg = 0.117$, $p < 0.01$), while it was significantly negative in developing economies (e.g., $during \times lnesg = -0.033$, $p < 0.05$). In the post-pandemic phase, however, a positive ESG effect emerged in both groups: the positive association persisted in developed economies, while developing economies exhibited a significant reversal from negative to positive (e.g., $post \times lnesg = 0.033$, $p < 0.05$). These findings suggest that the pandemic served as a litmus test for ESG's role—functioning as a resilience factor in developed markets, whereas short-term survival pressures may have temporarily overshadowed its value in emerging economies, before a corrective convergence occurred post-crisis.

The analysis in Table 6 reveals that ESG engagement consistently increased firm uncertainty in developed economies throughout all pandemic phases, with coefficients rising

from the pre-pandemic period (e.g., $pre \times lnesg = 0.033$, $p < 0.01$) to the during- (e.g., $during \times lnesg = 0.041$, $p < 0.01$) and post-pandemic (e.g., $post \times lnesg = 0.044$, $p < 0.01$) phases. By contrast, developing economies showed only a minimal pre-pandemic effect (e.g., $pre \times lnesg = 0.003$, $p < 0.05$) that became statistically insignificant during and after the crisis. This pattern suggests that stringent regulatory environments and higher stakeholder expectations in developed economies amplified ESG-related uncertainties, whereas less mature institutional frameworks in developing economies led to more attenuated effects (Mendiratta et al., 2023).

[Tables 5 & 6 About Here]

4.4. ESG and firm performance across operational regions: pre-, during-, and post-pandemic

Table 7 reveals distinct patterns of ESG's impact on firm value across casino operators with different market focuses. In the pre-pandemic period, ESG engagement significantly enhanced firm value for all three types of operators, though the effect was substantially weaker for dual-market operators (e.g., $pre \times lnesg = 0.047$, $p < 0.01$) compared to their domestic- (e.g., $pre \times lnesg = 0.109$, $p < 0.01$) and overseas-focused (e.g., $pre \times lnesg = 0.141$, $p < 0.01$) counterparts. During the pandemic, the value-enhancing effect became insignificant for domestic-focused operators, strengthened substantially for overseas-focused operators (e.g., $during \times lnesg = 0.307$, $p < 0.01$), but turned significantly negative for dual-market operators (e.g., $during \times lnesg = -0.031$, $p < 0.05$). This pattern persisted into the post-pandemic period, with overseas-focused operators continuing to show strong positive associations (e.g., $post \times lnesg = 0.361$, $p < 0.01$), while domestic-focused operators remained insignificant and

dual-market operators maintained significantly negative coefficients for certain pillars (e.g., $post \times lng = -0.033, p < 0.05$). These results suggest that while ESG generally enhances value, its effectiveness is highly contingent on market focus and external conditions. Overseas-focused operators likely benefit from more established ESG frameworks in international markets (Ning et al., 2022), while dual-market operators may face compounded regulatory complexities and stakeholder expectations that diminish ESG's value impact during crises (Marano and Kostova, 2016).

Table 8 shows that pre-pandemic, ESG reduced uncertainty for overseas-focused operators (e.g., $pre \times lnesg = -0.009, p < 0.05$) but increased it for domestic-focused firms (e.g., $pre \times lnesg = 0.065, p < 0.01$). During and after the pandemic, ESG's effect became insignificant for overseas operators, while continuing to significantly increase uncertainty for domestic and dual-market operators. These results suggest that international ESG frameworks initially provided stability for overseas-focused operators, but pandemic conditions undermined this advantage. Dual-market operators faced persistent uncertainty, likely due to the complexity of navigating multiple regulatory environments (Kostova and Zaheer, 1999). Domestic operators consistently experienced increased uncertainty, possibly reflecting heightened local stakeholder pressures. The findings highlight how market focus and regulatory complexity jointly shape ESG's uncertainty effects, with these relationships being further influenced by external crisis conditions.

[Tables 7 & 8 About Here]

5. Conclusions, implications, and limitations

5.1. Conclusions

This study analyzes 29 Asia-Pacific listed casino firms (2018–2024) to investigate ESG's impact on firm value and uncertainty through pre-/during-/post-pandemic comparisons and yields several important conclusions. First, we identify a consistent dual effect where ESG significantly enhances firm value while simultaneously increasing firm-level uncertainty. Second, the pandemic acted as a litmus test, amplifying both effects and revealing stark differences across economic contexts: ESG served as a resilience factor in developed markets, while its value was initially suppressed in emerging economies due to short-term survival pressures. Third, we observe a post-crisis convergence in emerging markets, suggesting a delayed but ultimately positive reassessment of ESG's value. Fourth, market focus proves to be a critical determinant, with overseas-focused operators benefiting most consistently from ESG engagement. Finally, these findings collectively highlight the context-dependent nature of ESG effectiveness, particularly in controversial industries facing complex stakeholder expectations and regulatory environments.

5.2. Implications and limitations

This study offers three key theoretical contributions. First, it extends the tourism crisis management literature by revealing a 'resilience paradox' associated with ESG. We conceptualize ESG not as a uniformly stabilizing force, but as a factor that introduces a fundamental tension—simultaneously fostering adaptive capacity while creating new forms of vulnerability. This dual nature challenges the prevailing assumption in tourism research that strategic investments are unconditionally beneficial during a crisis, thereby presenting a more nuanced and critical understanding of post-crisis recovery pathways.

Second, the findings advance theories of destination competitiveness and evolution. The pandemic, as an exogenous shock, illuminated how the institutional context of a destination (developed vs. emerging economy) fundamentally shapes the efficacy of sustainability governance. This provides an institutional theory lens to explain why some tourism destinations demonstrate stronger resilience and a more robust recovery trajectory than others, moving beyond traditional explanations based solely on infrastructure or marketing.

Third, our research refines stakeholder theory in the context of contested tourism. By highlighting how market focus and geographic exposure moderate ESG effectiveness, we show that managing divergent stakeholder expectations is not a one-size-fits-all endeavor. This is particularly critical in controversial tourism segments like gaming, where the findings offer a framework for tailoring stakeholder engagement strategies across different tourism models and destination types.

From a practical perspective, this research offers actionable insights for gaming executives, investors, and policymakers. Firms should adopt differentiated ESG strategies: deepening integration in developed markets to enhance resilience, and adopting phased approaches in emerging economies to balance short-term survival needs. Investors need to recognize that ESG may increase short-term uncertainty yet holds long-term value—particularly in emerging markets post-pandemic. Policymakers should strengthen institutional support by refining ESG standards and providing incentives to reduce implementation uncertainty and facilitate value realization in emerging economies.

However, this research is subject to certain limitations. Firstly, our sample is confined to 29 listed casino companies in the Asia-Pacific region, excluding non-listed entities. Future

studies could provide a more exhaustive analysis by incorporating financial data from non-listed companies. Secondly, this study does not delve into the specific mechanisms by which ESG activities influence casino company performance, such as reputation enhancement or stakeholder engagement. These areas present opportunities for further exploration in subsequent research.

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Tables

Table 1. Description and measurement of the main variables.

VARIABLES	Meaning	Measurement	Data source
<i>tobinq</i>	Corporate market value	market value/total asset	Thomson Reuters Eikon with Datastream
<i>stdev</i>	Uncertainty	standard deviation of daily stock closing price during the corresponding month	https://hk.finance.yahoo.com/ https://cn.investing.com/
<i>lnesg</i>	Environmental, Social, and Governance (ESG) score	ln(ESG score+1)	Thomson Reuters Eikon with Datastream
<i>lne</i>	Environmental score	ln(environment score+1)	
<i>lns</i>	Social score	ln(social score+1)	
<i>lng</i>	Governance score	ln(governance score+1)	
<i>lnage</i>	Corporate age	ln(statistical year-year of listing +1)	
<i>size</i>	Corporate size	ln(total asset)	
<i>lev</i>	Gearing ratio	total liabilities/total assets	
<i>roe</i>	Return on equity	net profit/total equity	
<i>lnpgdpm</i>	GDP per capita	ln(GDP per capita)	CEIC Global Database
<i>lnfdim</i>	Foreign direct investment	ln(foreign direct investment)	

Notes. All regional currencies are converted to USD using monthly average exchange rates. *lnpgdpm* and *lnfdim* serve as robustness check variables.

Table 2. Baseline regression: ESG and financial performance.

VARIABLES	Dependent variable = <i>tobinq</i>				Dependent variable = <i>stdev</i>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>lnesg</i>	0.105*** (0.015)				0.026*** (0.004)			
<i>lne</i>		0.113*** (0.016)				0.020*** (0.004)		
<i>lns</i>			0.107*** (0.015)				0.021*** (0.004)	
<i>lng</i>				0.109*** (0.016)				0.029*** (0.004)
<i>lnage</i>	0.783*** (0.263)	0.789*** (0.263)	0.779*** (0.263)	0.833*** (0.264)	-0.059 (0.066)	-0.076 (0.066)	-0.073 (0.066)	-0.038 (0.066)
<i>size</i>	-1.115*** (0.053)	-1.112*** (0.053)	-1.112*** (0.053)	-1.119*** (0.053)	-0.029** (0.013)	-0.026* (0.013)	-0.027** (0.013)	-0.031** (0.013)
<i>lev</i>	-0.847*** (0.144)	-0.827*** (0.144)	-0.839*** (0.144)	-0.847*** (0.144)	0.008 (0.036)	0.018 (0.036)	0.014 (0.036)	0.005 (0.036)
<i>roe</i>	0.044*** (0.013)	0.043*** (0.013)	0.043*** (0.013)	0.046*** (0.013)	0.001 (0.003)	0.001 (0.003)	0.001 (0.003)	0.002 (0.003)
Constant	14.878*** (1.106)	14.826*** (1.105)	14.859*** (1.105)	14.795*** (1.106)	0.682** (0.276)	0.704** (0.277)	0.701** (0.277)	0.648** (0.276)
Firm and Year FEs	YES	YES	YES	YES	YES	YES	YES	YES
Observations	2,304	2,304	2,304	2,304	2,276	2,276	2,276	2,276
R-squared	0.308	0.310	0.309	0.309	0.089	0.081	0.083	0.093

Notes. Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 3. Robustness tests.

Panel A: Add macro control variables.								
VARIABLES	Dependent variable = <i>tobinq</i>				Dependent variable = <i>stdev</i>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>lnesg</i>	0.098*** (0.016)				0.026*** (0.004)			
<i>lne</i>		0.106*** (0.016)				0.020*** (0.004)		
<i>lns</i>			0.100*** (0.016)				0.021*** (0.004)	
<i>lng</i>				0.101*** (0.016)				0.030*** (0.004)
<i>lnpgdpm</i>	0.265*** (0.100)	0.277*** (0.100)	0.265*** (0.100)	0.250** (0.101)	0.036 (0.025)	0.043* (0.026)	0.040 (0.026)	0.029 (0.025)
<i>lnfdim</i>	0.043* (0.022)	0.041* (0.022)	0.043* (0.022)	0.042* (0.022)	0.000 (0.006)	-0.000 (0.006)	0.000 (0.006)	-0.000 (0.006)
<i>Controls, Firm, and Year FEs</i>	YES	YES	YES	YES	YES	YES	YES	YES
Observations	2,178	2,178	2,178	2,178	2,150	2,150	2,150	2,150
R-squared	0.308	0.309	0.308	0.308	0.093	0.086	0.087	0.098
Panel B: Change fixed effects.								
<i>lnesg</i>	0.112*** (0.016)				0.026*** (0.004)			
<i>lne</i>		0.125*** (0.016)				0.021*** (0.004)		
<i>lns</i>			0.115*** (0.015)				0.021*** (0.004)	
<i>lng</i>				0.112*** (0.016)				0.028*** (0.004)
<i>Controls, Market, Cross Listing, and Year FEs</i>	YES	YES	YES	YES	YES	YES	YES	YES
Observations	2,304	2,304	2,304	2,304	2,276	2,276	2,276	2,276
R-squared	0.304	0.306	0.306	0.305	0.093	0.085	0.086	0.099

Notes. Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Cross-listing is a binary variable indicating whether the company is listed on both foreign and domestic stock markets. The market refers to the earliest trading market on which individual companies are listed.

Table 4. ESG and financial performance before, during, and post Covid19.

VARIABLES	Dependent variable = <i>tobinq</i>				Dependent variable = <i>stdev</i>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>pre</i> × <i>lnesg</i>	0.089*** (0.018)				0.022*** (0.005)			
<i>during</i> × <i>lnesg</i>	0.115*** (0.017)				0.026*** (0.004)			
<i>post</i> × <i>lnesg</i>	0.108*** (0.018)				0.029*** (0.004)			
<i>pre</i> × <i>lne</i>		0.102*** (0.018)				0.015*** (0.005)		
<i>during</i> × <i>lne</i>		0.121*** (0.017)				0.020*** (0.004)		
<i>post</i> × <i>lne</i>		0.112*** (0.018)				0.024*** (0.004)		
<i>pre</i> × <i>lns</i>			0.092*** (0.018)				0.016*** (0.005)	
<i>during</i> × <i>lns</i>			0.114*** (0.017)				0.021*** (0.004)	
<i>post</i> × <i>lns</i>			0.110*** (0.018)				0.025*** (0.004)	
<i>pre</i> × <i>lng</i>				0.093*** (0.018)				0.026*** (0.005)
<i>during</i> × <i>lng</i>				0.121*** (0.017)				0.030*** (0.004)
<i>post</i> × <i>lng</i>				0.113*** (0.018)				0.032*** (0.005)
Controls, Firm, and Year FEs	YES	YES	YES	YES	YES	YES	YES	YES
Observations	2,304	2,304	2,304	2,304	2,276	2,276	2,276	2,276
R-squared	0.309	0.311	0.310	0.310	0.090	0.084	0.085	0.094

Notes. Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 5. ESG and firm value in different economics before, during, and post Covid19.

VARIABLES	Dependent variable = <i>tobinq</i>							
	Developed (1)	Developing (2)	Developed (3)	Developing (4)	Developed (5)	Developing (6)	Developed (7)	Developing (8)
<i>pre</i> × <i>lnesg</i>	0.022 (0.028)	-0.022 (0.016)						
<i>during</i> × <i>lnesg</i>	0.117*** (0.026)	-0.033** (0.014)						
<i>post</i> × <i>lnesg</i>	0.063** (0.026)	0.033** (0.016)						
<i>pre</i> × <i>lne</i>			0.080*** (0.028)	-0.022 (0.016)				
<i>during</i> × <i>lne</i>			0.153*** (0.026)	-0.033** (0.014)				
<i>post</i> × <i>lne</i>			0.096*** (0.027)	0.030* (0.016)				
<i>pre</i> × <i>lns</i>					0.045 (0.029)	-0.022 (0.016)		
<i>during</i> × <i>lns</i>					0.134*** (0.027)	-0.033** (0.013)		
<i>post</i> × <i>lns</i>					0.079*** (0.027)	0.029* (0.015)		
<i>pre</i> × <i>lng</i>							0.014 (0.025)	-0.022 (0.020)
<i>during</i> × <i>lng</i>							0.115*** (0.025)	-0.033** (0.016)
<i>post</i> × <i>lng</i>							0.063** (0.025)	0.049** (0.019)
Controls, Firm, and Year FEs	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,680	624	1,680	624	1,680	624	1,680	624
R-squared	0.416	0.190	0.418	0.189	0.416	0.190	0.417	0.193
Developed vs. Developing_p- value_pre	0.041**		0.000***		0.003***		0.095*	
Developed vs. Developing_p- value_during	0.000***		0.000***		0.000***		0.000***	

Developed vs. Developing_p- value_post	0.233	0.045**	0.128	0.364
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Notes. According to the World Bank, the term ‘Developing’ mainly refers to low- and middle-income economies (and for Asia-Pacific, this includes China, India, Indonesia, Malaysia, Pakistan, Philippines, Sri Lanka, and Thailand), whereas ‘Developed’ denotes high-income economies (including Australia, Hong Kong, Japan, Korea, Singapore, and Taiwan) (Fu et al., 2018). So, casino companies located in developed economies are recorded as ‘Developed’ and those located in developing economies are recorded as ‘Developing’. Developed vs. Developing_p-value_pre and Developed vs. Developing_p-value_post both represent the significance (p-value) of the difference in coefficients between groups. Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6. ESG and uncertainty in different economics before, during, and post Covid19.

VARIABLES	Dependent variable = <i>stdev</i>							
	Developed (1)	Developing (2)	Developed (3)	Developing (4)	Developed (5)	Developing (6)	Developed (7)	Developing (8)
<i>pre</i> × <i>lnesg</i>	0.033*** (0.008)	0.003** (0.001)						
<i>during</i> × <i>lnesg</i>	0.041*** (0.007)	0.000 (0.001)						
<i>post</i> × <i>lnesg</i>	0.044*** (0.007)	0.003* (0.002)						
<i>pre</i> × <i>lne</i>			0.021*** (0.008)	0.003** (0.001)				
<i>during</i> × <i>lne</i>			0.031*** (0.007)	0.000 (0.001)				
<i>post</i> × <i>lne</i>			0.036*** (0.007)	0.003* (0.001)				
<i>pre</i> × <i>lns</i>					0.024*** (0.008)	0.003** (0.001)		
<i>during</i> × <i>lns</i>					0.033*** (0.007)	0.000 (0.001)		
<i>post</i> × <i>lns</i>					0.037*** (0.007)	0.003* (0.001)		
<i>pre</i> × <i>lng</i>							0.034*** (0.007)	0.004** (0.002)
<i>during</i> × <i>lng</i>							0.042*** (0.007)	-0.000 (0.001)
<i>post</i> × <i>lng</i>							0.046*** (0.007)	0.003 (0.002)
Controls, Firm, and Year FEs	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,679	597	1,679	597	1,679	597	1,679	597
R-squared	0.120	0.064	0.114	0.063	0.114	0.064	0.124	0.064
Developed vs. Developing_p-value_pre		0.000***		0.016**		0.002***		0.001***
Developed vs. Developing_p-value_during		0.000***		0.000***		0.000***		0.000***
Developed vs. Developing_p-value_post		0.000***		0.000***		0.000***		0.000***

Notes. Same as Table 5.

Table 7. ESG and corporate value in different operation regions before, during, and post Covid19.

VARIABLES	Dependent variable = <i>tobinq</i>											
	Domestic	Overseas	Both	Domestic	Overseas	Both	Domestic	Overseas	Both	Domestic	Overseas	Both
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<i>pre</i> × <i>lnesg</i>	0.109*** (0.025)	0.141*** (0.054)	0.047*** (0.012)									
<i>during</i> × <i>lnesg</i>	0.032 (0.024)	0.307*** (0.037)	-0.031** (0.013)									
<i>post</i> × <i>lnesg</i>	-0.015 (0.023)	0.361*** (0.040)	-0.028* (0.015)									
<i>pre</i> × <i>lne</i>				0.124*** (0.026)	0.347*** (0.054)	0.046*** (0.012)						
<i>during</i> × <i>lne</i>				0.053** (0.025)	0.322*** (0.036)	-0.025* (0.013)						
<i>post</i> × <i>lne</i>				0.009 (0.025)	0.333*** (0.040)	-0.021 (0.015)						
<i>pre</i> × <i>lns</i>							0.115*** (0.026)	0.086 (0.055)	0.044*** (0.012)			
<i>during</i> × <i>lns</i>							0.037 (0.024)	0.292*** (0.036)	-0.031** (0.013)			
<i>post</i> × <i>lns</i>							-0.008 (0.024)	0.358*** (0.041)	-0.026* (0.015)			
<i>pre</i> × <i>lng</i>										0.099*** (0.022)	0.157*** (0.052)	0.058*** (0.014)
<i>during</i> × <i>lng</i>										0.026 (0.022)	0.318*** (0.037)	-0.032** (0.014)
<i>post</i> × <i>lng</i>										-0.028 (0.023)	0.364*** (0.039)	-0.033** (0.016)
Controls, Firm, and Year FEs	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,176	624	504	1,176	624	504	1,176	624	504	1,176	624	504
R-squared	0.401	0.649	0.685	0.400	0.650	0.681	0.402	0.647	0.683	0.400	0.652	0.692
Domestic vs. Overseas_p- value_pre		0.174										0.045**
Domestic vs. Overseas_p- value_during		0.000***										0.000***

Domestic vs. Overseas_p- value_post	0.000***	0.000***	0.000***	0.000***
Domestic vs. Both_p-value_pre	0.009***	0.000***	0.000***	0.036**
Domestic vs. Both_p-value_ during	0.000***	0.000***	0.000***	0.003***
Domestic vs. Both_p-value_post	0.270	0.083*	0.215	0.392
Overseas vs. Both_p-value_pre	0.000***	0.000***	0.000***	0.001***
Overseas vs. Both_p-value_ during	0.237	0.315	0.237	0.221
Overseas vs. Both_p-value_post	0.110	0.085*	0.079*	0.147

Notes. A casino company is recorded as 'Domestic' if it operates a casino only within the country/region, 'Overseas' if it operates a casino only outside the country/region, and 'Both' if it operates both. Domestic vs. Overseas_p-value_pre, Domestic vs. Overseas_p-value_post, Domestic vs. Both_p-value_pre, Domestic vs. Both_p-value_post, Overseas vs. Both_p-value_pre, Overseas vs. Both_p-value_post represent the significance (p-value) of the difference in coefficients between groups. Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 8. ESG and uncertainty in different operating regions before, during, and post Covid19.

VARIABLES	Dependent variable = <i>stdev</i>			Domestic	Overseas	Both	Domestic	Overseas	Both	Domestic	Overseas	Both
	(1)	(2)	(3)									
<i>pre</i> × <i>lnesg</i>	0.065*** (0.014)	-0.009** (0.004)	0.004* (0.002)									
<i>during</i> × <i>lnesg</i>	0.069*** (0.014)	0.004 (0.002)	0.005** (0.002)									
<i>post</i> × <i>lnesg</i>	0.073*** (0.013)	0.003 (0.003)	0.005** (0.002)									
<i>pre</i> × <i>lne</i>				0.038** (0.015)	-0.011*** (0.004)	0.004** (0.002)						
<i>during</i> × <i>lne</i>				0.046*** (0.014)	0.004* (0.002)	0.005** (0.002)						
<i>post</i> × <i>lne</i>				0.053*** (0.014)	0.003 (0.003)	0.005** (0.002)						
<i>pre</i> × <i>lns</i>							0.043*** (0.015)	- (0.004)	0.011*** (0.002)	0.004* (0.002)		
<i>during</i> × <i>lns</i>							0.049*** (0.014)	0.003 (0.002)	0.005** (0.002)			
<i>post</i> × <i>lns</i>							0.055*** (0.014)	0.003 (0.003)	0.005** (0.002)			
<i>pre</i> × <i>lng</i>										0.067*** (0.013)	-0.007* (0.004)	0.004* (0.002)
<i>during</i> × <i>lng</i>										0.074*** (0.013)	0.004 (0.003)	0.006** (0.002)
<i>post</i> × <i>lng</i>										0.078*** (0.013)	0.003 (0.003)	0.005* (0.003)
Controls, Firm, and Year FEs	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,148	624	504	1,148	624	504	1,148	624	504	1,148	624	504
R-squared	0.139	0.060	0.220	0.129	0.072	0.220	0.129	0.061	0.221	0.144	0.054	0.220
Domestic vs. Overseas_p-value_pre		0.000***			0.000***			0.000***			0.000***	

Domestic vs. Overseas_p- value_during	0.000***	0.000***	0.000***	0.000***
Domestic vs. Overseas_p- value_post	0.000***	0.000***	0.000***	0.000***
Domestic vs. Both_p- value_pre	0.000***	0.002***	0.000***	0.000***
Domestic vs. Both_p-value_ during	0.000***	0.000***	0.000***	0.000***
Domestic vs. Both_p- value_post	0.000***	0.000***	0.000***	0.000***
Overseas vs. Both_p- value_pre	0.022**	0.000***	0.180	0.033**
Overseas vs. Both_p-value_ during	0.000***	0.000***	0.000***	0.000***
Overseas vs. Both_p- value_post	0.000***	0.000***	0.000***	0.000***

Notes. Same as Table 7.

Notes

¹ <https://wttc.org/News-Article/Global-TandT-sector-suffered-a-loss-of-almost-US4-trillion-in-2020> (obtained on 2021.11.23)

² <https://focusn.com/asia-pacific/south-korea-gaming-tax-revenue-down-82-4-in-2020> (obtained on 2021.11.22)

³ Data source: Gaming Inspection and Coordination Bureau (DICJ), 2024 Monthly Statistics. Available at: https://www.dicj.gov.mo/web/en/information/DadosEstat_mensal/2024/index.html (obtained on 2025.07.22)

⁴ <https://www.ibm.com/topics/environmental-social-and-governance> (obtained on 2024.2.10)

⁵ <https://www.reuters.com/business/sustainable-business/sustainable-fund-inflows-hit-record-high-q1-morningstar-2021-04-30/> (obtained on 2021.11.17)

⁶ https://www.bakermckenzie.com/-/media/files/insight/publications/2021/07/apbr_from-strategy-to-action--advancing-esg-in-asia-pacific_19-july.pdf?la=en (obtained on 2021.11.23)

⁷ There are a total of 42 listed casino companies in the Asia-Pacific region. After eliminating cruise ship casino companies, companies with ‘dead’ status, companies with major operations in non-Asia Pacific regions, companies with significant missing data, and companies whose main business is not gambling, 29 left.

⁸ In the literature, ESG and CSR are increasingly used interchangeably (Gillan et al., 2021; Huang, 2021; Garrido-Ruso et al., 2024) because both concepts focus on the social and environmental performance of companies. However, ESG explicitly incorporates governance, while CSR addresses governance issues implicitly, based on their impact on environmental and social factors (Gillan et al., 2021).

⁹ Our empirical specification follows form (i) recommended by Brambor et al. (2006, p. 69) for interaction models with a full set of categorical dummy variables. This is algebraically equivalent to the more common form (ii), which includes K-1 of the dummy variables and a constant as constitutive terms. In our case, the coefficient γ_1 on $pre \times lnesg$ represents the baseline effect of $lnesg$ in the pre-period, while γ_2 and γ_3 capture the differential effects during and after the event, respectively. Including a separate $lnesg$ main effect would cause perfect multicollinearity.

¹⁰ On May 5, 2023, WHO Director officially declared that COVID-19 no longer constitutes a Public Health Emergency of International Concern (PHEIC). This announcement marks a pivotal endpoint of the acute phase of the global pandemic. Available at: <https://www.who.int/zh/news-room/speeches/item/who-director-general-s-opening-remarks-at-the-media-briefing---5-may-2023> (obtained on 2025.08.02). This declaration serves as the key temporal benchmark for distinguishing between the during-pandemic and post-pandemic periods in our research.

¹¹ Due to space limitations, the treatment of endogeneity issues is discussed in supplementary materials.