A nexus between corporate gender diversity and dividend payout: Evidence from Asia Pacific

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Abstract: The study investigates the impact of corporate gender diversity on dividend payouts in Asia-Pacific countries. The study used the data of 610 listed firms in the Asian Pacific region over eleven years, from 2006 to 2016, with 6710 observations. The regression results revealed that the representation of women on board and at least 30% on board positively relates to dividend payout. Board size and board independence have a significant negative relationship with dividend payouts. Overall, results suggest that gender diversity on corporate boards has a greater propensity to pay dividends in the mix of ownership structure, strong and weak corporate governance compliance, and horizontal agency conflict.

Keywords: corporate gender diversity; dividend payout; corporate governance; regression

1. Introduction

The dividend payment is a fundamental decision in corporate finance and is important for corporate firms and investors. Investment and financing decisions are associated with each other (Narsa Goud, 2023). In situations where companies are pursuing growth and investment opportunities, they require funding from both internal and external sources. External financing plays a pivotal role in facilitating swift business expansion (Singh and Tandon, 2019). The availability of funds from external sources is largely contingent upon the financial performance and market valuation of the company (Kasasbeh, 2021). When a firm distributes dividends, it serves as a signal to the market regarding its financial well-being. This, in turn, has the effect of strengthening the firm’s market value. The firms easily acquire finance at a lower cost of capital, which enhances performance in terms of profitability, earnings per share, return on assets, and growth in assets and revenues. In the context of investors, investors always seek a greater return on their investment. Investors gain return in two ways: firstly, capital gain, and secondly, dividends (Roy, 2016).

This study is concerned with the monitoring mechanisms of corporate governance and their effects on dividend payout policies. Corporate governance and dividend payout have a strong association (Kuzey et al., 2023; Oliveira, 2016). Empirical studies have witnessed that by paying the dividend, the market value of the
share price increased (Manneh, 2014; Murtaza et al., 2017). Corporate firms pay a dividend as residual, which reveals that the firm has a sound financial position (Manneh, 2014; Teixeira and Carvalho, 2023). Gender diversity possesses unique characteristics and implications for firms and investors, attracting all stakeholders in firms to the presence of women on board (Nadeem et al., 2020, Jagirani et al., 2023). It protects the shareholder’s rights, and to mitigate the agency conflict, listed firms of many countries and governing institutes, especially in Asia Pacific countries, confined and pondered the appropriate presence of women on corporate boards, and reported statistics revealed that the presence of women on boards gradually increased over the year (Mgammal, 2022). Few statistics of gender diversity on corporate boards of Asia Pacific regions till 2016 are: Australia 19%, China 9.2%, Hong Kong 11%, India 11.2%, Indonesia 11.1%, Malaysia 13.5%, New Zealand 17%, Philippines 11%, Singapore 11%, South Korea 4%, Taiwan 12.5%, and Thailand 12.7% (Deloitte, 2016; Mgammal, 2022; Qian, 2016).

Gender diversity on corporate boards is associated with many benefits like innovation, new ideas, uncertainty avoidance, collaboration and communication, transformational leadership style, diversity in knowledge and experience, diverse problem-solving techniques, compliance with corporate governance, protection of shareholder rights, and mitigation of agency conflict (Jansen and Hlongwane, 2019; Matlala, 2011). Despite the numerous benefits associated with them, firms continue to underrepresent themselves on corporate boards, which has become a contentious issue among practitioners and academics. Female directors on the board have effective control and mitigate the agency conflict with a tendency to pay a higher dividend, especially where the governance of the firm is weak, and to protect the shareholder’s rights (Beh et al., 2016; Halaoua and Boukattaya, 2023). Furthermore, having a female on the board is key to achieving the desired results from gender diversity on the board, but this is not sufficient due to the critical mass threshold. It’s most important to know how many females on board play an efficient role and what threshold level is required. Critical mass theory is again supporting this point (Srivastava et al., 2018), and the prevailing study on gender diversity is still silent about critical mass effects on dividend policy. To understand and identify the problem, it is necessary to review the previous research studies. Contrary to the above, few research study results showed a negative effect of gender diversity on dividend payout in emerging countries such as India, Russia, and China (Saeed and Sameer, 2015; Utomo et al., 2023). Research results documented insignificant effects of gender diversity on board and dividends (Djan et al., 2017; Rehman, 2022).

The findings of earlier studies reveal the mixed results of gender diversity with different variables in the context of geography, complexity, and availability of data. This study is unique in several ways. First, this study is to evaluate the impact of board gender diversity on dividend payouts in the Asian Pacific region. Secondly, this study focuses on the relevance and context of agency and critical mass theory. The third, latest data set for the Asian Pacific region has been employed. Finally, this study examines the data of all financial and nonfinancial firms in the Asian Pacific region to get robust results for policymakers, regulators, and the financial industry worldwide.
2. Literature review and development of hypotheses agency problem in context of gender diversity and dividend payout

In 1932, Berle and Means presented the concept of corporate governance. The study of the separation between ownership and control of firms gave rise to and identified the basics of corporate governance. With the increase in separation, conflicts arise between ownership and control (Roy, 2016). Jensen and Meckling (1976), who presented agency theory, identified these conflicts. He documented the conflict between principal and agent and shareholder and creditors. Agency theory premised the conflict in three behavioral ways: firstly, principals and agents are rationales; secondly, they are self-interested; and thirdly, both are risk averse. Agents always enjoy themselves at the expense of shareholders, especially when information asymmetry exists. To evaluate the agent’s function, to align the interests of agents, and to mitigate the conflict, shareholders take two types of measures: incentives (monetary and non-monetary) and monitoring mechanisms (Anila, 2014).

The corporate governance structure of Asian countries is like that of the United States. But it varies across countries. Asian countries are not similar to developed countries. The ownership structure of these firms has different scenarios: firstly, family-owned; secondly, state-owned, as most are in China; thirdly, family group ownership; and fourthly, manager-owned firms. Therefore, firms in these regions have distinct agency conflicts. Monitoring control is under the control of insiders or family shareholders, and they do not need independent directors to monitor the management. In most firms, the board chair is not filled with directors; rather, the CEO holds the dual position of having strategic decision control in his hands and an independent board under his control in a conservative way (Essen et al., 2011). However, family-owned firms had little advantage, like a reduction in the cost of capital and free cash flow used for reinvestment; in cases of excess free cash flow, they tended to repurchase shares rather than pay dividends. In Asia Pacific Regions’ mostly listed firms, they are family and insider-to-outsider agency conflicts exist where minority shareholder rights were expropriated (Essen et al., 2011), and in these firms, gender diversity on board is scant and shareholders are reluctant to enhance diversity on their board (Tan and Jurdant, 2017).

3. Gender diversity and dividend payout

Previous research indicated that gender diversity on the board had a significant impact on firm performance and the ability to generate high revenues. Profitability is a major determinant of dividend policy because dividends are paid out of profit. As women directors increased on the board mandate to enhance firm value, performance, and effective control and monitoring efficiency, reduce agency conflict (Ntim, 2015), protect shareholders’ rights, and have the propensity to pay a higher dividend, further, it was found that women on board mitigate agency conflict in corporate governance by using dividend payments as a mechanism to control the agency conflict (Chen et al., 2017; Fidrmuc and Jacob, 2008).

In addition to this, results revealed that gender diversity has a positive relationship with dividend policy (Byoun et al., 2015; Chen et al., 2017). Firms with
high profit, a higher rate of return on assets, a higher rate of return on equity, and high growth in sales have a positive relationship with the dividend policy (Khan and Shamim, 2017; Uwuigbe et al., 2012). Research conducted in Turkey used data from 2008 to 2012 in which firm performance was measured with return on assets, return on equity, and return on sales. The research results showed a positive relationship between gender diversity and firm performance (Kılıc and Kuzey, 2016). Research was conducted in Spanish on 174 firms, and the data period was 2004–2012, to investigate the gender diversity on board characteristics such as executive, independent, shareholding, and dividend payout behavior. Research analysis results reveal that a percentage of women directors on corporate boards has a positive relationship with dividend payout, while independent female directors have no significant effect on dividend payout (Pucheta-Martínez and Bel-Oms, 2015).

Based on the literature and empirical studies, the following hypothesis is developed:

• H1a.: Women on board have a significant impact on dividend payout.

4. Women on board at critical mass and dividend payout

The earlier studies argued that women on board should be more than one for higher firm performance and to harvest benefits from their effectiveness. Because one female on board is just like a token and is only there to fulfil the legal requirement. One female director has not had a strong influence on other directors (Torchia et al. 2011, Jagirani et al., 2023). A single woman must work in a conservative way and transact business in a prevailing environment (Low et al., 2015). If women on board are more than one, two or three have composed a dynamic board, and now this minority group works together and feels free to discuss the business matter in an effective way, which can impart influence on other directors (Azmi and Barrett, 2013; Low et al., 2015). The presence of more than one woman on board addresses four major contexts, such as greater firm performance, the acquisition of a talent pool, corporate governance, and an effective response to concerns in the market (Low et al., 2015). According to Ferreira (2010), the effect of gender diversity on performance is that more female directors effectively control the CEO for poor performance. The positive relationship with stock return volatility Return on equity, a measure of financial performance, has a positive relationship with the presence of women on the board. less tendency towards debt financing and prefer equity finance (Djan et al., 2017). In addition to this, even two women are not enough to mitigate the tokenism effects (Torchia et al., 2010).

Empirical results reveal that an increase in the proportion of women on board has a positive relationship with firm performance (Low et al., 2015). However, dividend payouts are associated with profitability (Kent Baker and Powell, 2012). The women possess a risk-averse attitude, and they mitigate the agency conflict with the pay of a higher dividend. Other empirical studies by Chen, Leung, and Goergen (2017) found a positive relationship between a higher proportion of women and dividend payouts (Chen et al., 2017).

Based on the empirical studies, the following hypothesis is developed:

• H1b.: Women on board at critical mass have a significant impact on dividend
5. Board size and dividend payouts

Board size refers to the total number of directors in the board composition (Beh et al., 2016). A competent board is necessary to meet business challenges and run the business efficiently. The board of directors has different skills and expertise to manage and maximize the shareholder’s wealth. Firms’ directors are responsible for formulation, implementing corporate strategies, and evaluating or measuring the performance of firms. The board of directors is the top management of financial institutions. Board composition is an indicator of the efficiency of corporate governance, but it is very important to know that small or large size is beneficial for corporate firms (Cha et al., 2015; Roy, 2016).

Research conducted in Australia on 500 listed firms and used data for two years 2000–2001 to investigate the relationship between board size and firm value measured as return on assets, and its empirical results reveal that large board size hurts firm value and firm profitability (Nguyen and Faff, 2007), and in turn, dividend payout will be reduced with a reduction in profitability. Therefore, based on the literature review and empirical studies, the following hypothesis is developed:

- **H1c.** Board size has a significant impact on dividend payout.

6. Board independence and dividend policy

Board independence refers to the proportion of non-executives and independent directors on the corporate board (El-Chaarani, 2014). These independent directors have no business relationship with a firm, and they are neither employees nor employees of the firm, except that they receive only a director’s fee (Peterson and Philpot, 2007). Independent directors are appointed to monitor the business activities of the executive manager and give an independent opinion to directors and shareholders to ensure shareholder wealth maximization and the mitigation of agency conflict. Therefore, independent directors have a crucial role in firm performance and in setting the dividend policy (Beh et al., 2016; Chin et al., 2015).

Research conducted in the UAE used data from 2010 to 2013 from 127 firms listed on the Dubai securities market and Dubai financial market to explore the relationship between corporate governance and firm performance measured as return on assets. The analyzed results revealed that board independence has a negative relationship with firm performance (Farhan et al., 2017). While dividend payouts are associated with the financial performance of a firm, the board will hurt dividend payouts. In the context of reviewing literature and empirical evidence, the following hypothesis is developed and has also been shown in Figure 1.

- **H1d.** Board independence has a significant impact on dividend payout.

The theoretical and conceptual research model is:
7. Research methodology

The methodology used for the present research will be described to achieve the research objectives. One dependent variable along with four independent variables, namely board independence, board size, women on board, and critical mass on women on board, are employed in the study. Further, five control variables, such as growth in revenue, leverage, free cash flow, return on equity, and earnings per share, are used in this study. For analysis, quantitative research is carried out and secondary data is used, which in nature is panel data and comprises both time series and cross-sectional. The quantitative approach comprises time-series numerical data and cross-sectional or longitudinal data, which is termed panel data (Marashdeh, 2014).

The targeted population of this study is listed firms from regions and countries in the Asia Pacific Region: 1) Australia, 2) China, 3) Indonesia, 4) India, and 5) Malaysia. 6) New Zealand, 7) Philippines, 8) South Korea, 9) Singapore, 10) Hong Kong, 11) Taiwan, and 12) Thailand. The data sample consists of the yearly data of 610 Asian firms for 16 years from 2006 to 2021, with 9760 observations. Only the selected firms were employed that practice paying dividends and have gender diversity on their boards. The study runs a multiple regression model along with a diagnostic test for robust analysis.

7.1. Descriptive analysis

Panel data for descriptive statistics comprises 610 listed firms in the Asia-Pacific region from 2006 to 2021, with 9760 observations. We used descriptive statistics to find the mean, standard deviation, and highest and lowest values of variables that were dependent and independent. These variables were dividend payout, number of women on board, critical mass of women on board, board size, independence of board, earning per share, return on equity, free cash flow, leverage, and growth in revenues. Descriptive statistics were carried out with actual data without any transformation of
the data.

Descriptive statistics as shown in Tables 1 and 2 show that the dividend payout ratio mean is 293.56 to earnings per share, which is good, but it was hard to elaborate on while earnings were negative and firms were going to pay dividends to their shareholders, and this study did not consider the repurchase option of shares (Byoun et al., 2015). The board independence percentage to board size was 43.84, or four independent directors, while the median of board independence was 40%, which indicated that 60% of board members were executive and non-independent. The board size mean was 9, and the women on board percentage to board size mean was 12.51 percent or one female director on each board which is below the threshold for effective performance. As many studies have revealed, the critical mass is 30%, and some say the global ratio is 39% (Srivastava et al., 2018). The critical mass of women on board at 30% and 39% is only 2.18% of the board size, which is a very low proportion. The critical mass of women on board (at least three) mean was 0.068 percent of the board size, and the free cash flow mean was 0.066. Further, it shows that about seven percent of sample firms have at least three women on their boards, which means that only 40 firms out of 610 have more than two females on their boards, which is a very low representation of women at the critical mass level. The growth in revenue mean was 24.15 percent, the leverage mean was 0.42 percent to equity, the earning per share mean was 85.68, and the return on equity mean was 16.89 as shown in Table 3.

### Table 1. Measurement of variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Proxy</th>
<th>Measurements</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dividend Payout</td>
<td>DPO</td>
<td>Dividend per share/Earning per share</td>
<td>Saeed and Sameer (2015)</td>
</tr>
<tr>
<td>Board Independence</td>
<td>BI</td>
<td>Independent Directors/Board Size</td>
<td>Cha et al. (2015); Low et al. (2015)</td>
</tr>
<tr>
<td>Board Size</td>
<td>BS</td>
<td>Number of directors on the board</td>
<td>Cha et al. (2015); Kilincaslan et. (2013)</td>
</tr>
<tr>
<td>Critical Mass of Women on Board</td>
<td>CWOB</td>
<td>A dummy variable with a value of 1 if the firm has women directors at least three and otherwise 0.</td>
<td>Torchia et al. (2010); Srivastava et al. (2018)</td>
</tr>
<tr>
<td>Growth in Revenue</td>
<td>GR</td>
<td>Current Year Revenue—Last Year Revenue/Last Year Revenue</td>
<td>Ahmed and Murtaza (2015)</td>
</tr>
<tr>
<td>Leverage</td>
<td>LEV</td>
<td>Total Debt/Total Equity</td>
<td>Bushra (2012); Maldajian and El Khoury (2014)</td>
</tr>
<tr>
<td>Return on Equity</td>
<td>ROE</td>
<td>Net Income/Shares Equity</td>
<td>Khan and Shamim (2017)</td>
</tr>
<tr>
<td>Earnings Per Share</td>
<td>EPS</td>
<td>Net Income/Number of Shares Outstanding</td>
<td>Ahmed and Murtaza (2015); Khan and Shamim (2017)</td>
</tr>
</tbody>
</table>

Data analysis and findings.

### Table 2. Descriptive statistics.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std. Dev.</th>
<th>No. Obs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPO</td>
<td>293.56</td>
<td>0.1064</td>
<td>1304.7</td>
<td>−861.58</td>
<td>471.20</td>
<td>9760</td>
</tr>
<tr>
<td>BI</td>
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<td>0.4031</td>
<td>1.0000</td>
<td>0.0000</td>
<td>0.2584</td>
<td>9760</td>
</tr>
<tr>
<td>BS</td>
<td>9.4577</td>
<td>9.0000</td>
<td>39.1000</td>
<td>1.0000</td>
<td>3.4428</td>
<td>9760</td>
</tr>
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</table>
Table 2. (Continued).

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std. Dev.</th>
<th>No. Obs.</th>
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<tbody>
<tr>
<td>WOB</td>
<td>0.1251</td>
<td>0.1111</td>
<td>0.71430</td>
<td>0.0000</td>
<td>0.1033</td>
<td>9760</td>
</tr>
<tr>
<td>CWOB</td>
<td>0.0685</td>
<td>0.0000</td>
<td>1.0000</td>
<td>0.0000</td>
<td>0.2526</td>
<td>9760</td>
</tr>
<tr>
<td>FCF</td>
<td>0.0667</td>
<td>0.0678</td>
<td>0.8269</td>
<td>−38.39</td>
<td>0.6882</td>
<td>9760</td>
</tr>
<tr>
<td>LEV</td>
<td>0.422</td>
<td>0.4147</td>
<td>16.078</td>
<td>−0.0794</td>
<td>0.3226</td>
<td>9760</td>
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<tr>
<td>GR</td>
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<td>0.0747</td>
<td>132.61</td>
<td>−2.1951</td>
<td>3.0658</td>
<td>9760</td>
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<tr>
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<td>322.17</td>
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<td>113.01</td>
<td>9760</td>
</tr>
<tr>
<td>ROE</td>
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<td>0.0778</td>
<td>276.84</td>
<td>−6.9432</td>
<td>4.9151</td>
<td>9769</td>
</tr>
</tbody>
</table>

Table 3. Descriptive statistics (WOB 30%).

<table>
<thead>
<tr>
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<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std. Dev.</th>
<th>No. Obs.</th>
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<tr>
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<td>−861.59</td>
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<td>0.1111</td>
<td>0.7143</td>
<td>0.0000</td>
<td>0.1033</td>
<td>9760</td>
</tr>
<tr>
<td>CMWOB-30%</td>
<td>0.0218</td>
<td>0.0000</td>
<td>0.7143</td>
<td>0.0000</td>
<td>0.0879</td>
<td>9760</td>
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<tr>
<td>CMWOB-at least three</td>
<td>0.0685</td>
<td>0.0000</td>
<td>1.0000</td>
<td>0.0000</td>
<td>0.2526</td>
<td>9760</td>
</tr>
<tr>
<td>FCF</td>
<td>0.0667</td>
<td>0.0678</td>
<td>0.8269</td>
<td>−38.39</td>
<td>0.6882</td>
<td>9760</td>
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<td>GR</td>
<td>0.2415</td>
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<td>LEV</td>
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<td>EPS</td>
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<tr>
<td>ROE</td>
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<td>276.84</td>
<td>−6.9432</td>
<td>4.9151</td>
<td>9760</td>
</tr>
</tbody>
</table>

7.2. Correlation analysis

Correlation analysis was reported which indicated that all independent variables are not strongly correlated with each other, and all correlation estimated results were under the benchmark of 0.80. Further, correlation analysis describes a relationship between dependent and independent variables, whose range is −1 to +1. Positive and negative signs indicate the direction of the relationship between variables. In correlation analysis, board independence showed a negative relationship with dividends, as did the regression results. Board size indicated a positive relationship with dividend payouts. The women on board had a positive correlation. Similarly, a critical mass of women on board at 30% and 39% indicated a positive and higher association with dividend payout, and the same is also reported in FGLS regression results. However, for critical women on board, at least three indicated correlations are negative. Return on equity (ROE) had a strong correlation with free cash flow (FCF) and leverage (LEV), which was a problem. This was not consistent with OLS assumptions for efficient results and standard error estimates. The correlation analysis tested with E-views 9 is shown in Tables 4 and 5.
### Table 4. Correlation analysis.

<table>
<thead>
<tr>
<th></th>
<th>DPO</th>
<th>BI</th>
<th>BS</th>
<th>WOB</th>
<th>CWOB</th>
<th>FCF</th>
<th>GR</th>
<th>LEV</th>
<th>EPS</th>
<th>ROE</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.0040</td>
<td>0.0094</td>
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<td>-0.0061</td>
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<tr>
<td>BI</td>
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<tr>
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<td>-0.0439</td>
<td>-0.0435</td>
<td>-0.0133</td>
<td>-0.0014</td>
<td>1.0000</td>
<td>-0.0009</td>
<td>-0.0027</td>
<td>0.0017</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.0061</td>
<td>-0.0105</td>
<td>0.0366</td>
<td>-0.0331</td>
<td>-0.0040</td>
<td>-0.8527</td>
<td>-0.0009</td>
<td>1.0000</td>
<td>-0.0041</td>
<td>0.8582</td>
</tr>
<tr>
<td>EPS</td>
<td>-0.0046</td>
<td>0.0280</td>
<td>-0.0062</td>
<td>-0.0626</td>
<td>-0.0196</td>
<td>0.0037</td>
<td>-0.0027</td>
<td>-0.0041</td>
<td>1.0000</td>
<td>-0.0002</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.0007</td>
<td>0.0088</td>
<td>-0.0286</td>
<td>-0.0224</td>
<td>-0.0040</td>
<td>-0.9809</td>
<td>0.0017</td>
<td>0.8582</td>
<td>-0.0002</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

### Table 5. OLS regression results.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>224.746</td>
<td>416.607</td>
<td>0.539468</td>
<td>0.5896</td>
</tr>
<tr>
<td>BI</td>
<td>-28.1617</td>
<td>348.4379</td>
<td>-0.0808</td>
<td>0.9356</td>
</tr>
<tr>
<td>BS</td>
<td>12.0510</td>
<td>27.3005</td>
<td>0.4414</td>
<td>0.6589</td>
</tr>
<tr>
<td>WOB</td>
<td>721.139</td>
<td>983.4783</td>
<td>0.7332</td>
<td>0.4635</td>
</tr>
<tr>
<td>CWOB</td>
<td>-213.9879</td>
<td>394.0007</td>
<td>-0.5431</td>
<td>0.5871</td>
</tr>
<tr>
<td>FCF</td>
<td>251.9004</td>
<td>638.1647</td>
<td>0.3947</td>
<td>0.6931</td>
</tr>
<tr>
<td>LEV</td>
<td>-306.7551</td>
<td>517.7588</td>
<td>-0.5924</td>
<td>0.5536</td>
</tr>
<tr>
<td>GR</td>
<td>-12.6783</td>
<td>27.6404</td>
<td>-0.4586</td>
<td>0.6465</td>
</tr>
<tr>
<td>EPS</td>
<td>-0.0169</td>
<td>0.0749</td>
<td>-0.2259</td>
<td>0.8213</td>
</tr>
<tr>
<td>ROE</td>
<td>51.7258</td>
<td>90.6826</td>
<td>0.5704</td>
<td>0.5684</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.483</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.567</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>2.0123</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob. (F-statistic)</td>
<td>14.567</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 7.3. Multicollinearity test

Table 6 refers to Multicollinearity, the relationship of the independent variables with each other, and should not be greater than 0.8, as argued by Farhat (2014) and Khan (2016).

VIF formula is \( VIF_i = \frac{1}{1 - R_i^2} \) where: \( R_i^2 \) was the value for each auxiliary regression in which each independent variable became dependent and regressed on other independents. Its range is from one to infinity. If the \( VIF \) value was greater than 10, it showed serious multicollinearity (Beh et al., 2016).
Table 6. Multicollinearity table.

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>2.82</td>
<td>0.035948</td>
<td>No Multicollinearity</td>
</tr>
<tr>
<td>FCF</td>
<td>3.01</td>
<td>0.037023</td>
<td>No Multicollinearity</td>
</tr>
<tr>
<td>LEV</td>
<td>3.91</td>
<td>0.255953</td>
<td>No Multicollinearity</td>
</tr>
<tr>
<td>WOB</td>
<td>1.45</td>
<td>0.690712</td>
<td>No Multicollinearity</td>
</tr>
<tr>
<td>CWOB</td>
<td>1.39</td>
<td>0.720551</td>
<td>No Multicollinearity</td>
</tr>
<tr>
<td>BS</td>
<td>1.24</td>
<td>0.808409</td>
<td>No Multicollinearity</td>
</tr>
<tr>
<td>BI</td>
<td>1.14</td>
<td>0.880556</td>
<td>No Multicollinearity</td>
</tr>
<tr>
<td>EPS</td>
<td>1.01</td>
<td>0.993496</td>
<td>No Multicollinearity</td>
</tr>
<tr>
<td>GR</td>
<td>1.01</td>
<td>0.994502</td>
<td>No Multicollinearity</td>
</tr>
</tbody>
</table>

Table 7. Endogeneity diagnostic.

<table>
<thead>
<tr>
<th>Variable’s residuals</th>
<th>Coefficient</th>
<th>P-Value</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI</td>
<td>−28.16173</td>
<td>0.9356</td>
<td>No endogeneity</td>
</tr>
<tr>
<td>BS</td>
<td>12.05107</td>
<td>0.6589</td>
<td>No endogeneity</td>
</tr>
<tr>
<td>WOB</td>
<td>721.139</td>
<td>0.4635</td>
<td>No endogeneity</td>
</tr>
<tr>
<td>CWOB</td>
<td>−213.9879</td>
<td>0.5871</td>
<td>No endogeneity</td>
</tr>
<tr>
<td>FCF</td>
<td>251.9004</td>
<td>0.6931</td>
<td>No endogeneity</td>
</tr>
<tr>
<td>GR</td>
<td>−12.6783</td>
<td>0.6465</td>
<td>No endogeneity</td>
</tr>
<tr>
<td>LEV</td>
<td>−306.7551</td>
<td>0.5536</td>
<td>No endogeneity</td>
</tr>
<tr>
<td>EPS</td>
<td>−0.016936</td>
<td>0.8213</td>
<td>No endogeneity</td>
</tr>
<tr>
<td>ROE</td>
<td>51.72584</td>
<td>0.5684</td>
<td>No endogeneity</td>
</tr>
</tbody>
</table>

All measurements of the explanatory variable’s residuals indicated that there was no endogeneity and that the explanatory variables were exogenous.

Table 8. Summary of hypothesis and findings.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Expectation</th>
<th>Results</th>
<th>Consistency</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a: Women on board have significant impact on dividend payout.</td>
<td>Positive/Negative Significant</td>
<td>Positive Significant</td>
<td>Consistent</td>
<td>Accepted</td>
</tr>
<tr>
<td>H1b: Women on board at critical mass have significant impact on dividend payout.</td>
<td>Positive/Negative Significant</td>
<td>Positive Insignificant 95% intervals and Positive significant at 90% intervals</td>
<td>Inconsistent at 95% and consistent at 90% confidence intervals</td>
<td>Accepted</td>
</tr>
<tr>
<td>H1c: Board size has significant impact on dividend payout.</td>
<td>Positive/Negative Significant</td>
<td>Negative Significant</td>
<td>Consistent</td>
<td>Accepted</td>
</tr>
<tr>
<td>H1d: Board independence has significant impact on dividend payout.</td>
<td>Positive/Negative Significant</td>
<td>Negative Significant</td>
<td>Consistent</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

7.4. Discussion and conclusions

Women on board have a significant impact on dividend payouts as Shown in Tables 7 and 8. The empirical results of this study jointly indicated that women on board have a significant positive impact on dividend payout, and this is consistent with the empirical results of (Al-Amarneh et al., 2017; Al-Rahahleh, 2017; Byoun et al., 2015; etc.). Women on board at critical mass have a significant impact on dividend payouts. The study’s empirical results showed that having at least 30% women on
corporate boards has a significant positive relationship with dividend payout at a significant level of 5%. This is in line with the ways that Youn et al. (2016) and Pucheta-Martínez and Bel-Oms (2015) measured gender diversity. These results are also not consistent with Saeed and Sameer (2015), who argued that women are first and foremost risk-averse by nature and use cash holdings for growth opportunities.

Board size has a significant impact on dividend payouts. There is sufficient evidence in the regression result to reject the null hypothesis. The empirical results of this study revealed that board size has a significant negative relationship with dividend payout at a 5% level. The results of this study agree with those of the following studies, which found that the size of the board has a negative relationship with dividend payout (Abor and Fiador, 2013; Musiega et al., 2013; Sani and Musa, 2017). This means that board size doesn’t help reduce agency conflict as much as it should. Board independence has a significant impact on dividend payouts. The empirical results of this study revealed that independence of the board of directors has a significant negative relation with dividend payout at a 5% level. Findings are consistent with previous studies, which revealed that weak corporate governance practices, weak disclosure requirements, poor and weak structure of the corporate board, and concentrated ownership are major causes of negative relations between corporate governance and dividend payout (Brown and Roberts, 2016; Setiawan and Kee Phua, 2013; Shehu, 2015).

Findings of this study showed that women on board have a significant positive relationship with dividend payout. In addition to this, female directors use dividends as a mechanism to protect shareholders and mitigate agency costs in a mix of strong and weak corporate governance. In the Asia-Pacific region, firm ownership structure is concentrated, family- and state-owned; therefore, more female directors play their role to mitigate horizontal agency conflict and protect shareholders’ rights, with a higher propensity towards dividend payout. Moreover, the risk-averse and uncertainty-avoidance behaviors of women led to profitability, strengthening corporate governance, and paying a higher dividend to meet client demand. Agency theory, resource dependence theory, clientele theory, and information asymmetry theory support the findings of this study in the context of gender diversity’s positive relationship with dividend payout.

Board independence and board size have a significant negative relationship with dividend payouts. In strong corporate governance, the dividend substitute model was followed, and board independence revealed a negative relationship. In the relationship between board independence and family ownership, independence board functioning is reduced as ownership increases (Setia-Atmaja et al., 2009); further, if board of directors members hold directorships of many firms as independent directors, they remain very busy and do not exert their expertise efficiently (Farhan et al., 2017). Family-owned firms for monitoring preferred the use of debts rather than dividends. In family-owned firms, independent directors do not play their role fairly. The Big Board has a negative relationship with dividends because of the increasing cost of their salaries and expenses. The Big Board created conflict in many ways and delays in decision-making and wanted to work as free riders.

The presence of women on corporate boards undeniably contributes to enhanced dividend payouts, marking a significant stride towards financial inclusivity and
balanced governance. Past studies, as discussed above, consistently highlight the correlation between gender diversity in boardrooms and improved decision-making, which positively impacts financial performance. As women bring diverse perspectives and skill sets, their inclusion stimulates more comprehensive deliberations, leading to prudent strategies and stronger governance frameworks. The association between women’s representation on boards and increased dividend payouts is multi-faceted. Diverse perspectives foster innovation and risk management, influencing long-term sustainable growth and profitability. Furthermore, firms that embrace gender diversity tend to attract a wider investor base, aligning with socially responsible investment strategies. This trend is not merely about meeting diversity quotas. It is about leveraging the richness of varied experiences and insights. While correlation does not necessarily imply causation, the evidence supporting the positive relationship between women on boards and improved dividend payouts cannot be ignored.

Encouraging gender diversity on boards is not just a matter of social equity; it is a strategic imperative for businesses aiming for long-term success. Fostering an environment where women are empowered in leadership positions not only drives financial performance but also reflects a commitment to progressive, inclusive governance that benefits corporations and society as a whole.

8. Implications of study

In Asia-Pacific countries, corporate governance compliance has been recognized, and improvements have been made in the past decade to improve performance. There is still work to be done for more advancement. Now the emphasis has shifted from governance to the effectiveness of the board. Culture, behaviour, values, experience, and diversity influence the board’s effectiveness. The effectiveness of these terms was assessed in the context of the board of directors. Corporate board dynamics in the context of culture, experience, diversity in gender, and independence are most important. To achieve high board performance, four capabilities are important: people for whom talent is pooled, vision and strategies, diversity in terms of experience, knowledge, gender, and leadership style. Therefore, this study shed light on board composition, including board independence, board size, and women on board, and tested critical mass theory concerning gender effectiveness and their association with dividend payout.

Abad et al. (2017) and Srivastava et al. (2018) examine that gender diversity is a great way for families and state-owned businesses to reduce agency conflict between blacks and minority shareholders. This has a positive effect on dividend payouts and lessens information asymmetry in the emerging market. The empirical findings of this study support previous studies' results and show a positive relationship between women and dividend policy. Therefore, balance of skill, balance of executive and non-executive directors, and balance of gender enhance the protection of minority shareholders’ rights, and their investment is rewarded with a dividend payout. Investors or shareholders prefer dividends rather than waiting for capital gains.

For better results, women’s representation on the board should not be less than 30% of the board size. The results of this study showed that 30% of women on board perform well and provide more return to investors as dividends, and it showed equal
results in all the sample countries in the Asia Pacific, whether they have imposed
gender quotas on corporate governance or not. As a result, the study advises that the
governments of these nations set the goal of reaching the minimum 30% representation
of women on corporate boards and should annually review and monitor company
progress. As composite sample findings of this study and country level (Australia,
Malaysia, India, Hong Kong, Singapore), regression results revealed that women’s
presentation at 30% of board size has a positive relation with dividend payout.

As many studies have shown, gender diversity has a positive relationship with a
higher return to investors in dividends and an increase in share price, and this study
showed a positive relationship between 30% representation of women on board and
dividend payout. The disclosure of gender diversity requirements by law enhanced the
presence of women on board, as was found in Australia. 10.7% of women on board in
2010, and by disclosure in 2016, it had reached 23.4%. Hong Kong introduced
disclosure of gender diversity on a comply or explain basis in 2013, which changed
the representation of women on board in 2013 to 9.4% and in 2016 to 11.1% (PWC,
2016). Taiwan and Thailand statistics show a very low proportion of women on board
and show a decline in women’s presence on board, as in Taiwan 1.6% declined from
2010 to 2015 and in Thailand 0.4% declined from 2010 to 2015; similarly, the
Philippines showed a decline of 5.6% in the same period (Lee et al., 2015). Therefore,
in these three countries—the Philippines, Taiwan, and Thailand—there is a greater
need to introduce the law and disclosure requirement on a comply or explain basis to
harvest the gender diversity benefits in performance and return them to investors.
Further, the findings of this study support this.

Corporate firms, to enhance the performance and fair investment in NPV projects,
should promote women’s representation on board by following the procedure cited
above. To get a better return on investment in dividends and share prices, investors
should prefer firms where a fair proportion of female directors are present. The
shareholders should decide on the representation of women on the corporate board;
diversity should be improved by conducting skill audits.

Further, the findings of this study revealed that in family-owned and strong
corporate governance, a small board can perform more efficiently than a large board.
Legislative authorities and institutions should encourage small board sizes as they
work and perform efficiently and protect shareholder rights by paying dividends.

9. Limitation of study and future research

This study has certain limitations that need to be acknowledged. The sample of
the study is drawn from diverse sectors, each characterized by its own unique corporate
culture, ownership structure, and capital structure. Consequently, the research findings
may diverge from those of other empirical studies. Additionally, due to data
constraints, certain crucial variables were not incorporated into the study. These
include factors such as cross-country cultural variations, the specifics of firms’
ownership structures, the independence levels of female directors on boards, the
implications of gender quotas, and voluntary initiatives related to the adoption of
gender diversity on boards.

This study examined the correlation between gender diversity on corporate
boards, board size, board independence, and dividend distributions within the context of 610 listed firms in the Asia Pacific region for the period from 2006 to 2016. The findings suggest numerous opportunities for further research to enhance our comprehension of how gender diversity impacts dividend payouts. Specifically, this study recommends that future research consider the potential moderating effects of ownership structure and cultural variations concerning the relationship between gender diversity and dividend distribution policies in the countries of the Asia-Pacific region.

**Author contributions:** Conceptualization, ZA, MGF and MBH; methodology, AN, TSJ and MBH; software, ZA and MGF; validation, MGF and MBH; formal analysis, FI, ZA and AN; investigation, TSJ and MGF; resources, MBH, AN and ZA; data curation, ZA and FI; writing—original draft preparation, ZA, AN and TSJ; writing—review and editing, TSJ, MBH and MGF; visualization, FI and TSJ; supervision, MGF; project administration, MBH; funding acquisition, MGF. All authors have read and agreed to the published version of the manuscript.

**Conflict of interest:** The authors declare no conflict of interest.

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