Norwegian School of Economics
Bergen, Fall 2024

Gender Diversity and Financial Performance in Law Firms

Does gender diversity among partners in law firms impact the financial performance of the firm?

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Master thesis, Economics and Business Administration,
Major in Financial Economics & Business Analytics

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Abstract

This thesis sets out to answer the question, "*Does gender diversity among partners in law firms impact the financial performance of the firm?"* To address this, a dataset was created comprising the top 20 Norwegian firms ranked by revenue in 2023, tracking their financial performance over the period 2010–2023. The key financial metrics EBITDA Margin, Revenue per Partner, and Cost Ratio, are analysed using panel data regression models with the fraction of female partners in the firm as the key independent variable. Control variables included are the number of partners, the number of employees, and the yearly employee growth of the firm. Due to the absence of exogenous variation of the key independent variable, Fraction Female, the thesis focuses on identifying correlations rather than establishing causal relationships.

The findings reveal mixed results. While no meaningful correlation is observed between gender diversity and Revenue per Partner, a subtle negative relationship is detected for EBITDA Margin, which becomes statistically significant with a two-year lag. This suggests that increased female representation among partners may be associated with a slight decrease in profitability over time. Similarly, the Cost Ratio shows a delayed positive correlation with gender diversity, indicating higher costs after a two-year lag.

The study highlights several limitations, including the small sample size (280 observations), low explanatory power of the regression models, and the exclusion of potentially important control variables such as partner specialization and experience. While the results provide insights into the correlation between gender diversity and financial performance, they underscore the need for further research leveraging exogenous variation to assess causality.

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1. Introduction

The underrepresentation of women in leadership roles has long been a challenge in many industries (Sentralbyrå, 2021), but in professional service firms like law, it takes on particular significance (Section 2.2). Leadership diversity is more than an issue of fairness; it has the potential to shape the financial and operational outcomes of organizations (Section 2.3). In Norway, a country celebrated for its commitment to gender equality (Forum, 2023, s. p. 11), the legal profession presents a paradox (Section 2.2). Despite progressive societal values and policies designed to foster equality (Forum, 2023, ss. p. 289-290), the pathway to senior leadership remains uneven (Section 2.2). Women dominate law school admissions and comprise the majority of entry-level associates in law firms, yet their representation diminishes sharply in more senior roles, culminating in a significant gender gap at the partner level (Figure 2.1 & 2.2).

This gap in gender representation is particularly striking in the Norwegian context, where equality is both a cultural value and a legal mandate (Thommessen, 2023). Policies such as generous parental leave and flexible working arrangements are designed to reduce barriers for women and promote work-life balance in Norway (Norwegian Ministry of Foreign Affairs, 2016). However, a significant disconnect remains between these national policies and the realities within many law firms (Section 2.2). Female lawyers frequently cite inflexible work environments and long working hours as primary reasons for leaving the profession, particularly between the ages of 30 and 40, a critical stage for career advancement (Advokatbladet, 2024a). Among those who remain, women still face challenges in advancing to partnership, with only one-third of new partners in the ten largest Norwegian law firms being women (Advokatbladet, 2023).

Traditional promotion systems often prioritizing long working hours, individual performance metrics, and client acquisition, creates additional hurdles for women, particularly those balancing family responsibilities (Hoobler, Wayne, & Lemmon, 2009). Over 90% of female lawyers with a practicing certificate work in law firms at age 27, but only 50% remain by age 40, compared to 66.4% of their male counterpart. (Advokatbladet, 2024a). This steady loss of women from the profession suggests the presence of structural obstacles that may hinder equal representation at the partner level, where leadership diversity has the potential to drive meaningful change (Section 2.3).

However, recent efforts to improve female representation among partners in Norwegian law firms signal a gradual shift (Figure 3.4). This makes it particularly timely and relevant to explore the potential financial implications of these changes. While much has been written about the barriers women face in advancing to senior roles, there is less focus on the measurable impact of leadership diversity on organizational success. This thesis addresses this gap by investigating the relationship between the representation of female partners and financial performance. We study the top 20 Norwegian law firms in the period from 2010 to 2023 to answer the following research question:

> "*Does gender diversity among partners in law firms impact the financial performance of the firm?*"

In this context, gender diversity refers to the balance between male and female representation among law firm partners. It is measured by the fraction of female partners relative to the total number of partners in a firm. Since none of the firms in our dataset have a fraction of female partners exceeding 50% (Figure 3.2), any increase in the fraction of female partners represents a step toward achieving perfect gender diversity, defined as a 50/50 balance between male and female partners.

This thesis will employ a structural approach to answer the research question. Section 2 provides the background, examining Norway's unique commitment to gender equality, as well as the current state of gender diversity among partners in Norwegian law firms. It also introduces the theoretical and empirical foundations for understanding how gender diversity at the leadership level influences organizational outcomes.

Section 3 focuses on the data collection process and presents descriptive statistics, trends, and distributions. This chapter offers an overview of key variables, providing important context for the subsequent analysis.

In Section 4, the methodological framework is detailed. The thesis employs econometric techniques, including panel data regression, to investigate potential relationships while controlling for firm-specific and temporal factors. Diagnostic tests are applied to validate the models, addressing issues such as multicollinearity and heteroscedasticity.

Section 5 presents the core analysis, beginning with a correlation analysis to explore relationships between variables such as gender diversity, firm size, and profitability metrics.

This is followed by the results of panel data regression models that examine the influence of gender diversity on the key financial outcomes EBITDA Margin, Revenue per Partner, and Cost Ratio. Lagged effect models are also introduced to assess whether the impact of gender diversity manifests over time.

Finally, Section 6 begins by summarizing the key findings of the study, highlighting the relationship between gender diversity among partners and financial performance. A quantitative assessment of the reliability of the results follows, addressing aspects such as statistical validity, and model robustness. This is complemented by a qualitative interpretation of the results, which explores potential reasons behind the findings. The chapter will also address the study's limitations, before we conclude the thesis in Section 7.

2. Background

2.1 Norway’s Commitment to Gender Diversity

Norway is widely regarded as a global leader in promoting gender equality (Forum, 2023). This reputation is supported by progressive policies such as the Equality and Anti-Discrimination Act, which aims to prevent discrimination and promote equal opportunities in all areas of society, including the workplace. The Act has a particular objective of improving the position of women and minorities by dismantling societal barriers that hinder equality and preventing new barriers from being created. This act applies to all sectors of society, making it an important interpretative aid for all areas of Norwegian law (Equality and Anti-Discrimination Act, 2018 § 1 and § 2).

Norway has also implemented mandatory gender quotas for corporate boards, ensuring that women hold at least 40% of board positions in publicly listed companies. By 2028, this quota will be extended to include all companies with a revenue of at least 50 million NOK or 30 employees, significantly broadening its scope (Teigen, 2012).

These policies reflect Norway’s broader societal values, which emphasize collaboration, inclusivity, and fairness as essential components of professional and organizational life (Norwegian Ministry of Culture, n.d.). In addition, these approaches demonstrate that Norway's dedication to ensuring gender equality is not merely an aspiration but a reality, supported by actionable frameworks and long-term strategies.

2.2 Gender Diversity Among Partners in Norwegian Law Firms

Historically, the legal profession, particularly in the context of private law firms, has been a male-dominated field, both in Norway and globally (Centre for Economic Policy Research, 2019). While Norway is internationally recognized for its strong societal and legislative commitments to gender equality (Forum, 2023), the legal profession has not been immune to persistent gender disparities (International Bar Association, 2022). This trend is evident in the current demographics: as of 2022, only 22% of lawyers over the age of 50 in Norwegian private law firms are women (Advokatforeningen, 2023).

However, recent demographic shifts suggest that the landscape of the legal profession is evolving. Figure 2.1 shows that as of 2024, 70.5% of students admitted to law school in Norway are women, an increase from 65.5% in 2015 (Samordna Opptak, 2024). Furthermore, Figure 2.2 illustrates that in the top twenty law firms in Norway, 61.8% of entry-level associate positions in 2024 are held by women. This strong representation of women at the entry level of the profession reflects a significant demographic shift within the legal profession.

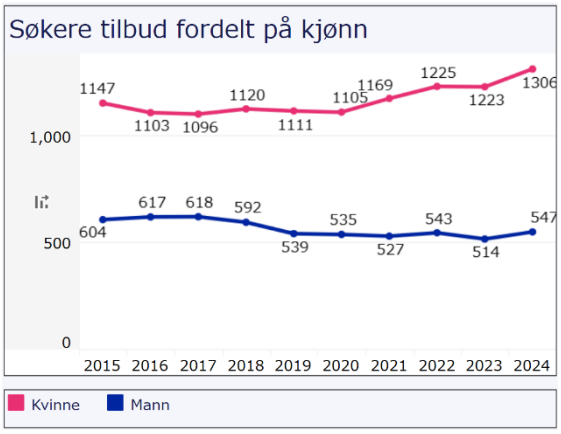

Figure 2.1: *Applicants Admitted to Law Studies by Gender (Samordna Opptak, 2024)*

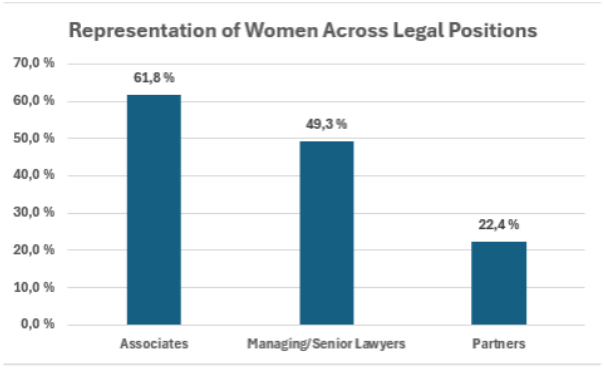

Figure 2.2: *Representation of Women Across Legal Positions (Author's Own Dataset, data pulled from law firm's websites 03.12.2024)*

Despite the increased representation of women among law school graduates and entry-level associates, significant gender disparities remain at the partnership level in private law firms. As of 2024, only 22.4% of partners in Norway's 20 largest law firms are women, highlighting a contrast with their majority presence at the early stages of the profession (Figure 2.2). Since reaching partnership takes years, the proportion of female partners is expected to increase over time as more women progress through their careers. This trend is already evident in our dataset, as illustrated in Figure 3.4, which shows that the percentage of female partners in the 20 largest law firms in Norway has doubled from 10% in 2010 to 20% in 2023.

This ongoing evolution toward greater gender equality within partnership roles in law firms raises intriguing questions about its broader implications, particularly regarding financial performance. As the proportion of female partners continues to grow, it becomes increasingly relevant to examine whether gender diversity at the leadership level influences a firm's financial outcomes.

2.3 Gender Diversity and Financial Performance

This section explores the relationship between gender diversity and financial performance, focusing on its relevance to the research question: *Does gender diversity among partners in law firms impact the financial performance of the firm?* While the primary focus of this research is on law firms, direct empirical evidence linking gender diversity at the partner level to firm performance within the law firms is relatively scarce. As a result, this section will also draw on insights from related professional fields, to better understand how gender composition in top management can influence financial outcomes.

2.3.1 Empirical Insights on Gender Diversity in leadership and Fininancial Performance

In assessing profitability, several studies have highlighted the ways in which women's representation in top leadership influences key financial metrics. For instance, Moreno-Gómez, Lafuente, and Vaillant (2018) applied panel data regression on data from 54 companies in Colombia from 2008 to 2015 to investigate how proportion of women in the top management team are associated with financial performance. Their findings were a positive correlation between the proportion of women in the top management, with financial metrics such as return on assets (ROA). Although the study acknowledged endogeneity concerns due to the absence of exogenous variation in the key independent variables, the authors mitigated these issues by employing a lagged effect model.

Johnson (2017), meanwhile, examined the role of gender diversity in enhancing governance and risk management in financial firms such as investment banking, bank holding companies and traditional depository banks. By synthesizing evidence from research employing statistical methods, the study showed that gender-diverse leadership teams was associated with improved risk oversight and decision-making processes, leading to better financial stability. However, the study acknowledged potential reverse causality due to endogeneity issues, which may have influenced the observed associations. If these findings hold true, they are particularly relevant for law firms, where governance, risk management, and client trust are critical to profitability.

However, not all analyses have produced consistently positive results. Marinova, Plantenga, and Remery (2016) employed two-stage least squares regression to control for endogeneity in a study on Dutch and Danish listed firms. Their findings revealed no statistically significant relationship between board gender diversity and firm performance, indicating that the business

case for diversity may not always hold. Such a result signals the importance of considering contextual factors, as gender diversity's effect on the bottom line may vary by industry, cultural climate, or national regulatory framework.

Building on the notion that context matters, Zhang (2019) explored the influence of normative support for gender diversity in different countries. By applying a fixed effects regression in a cross-country comparison using lagged measures of gender diversity to combat issues of endogeneity, it was found that firms in regions with strong normative support for gender diversity achieved better market valuation and revenue growth when gender diversity increased. The same was not found for regions in which only regulatory support for gender diversity was present. This indicates that for the benefits of gender diversity to be present, there must be an underlying normative support for gender diversity, which cannot be substituted with regulatory support.

2.3.2 Regulatory Mandates and Structural Reforms

Bertrand et al. (2019) analysed Norway's gender board quotas using a difference-in-differences approach after the country introduced a mandated 40% gender representation requirement for public limited liability companies in 2003. Their study demonstrated that quotas led to structural changes in leadership, including higher qualifications among female board members appointed post-reform compared to those appointed pre-reform. While the broader labour market saw limited immediate effects, the findings indicate that regulatory policies can transform leadership dynamics over time, potentially contributing to long-term performance improvements.

Building on this perspective, Pinnington and Sandberg (2013) provided insights into the barriers to achieving gender diversity among partners in law firms. Their qualitative case study highlighted organizational cultures and norms that restrict women's progression into partnership roles. The author highlights that structural and cultural reforms are needed to fully unlock the benefits of diversity.

Together, these studies emphasize that while externally imposed quotas can indeed reshape the leadership landscape, addressing deeply rooted institutional practices and norms remains essential for ensuring that gender diversity can translate into meaningful organizational gains.

2.3.3 The Role of Critical Mass in Driving Financial Performance

Several studies suggest that reaching certain thresholds of gender representation can lead to improved outcomes in terms of profitability, decision-making, and overall organizational performance. This is consistent with Critical Mass Theory from political science, where it is stated that "it takes a critical mass of women, e.g. 30 percent, to make a difference in politics" (Dahlerup, 1988). Applying this concept to organizational contexts, Ferrary and Déo (2022) analysed a dataset of 159 large French firms. They found that firms with gender-balanced leadership, defined as between 40 and 60 percent female representation, reported significantly higher profitability. This was attributed to enhanced team dynamics and improved decision-making processes. The study lacked exogenous variation in the key independent variable, raising concerns of reverse causality, which the authors addressed by using a lagged effect model.

Similarly, Schrand et al. (2018) found that reaching a threshold of approximately 30 percent female leadership in US real estate investment trusts was positively associated with financial performance, including metrics such as price-to-NAV ratios and overall profitability.

Brahma et al. (2020) analysed FTSE 100 firms from 2005 to 2016 and demonstrated that gender-diverse boards improved financial performance metrics, particularly return on assets (ROA) and Tobin's Q. Their findings highlighted that the positive effects were most pronounced when boards included three or more female directors.

These findings align with critical mass theory (Dahlerup, 1988), which suggests that achieving meaningful representation is needed to drive systemic improvements in organizational performance.

3. Data

3.1 Data Retrieval and Assembly

Our self-created dataset covers the top 20 law firms in Norway, ranked by Advokatbladet in 2024 based on revenue (Advokatbladet, 2024b). The data spans 14 years, from 2010 to 2023, and includes financial performance metrics sourced from annual reports provided by the Brønnøysund Register Centre. Additionally, detailed partner information was retrieved from the Norwegian Shareholder Register (Aksjonærregisteret). Although extending our study to earlier years could have provided a broader historical context, cost constraints limited our analysis to the available period.

3.1.1 Partner Information

To collect partner data, we accessed shareholder records from the Norwegian Shareholder Register (Aksjonærregisteret) for firms organized as limited liability companies (AS). The data was provided as CSV files for each year, containing shareholder details for all registered companies in Norway. Partner information was then manually extracted using company organizational numbers in Excel. Gender classification was conducted by assigning gender based on name conventions, with ambiguous cases manually verified through online searches.

Several firms transitioned from a DA (partnership) to an AS (limited liability company) during the study period. To maintain data accuracy, we identified previous organizational numbers and retrieved historical records from Brønnøysund Register Centre.

We excluded two firms from the sample: Ernst & Young Advokatfirma, as it was not possible to separate legal partners from audit partners, and Elden Advokatfirma, because we were unable to find the partners from after the company changed firm structure from DA to AS in 2020. These were replaced with the firms ranked 21st and 22nd. Additionally, we accounted for the 2013 merger of Simonsen Vogt Wiig by combining pre-merger data for both entities to maintain consistency.

3.1.2 Financial Data

We gathered financial data from the Brønnøysund Register Centre, covering the years 2010 to 2023. We focused on essential operational metrics, such as revenue, operating costs, and

operating profit, as well as annual employee numbers. Similar to partner data, retrieving historical financial records required an additional step of identifying both the firm's current organizational number and any previous organizational numbers it had used, ensuring access to complete financial records across all years.

3.1.3 Final Dataset

The final assembled dataset consists of the number of female partners, male partners, and total partners for each firm and year. It also includes financial figures for revenue, operating costs, EBITDA, and the number of non-partner employees. From these foundational figures, we calculated key financial ratios and growth metrics, enhancing the scope of our analysis.

3.1.4 Limitations in Dataset for Establishing Causality

To understand whether gender diversity among partners influences a law firm’s financial performance, it is essential to identify exogenous variation in the key independent variable, which for this thesis is the fraction of female partners. As Wooldridge (2016, chapter 15-2) emphasizes, causality is most convincingly inferred when changes in the independent variable are driven by factors external to the system (exogenous factors) rather than by characteristics of the firm or its performance. Such exogenous shifts allow researchers to separate the effect of the variable of interest from confounding factors, omitted variables, or the possibility of reverse causation.

For example, a sudden policy mandate that requires law firms above a certain size to increase female representation in partner roles, or a natural experiment that unexpectedly alters the availability of qualified female partners, would provide a source of variation independent of the firm’s own performance or strategic decisions. By leveraging these kinds of changes, it becomes possible to attribute any observed differences in financial outcomes directly to the increased share of female partners, thereby establishing a causal relationship.

In our study, after careful consideration of the available data sources, we were unable to identify any such exogenous events or policy changes that affected our sample of Norwegian law firms in a clear, externally imposed manner. The absence of exogenous variation in our dataset means that our analysis is subject to endogeneity concerns. Without a credible source of exogenous variation, the relationships we estimate between gender diversity and financial metrics remain correlational rather than causal.

One practical example of the endogeneity issue is the potential for firms with better financial performance to attract or promote more female partners, rather than gender diversity causing improved financial outcomes. For instance, more profitable firms might invest in diversity initiatives, which could lead to a higher fraction of female partners. In this case, financial performance drives gender diversity, not the other way around, making it difficult to disentangle cause and effect. With the presence of this issue, estimating a causal relationship between gender diversity and firm performance is not be feasible.

Despite this limitation, we proceed with the analysis to ascertain whether any robust correlations emerge. Although these correlations cannot confirm that increasing the fraction of female partners directly affects financial outcomes, they still provide valuable insights into the associations between gender diversity and firm performance. Such findings can serve as an informed starting point for future research that may uncover suitable exogenous factors, enabling a more definitive examination of causality.

3.2 Descriptive Statistics

This section provides an overview of the dataset, detailing key variables, their significance, and summary statistics. We highlight important trends and variability in the data, preparing the reader for a deeper analysis of gender diversity and financial performance among Norway's top law firms. These foundational insights provide context and guide our exploration of the dynamics between gender diversity and financial outcomes.

3.2.1 Key Variables and Summary Statistics

Summary Statistics of Key Variables

	Metric	Count	Mean	Std	Min	25%	50%	75%	Max
0	EBITDA Margin (%)	280	36.93	14.16	5.38	28.54	37.40	48.62	69.56
1	Revenue per Partner (in thousand NOK)	280	11959.75	5407.66	3982.25	8188.31	10317.91	14545.54	35211.91
2	Cost Ratio (%)	280	63.18	14.42	30.44	51.38	62.49	71.87	100.00
3	Fraction Female (%)	280	14.12	8.69	0.00	8.57	12.50	16.76	50.00
4	Employees (No Partners)	280	122.44	67.17	3.00	70.00	111.50	172.25	309.00
5	Total Partners	280	36.42	15.12	4.00	26.75	37.00	45.00	91.00
6	Employee Growth (%)	280	3.97	11.91	-30.84	-0.99	2.38	6.45	77.67

Table 3.1: *Summary Statistics of Key Variables (Author's Own Dataset, see section 3.1)*

The summary statistics of key variables, as presented in Table 3.1, provide an overview of the key variables in our dataset. **EBITDA Margin** is a critical measure of a firm's operating profitability, calculated as EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization) divided by total revenue. This metric provides insights into how efficiently a firm converts revenue into profit. In our dataset, the average EBITDA Margin is 36.93%, with a significant standard deviation of 14.16%, reflecting wide variation across firms. The observed range, from a low of 5.38% to a high of 69.56%, highlights the diversity in profitability among these top law firms

Revenue per Partner measures the revenue-generating efficiency at the partner level, calculated as total revenue divided by the number of partners. The data reveal an average of 11.96 million NOK per partner, with a substantial standard deviation of 5.41 million NOK.

Cost Ratio, defined as the percentage of revenue consumed by total operating costs, reflects a firm's operational efficiency. In our sample, the mean Cost Ratio is 63.18%, with a standard deviation of 14.42%. This variability points to differences in how firms allocate resources and manage expenses, potentially affecting their overall financial sustainability

Fraction Female represents the percentage of female partners within a firm and is a central variable for analysing gender diversity's impact on performance. The data show an average female representation of 14.12%, with values ranging from 0% to 50% and a standard deviation of 8.69%. Importantly, no firm in the dataset has ever had a Fraction Female above 50%, meaning that higher values of Fraction Female represent progress toward gender equality. As such, this measure effectively captures gender diversity in this context, with increases in Fraction Female indicating a closer alignment to a balanced representation of genders and thus greater diversity.

Employees, the number of non-partner employees serves as an indicator of a firm's operational workforce. On average, firms employ 122.44 non-partner staff, with considerable variation ranging from 3 to 309 employees.

Total Partners refers to the total number of partners within a firm. The median number of partners is around 40, but the distribution exhibits significant variability, with a few firms having an exceptionally high number of partners. These outliers could influence firm

dynamics, governance, and financial metrics, highlighting the structural differences among firms in the sample.

Employee Growth measures the year-over-year percentage change in the number of non-partner employees and provides insights into workforce dynamics. An average annual growth rate of 3.97% is observed, with changes ranging from contractions of -30.84% to expansions of 77.67%.

3.2.2 Variable Distributions

The histogram of Revenue per Partner (Figure 3.1) shows a distribution with a right-sided tail, illustrating a right-skewed pattern, where most firms generate between 5,000 and 15,000 thousand NOK per partner. The skewness suggests that while a few firms achieve exceptionally high revenue efficiency, the majority cluster around a lower revenue range. This disparity shows the differences in revenue-generating capabilities among law firms.

The *Fraction Female* histogram (Figure 3.2) indicates that gender diversity among partners is also right skewed, with most firms having less than 20% female representation. A notable concentration between 5% and 15% suggests a persistent gender gap, with relatively few firms approaching gender parity.

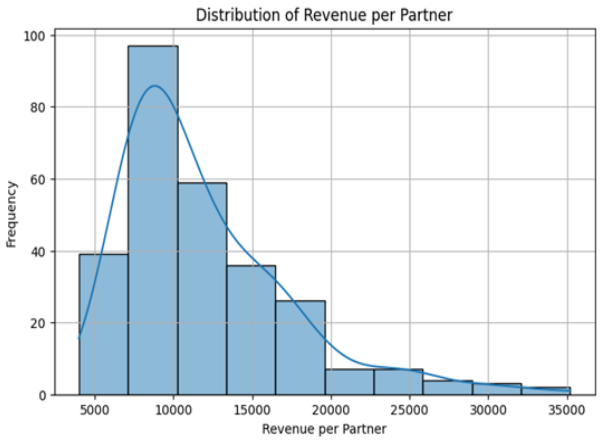

Figure 3.1: *Distribution of Revenue per Partner Author's Own Dataset, see Section 3.1)*

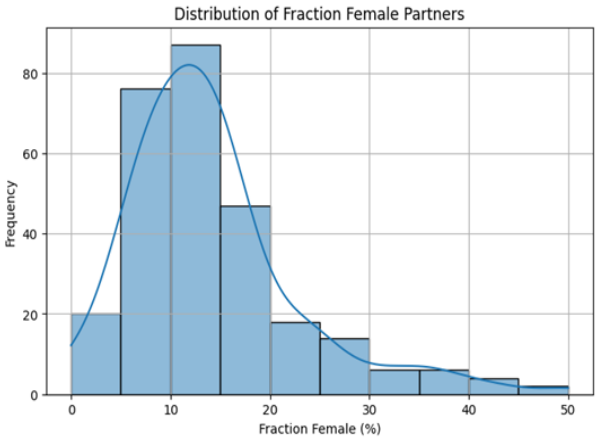

Figure 3.2: *Distribution of Fraction Female Partners (Author's Own Dataset, see Section 3.1)*

The boxplot of *Total Partners* (Figure 3.3) shows a median of around 40 partners per firm, with a substantial range and several notable outliers. These outliers reflect firms with an exceptionally high number of partners, which could influence revenue distribution.

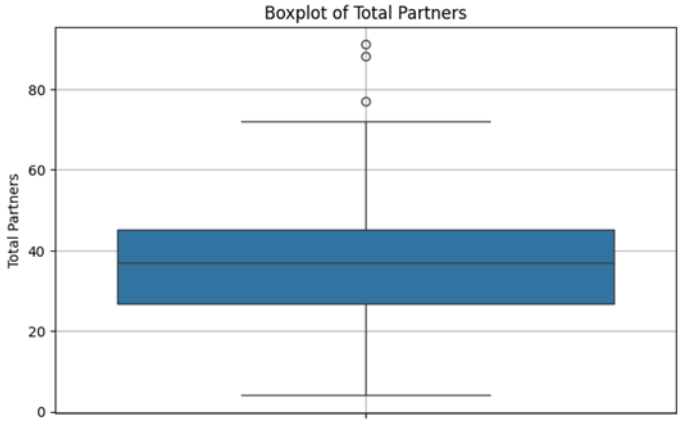

Figure 3.3: *Boxplot of Total Partners (Author's Own Dataset, see Section 3.1)*

3.2.3 Trend In Female Representation

Figure 3.4, titled *Average Fraction of Female Partners Over Time*, illustrates a gradual but notable increase in female representation from 2010 to 2023. The most significant growth appears post-2017, which may reflect changes in hiring or promotion practices aimed at enhancing gender diversity. Over this period, the average fraction of female partners doubled from about 10% to 20%, indicating a substantial increase while underscoring the persistence of a significant gender gap.

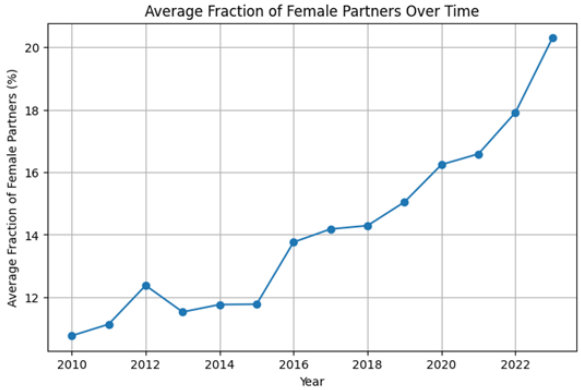

Figure 3.4: *Average Fraction of Female Partners Over Time (Author's Own Dataset, see Section 3.1)*

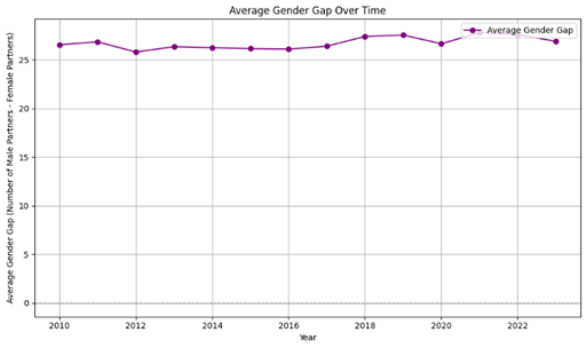

Figure 3.5: *Average Gender Gap Over Time (Author's Own Dataset, see Section 3.1)*

Figure 3.5, titled *Average Gender Gap Over Time*, represents the difference between the number of male and female partners in each company, averaged across all firms for each year. The figure illustrates that despite the gains in female representation presented in Figure 3.4, the gap between male and female partners has remained relatively stable. The data shows an average difference of about 25 throughout the observed period, suggesting that the net average change in male and female partners has been closely aligned.

3.2.4 Profitability By Diversity Group

Figure 3.6, which presents a box plot comparing EBITDA margins across four diversity groups (0-10%, 10-20%, 20-30%, and 30-50% female partners), suggests a potential downward trend in profitability. Preliminary observations reveal that firms with higher gender diversity (30-50%) generally exhibit lower median EBITDA margins compared to those with lower diversity (0-10%).

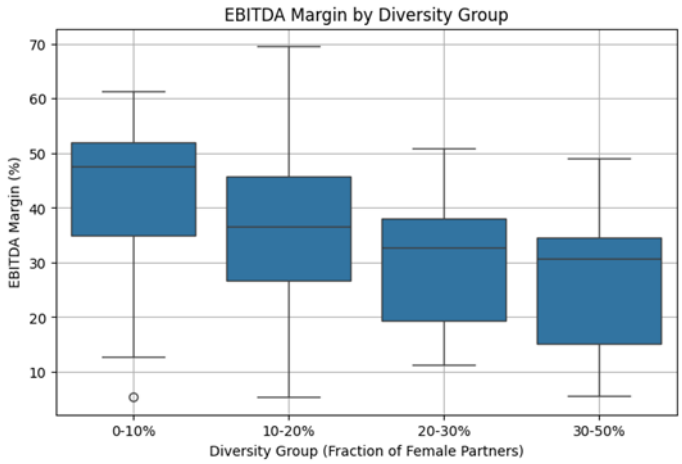

Figure 3.6: *EBITDA Margin by Diversity Group (Author's Own Dataset, see Section 3.1)*

Figure 3.7, titled *Cross-Tabulation of Diversity and Profitability Categories*, reveals that firms with greater gender diversity are more frequently found in the lower profitability category, whereas companies with lower gender diversity tend to appear more frequently in the higher profitability category. This observation suggests a potential inverse relationship between gender diversity and profitability, which will be explored further in the analysis.

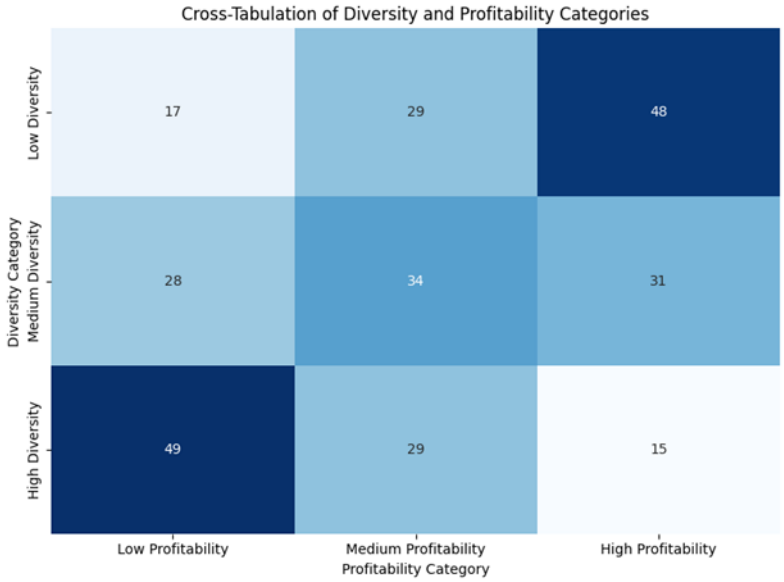

Figure 3.7: *Cross-Tabulation of Diversity and Profitability Categories (Author's Own Dataset, see Section 3.1)*

4. Methodology

4.1 Research Design

The research design of this study is grounded in a quantitative approach, leveraging panel data analysis to explore the correlation between gender composition and financial performance in law firms. By examining data from 20 law firms over a 14-year period, this study employs a longitudinal perspective that captures both within-firm and across-firm variations. The design integrates diagnostic testing to ensure the reliability and validity of the results. Tests for multicollinearity and heteroscedasticity are employed to identify potential issues that could distort regression outcomes. In response to these diagnostics, adjustments, are implemented to mitigate their effects, ensuring robust and reliable estimates.

4.2 Panel Data Regression

4.2.1 Introduction to Panel Data Analysis

Panel data analysis involves examining data that tracks the same entities over multiple time periods, allowing for the analysis of both changes within each entity over time and differences between entities. This structure provides a valuable tool for controlling for unobserved factors specific to each entity that remain constant over time but may still influence the relationships under study (Ashley, 2012, s. p. 459).

Panel data analysis is particularly suited for this research, as it allows for examining how the fraction of female partners in law firms influences financial performance while controlling for both firm-specific and time-specific effects. Firm-specific effects account for unobserved characteristics that remain constant within each law firm, such as organizational culture or baseline profitability, whereas time-specific effects control for external factors that might impact all firms in a given year, such as economic conditions or industry-wide regulatory changes. By leveraging data across 20 law firms over a 14-year period, this methodology provides greater statistical power, making it a solid approach for investigating the relationship between gender composition and financial outcomes in law firms.

4.2.2 Fixed Effects vs Random Effects Model

In panel data analysis, researchers must decide between two primary modelling approaches: fixed effects and random effects (J.M, 2016, ss. Chapter 14-1 and 14-2). Each model addresses unobserved, entity-specific characteristics in a different way, making the choice of model critical for accurately capturing the relationship between gender equality and financial performance in law firms.

The fixed effects model is well-suited for situations where we suspect that firm-specific characteristics, such as organizational culture, reputation or practice area specialization, are correlated with the variable of interest (J.M, 2016, s. p. 435). By controlling for each firm's unique, time-invariant characteristics, the fixed effects model focuses only on variations within each firm over time, allowing us to assess how changes in female representation might impact financial performance within individual firms. Given that each law firm likely has its own enduring policies, culture, and management style, it is reasonable to expect that these characteristics would correlate with both gender composition and financial outcomes. This would make the fixed effects model a strong candidate.

The random effects model, in contrast, assumes that these firm-specific characteristics are not correlated with the fraction of female partners or other independent variables (J.M, 2016, s. p. 441). This approach utilizes both within-firm and between-firm variations, allowing us to examine differences across firms as well as over time. While the random effects model is generally more efficient, its assumptions may be less suitable here, as it is likely that firm-specific factors do influence both gender composition and financial results.

Given the likelihood that unique characteristics of each law firm affect both the fraction of female partners and financial performance, we have reason to believe that the fixed effects model may be more appropriate for this study. However, we will conduct a formal Hausman test to confirm this assumption, as it will indicate whether there is significant correlation between firm-specific characteristics and our independent variables, guiding our final choice of model (Yufei Qin, 2003).

4.2.3 Lagged Effect Regression

Lagged effect regressions are a statistical approach used to explore delayed relationships between variables. In this context, they help determine whether gender diversity among partners influences financial performance over time, rather than having an immediate impact (J.M, 2016, ss. chapter 9-2a). By introducing a lag, the model accounts for the possibility that changes in gender diversity may take time to manifest in measurable financial outcomes.

However, incorporating lagged effects inherently reduces the size of the dataset. For a lagged model, observations from earlier years are excluded since the dependent variable requires corresponding data from previous years. For instance, a 1-year lag removes the first year's data, while a 2-year lag excludes the first two years. This progressive reduction in the dataset limits the number of observations available for analysis, which can impact the strength the results.

To balance the benefits of lagged analyses with the constraints of dataset size, this study has capped the lagged effects at two years. This approach allows for an exploration of potential delayed effects without overly compromising the statistical power of the models.

4.3 Diagnostic Tests

To ensure the validity and robustness of the panel data regression results, diagnostic tests will be conducted. These tests are critical for identifying and addressing potential issues that could compromise the reliability of the estimates. Two key diagnostics that will be used are the assessment for multicollinearity and heteroscedasticity.

4.3.1 Multicollinearity Diagnostic

Multicollinearity occurs when two or more independent variables in a regression model are highly correlated with each other. This issue can inflate the standard errors of the coefficients, making it difficult to assess the unique effect of each variable and leading to unreliable statistical inferences (Ashley, 2012, ss. p. 208-209). In the context of this study, multicollinearity could obscure the true relationship between gender diversity and financial performance in law firms.

To detect multicollinearity, we will use the Variance Inflation Factor (VIF) test, a common diagnostic tool in regression analysis. The VIF measures how much the variance of a coefficient is inflated due to correlations with other predictors in the model. Generally, a VIF value above 10 indicates a high level of multicollinearity, suggesting that corrective actions may be necessary (J.M, 2016, s. p. 86). If significant multicollinearity is detected, one simple solution is to remove one of the highly correlated variables or to combine them into one.

Addressing multicollinearity ensures that each variable's contribution to financial performance is accurately captured, allowing us to interpret the results of the regression with greater confidence.

4.3.2 Heteroscedasticity Diagnostic

Heteroscedasticity occurs when the variance of the residuals differs across observations in a regression model. This non-constant variance can lead to inefficient coefficient estimates, ultimately compromising the accuracy of the regression (J.M, 2016, s. p. 243). In the context of this study, heteroscedasticity could distort the estimated relationship between gender diversity and financial performance, leading to misleading results. To detect heteroscedasticity, we will employ both a visual inspection method and a formal statistical test.

Visual Inspection: Residual plots will be examined for any patterns in the spread of residuals across values of the independent variables. If the variance of residuals appears to increase or decrease systematically, or the residuals does not appear to have a mean of 0, this can indicate the presence of heteroscedasticity (Ashley, 2012, ss. p. 239-240).

Breusch-Pagan Test: As a formal test, the Breusch-Pagan test will be conducted to statistically evaluate whether heteroscedasticity is present. This test assesses whether the residual variance is related to the independent variables in the model, providing a quantitative measure of heteroscedasticity. A significant result in this test would confirm the presence of heteroscedasticity (Ashley, 2012, ss. p. 240-242).

If heteroscedasticity is detected, the study will employ robust standard errors in the regression analysis to address this issue. Robust standard errors adjust for non-constant variance in residuals, allowing for valid statistical conclusions even when heteroscedasticity is present.

This adjustment ensures that the estimated coefficients and their standard errors are reliable, thereby enhancing the accuracy of the regression (J.M, 2016, ss. chapter 8-2).

Addressing heteroscedasticity is essential for obtaining trustworthy estimates, as it allows for more accurate assessment of the relationship between gender diversity in law firms and the financial performance of the firm.

4.4 Regression Result Analysis

For the analysis, we will use four key statistical indicators to interpret the regression models: Model R-squared, Model P-value, Coefficient, and Coefficient P-value. These metrics provide a foundation for assessing the strength, significance, and reliability of the relationships identified in the analysis.

Model R-Squared

The R-squared value measures the proportion of variation in the dependent variable that is explained by the independent variables in the regression model. A higher R-squared value indicates that the model accounts for a larger proportion of the variation, while a lower value suggests that much of the variation remains unexplained. This statistic is important for evaluating the overall explanatory power of the model (Draper, 1998).

In panel data regression results, multiple R-squared measures are provided. These are R-squared within, R-squared between, and R-squared overall. For fixed effects models, the R-squared within is the most appropriate as it captures the variation within entities over time. Since the fixed effects model is applied in our analysis, the R-squared within will be used (Ashley, 2012, ss. p. 475-476).

Model P-value

The Model P-value assesses the statistical significance of the regression model as a whole. A low P-value suggests that the independent variables collectively have a significant relationship with the dependent variable (Draper, 1998). For this thesis a significance level of 0.05 is used, reflecting standard practice in empirical research.

Coefficient

The Coefficient indicates the direction and strength of the relationship between an independent variable and the dependent variable. A positive coefficient signifies that as the independent

variable increases, the dependent variable also increases. Conversely, a negative coefficient suggests an inverse relationship (Draper, 1998). This metric allows for quantifying the specific relationship of each independent variable with the dependent variable.

Coefficient P-value

The Coefficient P-value evaluates the statistical significance of individual coefficients in the regression model. A P-value below 0.05 for a coefficient implies that the associated variable has a statistically significant relationship with the dependent variable (Draper, 1998).

5. Analysis

The analysis in this study is structured into two main parts, each serving a distinct purpose in investigating the relationship between gender diversity and financial metrics in law firms. The first part focuses on descriptive analysis, employing correlation matrices and scatter plot analysis to identify initial patterns and relationships within the data. This exploratory approach highlights key variables of interest that warrant deeper investigation, laying the foundation for the subsequent regression analysis.

The second part builds on these findings by employing panel data regression analysis. This approach rigorously examines the identified relationships while controlling for both firm-specific and time-specific factors that could influence the results. To ensure the reliability of the regression models, diagnostic tools such as multicollinearity and heteroscedasticity tests are incorporated. Together, these two parts provide a comprehensive framework for understanding how gender diversity among partners correlates with key financial performance indicators over time.

5.1 Correlation Analysis

5.1.1 Correlation Matrices

The first step in this correlation analysis involves using correlation matrices to explore relationships between female representation and key financial metrics. The primary objective is to identify significant correlations that warrant more detailed examination and to justify the selection of financial metrics for further investigation.

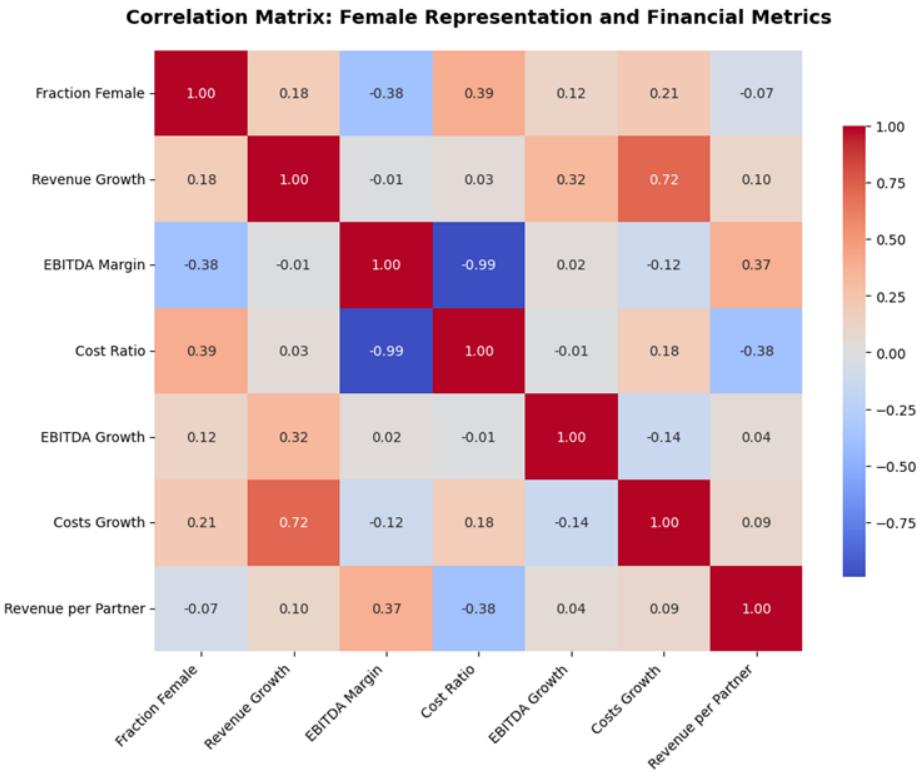

Figure 5.1: *Correlation Matrix of Female Representation and Financial Metrics*

Figure 5.1 presents a correlation matrix that examines the relationships between female representation and financial metrics. The variable Fraction Female exhibits notable associations with several financial indicators. Specifically, there is a moderate negative correlation with EBITDA Margin (-0.38) and a moderate positive correlation with Cost Ratio (0.39). These findings suggest that firms with higher female representation among partners tend to have lower profitability margins and higher relative costs. Such correlations provide a justification for examining EBITDA Margin and Cost Ratio further.

Revenue per Partner, on the other hand, shows a weak negative correlation (-0.07) with Fraction Female. Although this correlation is less pronounced, Revenue per Partner remains an essential measure of partner productivity and firm efficiency, justifying its inclusion for more in-depth analysis.

Other financial metrics, such as Revenue Growth, EBITDA Growth, and Cost Growth, exhibit low or inconsistent correlations with Fraction Female, indicating limited explanatory value in the context of gender diversity. Therefore, these growth metrics are excluded from further exploration, allowing the analysis to focus on more relevant indicators.

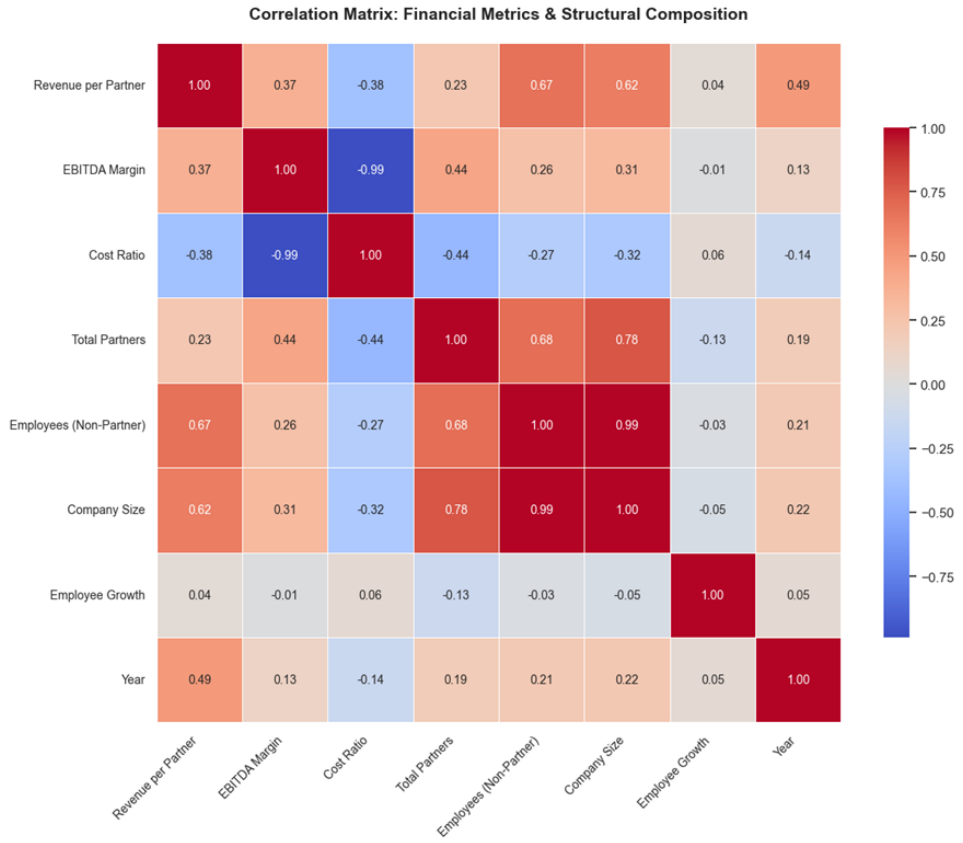

Figure 5.2: *Correlation Matrix of Financial Metrics and Structural Composition*

Figure 5.2 provides a correlation matrix that explores the relationships between selected financial metrics, including EBITDA Margin, Cost Ratio, and Revenue per Partner, and structural composition variables such as Total Partners, Employees, Employee Growth, and Year.

The analysis reveals that EBITDA Margin is positively correlated with Employees (0.26) and with Total Partners (0.44). Furthermore it shows that Revenue per Partner is also positively correlated with Employees (0.67) and Total Partners (0.62). Lastly, it shows that Cost Ratio is negatively correlated with both Total Partners (-0.44) and Employees (-0.27). Based on these observations, Employees and Total Partners are identified as essential control variables for subsequent regression analysis to account for differences in firm size and structure.

Employee Growth, despite showing a relatively weak correlation with the selected financial metrics, is a critical variable to include in the regression analysis due to its potential impact on multiple aspects of a firm's financial performance. An increase in employee growth typically leads to higher costs for the company, directly influencing the Cost Ratio. At the same time, expanding the workforce is often associated with an increase in revenue, making it a key factor

in understanding variations in Revenue per Partner. Since EBITDA Margin reflects the balance between revenue and costs, changes in employee growth could influence both components, making it an essential variable to assess in the analysis. Including Employee Growth ensures a more comprehensive evaluation of the firm's financial outcomes.

Additionally, the variable Year is included in order to show the importance of incorporating the temporal effects, ensuring that observed relationships are not influenced by broader economic trends. This is handled in the regression analysis by using panel data.

5.1.2 Scatter Plot analysis

The scatter plot analysis visually examines the relationships identified in the correlation matrices, providing a clearer understanding of how female representation among partners is associated with key financial metrics. Each scatter plot includes a regression line and R-squared value, offering a quantitative measure of the relationship's strength and direction.

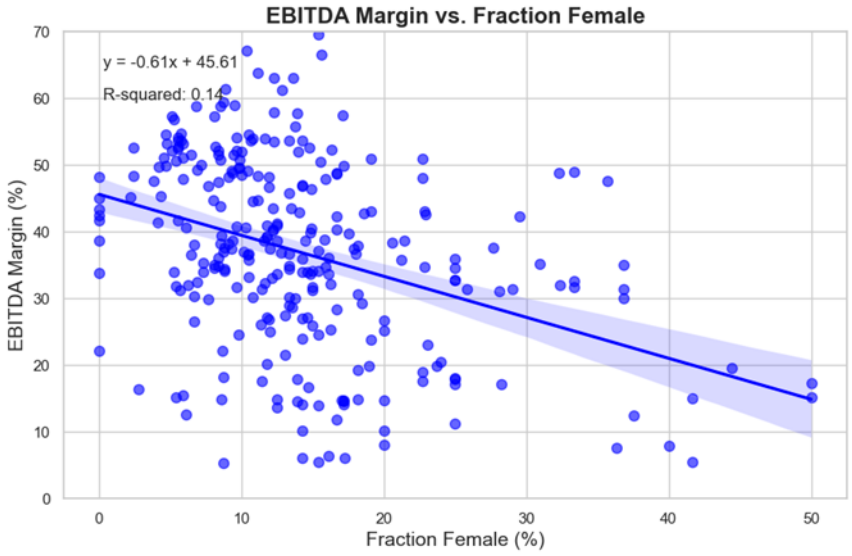

Figure 5.3: *Scatter Plot: EBITDA Margin vs. Fraction Female*

Figure 5.3 illustrates a scatter plot of EBITDA Margin against Fraction Female, revealing a clear negative trend with a regression slope of -0.61 and an R-squared value of 0.14. This finding aligns with the earlier correlation analysis, indicating that higher female representation is associated with lower profitability margins. Despite the modest R-squared value, which suggests that Fraction Female accounts for only a limited proportion of the variance in

EBITDA Margin, the distribution of data points highlights an interesting relationship that is worth analysing further.

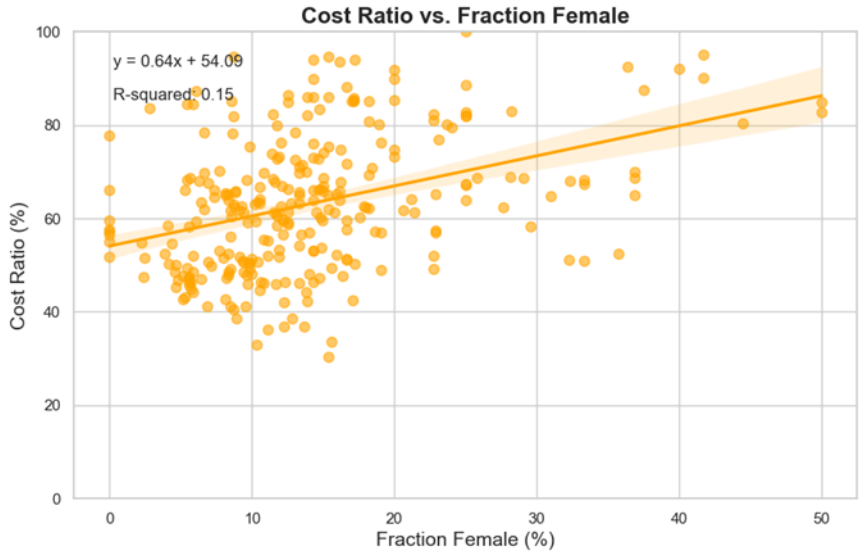

Figure 5.4: *Scatter Plot: Cost Ratio vs. Fraction Female*

Figure 5.4 depicts a scatter plot of Cost Ratio against Fraction Female, highlighting a positive relationship with a regression slope of 0.64 and an R-squared value of 0.15. This suggests that firms with a higher proportion of female partners tend to have higher cost ratios. While the moderate R-squared value indicates that female representation contributes to explaining cost variations, additional analysis is necessary to uncover the underlying mechanisms driving this relationship.

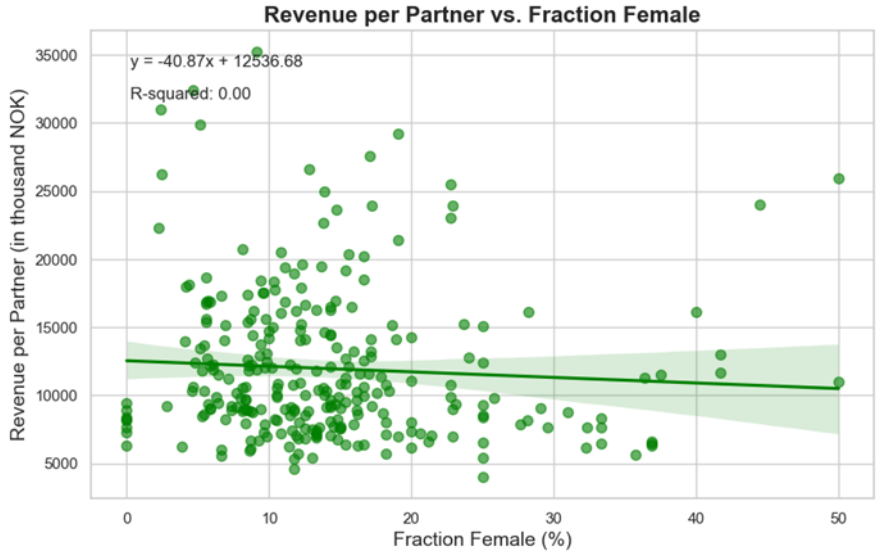

Figure 5.5: *Scatter Plot: Revenue per Partner vs. Fraction Female*

Finally, Figure 5.5 displays a scatter plot of Revenue per Partner against Fraction Female, showing a weak and negligible negative relationship with a regression slope of -40.87 and an R-squared value of 0.00. This suggests that female representation among partners has no meaningful impact on revenue efficiency, as evidenced by the lack of a discernible trend in the data points. The absence of a strong association implies that revenue generation is likely driven by factors other than gender diversity.

5.1.3 Scatter Plot Lagged Effects

To explore whether the impact of female representation on financial performance is affected by time delays, we introduce one- and two-year lags for the Fraction Female variable. This temporal analysis aims to identify whether the relationship between gender diversity and financial metrics become more pronounced or diminish over time.

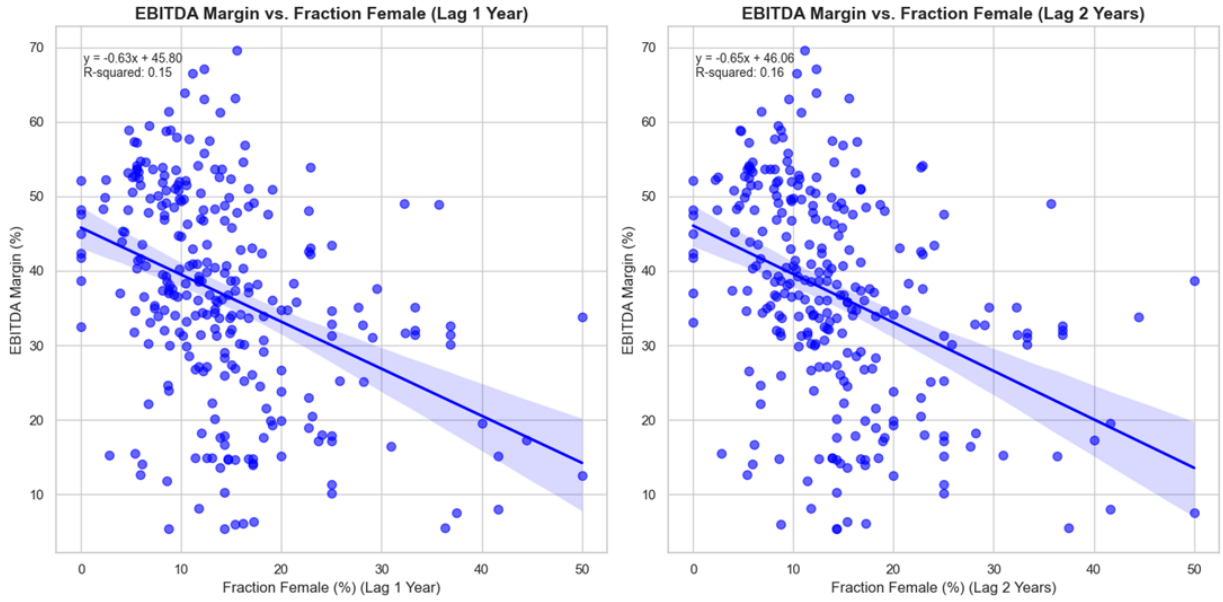

Figure 5.6: *Scatter Plot: EBITDA Margin vs Fraction Female Lagged*

Figure 5.6 presents lagged scatter plots for EBITDA Margin, showing a persistent negative trend. The R-squared values increase modestly to 0.15 for the one-year lag and 0.16 for the two-year lag, indicating a slight strengthening of the relationship over time. The steeper slope in the two-year lag suggests a potential intensification of the negative impact of female representation on profitability margins in the medium term. Despite the relatively low R-squared values, the graphs presents an interesting relationship that warrants further investigation.

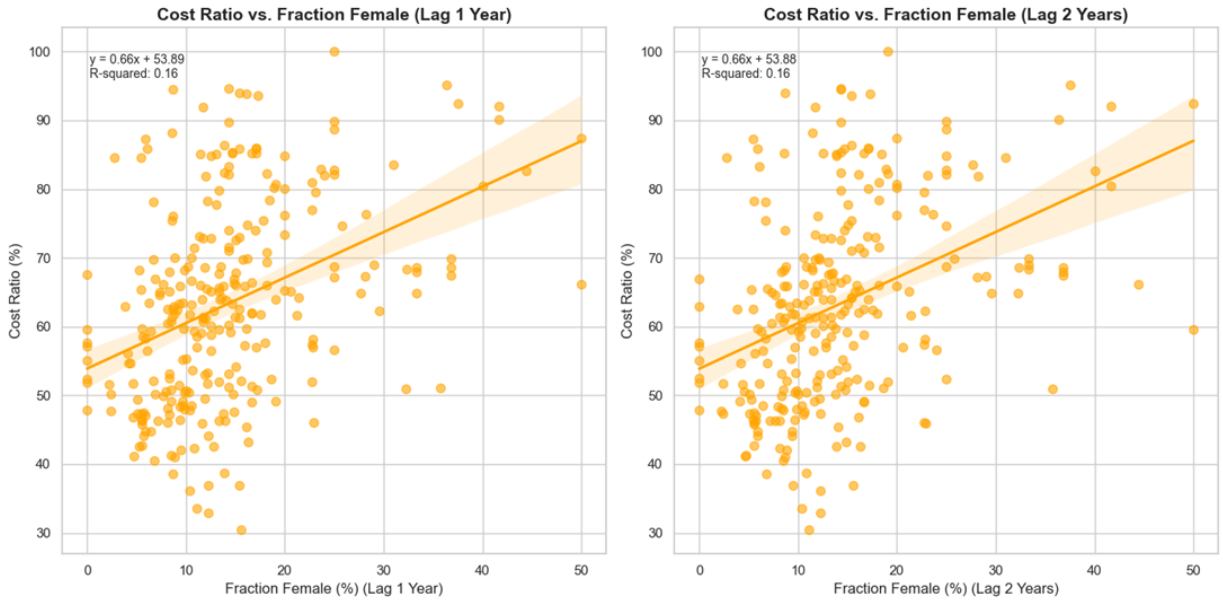

Figure 5.7: *Scatter Plot: Cost Ratio vs. Fraction Female Lagged*

Figure 5.7 shows scatter plots of Cost Ratio versus lagged Fraction Female, illustrating a consistent positive relationship with R-squared values remaining stable at 0.16 across both one-year and two-year lags. This stability suggests that higher female representation among partners is correlated to persistent changes in cost structures. The enduring nature of this relationship points to potential long-term organizational factors, such as strategic investments in diversity initiatives or variations in cost management practices.

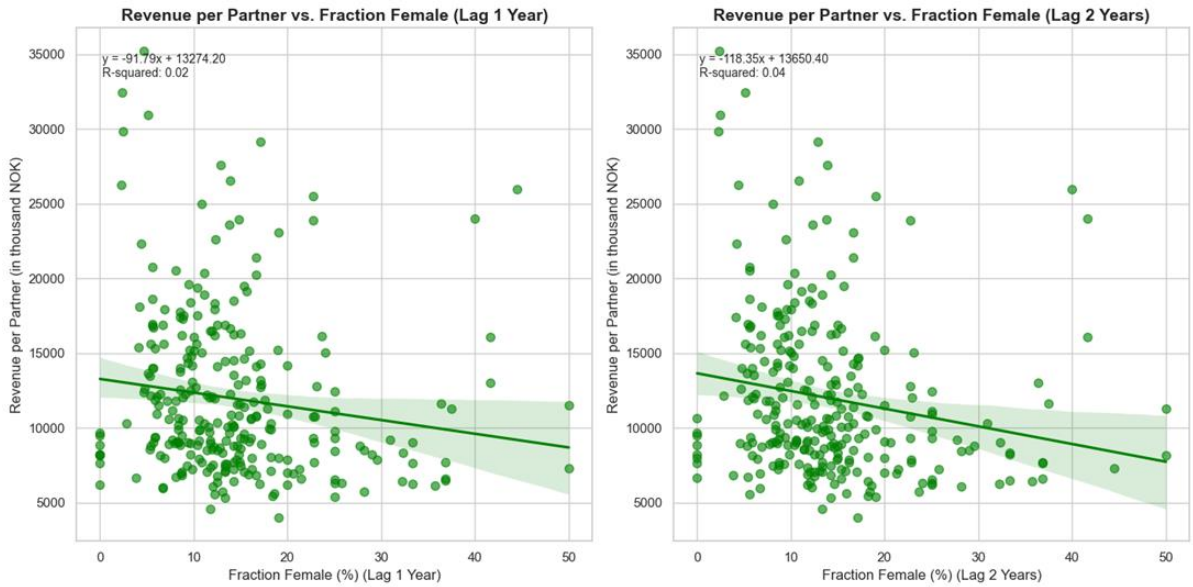

Figure 5.8: *Scatterplot: Revenue per Partner vs. Fraction Female Lagged*

Figure 5.8 displays lagged scatter plots for Revenue per Partner, showing minimal changes in the relationship, with R-squared values increasing slightly to 0.02 for the one-year lag and 0.04 for the two-year lag. These results reinforce the earlier finding that female representation among partners seems to have no significant relationship with revenue efficiency, even when accounting for potential delayed effects. The negligible increase in explanatory power highlights the likelihood that revenue generation is not explained by gender diversity.

In summary, the lagged analysis reveals that while the negative impact of female representation on EBITDA Margin appears to grow modestly over time, the Cost Ratio effect remains stable and the relationship with Revenue per Partner remains consistently weak. These findings indicates the possibility of finding meaningful results using lagged effects, specifically relating to EBITDA Margin.

5.2 Regression Analysis

5.2.1 Objective of Regression Analysis

Building on the correlation and scatter plot analysis, the goal of the regression analysis is to thoroughly examine the relationship between female representation among partners and key financial metrics in law firms. By using panel data regression, we can control for both firm-specific and time-specific effects, allowing us to isolate the relationship of gender composition from other variables. This structured approach enables us to move from preliminary observations to a statistically controlled assessment of how gender diversity is correlated with financial outcomes.

The primary objectives of the regression analysis are:

- Model Temporal and Firm-Specific Effects: As outlined in the methodology in Section 4, we will use panel data regression to account for both time-fixed effects and entity-fixed effects (if the Hausman test confirms the fixed effects model as most suitable). This approach accounts for unchanging firm-specific factors and time-related external factors, ensuring that the observed relationships reflect changes in gender composition rather than external influences.

- Address Statistical Assumptions for Robust Results: Given the diagnostic framework outlined in the methodology (Section 4), this analysis will assess and address potential multicollinearity and heteroscedasticity. A Variance Inflation Factor (VIF) test will be used to detect multicollinearity among independent variables, ensuring that each variable's effect is distinct and interpretable. Additionally, a Breusch-Pagan test will be conducted to detect heteroscedasticity, and robust standard errors will be applied if necessary to produce reliable estimates.

- Quantify the Relationship between Gender Diversity and Financial Metrics: Through the regression models, we aim to quantify the relationship between the fraction of female partners and key financial outcomes, specifically EBITDA Margin, Cost Ratio, and Revenue per Partner. This quantification allows for a precise assessment of the strength and direction of the relationship, building a clearer understanding of how changes in gender diversity correlates with financial performance.

The regression analysis will provide a thorough view of the relationship of gender diversity with financial outcomes, offering a statistically controlled perspective that builds on the preliminary insights gained in Section 5.1. These results will inform the discussion in Section 6, contributing to an interpretation of the relationship between financial performance and gender diversity in law firms.

5.2.2 EBITDA-Margin Gender Diversity Model

5.2.2.1 Introduction

Since the goal of this thesis is to identify relationships between female partner representation and financial outcomes, a logical starting point is to evaluate whether there is a correlation between the fraction of female partners and EBITDA Margin.

To investigate the impact of female representation among partners on EBITDA Margin, we employ the panel data regression approach as outlined in the methodology Section 4. To identify the most suitable model for our dataset, we estimate the regression using both fixed effects and random effects methods. This enables us to apply a Hausman test to formally determine which model is more appropriate for capturing the relationship between female partner representation and EBITDA Margin in our panel data.

As presented in the Section 5.1, for our models we have chosen to use Employees, Partner Total and Employee Growth as control variables, with Fraction Female serving as the primary independent variable, as it is the key factor to answer our research question.

5.2.2.2 Model Presentation

Fixed effects model:

$$EBITDA\ Margin_{\mathrm{it}} = \alpha_{\mathrm{i}} + \lambda_{\mathrm{t}} + \beta^1 \cdot Fraction\ Female_{\mathrm{it}} + \beta^2 \cdot Employees_{\mathrm{it}} + \beta^3 \cdot Partner\ Total_{\mathrm{it}} + \beta^4 \cdot Employee\ Growth_{\mathrm{it}} + \epsilon_{it}$$

Random Effects:

$$EBITDA\ Margin_{\mathrm{it}} = \beta^1 \cdot Fraction\ Female_{\mathrm{it}} + \beta^2 \cdot Employees_{\mathrm{it}} + \beta^3 \cdot Partner\ Total_{\mathrm{it}} + \beta^4 \cdot Employee\ Growth_{\mathrm{it}} + u_i + \epsilon_{it}$$

Dependent variable:

- **EBITDA Margin$_{it}$**: The EBITDA margin for firm *i* in year *t*, representing the firms profitability.

Independent variables:

- **Fraction Female**: Percentage of female partners, our main variable of interest.
- **Employees:** Number of employees, excluding partners, to account for firm size together with partner Total.
- **Partner Total**: Total number of partners, to account for firm size together with Employees.
- **Employee Growth**: Growth rate of employees, capturing firm expansion over time.

Fixed Effects (For the fixed effects model):

- **Firm-Specific Effects (α_i):** This captures the unique, time-invariant characteristics of each firm, such as management style or long-standing reputation.
- **Time Effect (λ_t):** This accounts for yearly changes that affect all firms similarly, like economic cycles and industry trends.

Random Effects (For the random effects model):

- **Entity-Specific shock (u_i):** This is a random variable unique to each firm, representing entity-specific characteristics. The Random Effects model assumes that this entity-specific effect is uncorrelated with the independent variables, allowing for greater efficiency by using both within- and between-entity variation.

Error Term:

- **ϵ_{it}:** Indicates the error term which is the unexplained variation in EBITDA margin. The error term is assumed to have constant variance, meaning that it is homoscedastic.

5.2.2.3 Model results

Fixed Effects Model

R-Squared: 0.0949

F-statistics: 3.7045

P-value: 0.0060

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Intercept	39.114	2.5364	15.421	0.0000	34.118	44.110
Fraction Female	-0.2024	0.0905	-2.237	0.0262	-0.3805	-0.0242
Employees	-0.0400	0.0198	-2.013	0.0452	-0.0791	-0.0009
Partner Total	0.1457	0.0626	2.328	0.0207	0.0224	0.2690
Employee Growth	0.0648	0.0328	1.973	0.0496	0.0001	0.1295

Table 5.1: *Fixed Effects EBITDA Margin Model*

The model results presented in table 5.1 indicate that while the regression is statistically significant overall with a P-value of 0.0060, it explains a relatively small amount of the variation in EBITDA Margin. The R-squared value of 0.0949 suggests limited predictive power, as the model only explains 9.5 % of the EBITDA Margin variation.

Regarding the significant coefficients, a 1% increase in the fraction of female partners is associated with a 0.2024 percentage point decrease in EBITDA Margin, with a P-value of 0.0262, suggesting a potential negative impact of gender diversity on profitability in this context.

Random Effects Model

R-Squared: 0.1919

F-statistics: 4.2383

P-value: 0.0024

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Intercept	30.472	3.2375	9.4121	0.0000	24.099	36.846
Fraction Female	-0.1275	0.0851	-1.4981	0.1353	-0.2951	0.0401
Employees	0.0068	0.0179	0.3794	0.7047	-0.0285	0.0421
Partner Total	0.1987	0.0650	3.0572	0.0025	0.0708	0.3267
Employee Growth	0.0473	0.0343	1.3797	0.1688	-0.0202	0.1147

Table 5.2: *Random Effects EBITDA Margin Model*

The results from the random effects model presented in table 5.2 is statistically significant overall, with a P-value of 0.0024. However, the R-squared of 0.1919 suggests modest explanatory power, indicating that the model accounts for around 19.2% of the variability in EBITDA Margin.

In terms of significant coefficients, the total number of partners (Partner Total) stands out, with each additional partner associated with a 0.1987 percentage point increase in EBITDA Margin (P-value = 0.0025). This suggests a positive relationship between the number of partners and profitability. However, the fraction of female partners and other control variables

(Employees and Employee Growth) are not statistically significant in this model, indicating limited evidence of their influence on EBITDA Margin in the random effects framework.

5.2.3 Hausman Test

To determine whether a fixed effects or random effects model is most suitable for our analysis, it is essential to assess whether there is a correlation between the individual firm-specific effects, such as management style, organizational structure and reputation, and the independent variables. The Hausman test serves this purpose by testing the null hypothesis that the firm's individual effects are uncorrelated with the regressors. If the test indicates that there is correlation (by rejecting the null hypothesis), then the fixed effects model is more appropriate. On the other hand, if the test does not find significant correlation, then the random effects model is preferred, as it yields more efficient estimators.

The formula used for the test is the following (Greene, 2012, ss. p. 274-275):

$$H = (b_{RE} - b_{FE})^T (Var(b_{FE}) - Var(b_{RE})^{\dagger} (b_{RE} - b_{FE})$$

- **H:** The Hausman test statistic, which follows a chi-squared distribution under the null hypothesis. It tests whether there is a systematic difference between the fixed effects and random effects estimators for the coefficients.
- $\boldsymbol{b_{RE}}$**:** Represents the vector of estimated coefficients from the random effects model.
- $\boldsymbol{b_{FE}}$: Represents the vector of estimated coefficients from the fixed effects model.
- T indicates the transpose, while † indicates the Moore–Penrose inverse.

Under the null hypothesis, this statistic approximates a chi-squared distribution, with the degrees of freedom being the number of potentially endogenous variables in the regression (Chmelarova, 2006, s. p. 10), which in our model would be all regressors.

$$\text{pvalue} = 1 - F_{x^2}(H, df)$$

Our results from the Hausman test were the following:
Hausman test statistic: 30.00571935729018
P-value: 1.471040051004291e-05

The results of the Hausman test yielded a test statistic of 30.01 with a P-value of 0.0000147. This low P-value indicates that we reject the null hypothesis, suggesting a correlation between

the individual firm-specific effects and the independent variables. Consequently, the fixed effects model is more appropriate for our analysis, as it provides consistent estimates in the presence of this correlation. Therefore, for the remaining regressions in this analysis, we will proceed with the fixed effects model to ensure the reliability of our findings.

5.2.4 Variance Inflation Factor diagnostic for Multicollinearity

The Variance Inflation Factor (VIF) diagnostic is applied in this section to assess potential multicollinearity among the independent variables in our regression model. High multicollinearity can distort the estimated effects of each predictor, potentially leading to unreliable inferences about the relationship between gender diversity and financial performance. By calculating the VIF for each variable, we can identify whether any predictors are excessively correlated with others (J.M, 2016, ss. p. 85-86). In this analysis, we set a strict threshold of 5 for the VIF, meaning that any variable with a VIF above this cap will require corrective action to ensure model robustness.

The VIF test for multicollinearity is based on the following formula (J.M, 2016, s. p. 86):

$$VIF_j = \frac{1}{1 - R_j^2}$$

- VIF_j: The Variance Inflation Factor for the *j*-th predictor variable.
- R_j^2: The R^2 value obtained from regressing the *j*-th predictor on all other predictor variables.

The result from our test was the following:

VIF Factor	features
1.089618	fraction_female
1.910943	employees_no_partner
1.946133	partner_total
1.052606	employee_growth

Table 5.3: *VIF Results*

The VIF results presented in table 5.3 indicate that multicollinearity is not a concern in this model, as all VIF values are well below the standard threshold of 5. These low values suggest that each independent variable is sufficiently independent of the others, ensuring reliable coefficient estimates in the regression analysis.

5.2.5 Graphical and Breusch-Pagan Test for Heteroscedasticity

In this section, we evaluate the assumption of homoscedasticity in our fixed effects model, which is the assumption that the variance of the residuals remains constant across different levels of fitted values. Heteroscedasticity, where residual variance changes with the level of the independent variables, can lead to inefficient estimators and biased inference if not properly addressed (Section 4.3.2). We apply both graphical inspection and a formal test to assess heteroskedasticity.

Graphical Analysis

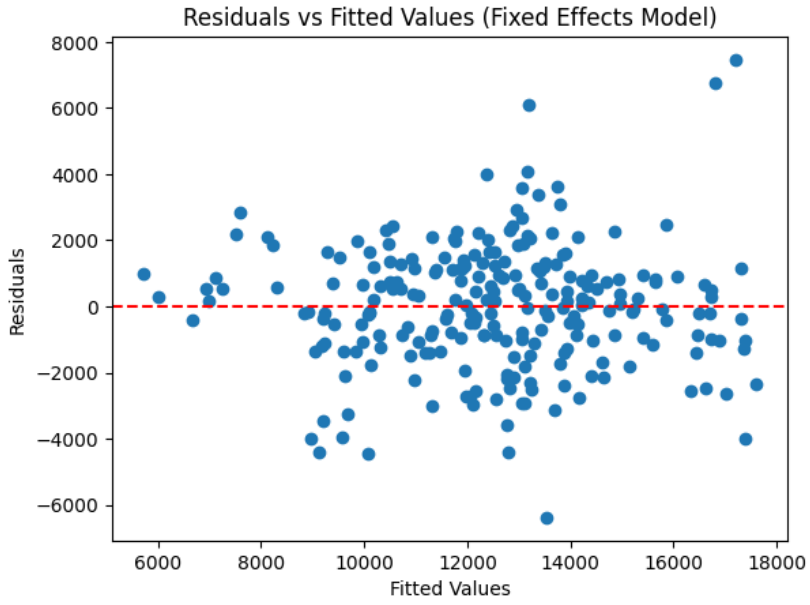

Figure 5.9: *Residual vs. Fitted Values EBITDA Margin model*

The scatter plot presented in Figure 5.9 shows the residuals plotted against the fitted values of the fixed effects model. In an ideal scenario without heteroscedasticity, we would expect the residuals to be randomly scattered around zero with no clear pattern or structure. However, in this plot, we observe indications of an increase of residual variance as the fitted values increase, suggesting potential heteroscedasticity. This visual pattern hints at a possible violation of the homoscedasticity assumption, motivating the need for a formal test.

Breusch-Pagan Test

The Breusch-Pagan test is a formal statistical method to assess heteroscedasticity in regression models, specifically testing whether the variance of the residuals depends on the independent variables. The test works under the null hypothesis that residual variance is homoscedastic across all observations. A rejection of this null hypothesis suggests heteroscedasticity, where the variance changes systematically with the predictors.

The test statistic for the Breusch-Pagan test is calculated as follows (J.M, 2016, ss. p. 248-251):

$$BP = nR^2$$

- **BP:** Breusch-Pagan test statistic, which approximately follows a chi-squared distribution under the null hypothesis.
- **n:** The number of observations in the model.
- $\boldsymbol{R^2}$**:** The coefficient of determination from an auxiliary regression. This is obtained by running a new regression where we take the squared residuals from the main regression and treat them as the dependent variable. We then regress these squared residuals on the independent variables from the main model.

The auxiliary regression is based on the model (J.M, 2016, s. p. 251):

$$\hat{u}^2 = \gamma_0 + \gamma X + v$$

Where:

- $\hat{u}^2$**:** The squared residuals from the main model, representing the estimated variance for each observation.
- **X:** The matrix of independent variables.
- $\boldsymbol{\gamma_0}$**:** The constant term in the auxiliary regression.
- $\boldsymbol{\gamma}$: The vector of coefficients estimated for the independent variables in X
- $\boldsymbol{v}$**:** The error term for this auxiliary model.

Under the null hypothesis of homoscedasticity, the test statistic BP follows a chi-squared distribution with degrees of freedom equal to the number of predictors.

Our results from the Breusch-Pagan test were the following:

Breusch-Pagan test statistic: 18.359030805398447
Breusch-Pagan test P-value: 0.0010498184908759342

The results of the Breusch-Pagan test confirm the presence of heteroscedasticity in our model, with a test statistic of 18.36 and a P-value of 0.001. Since this P-value is below our significance threshold, we reject the null hypothesis of homoscedasticity, indicating that the residual variance varies with the independent variables. Consistent with the methodology outlined in Section 4.3.2, we will apply robust standard errors in the regression analysis to account for this heteroscedasticity. This approach ensures that our coefficient estimates and standard errors remain accurate, improving the reliability of our results.

5.2.6 Correction of the EBITDA-Margin Gender Diversity Model

We will now present the corrected regression model based on the diagnostic tests performed. The Hausman test indicated that the fixed effects model was more appropriate than the random effects model, suggesting that firm-specific characteristics are correlated with the independent variables. Additionally, the Breusch-Pagan test detected heteroscedasticity, meaning the variance of the residuals was not constant. To address this, we apply robust standard errors to our fixed effects model, which allows for valid statistical inference despite the presence of heteroscedasticity. This corrected model ensures more reliable and accurate estimates of the relationship between gender diversity and financial performance.

In the corrected model, we retain the structure of the original model but relax the assumption of constant error variance, allowing the error term's variance to vary across observations. This change, achieved by applying robust standard errors, addresses heteroscedasticity, making our coefficient estimates more reliable by accounting for potential differences in variance across observations. The new model will retain the original form:

$$
\begin{aligned}
&EBITDA\ Margin_{\mathrm{it}} = \alpha_{\mathrm{i}} + \lambda_{\mathrm{t}} + \beta^{1} \cdot Fraction\ Female_{\mathrm{it}} \\
&+\beta^{2} \cdot Employees_{\mathrm{it}} \\
&+\beta^{3} \cdot Partner\ Total_{\mathrm{it}} \\
&+\beta^{4} \cdot Employee\ Growth_{\mathrm{it}} + \boldsymbol{\epsilon_{it}}
\end{aligned}
$$

Though in the previous model the variance of the error term had the properties of $\text{Var}(\epsilon_{it}) = \sigma^2$, but in the corrected model, the property is given as $\text{Var}(\epsilon_{it}) = \sigma_{it}^2$, allowing the variance of the error term to vary with entities and time. Thus, the variance of the error term will no longer be constant. This improved model gives the following result:

R-Squared: 0.0949
F-statistics: 3.4759
P-value: 0.0088

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Intercept	39.114	2.3576	16.591	0.0000	34.470	43.758
Fraction Female	-0.2024	0.1057	-1.9139	0.0568	-0.4106	0.0059
Employees	-0.0400	0.0183	-2.1781	0.0304	-0.0761	-0.0038
Partner Total	0.1457	0.0471	3.0965	0.0022	0.0530	0.2384
Employee Growth	0.0648	0.0437	1.4842	0.1391	-0.0212	0.1508

Table 5.4: *EBITDA Margin Gender Diversity Model*

The results from the adjusted model with robust standard errors presented in table 5.4 shows a lower overall R-squared value of 0.0949, down from 0.1919, indicating that the model now explains only about 9.5% of the variability in EBITDA Margin. Additionally, the F-statistic has decreased slightly from 3.7045 to 3.4759, with a new P-value of 0.0088. Despite these adjustments, the model remains statistically significant, suggesting that while robust standard errors provide a more conservative estimate of significance, the relationships in the model still hold.

Applying robust standard errors has introduced changes in the standard errors and P-values of individual coefficients, which alters our interpretation of the independent variables. A 1% increase in the fraction of female partners still corresponds to a 0.2024 percentage point decrease in EBITDA Margin, but its P-value has shifted from 0.0262 to 0.0568, making this coefficient marginally fall outside of the 5% statistically significant threshold. This suggests that the previously observed negative association between gender diversity and profitability is less definitive once heteroscedasticity is accounted for.

5.2.7 Revenue per Partner Gender Diversity Model

5.2.7.1 Introduction

Following the indications from the previous analysis of EBITDA Margin, which suggested a negative relationship just outside the significant level between the fraction of female partners and profitability, this section shifts the focus to Revenue per Partner. EBITDA Margin is influenced by both revenue generation and cost management, making it essential to examine these components separately to better understand the observed relationship. By analysing Revenue per Partner, we aim to determine whether the potential impact on profitability is driven by changes in revenue. Revenue per Partner serves as a key financial indicator, offering insights into the firm's ability to generate revenue on a per-partner basis and capturing variations that may arise from differences in partner composition.

To investigate the relationship of gender diversity among partners on Revenue per Partner, we will perform a panel data regression analysis similar to the one conducted Section 5.2.6, but with Revenue per Partner as the dependent variable. As in the earlier analysis, Fraction Female remains the primary variable of interest, while Employees, Partner Total, and Employee Growth are included as control variables. These variables help account for differences in firm size and growth, ensuring that the observed relationship with Revenue per Partner can be more confidently linked to variations in female representation among partners.

The Hausman test and heteroscedasticity tests yields the same results for this regression as in the previous analysis performed in Section 5.2.3 and 5.2.5. Therefore, we will proceed with the fixed effects model, incorporating robust standard errors to address heteroscedasticity. Also, since none of the independent variables has been changed, it is not necessary to repeat the VIF test for multicollinearity as it will yield identical results as in Section 5.2.4.

5.2.7.2 Model Presentation

$$Revenue\ per\ Partner_{\mathrm{it}} = \alpha_{\mathrm{i}} + \lambda_{\mathrm{t}} + \beta^{1} \cdot Fraction\ Female_{\mathrm{it}}$$
$$+\beta^{2} \cdot Employees_{\mathrm{it}}$$
$$+\beta^{3} \cdot Partner\ Total_{\mathrm{it}}$$
$$+\beta^{4} \cdot Employee\ Growth_{\mathrm{it}} + \epsilon_{it}$$

The model follows the same structure as presented in Section 5.2.6, with the only modification being the dependent variable, which is now Revenue per Partner instead of EBITDA Margin. The result from the model is the following:

Fixed Effects Model

R-Squared: 0.1924

F-statistics: 56.283

P-value: 0.0000

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Intercept	15,370.00	1,185.90	12.959	0.0000	13,030.00	17,700.00
Fraction Female	19.567	32.557	0.601	0.5484	-44.563	83.697
Employees	53.906	6.931	7.777	0.0000	40.254	67.559
Partner Total	-280.93	31.207	-9.002	0.0000	-342.40	-219.46
Employee Growth	-13.500	12.774	-1.057	0.2916	-38.663	11.662

Table 5.5: *Revenue per Partner Gender Diversity Model*

The results from the regression model analysing Revenue per Partner as presented in table 5.5, explains 19.2% of the variability in the dependent variable, as indicated by the overall R-squared value of 0.1924. The F-statistic for the model is 56.283, with a P-value of 0.0000, confirming that the model as a whole is highly statistically significant.

Examining the individual coefficients, the fraction of female partners does not have a statistically significant effect on Revenue per Partner, with a coefficient of 19.567 and a P-value of 0.5484. This result suggests that variations in gender diversity is not correlated with changes in revenue generation on a per-partner basis in this context.

However, other variables in the model show significant relationships. For instance, the number of employees (excluding partners) has a positive and statistically significant effect, with a coefficient of 53.906. This indicates that for each additional employee, the Revenue per Partner increases by approximately 54 thousand NOK. Conversely, the total number of partners is negatively associated with Revenue per Partner with a coefficient of -280.93; for every additional partner, revenue per partner decreases by 281 thousand NOK, a finding that

is highly statistically significant. Employee growth, however, does not have a significant relationship with Revenue per Partner, as its P-value of 0.2916 falls well outside the threshold for significance.

5.2.8 Cost Ratio Gender Diversity Model

5.2.8.1 Introduction

The model follows the same structure as presented in Section 5.2.6, with the only modification being the dependent variable, which is now Cost Ratio. The Cost Ratio metric is critical in understanding the efficiency of a firm, as it reflects the proportion of total costs relative to revenue. By analysing this metric, we aim to identify whether the observed effects of gender diversity among partners are linked to cost management within the firms.

Since none of the independent variables have been altered, the Variance Inflation Factor (VIF) test for multicollinearity is not repeated, as it would yield identical results as in Section 5.2.4, showcasing that multicollinearity in not an issue. Additionally, the Hausman and Breusch-Pagan tests as performed in Section 5.2.3 and 5.2.5, yielded the same outcomes as the earlier models, confirming the appropriateness of the fixed effects model with robust standard errors for this analysis.

5.2.8.2 Model Presentation

$$Cost\ Ratio_{it} = \alpha_{\mathrm{i}} + \lambda_{\mathrm{t}} + \beta^1 \cdot Fraction\ Female_{\mathrm{it}} + \beta^2 \cdot Employees_{\mathrm{it}} + \beta^3 \cdot Partner\ Total_{\mathrm{it}} + \beta^4 \cdot Employee\ Growth_{\mathrm{it}} + \epsilon_{it}$$

The result from the model is the following:

Fixed Effects model
R-Squared: 0.0987
F-statistics: 2.0124
P-value: 0.0934

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Intercept	61.872	2.2333	27.704	0.0000	57.473	66.271

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Fraction Female	0.1657	0.1073	1.5448	0.1237	-0.0456	0.3770
Employees	0.0274	0.0174	1.5748	0.1166	-0.0069	0.0616
Partner Total	-0.1196	0.0474	-2.5229	0.0123	-0.2130	-0.0262
Employee Growth	-0.0071	0.0387	-0.1842	0.8540	-0.0834	0.0691

Table 5.6: *Cost Ratio Gender Diversity Model*

The regression model results presented in table 5.6 shows limited explanatory power, with an overall R-squared value of 0.0987 and an F-statistic of 2.0124 (P-value = 0.0934), suggesting the model as a whole is not statistically significant. Notably, the primary variable of interest, the fraction of female partners, is not significant (coefficient = 0.1657, P-value = 0.1237), indicating no clear relationship between gender diversity and the Cost Ratio. Among the independent variables, only the total number of partners is statistically significant (coefficient = -0.1196, P-value = 0.0123), implying that increases in partner count are associated with modest improvements in cost efficiency. Given these results, this analysis suggests that the Cost Ratio is not meaningfully correlated with the fraction of female partners.

5.2.9 Lagged Effect Models

5.2.9.1 Introduction

In the previous analyses performed in Section 5.2.6, 5.2.7, and 5.2.8, the fraction of female partners did not exhibit statistically significant relationships with key financial metrics such as EBITDA Margin, Revenue per Partner, and Cost Ratio. One possible explanation for this lack of significance is that the relationship between gender diversity and financial performance may take time to materialize, manifesting only after a lag. For example, changes in partner composition might influence firm culture, productivity, or market perception gradually rather than immediately.

To explore this possibility, this section investigates whether the fraction of female partners has a lagged relationship with the financial performance metrics. Specifically, we re-estimate the panel data regression models for EBITDA Margin, Revenue per Partner, and Cost Ratio, incorporating both one-year and two-year lags of the fraction of female partners. By doing so,

we aim to uncover any delayed relationships between gender diversity and profitability, revenue generation, and cost efficiency.

This analysis will follow the same methodological framework as in Section 5.2.6, 5.2.7, and 5.2.8, utilizing robust fixed effects models for consistency.

5.2.9.2 Model Presentation

Lag Model:

$$Financial\ Metric_{i,t} = \alpha_i + \lambda_t + \beta^1 \cdot Fraction\ Female_{i,t-y} + \beta^2 \cdot Employees_{i,t-y} + \beta^3 \cdot Partner\ Total_{i,t-y} + \beta^4 \cdot Employee\ Growth_{i,t-1} + \epsilon_{it}$$

Where:

- **y:** Represents the number of years of lag applied to the independent variables, allowing us to model delayed effects.
- **Financial Metric:** Refers to the specific financial metric under investigation (EBITDA Margin, Revenue per Partner, Cost Ratio).

5.2.9.3 EBITDA-Margin with Lag

1-Year Lag Model
R-Squared: 0.1058
F-statistics: 1.8031
P-value: 0.1292

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Intercept	39.210	2.3203	16.899	0.0000	34.638	43.783
Fraction Female	-0.2086	0.1071	-1.9483	0.0526	-0.4195	0.0024
Employees	-0.0146	0.0196	-0.7460	0.4565	-0.0532	0.0240
Partner Total	0.0652	0.0527	1.2379	0.2170	-0.0386	0.1691
Employee Growth	0.0291	0.0322	0.9042	0.3669	-0.0343	0.0925

Table 5.7: *EBITDA Margin Gender Diversity 1-Year Lag Model*

2-Year Lag Model
R-Squared: 0.0862
F-statistics: 3.3667
P-value: 0.0108

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Intercept	40.731	2.3083	17.645	0.0000	36.179	45.282
Fraction Female	-0.2280	0.1115	-2.0452	0.0421	-0.4477	-0.0082
Employees	-0.0005	0.0189	-0.0270	0.9785	-0.0377	0.0367
Partner Total	-0.0160	0.0596	-0.2693	0.7879	-0.1335	0.1014
Employee Growth	0.0424	0.0344	1.2338	0.2187	-0.0254	0.1103

Table 5.8: *EBITDA Margin Gender Diversity 2-Year Lag Model*

The results of the 1-year lagged fixed effects model as presented in table 5.7, reveal that approximately 10.6% of the variation in EBITDA Margin is explained by the independent variables, as indicated by an R-squared value of 0.1058. However, the model as a whole is not statistically significant, with an F-statistic of 1.8031 and a P-value of 0.1292. Among the independent variables, Fraction Female exhibits a coefficient of -0.2086, suggesting a negative relationship with EBITDA Margin. While this result has a P-value of 0.0526, it is marginally outside the 5% significance threshold. Other variables, such as Employees, Partner Total, and Employee Growth, show no statistically significant relationships, as their respective P-values are well above conventional thresholds. These findings suggest limited evidence of a relationship between gender diversity and EBITDA Margin in the short term.

In contrast, the results of the 2-year lagged model presented in table 5.8, demonstrate greater statistical significance. While the overall explanatory power of the model is slightly lower, with an R-squared value of 0.0862, the F-statistic of 3.3667 and a P-value of 0.0108 indicate that the model is statistically significant. The key finding is the coefficient for Fraction Female, which strengthens to -0.2280 and becomes statistically significant with a P-value of 0.0421. This indicates that each percentage point increase in female representation is correlated with a 0.228 percentage point decrease in EBITDA Margin two years later. This result suggests a negative relationship between female representation and EBITDA Margin that grows stronger

over time. However, other independent variables, including Employees, Partner Total, and Employee Growth, remain statistically insignificant, with P-values far above the 5% threshold.

In summary, the 1-year lag model provided similar results as the non-lag model. They both resulted in a coefficient of around -0.20 and with a P-value just shy of the statistically significant level of 0.05. In the 2-year lag model, however, the negative correlation between Fraction Female increased to -0.2280 with a P-value in the significant level of 0.0421.

5.2.9.4 Revenue Per Partner with Lag

1-Year Lag Model
R-Squared: 0.0033
F-statistics: 14.359
P-value: 0.0000

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Intercept	16,430	1285.1	12.784	0.0000	13,900	18,960
Fraction Female	23.175	34.722	0.8114	0.4180	-40.249	96.599
Employees	35.476	7.6700	4.6253	0.0000	20.362	50.591
Partner Total	-246.44	34.878	-7.0659	0.0000	-315.17	-177.71
Employee Growth	2.9064	13.498	0.2153	0.8297	-23.692	29.505

Table 5.9: *Revenue per Partner Gender Diversity 1-Year Lag Model*

2-Year Lag Model
R-Squared: -0.2078
F-statistics: 12.033
P-value: 0.0000

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Intercept	17,880	1242.2	14.396	0.0000	15,430	20,330
Fraction Female	11.068	38.763	0.2855	0.7755	-65.358	87.494
Employees	15.850	8.0455	1.9700	0.0502	-0.0127	31.712

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Partner Total	-207.48	30.842	-6.7270	0.0000	-268.29	-146.67
Employee Growth	-7.9561	15.876	-0.5011	0.6168	-39.258	23.346

Table 5.10: *Revenue per Partner Gender Diversity 2-Year Lag Model*

The analysis of revenue per partner with lagged effects did not yield meaningful insights. Both the 1-year and 2-year lag models presented in table 5.9 and 5.10, exhibited very low R-squared values (0.0033 and -0.0230 respectively), indicating that the models explained little to none of the variation in the dependent variable. Furthermore, the P-values for the key independent variable, Fraction Female, were in both cases well above the significant level (0.4180 and 0.7755 respectively) suggesting no statistically significant relationship between female representation among partners and revenue per partner when considering lagged effects. As such, the lagged models do not provide evidence of a correlation between gender diversity and Revenue per Partner.

5.2.9.5 Cost Ratio with Lag

1-Year Lag Model
R-Squared: 0.0683
F-statistics: 1.7653
P-value: 0.1368

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Intercept	60.714	2.3217	26.151	0.0000	56.139	65.289
Fraction Female	0.1648	0.1082	1.5236	0.1290	-0.0484	0.3779
Employees	0.0151	0.0201	0.7520	0.4529	-0.0245	0.0548
Partner Total	-0.0430	0.0545	-0.7891	0.4309	-0.1504	0.0644
Employee Growth	-0.0532	0.0308	-1.7284	0.0853	-0.1139	0.0075

Table 5.11: *Cost Ratio Gender Diversity 1-Year Lag Model*

2-Year Lag Model
R-Squared: 0.0853
F-statistics: 3.4944
P-value: 0.0087

Variable	Estimate	Std. Error	T-Stat	P-value	95% CI (Lower)	95% CI (Upper)
Intercept	58.930	2.3582	24.990	0.0000	54.281	63.580
Fraction Female	0.2346	0.1114	2.1064	0.0364	0.0150	0.4542
Employees	0.0024	0.0191	0.1237	0.9016	-0.0354	0.0401
Partner Total	0.0163	0.0600	0.2718	0.7861	-0.1020	0.1346
Employee Growth	-0.0424	0.0350	-1.2098	0.2278	-0.1115	0.0267

Table 5.12: *Cost Ratio Gender Diversity 2-Year Lag Model*

The analysis of 1-year and 2-year lagged effects on the cost ratio provides mixed results. The results from the 1-year lagged model presented in table 5.11, shows limited explanatory power, with an R-squared value of 0.0683, indicating that only 6.8% of the variation in the cost ratio is explained by the independent variables. The model as a whole is not statistically significant, with a P-value of 0.1368. None of the independent variables, including Fraction Female, show statistically significant effects in the 1-year lagged model.

In contrast, the results from the 2-year lagged model as presented in table 5.12, demonstrates slightly higher explanatory power, with an R-squared value of 0.0853, and the overall model is statistically significant, with a P-value of 0.0087. Importantly, Fraction Female becomes statistically significant in this model, with a coefficient of 0.2346 and a P-value of 0.0364, indicating that a 1 percentage point increase in the fraction of female partners is associated with a 0.235 percentage point increase in the cost ratio two years later. However, other independent variables, including Employees, Partner Total, and Employee Growth, remain statistically insignificant across both lagged models.

In summary, while the 1-year lagged model provides limited insights, the 2-year lagged model suggests a potentially meaningful delayed correlation between gender diversity and cost efficiency, as indicated by the significant relationship between Fraction Female and Cost

Ratio. Nonetheless, the low R-squared values for both models highlight that much of the variation in the cost ratio remains unexplained, suggesting that additional factors influence this metric.

5.3 Analysis Summary

The following tables provide a concise summary of the analysis results for the three financial performance metrics: EBITDA Margin, Revenue per Partner, and Cost Ratio. Each model is presented with its original, 1-year lagged, and 2-year lagged variations, showcasing the key statistics such as the R-squared value, overall model P-value, the coefficient for Fraction Female, and its respective P-value.

EBITDA Margin Model

	Original	1-year lag	2-year lag
Model R squared	0.0949	0.1058	0.0862
Model P-value	0.0088	0.1292	0.0108
Fraction Female Coefficient	-0.2024	-0.2086	-0.2280
Fraction Female P-value	0.0568	0.0526	0.0108

Table 5.13: *EBITDA Margin Gender Diversity Model Summary*

Revenue per Partner Model

	Original	1-year lag	2-year lag
Model R squared	0.1924	0.0033	-0.2078
Model P-value	0.0000	0.0000	0.0000
Fraction Female Coefficient	19.567	28.175	11.068
Fraction Female P-value	0.5484	0.4180	0.7755

Table 5.14: *Revenue per Partner Gender Diversity Model Summary*

Cost Ratio Model

	Original	1-year lag	2-year lag
Model R squared	0.0987	0.0683	0.0853
Model P-value	0.0934	0.1368	0.0087
Fraction Female Coefficient	0.1657	0.1648	0.2346
Fraction Female P-value	0.1237	0.1290	0.0364

Table 5.15: *Cost Ratio Gender Diversity Model Summary*

6. Discussion

6.1 Introduction

The discussion section of this thesis examines the findings of the analysis in the context of the research question: *"Does gender diversity among partners in law firms impact the financial performance of the firm?"* This section integrates and evaluates the results from the three financial performance metrics, EBITDA Margin, Revenue per Partner, and Cost Ratio, and their respective lagged models to draw insights about the relationship between gender diversity and financial outcomes in law firms. While the initial goal for this thesis was to infer causality, no source of exogenous variation in the dataset was identified as discussed in Section 3.1.4, making conclusions regarding causality unfeasible. Consequently, the analysis focuses on examining the correlations between gender diversity and financial performance. The following discussion will therefore center on the correlation analysis presented in Section 5.

6.2 Summary of Key Findings

6.2.1 EBITDA Margin and Gender Diversity

The results of the analysis on EBITDA Margin, summarised in table 5.13, provides the most notable insights into the relationship between gender diversity among partners and financial performance. In the original model, the coefficient for Fraction Female is negative (-0.2024) but has a P-value of 0.0568, narrowly exceeding the conventional 5% significance threshold. This suggests that a 1% increase in Fraction Female is associated with a 0.2% decrease in EBITDA Margin, hinting at a potential modest decline in profitability. While this result is technically not considered statistically significant, it is important to recognize that the 5% threshold is an arbitrary standard commonly used in academic research. A P-value of 0.0568 is very close to this limit, and the difference between results just below 5% and just above 5% are often negligible in practical terms. Thus, while the result do not meet the strict significance cutoff, it still suggests a potential negative relationship between gender diversity and EBITDA Margin.

When lagged models were introduced, the 1-year lag model yielded a slightly stronger negative coefficient (-0.2086) and a P-value closer to significance (0.0526). This pattern

strengthens in the 2-year lag model, where the coefficient increases in magnitude to -0.2280 and becomes statistically significant (P-value = 0.0108). These results suggest that the relationship between gender diversity and profitability may be delayed, with higher female representation being correlated to lower EBITDA Margins after a two-year lag.

These findings highlight that while the correlation between partner-level gender diversity and EBITDA Margin does not consistently reach conventional levels of statistical significance, the results consistently point toward a potentially negative relationship. Although the initial model shows only a marginally insignificant result, subsequent lagged models increasingly indicate that greater female representation is linked with lower EBITDA Margins over time. This effect becomes more pronounced and statistically significant in the two-year lag model, suggesting a delayed relationship between gender diversity and profitability. In essence, the evidence hints that as the fraction of female partners grows, there may be a gradual, negative correlation with EBITDA Margin, emerging more clearly with longer time horizons.

6.2.2 Revenue per Partner and Gender Diversity

The analysis of Revenue per Partner, summarised in table 5.14, shows no evidence of a meaningful correlation with gender diversity among partners. In the original model, the coefficient for Fraction Female is positive (19.567) but statistically insignificant (P-value = 0.5484).

Lagged models provide little additional insight. The 1-year lag model has a negligible R-squared value (0.0033) and an insignificant coefficient for Fraction Female (28.175, P-value = 0.4180). The 2-year lag model performs even worse, with a negative R-squared (-0.2078) and similarly insignificant results for Fraction Female (11.068, P-value = 0.7755).

Overall, these findings suggest that gender diversity has no measurable correlation with Revenue per Partner, and the lagged models further highlight the lack of explanatory power for this metric.

6.2.3 Cost Ratio and Gender Diversity

The Cost Ratio model, summarised in table 5.15, provides limited evidence of a correlation between gender diversity and financial performance. In the original model, the coefficient for

Fraction Female is positive (0.1657), indicating a potential increase in cost ratio with higher female representation, though this result is not statistically significant (P-value = 0.1237).

The lagged models yield slightly different results. The 1-year lag model shows a nearly identical coefficient for Fraction Female (0.1648) with a P-value reduced to 0.1290, remaining statistically insignificant. However, the 2-year lag model reveals a stronger positive relationship, with the coefficient increasing to 0.2346 and achieving statistical significance (P-value = 0.0364). This suggests that higher female representation among partners may be correlated with an increase in cost ratio, but only after a delayed effect.

The Cost Ratio model provides modest evidence that partner-level gender diversity may be correlated with a firm's cost structure over time. In both the original and 1-year lag models, higher female representation is associated with increased costs, though the results are not statistically significant. However, by the 2-year lag, the relationship becomes stronger and statistically significant, implying that it may take longer for shifts in the gender composition of partners to manifest in the firm's cost ratio. While these findings hint at a delayed correlative effect, they remain modest.

6.3 Assessing the Reliability of the Quantitative Findings

This section explores potential inconsistencies and limitations in the regression results, emphasizing the need for cautious interpretation of the findings. While the analysis sheds light on the relationship between gender diversity among partners and financial performance, certain issues raise questions about the robustness of the results.

6.3.1 Low R-squared Values

One limitation of the regression models lies in their low R-squared values, which indicate limited explanatory power. In both the EBITDA Margin and Cost Ratio models, where at least one statistically significant relationship was identified, the proportion of variance explained by the models is notably small. For instance, the highest R-squared value in the EBITDA Margin model was 10.58% (1-year lag), suggesting that the independent variables account for only a fraction of the variability in the dependent variable. Similarly, the Cost Ratio model's R-squared values never exceeded 10%, with the 2-year lag model, the only one yielding statistically significant results, explaining just 8.53% of the variation. While low R-squared

values do not invalidate the findings, they indicate that a significant portion of the variation in the dependent variables remains unexplained.

6.3.2 Irregular Progression of Lagged Effects

Another notable inconsistency lies in the progression of the coefficients for Fraction Female across the lagged models. If the delayed correlative effects of gender diversity were genuine, one might reasonably expect the coefficients to evolve more steadily across time lags. For example, the correlation between gender diversity and financial performance could be anticipated to gradually strengthen or weaken over successive time periods.

For the EBITDA Margin model, summarised in table 5.13, the coefficients consistently indicate a negative relationship, but their progression lacks a clear or gradual trend. In the original model, the coefficient is -0.2024, suggesting a modest negative relationship. This coefficient remains relatively stable in the 1-year lag model (-0.2086), showing only a marginal increase in magnitude. However, the 2-year lag model exhibits a sharper change, with the coefficient increasing to -0.2280.

A similar irregularity is evident in the Cost Ratio model as summarised in table 5.15. The coefficients for Fraction Female remain nearly identical between the original model and the 1-year lag model (0.1657 and 0.1648, respectively), showing almost no change. However, in the 2-year lag model, the coefficient increases more substantially to 0.2346. This sharp change challenges the expectation of a gradual progression in the correlative relationship between gender diversity and Cost Ratio.

These abrupt shifts in coefficients across the lagged models, particularly between the 1-year and 2-year lag models, cast doubt on the reliability of the observed relationships. If the delayed relationship with gender diversity were genuine as the 2-year model suggests, one might expect a more consistent or incremental progression in the coefficients over time. Instead, the irregularities may be caused by potential noise or model instability. However, the lack of statistical significance in the 1-year lag models may also contribute to these inconsistencies, as coefficients from statistically insignificant models are inherently less reliable and may not accurately reflect the true relationship. Though this could partially explain the irregularities, it still warrants careful interpretation of the findings.

6.4 Qualitative Discussion of the Results

Our analysis points to a mild negative correlation between the fraction of female partners and profitability, suggesting that higher levels of diversity may coincide with reduced financial performance in Norwegian law firms. This finding contrasts with much of the theoretical and empirical literature, which highlights the benefits of gender diversity. However, several contextual and structural factors may help explain this result.

One key factor is the impact of firm size on changes in diversity and profitability. Smaller law firms are more likely to experience significant percentage shifts in their fraction of female partners because of their smaller overall number of partners. Adding one or two female partners in these firms results in a more pronounced percentage increase in diversity compared to larger firms. Given that company size correlates positively with EBITDA Margin by 0.31 (Figure 5.2), meaning that larger firms in our sample tend to have greater profitability, this may explain part of the negative correlation observed.

Another explanation lies in the relatively recent entry of women into partnership roles. Women have only begun to achieve representation at the partner level in significant numbers over the past decade (see Figure 3.4). As a result, the average female partner may have less experience in the partnership role compared to her male counterparts, potentially influencing key areas such as client acquisition and strategic decision-making. These differences are not a reflection of capability but rather of the historical underrepresentation of women in partnership roles. Over time, as female partners gain experience comparable to that of their male counterparts, this effect is likely to diminish.

Differences in legal practice specializations also provide a potential explanation for the findings. The dataset does not account for the areas of law in which partners specialize, which can potentially influence firm profitability. Male partners may be more represented in firms specialized in high-margin practice areas, while female partners may be more concentrated in firms specializing in practices which are traditionally low-margin areas. This uneven distribution could partially account for the observed negative correlation between gender diversity and financial metrics.

The findings also align with aspects of Critical Mass Theory, which emphasizes the importance of achieving sufficient representation to drive meaningful organizational change.

As Section 2.3.3 highlighted, the literature suggests that achieving a critical mass of at least 30% female representation is necessary for women to effectively influence decision-making processes and reshape traditional norms. However, most firms in our dataset have not reached this threshold, with most observations showing a fraction of female partners below 30% (see figure 3.2). This may help explain the slight negative correlation observed between increased gender diversity and financial performance in our regression results. Without reaching critical mass, gender diversity efforts may fail to yield the systemic benefits predicted by the theory, such as improved financial performance and risk management.

The cultural and structural readiness of firms to embrace diversity may also play a critical role. While Zhang (2019) examined the financial benefits of diversity in the context of different countries, the findings may also hold true for different organisations. The study emphasised that the financial gains from increased gender diversity are dependent on the presence of inclusive cultures that strongly value diverse perspectives. In the absence of such a culture within the analysed law firms, resistance to change may arise, resulting in inefficiencies that could account for the observed negative correlation.

Lastly, the potential benefits of gender diversity are expected to unfold over the long term, as structural and cultural shifts required, which often take time to materialise. While our analysis employed lagged models with a maximum two-year lag to capture delayed effects, this timeframe may be insufficient to fully account for the long-term nature of these benefits.

6.5 Limitations

While this study provides insights into the correlation between gender diversity among partners and financial performance in Norwegian law firms, it is important to acknowledge several limitations that may influence the results.

One significant limitation is the size of the dataset. With only 280 observations, the sample size is relatively small for running regressions, which may affect the statistical power and reliability of the findings. We chose to limit the sample to the top 20 law firms in Norway to maintain comparability, as including smaller firms introduces greater variation in firm size and operational structure. For instance, the 25th largest law firm in Norway is significantly smaller than the top firm, making direct comparisons less meaningful. While this decision

ensures greater consistency, it reduces the overall dataset and limits the ability to explore broader industry trends.

The study also focuses on a time frame spanning from 2010 to 2023. Including more years could have increased the robustness of the findings, and allowed for the exploration of longer lagged effects, as benefits of gender diversity may take longer than two years to materialize. However, paywall constraints associated with acquiring annual reports prior to 2010 prevented us from extending the dataset.

Another limitation is the exclusion of potentially important control variables that could enhance the explanatory power of our models. For example, partner-level variables such as age, experience and specialization were not included in the analysis due to the difficulty of collecting this data. These factors are likely to influence profitability and operational performance, as certain practice areas typically generate higher revenues than others. Similarly, age and experience could provide additional insights into the observed relationships, as younger and less experienced partners may contribute differently to financial outcomes compared to more established counterparts.

7. Conclusion

This thesis set out to answer the research question: *Does gender diversity among partners in law firms impact the financial performance of the firm?* To explore this, the study examined the top 20 Norwegian law firms over the period 2010–2023, analysing the relationship between gender diversity and key financial performance indicators: EBITDA Margin, Revenue per Partner, and Cost Ratio.

One critical problem in addressing the research question lies in the inability to establish causality due to the lack of exogenous variation in the fraction of female partners. Without external events, such as policy mandates or natural experiments that independently influence gender diversity, isolating the causal effects of gender diversity on financial performance is not possible. As a result, while this study identifies correlations, these should not be interpreted as evidence of a direct causal relationship between gender diversity and financial performance. For this reason, we are unable to conclusively determine whether gender diversity among partners in law firms impacts the financial performance the firm.

Our findings regarding correlations between gender diversity and financial performance offer mixed results. For Revenue per Partner, our analysis showed no discernible correlation between the fraction of female partners and the revenue generated on a per-partner basis. For EBITDA Margin however, our findings indicate a subtle negative relationship that becomes more pronounced and statistically significant after a two-year lag, indicating that an increase in gender diversity is correlated with a slight decrease in profitability. For Cost Ratio, our analysis suggests that increased female representation among partners is associated with a higher Cost Ratio, but only after a two-year lag. Ultimately, these findings suggest that gender diversity among partners in law firms is associated with a slight negative correlation with the firm's financial performance.

The study faced several limitations with regards to the correlation analysis that should be acknowledged. First, the dataset was constrained to the top 20 law firms and had only 280 observations, which may have impacted the reliability of the results. Furthermore, the explanatory power of the regression models was limited, as reflected in low R-squared values, indicating that unobserved variables might significantly influence the financial performance of firms. Lastly, relying exclusively on quantitative methods meant that the study could not explore important qualitative aspects, such as how the internal culture of law firms or the

dynamics of leadership teams influence the relationship between gender diversity and financial performance.

Declaration on the use of AI tools in the work on this master's thesis

Name and version of the AI tool: ChatGPT-4o

Purpose of using the tool: ChatGPT has been used as a tool for brainstorming ideas, diagnostics of errors in the Python code and outlining the thesis' structure.

We are aware that we are responsible for all content of this master's thesis, including the parts where AI tools are used. We are responsible for ensuring that the thesis complies with ethical rules for privacy and publication.

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