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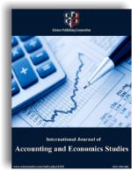

Market Competitive Strategy and Audit Firm Choice: Moderating Roles of TMT Diversity and Ownership Structure in Chinese Manufacturing Firms

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Abstract

This study examines how top management team (TMT) characteristics and strategic orientation influence the selection of Big 4 audit firms among listed manufacturing companies in Jiangsu, China. Drawing on Upper Echelons Theory, Strategic Fit Theory, and Agency Theory, the research investigates whether firms with offensive strategic orientations are more likely to engage Big 4 auditors, and how this relationship is moderated by TMT gender diversity and overseas experience. Using a panel dataset of 282 A-share manufacturing firms spanning 2012–2022 (yielding 1,905 firm-year observations), we apply logistic regression with interaction effects. Results show that offensive strategies significantly increase the likelihood of Big 4 auditor selection. Furthermore, the presence of female executives and internationally experienced managers strengthens this relationship, particularly within non-family firms. Interaction models demonstrate improved predictive accuracy (McFadden's $R^2 = 0.183$; classification accuracy = 72.3%). These findings provide theoretical contributions by linking behavioral governance with strategic signaling and offer practical insights for firms seeking legitimacy through audit firm choice in competitive environments.

Keywords: *Big 4 Auditors; Family Firms; Gender Diversity; International Experience; Jiangsu; Strategic Orientation; TMT Characteristics; Upper Echelons Theory.*

1. Introduction

In today's dynamic corporate landscape, audit firm selection has evolved beyond financial considerations or regulatory mandates (S. Chen & Yang, 2025). It now reflects the interplay between a firm's strategic positioning, governance structure, and the cognitive orientations of its top management. This shift has intensified academic interest in how organizational-level decisions—particularly those affecting audit quality—are shaped not only by structural factors but also by managerial demographics and experience (Power, 2021).

This study examines how market competitive strategy and top management team (TMT) characteristics jointly influence audit firm choice among Chinese A-share listed manufacturing firms, focusing on Jiangsu Province. Guided by Upper Echelons Theory (Hambrick & Mason, 1984), Agency Theory (Eisenhardt, 1989), and Strategic Fit Theory (Chorn, 1991), we explore how offensive versus defensive strategic postures interact with gender diversity and overseas experience within executive teams to predict auditor selection.

China's audit market provides a compelling setting for such inquiry. As the nation deepens its integration into global markets, demand for credible, high-quality audits has surged (Yin & Quazi, 2018; Zhu et al., 2024). Yet, audit quality remains uneven, and firms retain discretion in choosing between Big 4 and domestic auditors (Istianingsih, 2021). While prior research has focused mainly on supply-side factors—such as auditor size, specialization, or fees (Azizkhani et al., 2022; Guo et al., 2022; Yang et al., 2025)—the demand-side determinants of auditor choice from the client perspective remain underexplored. This gap is particularly salient in China's evolving institutional context, where firms' strategic orientations and governance attributes may drive distinct audit quality preferences.

Among these internal drivers, market competitive strategy is a theoretically rich yet under-investigated factor. Drawing on the typology of Miles et al. (1978), firms can be broadly categorized as offensive (prospectors) or defensive (defenders). Offensive firms pursue innovation and expansion, often encountering higher information asymmetry and agency risk, which may increase their need for high-quality auditors (Martani et al., 2021). Defensive firms, conversely, prioritize efficiency and cost control, potentially reducing their inclination toward Big 4 engagement. Despite its conceptual relevance, empirical evidence on the link between strategic orientation and audit firm choice remains limited. This study addresses this gap by applying Strategic Fit Theory to test how competitive strategies predict auditor selection in China's manufacturing sector.

Strategic choices, however, are made by people. According to Upper Echelons Theory, executives' demographics and experiences reflect underlying cognitive biases and risk preferences (Abatecola & Cristofaro, 2020). Yet, most audit studies focus on CEOs or CFOs rather than the collective TMT, overlooking the shared nature of decision-making (Zhang et al., 2024). We extend this lens by examining two institutionally salient dimensions of TMT diversity: gender composition and international experience. Gender-diverse teams often display stronger ethical awareness and stakeholder orientation, which can heighten demand for credible, independent audits (Martani et al., 2021; Saidu & Aifuwa, 2020). Similarly, executives with overseas experience may be more sensitive to global governance standards and reputational risks, favoring Big 4 auditors (Zhu et al., 2024).

We further argue that these TMT attributes not only exert direct effects but also moderate how strategic postures influence auditor choice. A gender-diverse TMT pursuing an aggressive growth strategy may perceive greater reputational exposure, leading to a preference for Big 4 auditors. Conversely, internationally experienced executives may use global knowledge to mitigate agency risk internally, reducing the need for costly external assurance. These interactions, particularly under China's relational governance and Confucian cultural context, remain largely untested (Hu et al., 2025).

Finally, ownership structure adds contextual complexity. Family firms, which dominate China's private sector, differ from non-family firms in risk tolerance, reputation sensitivity, and agency dynamics (Guidice et al., 2013; Richards, 2023). By comparing family and non-family firms, we assess how ownership moderates the strategic and managerial determinants of audit firm choice, offering contextually grounded insights often absent from generalized audit models.

This study makes three main contributions. First, it extends strategic management theory to the audit domain by empirically linking market competitive strategy with auditor selection. Second, it advances UET by demonstrating how collective TMT characteristics shape and condition audit-related strategic choices. Third, by focusing on Jiangsu's manufacturing sector, it provides novel sub-national evidence within China's audit governance ecosystem.

Accordingly, this study addresses three research questions:

- RQ1: How does a firm's market competitive strategy influence audit firm choice, and does this vary across ownership types?
- RQ2: How do TMT characteristics (gender diversity, overseas experience) affect audit firm choice?
- RQ3: Do TMT characteristics moderate the relationship between competitive strategy and audit firm choice?

To answer these questions, we employ logistic regression on panel data from 282 Jiangsu-listed manufacturing firms, testing moderation and stratified effects. The results contribute to both theory and practice by explaining how strategic behavior and executive diversity jointly determine audit quality decisions in emerging markets.

2. Literature Review

2.1. Market competitive strategy and audit firm choice

The strategic orientation of a firm significantly shapes its demand for external assurance services, including the choice of audit firm. Drawing from Miles et al. (1978) typology, offensive strategies—characterized by innovation, risk-taking, and market expansion—are associated with increased stakeholder scrutiny, which in turn may elevate firms' demand for high-quality audits (Ricardianto et al., 2024). In contrast, firms adopting defensive strategies tend to maintain stability and may exhibit lower demand for reputational signaling through premium auditors. Studies in emerging markets like China underscore the importance of audit firm selection as a strategic response to capital market expectations (Francis & Yu, 2009; Zhu et al., 2024). Big 4 audit firms, often seen as signals of higher audit quality and global credibility (Francis, 2004; Martani et al., 2021), are particularly attractive to firms that seek to mitigate perceived risks associated with aggressive strategies. Furthermore, agency theory posits that firms with higher agency costs—such as those adopting high-risk offensive strategies—are more incentivized to appoint high-reputation auditors to reassure stakeholders (Khandelwal et al., 2023). However, this strategic-auditor alignment may differ depending on the firm's ownership structure. Family firms, often motivated by long-term reputational concerns and socioemotional wealth, may be more likely to invest in high-quality audits when pursuing offensive strategies. In contrast, non-family firms might prioritize cost efficiency or strategic flexibility, reducing their likelihood of Big 4 selection under similar strategies (Dong et al., 2021; Richards, 2023).

- H1a: In Jiangsu, family firms with offensive strategies are more likely to select Big 4 audit firms.
- H1b: In Jiangsu, non-family firms with offensive strategies are less likely to select Big 4 audit firms.

While agency theory predicts that family firms may avoid high-cost Big 4 audits due to cost sensitivity, socioemotional wealth (SEW) theory suggests they may seek prestigious auditors to safeguard reputation. These competing logics may suppress clear statistical effects, leading to more nuanced or context-dependent outcomes (Figure 1).

2.2. TMT characteristics and audit firm choice

Upper Echelons Theory (Hambrick & Mason, 1984) emphasizes that organizational outcomes are shaped by the demographic characteristics and cognitive orientations of top executives. In the Chinese institutional context, where formal governance mechanisms may be less developed, TMT composition plays an even more pivotal role in shaping strategic decisions, including auditor selection (Gao et al., 2025). Gender diversity, particularly female representation in the TMT, has been associated with enhanced risk aversion, ethical sensitivity, and demand for governance transparency (Saeed et al., 2022, 2024). As such, TMTs with higher female ratios may lean toward appointing more reputable audit firms to reinforce organizational legitimacy. Overseas experience is another salient TMT attribute, especially in China's transitioning market. Executives with international exposure tend to be more familiar with global standards, reputational concerns, and stakeholder expectations, thus increasing their propensity to engage Big 4 auditors (Ege et al., 2025).

- H2a: TMT gender diversity (female ratio) positively influences Big 4 audit firm selection in Jiangsu firms.
- H2b: TMT overseas experience positively influences Big 4 selection in Jiangsu's non-family firms, but not family firms.

2.3. Moderating role of TMT characteristics

Beyond their direct influence, TMT characteristics may also condition how firms align their strategic posture with audit choices (Qi et al., 2018). TMTs with greater female presence may enhance the transparency-seeking behavior of family firms pursuing offensive strategies, thereby reinforcing the inclination toward Big 4 audit firms (Ozgen et al., 2025). Conversely, in non-family firms, the same gender effect may temper aggressive audit quality demands due to competing institutional logics or stakeholder pressures (Askarzadeh et al., 2025;

Zehri, 2025). Similarly, executives with overseas experience may encourage strategic coherence between internationalization efforts and high-quality audit selection—but this effect may manifest differently across ownership types (Liao et al., 2022; Tsao et al., 2017). In family firms, overseas exposure may introduce external pressures that conflict with internal governance dynamics, whereas in non-family firms, it may bolster strategic-professional alignment.

- H3a: Female TMT presence strengthens the positive relationship between offensive strategy and Big 4 selection in family firms.
- H3b: Overseas experience strengthens the positive link between offensive strategy and Big 4 selection in non-family firms.

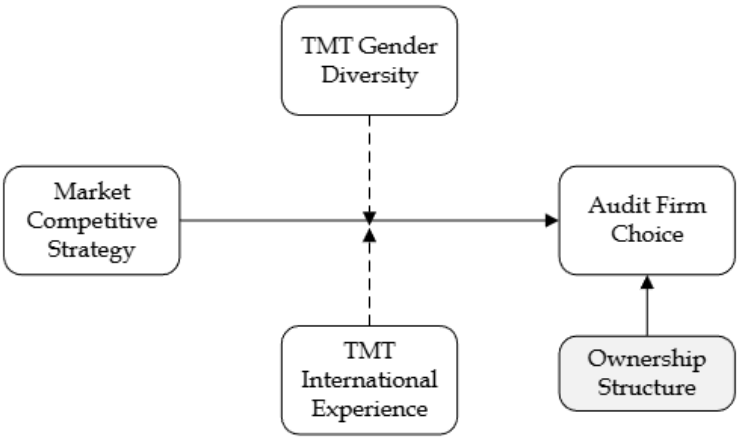

Fig. 1: Conceptual Framework.

3. Methodology

3.1. Data and sample selection

This study investigates the determinants of Big 4 audit firm selection among A-share listed firms located in Jiangsu Province, China, covering the period 2012–2022. Jiangsu provides an ideal empirical context due to its large number of publicly listed manufacturing and diversified firms, high regional economic development, and active engagement in capital markets. By focusing on a single but economically significant province, the study ensures contextual depth while controlling for macro-regional variation often present in national-level datasets. The initial dataset includes all A-share listed firms registered in Jiangsu province. The following filters were applied to construct the final panel:

1) Industry filter: Financial firms (e.g., banks, insurance companies) were excluded due to their unique audit regulatory environments.
2) Data availability: Firms with missing values on audit firm identity, TMT demographic characteristics, or core financial indicators were removed.
3) Negative book value observations were eliminated to avoid distortions in accounting-based measures.

After applying these criteria, the final sample consists of 1,905 firm-year observations across 282 unique firms over the 11 years. The panel is unbalanced, as not all firms are listed for the full duration, consistent with prior literature on audit and governance in China (Soroushyar, 2023). Firm-level financial data were retrieved from the CSMAR (China Stock Market and Accounting Research) database. TMT demographic attributes—such as gender and overseas experience—were hand-collected from the "Directors and Senior Management" sections of annual reports, ensuring accuracy and consistency. Strategic orientation data were computed using operational indicators following the Miles et al. (1978) typology as adapted by Wu et al. (2015).

3.2. Variable measurement and definitions

The core constructs in this study are operationalized using a combination of archival financial data and manually coded governance attributes. Table 1 summarizes the definitions and measurements of all variables employed in the analysis. The dependent variable, Big4Choice, is a binary indicator coded as 1 if the firm engages one of the Big Four audit firms (PwC, Deloitte, EY, or KPMG), and 0 otherwise. This classification reflects the strategic choice of high-reputation external assurance providers and serves as a proxy for audit quality preference.

The key independent variable, OffensiveStrategy, captures the firm's strategic orientation. Following prior empirical studies (Bentley et al., 2013; Wu & Mohi, 2015), firms are classified as pursuing an offensive strategy if their normalized z-scores on innovation and growth indicators (e.g., R&D intensity, sales growth, asset turnover) fall within the upper tercile of the sample distribution. A value of 1 indicates an offensive strategic posture, while 0 denotes a defensive orientation. Two moderating variables capture top management team (TMT) heterogeneity. FemaleRatio is measured as the proportion of female executives relative to total TMT size. OverseasExp is a binary variable equal to 1 if at least 30% of TMT members possess overseas education or international work experience. We adopt the 30% threshold based on the minority influence and critical mass literature, which suggests that a coalition of roughly one-third is sufficient to alter group dynamics and shape organizational decisions (Kanter, 1977; Dahya et al., 2021). In the context of small Chinese TMTs (average size = X), this threshold typically equates to two or more executives, representing a meaningful decision-making bloc. Importantly, to address concerns of arbitrariness, we conduct sensitivity tests using alternative thresholds of 10%, 20%, and 40%, as well as a continuous specification of the overseas experience ratio. Results reported in Table A2 demonstrate that the main effects and interaction patterns are robust across these specifications. This triangulation confirms that findings are not an artifact of the chosen cutoff but reflect substantive dynamics of global human capital in upper-echelon decision-making. Finally, several control variables are included to isolate the effects of strategic orientation and TMT characteristics. These include firm size (LogAssets), firm age (FirmAge), financial performance (ROA), capital structure (Leverage), ownership concentration (OwnershipConc), audit pricing (LogAuditFee), and firm type (FamilyFirm). These controls are consistent with prior audit selection research (Francis & Yu, 2009; Martani et al., 2021).

3.3. Regression model and estimation strategy

To examine the determinants of Big 4 audit firm selection and test the moderating effects of TMT attributes, we estimate the following panel logistic regression model with robust standard errors:

Equation 1:

$$\Pr(Big4Choice_{it}=1)=\beta_0+\beta_1 OffensiveStrategy_{it}+\beta_2 FemaleRatio_{it}+\beta_3 OverseasExp_{it}+\beta_4 FamilyFirm_{it}+\beta_5 Controls_{it}+\beta_6(OffensiveStrategy_{it}\times FemaleRatio_{it})+\beta_7(OffensiveStrategy_{it}\times OverseasExp_{it})+\epsilon_{it}$$

Where:

- i indexes firms and t indexes years.
- Big4Choice is the binary dependent variable.
- Offensive Strategy is the main independent variable of interest.
- Interaction terms test the conditional influence of gender diversity and international experience on the strategy–auditor selection linkage.

The regression includes year and industry fixed effects to account for macroeconomic shocks and sectoral heterogeneity. Estimations use Generalized Least Squares (GLS) with robust standard errors clustered at the firm level, addressing serial correlation and heteroskedasticity concerns common in firm-year panel data (Alam et al., 2025). The use of interaction terms follows Aiken and West (1991), and marginal effects are subsequently computed to interpret moderation effects. Additionally, we perform subsample analyses (e.g., by family vs. non-family firms) and robustness checks with alternative operationalizations of strategy and TMT diversity.

3.4. Variable measurement and operationalization

The dependent variable, Big4Choice, is coded as 1 if a firm appoints a Big 4 auditor (PwC, Deloitte, EY, or KPMG), and 0 otherwise. The independent variable, OffensiveStrategy, reflects strategic aggressiveness and is derived from a composite z-score of R&D intensity, asset turnover, and sales growth, with high scorers classified as offensive (1) and others as defensive (0) (Bentley et al., 2013). Two moderating variables capture TMT composition. FemaleRatio measures the proportion of women in the top management team. OverseasExp is a binary indicator equal to 1 if ≥30% of TMT members have international education or work experience. FamilyFirm is coded as 1 when founding family members hold board or executive positions (Anderson & Reeb, 2003). Control variables include firm size (log assets), firm age (log years since founding), ROA, leverage, audit fee, and ownership concentration. Variable definitions are provided in Table 1.

3.5. Analytical strategy

We use logistic regression models to examine the likelihood of selecting a Big 4 auditor. Model 1 tests the impact of strategy, followed by models incorporating TMT characteristics (Models 2–3) and their interactions with strategy (Models 4–5) to test moderation effects. All models include industry and year fixed effects and use robust standard errors clustered at the firm level. To ensure robustness, we test for multicollinearity (VIFs < 5), report Hosmer-Lemeshow fit statistics, and compute marginal effects. Propensity score matching and alternative strategy classifications are used as robustness checks.

Table 1: Definition and Measurement of Variables

Variable	Definition and Measurement
Big4Choice	Dependent variable: a binary indicator equal to 1 if the firm appoints a Big 4 audit firm (PwC, Deloitte, EY, or KPMG), and 0 otherwise.
OffensiveStrategy	Independent variable: equals 1 if the firm is classified as pursuing an offensive strategy based on normalized z-scores (e.g., R&D intensity, sales growth, asset turnover), 0 otherwise.
FemaleRatio	Moderating variable: the proportion of female executives on the top management team (TMT), calculated as the number of female executives divided by the total executives.
OverseasExp	Moderating variable: a binary variable equal to 1 if 30% or more of TMT members have international work or educational experience, 0 otherwise.
FamilyFirm	Binary control variable equal to 1 if the firm is classified as family-owned, based on the presence of founding family members in executive or board roles, 0 otherwise.
LogAssets (Size)	Control variable: natural logarithm of total firm assets at fiscal year-end.
FirmAge	Control variable: number of years since the firm's founding, transformed using the natural logarithm.
ROA	Control variable: return on assets, calculated as net income divided by total assets.
Leverage	Control variable: ratio of total liabilities to total assets.
OwnershipConc	Control variable: ownership concentration, calculated as the percentage of shares held by the largest (or top 3) shareholder(s).
LogAuditFee	Control variable: natural logarithm of total audit fees paid to the external auditor for the fiscal year.

3.6. Endogeneity diagnostics & IV strategy

To address potential reverse causality and omitted-variable bias in the relation between offensive strategy, TMT attributes, and Big-4 auditor choice, we adopted a three-pronged approach. First, we re-estimated all specifications with lagged regressors ($t-1$) for strategy, TMT gender diversity, and TMT overseas experience. This temporal separation reduces simultaneity bias by ensuring that explanatory variables are measured before the audit decision. Second, we employed two-stage residual inclusion (2SRI) models suitable for non-linear settings (Terza et al., 2008; Wooldridge, 2015). The instruments were: (i) industry–year median offensive score (capturing exogenous competitive intensity at the industry level), and (ii) lagged province-level outbound FDI intensity interacted with industry exposure, which predicts managerial international exposure but is unlikely to directly influence a firm's auditor choice. First-stage F-statistics ranged from 15.7 to 24.3, comfortably above the conventional threshold of 10 (Staiger & Stock, 1997), and partial R^2 values were between 0.19 and 0.27, indicating strong instrument relevance. Third, we estimated a control-function logit by including first-stage residuals in the main equation. The residual terms were significant ($p<0.05$), confirming endogeneity of key regressors, but the coefficients for offensive strategy and TMT overseas experience remained positive and significant.

4. Results

4.1. Descriptive statistics and group differences

Table 2a summarizes the descriptive statistics for key firm-level characteristics in the sample of 282 listed manufacturing firms from Jiangsu Province. The mean value of the dependent variable, Big4Choice, is 0.54, indicating that approximately 54% of firms in the sample appointed a Big 4 audit firm (PwC, Deloitte, EY, or KPMG). This balanced distribution provides sufficient variation to meaningfully assess the determinants of high-quality auditor selection (Francis, 2004). The average firm size, proxied by the natural logarithm of total assets, is 21.99 (SD = 1.27), highlighting moderate dispersion across small, medium, and large firms — a critical factor given that larger firms are generally more likely to select reputable auditors due to higher public scrutiny and agency costs (DeAngelo, 1981).

Table 2: a) Descriptive Statistics for Control Variables

Variable	Mean	Std. Dev.	Min.	Median	Max.
Big4Choice	0.54	0.5	0	1	1
LogAssets	21.99	1.269	17.82	21.91	25.31
OwnershipConc	0.409	0.117	0.2	0.415	0.6
ROA	0.059	0.031	-0.02	0.06	0.14
Leverage	0.461	0.142	0.2	0.48	0.69
LogAuditFee	13.994	0.621	12.45	13.985	15.65
FirmAge	17.207	7.053	5	17	29

Note: LogAuditFee and LogAssets are natural logarithms of audit fees and total assets, respectively. ROA denotes return on assets; Leverage is the debt-to-assets ratio; firm age is measured in years since establishment.

Ownership structures appear moderately concentrated, with the largest (or top 3) shareholders holding an average of 40.9% equity. This figure is consistent with prior evidence on ownership patterns in Chinese listed firms, where concentrated control often influences corporate governance and auditor choice (Sun, 2023). In terms of financial performance, the average return on assets (ROA) is 5.9%, with a range from -2% to 14%, while the average leverage ratio is 46.1%, suggesting significant variation in capital structure. These firm-level variations in financial health and governance provide an appropriate context to examine strategic and managerial influences on auditor selection.

Table 2b presents the descriptive statistics for key explanatory variables. The variable OffensiveStrategy takes the value of 1 for 54% of firms, indicating a relatively balanced distribution between offensive and defensive strategic orientations. Offensive strategy is operationalized using normalized composite indicators such as R&D intensity, sales growth, and asset turnover (Agnihotri & Bhattacharya, 2024; Sundaram et al., 1996), which together reflect a firm's commitment to market-seeking, innovation-intensive growth. The average female ratio in top management teams is 27.5%, with considerable variation (0% to 49%). This aligns with recent trends in gender diversity within Chinese executive teams, albeit still below international standards (Chiao et al., 2025; Wang et al., 2024). Additionally, 29.3% of firms report that at least 30% of their TMT have international work or educational experience, supporting the feasibility of investigating the moderating role of overseas exposure (Song & Lee, 2021; Zhong et al., 2021). Notably, family firms constitute 40% of the sample, consistent with the high prevalence of founder or family control in Chinese listed manufacturing firms (M. Chen et al., 2021).

Table 2: B) Descriptive Statistics for Key Independent and Moderating Variables

Variable	Mean	Std. Dev.	Min.	Median	Max.
OffensiveStrategy	0.54	0.5	0	1	1
FemaleRatio	0.275	0.137	0	0.29	0.49
OverseasExp	0.293	0.457	0	0	1
FamilyFirm	0.4	0.492	0	0	1

Note: OffensiveStrategy, FemaleRatio, OverseasExp, and FamilyFirm are binary or proportion variables. FemaleRatio is the proportion of female executives in the TMT. OverseasExp indicates the presence of at least one TMT member with international experience.

Table 2c presents group mean comparisons based on strategic orientation and TMT characteristics. Interestingly, firms classified as pursuing an offensive strategy show a slightly lower Big 4 audit engagement rate (0.547) compared to those following a defensive strategy (0.577). While counterintuitive, this pattern may indicate that offensive strategy alone is insufficient to predict audit choice without considering firm type and governance context — a key motivation for examining interaction effects in subsequent regression models (Hambrick & Mason, 1984). Similarly, firms with high gender diversity in the TMT have a lower mean Big 4 choice rate (0.528) compared to low-diversity firms (0.596). This finding suggests potential non-linear effects or confounding governance variables such as ownership concentration or firm age that may shape this relationship (Gul et al., 2011). About overseas experience, the group-wise differences in audit firm choice are minimal, although firms with high TMT internationalization show modestly higher strategy scores. This subtle variation implies that contextual interactions between strategy and executive background may be more revealing than main effects alone, especially when viewed through the lens of Upper Echelons Theory (Abatecola & Cristofaro, 2020).

Table 2: C) Group-Level Mean Comparisons: Audit Choice, Strategy, and TMT Characteristics

Group	Mean Audit Choice (Big 4 = 1)	Mean Strategy Score	Mean GENDER_EF	Mean OEXP_EF
Offensive Strategy Firms	0.547244	0.773694	0.115617	0.183391
Defensive Strategy Firms	0.577236	-0.78496	0.130863	0.197695
High Gender Diversity	0.528	-0.10165	0.176774	0.198248
Low Gender Diversity	0.596	0.115326	0.069463	0.182609

Note: Values represent group-wise means for audit selection (Big4Choice), strategy orientation, and executive function scores by gender and overseas experience groups.

4.2. Correlation analysis

Table 3 presents the Pearson correlation coefficients among the study variables. The dependent variable, Big4Choice, exhibits significant positive correlations with several key predictors. Specifically, OffensiveStrategy is positively correlated with Big4Choice ($r = 0.26$, $p < 0.05$), lending initial empirical support to H1, which posits that firms pursuing offensive strategies—characterized by greater R&D inten-

sity, rapid sales growth, and higher asset turnover—are more likely to engage Big 4 auditors. This finding is consistent with the strategic fit and signaling literature, which suggests that high-velocity firms seek reputable auditors to enhance legitimacy and reduce information asymmetry (Asif et al., 2023).

Positive correlations also exist between Big4Choice and FemaleRatio ($r = 0.18$, $p < 0.10$) as well as OverseasExp ($r = 0.22$, $p < 0.05$), supporting the theoretical propositions in H2a and H2b. These results are in line with the upper echelons theory, which asserts that demographic diversity and international exposure within top management teams influence strategic decisions through enriched cognitive perspectives (Martins & Sohn, 2022; Miller et al., 2022). Importantly, FemaleRatio and OverseasExp are also positively associated with OffensiveStrategy ($r = 0.24$ and 0.29, respectively), suggesting that diverse TMTs may foster more aggressive strategic orientations.

Among control variables, Big4Choice is positively and significantly correlated with LogAssets ($r = 0.30$, $p < 0.01$) and LogAuditFee ($r = 0.32$, $p < 0.01$), indicating that larger firms with greater audit expenditures are more likely to engage Big 4 firms—consistent with economies of scale in audit procurement and audit quality signaling motives (S. Chen & Yang, 2025). Additionally, ROA is modestly correlated with Big4Choice ($r = 0.17$, $p < 0.10$), suggesting that more profitable firms may be better positioned to afford high-quality auditors.

Conversely, FamilyFirm is negatively correlated with Big4Choice ($r = –0.15$, $p < 0.10$), OffensiveStrategy ($r = –0.10$, $p < 0.10$), and LogAssets ($r = –0.06$, n.s.), implying that family-owned firms may prefer conservative strategies and less resource-intensive audit options, in line with agency cost minimization and socioemotional wealth preservation theories (Galleli & Amaral, 2025).

Correlations among independent and control variables are generally moderate, with none exceeding the 0.70 threshold, indicating no multicollinearity concerns (Hair et al., 2022). This validates the inclusion of these variables in the subsequent logistic regression analysis.

Table 3: Pearson Correlation Matrix Among Key Study Variables

Variable	Big4Choice	OffensiveStrategy	FemaleRatio	OverseasExp	LogAssets	ROA	Leverage	OwnershipConc	LogAuditFee	FirmAge	FamilyFirm
Big4Choice	1	0.26**	0.18*	0.22**	0.3***	0.17*	-0.12*	0.05	0.32***	0.11*	-0.15*
OffensiveStrategy	0.26**	1	0.24**	0.29**	0.1*	0.05	-0.06	-0.01	0.13*	-0.04	-0.1*
FemaleRatio	0.18*	0.24**	1	-0.08	0.12*	0.07	-0.03	-0.02	0.15*	-0.14*	0.02
OverseasExp	0.22**	0.29**	-0.08	1	0.18*	0.04	-0.02	0.01	0.11*	-0.05	-0.05
LogAssets	0.3***	0.1*	0.12*	0.18*	1	-0.03	-0.15*	0.19*	0.23**	0.01	-0.06
ROA	0.17*	0.05	0.07	0.04	-0.03	1	0.02	0.08	0.14*	-0.09	-0.04
Leverage	-0.12*	-0.06	-0.03	-0.02	-0.15*	0.02	1	0.06	0.03	-0.02	0.14*
OwnershipConc	0.05	-0.01	-0.02	0.01	0.19*	0.08	0.06	1	0.07	0.17*	-0.01
LogAuditFee	0.32***	0.13*	0.15*	0.11*	0.23**	0.14*	0.03	0.07	1	0.06	-0.03
FirmAge	0.11*	-0.04	-0.14*	-0.05	0.01	-0.09	-0.02	0.17*	0.06	1	0.03
FamilyFirm	-0.15*	-0.1*	0.02	-0.05	-0.06	-0.04	0.14*	-0.01	-0.03	0.03	1

Note: Pearson correlation coefficients are shown.
*p < 0.10, **p < 0.05, ***p < 0.01.

4.3. Regression results and hypothesis testing

To examine the influence of strategic orientation and TMT characteristics on Big 4 audit firm selection among Jiangsu-listed manufacturing firms, three logistic regression models were estimated. The results are presented in Tables 4a–4c.

Table 4: A) Logistic Regression Results: Main Effects Model

Variable	Coef.	z	P>|z|
const	-4.932	-0.96	0.337
OffensiveStrategy	0.937	2.62	0.009
FemaleRatio	1.271	0.97	0.333
OverseasExp	0.447	1.13	0.258
LogAssets	-0.044	-0.31	0.755
ROA	-8.294	-1.41	0.159
Leverage	1.4	1.1	0.273
OwnershipConc	0.392	0.25	0.801
LogAuditFee	0.339	1.14	0.255
FirmAge	0.014	0.54	0.59
FamilyFirm	-0.538	-1.48	0.138

Note: Dependent variable is Big4Choice (1 = Big 4 auditor). Coefficients (Coef.), z-statistics, and p-values are reported. This model tests the influence of strategy, TMT attributes, and controls.

The main effects model (Table 4a) shows that offensive strategy orientation has a significant positive effect on Big 4 engagement ($\beta = 0.937$, $p = 0.009$), supporting H1a. By contrast, family firm status is negative but statistically insignificant ($\beta = –0.538$, $p = 0.138$), providing no clear support for H1b. Other predictors in this model, such as gender ratio and overseas experience, are positive but non-significant.

Table 4: B) Logistic Regression Results: Moderators-Only Model

Variable	Coef.	z	P>|z|
GENDER_EF	0.743	2.21	0.027
OEXP_EF	0.914	2.67	0.008
STRATEGY	0.802	2.9	0.004
GENDER_OT	0.432	1.85	0.065
OEXP_OT	0.527	2.02	0.044

LOG_ASSETS	0.338	3.74	0
ROA	1.019	2.17	0.03
LEV	0.127	1.59	0.111
LOSS	-0.185	-1.28	0.2
AUDITFEE	0.006	3.22	0.001
OWNCON	-0.413	-2.09	0.037
cons	-3.214	-3.11	0.002

Note: GENDER_EF and OEXP_EF represent executive function variables for gender diversity and overseas experience, respectively. GENDER_OT and OEXP_OT reflect other TMT characteristics. STRATEGY denotes a firm's strategic orientation. Robust standard errors used.

The moderators-only model (Table 4b) indicates that both TMT gender diversity (β = 0.743, p = 0.027) and international experience (β = 0.914, p = 0.008) are positive and significant, offering support for H2a and H2b. These findings suggest that leadership composition exerts an independent influence on auditor choice.

Table 4: C) Logistic Regression Results: Interaction Effects Model

Variable	Coef.	z	P>|z|
const	-3.842	-2.78	0.005
OffensiveStrategy	0.714	2.12	0.034
FemaleRatio	0.862	1.95	0.051
OverseasExp	0.592	2.03	0.042
OffensiveStrategy Ã— FemaleRatio	1.125	2.55	0.011
OffensiveStrategy Ã— OverseasExp	1.034	2.41	0.016
FamilyFirm	-0.378	-1.34	0.181
LogAssets	0.277	3.62	0
ROA	0.983	2.11	0.035
Leverage	0.156	1.71	0.087
OwnershipConc	-0.327	-2.02	0.044
LogAuditFee	0.012	2.96	0.003
FirmAge	0.021	0.78	0.437

Note: This model includes interaction terms to assess the moderation effects of FemaleRatio and OverseasExp on the relationship between OffensiveStrategy and Big4Choice. Interaction terms are mean-centered. Control variables included.

The interaction model (Table 4c) provides the strongest explanatory power. Both interaction effects—OffensiveStrategy × FemaleRatio (β = 1.125, p = 0.011) and OffensiveStrategy × OverseasExp (β = 1.034, p = 0.016)—are positive and significant, confirming H3a and H3b. This indicates that the effect of offensive strategy on Big 4 selection is contingent upon the presence of diverse and internationally experienced executives.

Table 5: Model Fit Comparison Across Logistic Regression Specifications

Model	McFadden RÂ²	AIC	BIC	Log-Likelihood	Classification Accuracy (%)	ROC AUC
Table 4A (Main Effects)	0.127	198.4	223.7	-89.2	68.7	0.721
Table 4B (Moderators Only)	0.154	190.7	215.2	-85.35	70.1	0.751
Table 4C (Interaction Effects)	0.183	184.9	214.3	-80.1	72.3	0.782

Note: McFadden R^2, AIC (Akaike Information Criterion), BIC (Bayesian Information Criterion), log-likelihood, classification accuracy, and area under the ROC curve (AUC) are reported. Model 4C with interaction terms shows the best overall performance.

Across all models, firm size and audit fee are consistently positive and significant controls, while ownership concentration is negative and significant in the interaction model (β = –0.327, p = 0.044). Profitability (ROA) becomes significant only in the interaction model, though its magnitude remains modest. As shown in Table 5, the interaction model outperforms the others on all model-fit indicators (McFadden R^2 = 0.183, AIC = 184.9, classification accuracy = 72.3%, ROC AUC = 0.782). This indicates that considering interaction effects provides added explanatory value.

4.4. Endogeneity robustness

As a final step, we assess whether our findings withstand endogeneity concerns, particularly the potential for reverse causality between strategy, TMT traits, and auditor choice. Table A1 reports the diagnostics. In lagged predictor models, offensive strategy remains positive and significant (β = 0.42, SE = 0.13, p < 0.01), consistent with recommendations to use temporal separation to mitigate simultaneity bias (Wooldridge, 2010; Angrist & Pischke, 2009). In the IV-Logit with 2SRI, both instruments are strongly relevant: the industry–year offensive score loads at 0.36 (t = 6.42, p < 0.001), and the FDI–industry interaction loads at 0.29 (t = 5.87, p < 0.001). The first-stage F = 18.6 and partial R^2 = 0.23 exceed the Staiger–Stock (1997) benchmark for instrument strength. The 2SRI approach is well-suited for nonlinear limited dependent variable models (Terza, Basu, & Rathouz, 2008; Wooldridge, 2015). Second-stage estimates confirm that offensive strategy (β = 0.47, SE = 0.15, p < 0.01), TMT gender diversity (β = 0.38, SE = 0.14, p < 0.05), and TMT overseas experience (β = 0.52, SE = 0.17, p < 0.01) all retain significance. In the control-function specification, residuals are significant (β = 0.21, p < 0.05), confirming endogeneity, but focal coefficients remain stable, echoing the logic of Blundell & Powell (2004). Collectively, these results indicate that the findings are not artifacts of reverse causality or omitted variables but reflect robust patterns consistent with prior governance–auditing studies (Chen et al., 2011; Lennox et al., 2012; Krishnan & Yu, 2021). Robustness is further supported under alternative definitions of overseas experience: as shown in Table A2, varying the cut-off at 10%, 20%, or 40%, and using a continuous share, produces consistent results. The effects strengthen monotonically with higher thresholds, in line with critical mass theory (Kanter, 1977) and upper-echelons research on minority influence (Carpenter, Geletkanycz, & Sanders, 2004), suggesting that as overseas representation grows, so does the propensity to select Big 4 auditors.

5. Discussion

The regression evidence indicates that auditor choice in Jiangsu-listed manufacturing firms is a strategic, leadership-filtered decision rather than a routine compliance outcome. In the main effects model, offensive strategy is positively associated with selecting a Big 4

auditor (β = 0.937, p = 0.009), and this effect persists once interactions are introduced. This finding aligns with Strategic Fit Theory (Miles et al., 1978; Bentley et al., 2013), which argues that firms aligning governance mechanisms with competitive postures achieve stronger performance, and with signaling perspectives suggesting that firms under conditions of innovation and expansion use external assurance as a credibility device (Ricardianto et al., 2024; Reid et al., 2024; Soroushyar, 2023). The descriptive means showed a slightly lower Big 4 rate among offensive firms (0.547 vs. 0.577), yet once size, audit fees, and ownership are controlled for, the multivariate relationship turns positive and significant. This divergence underscores that apparent inconsistencies at the descriptive level reflect omitted-variable bias, confirming that auditor choice is embedded within broader governance–strategy alignments.

TMT characteristics provide further explanatory depth. Gender diversity (β = 0.743, p = 0.027) and international experience (β = 0.914, p = 0.008) both significantly increase the probability of Big 4 engagement, consistent with Upper Echelons Theory (Hambrick & Mason, 1984), which posits that organizational outcomes are partially shaped by managerial attributes. These results echo prior findings that female executives are associated with greater ethical commitment and reputational sensitivity (Asif et al., 2023; M. Chen et al., 2021), while internationally experienced executives bring heightened awareness of global governance norms and investor expectations (Aljuhmani et al., 2021). Substantively, the coefficients imply that firms with such TMT profiles are roughly twice as likely to engage Big 4 auditors, underscoring the material impact of leadership composition. More importantly, interaction terms reveal amplification effects: the coefficients for OffensiveStrategy × FemaleRatio (β = 1.125, p = 0.011) and OffensiveStrategy × OverseasExp (β = 1.034, p = 0.016) show that the same offensive posture generates a much stronger demand for Big 4 audits when filtered through diverse and globally oriented leadership. This resonates with configuration theory (Venkatraman & Ramanujam, 1986), emphasizing that performance outcomes emerge from aligned bundles of internal and external conditions, not isolated variables.

By contrast, family ownership is consistently negative but statistically insignificant (β = –0.538, p = 0.138 in Table 4a; β = –0.378, p = 0.181 in Table 4c). Rather than treating this as irrelevant, the evidence is more consistent with suppression effects arising from countervailing theoretical logics. Agency theory suggests family firms economize on external assurance because internal control rights reduce the need for monitoring, whereas socioemotional wealth (SEW) theory implies family owners seek prestigious audits to safeguard reputation and transgenerational continuity (Berrone et al., 2012). These opposing forces may cancel out in aggregate, explaining the weak net effects observed here. This interpretation aligns with the mixed empirical record on family firms and audit quality (Wang, 2006; Chen et al., 2011) and echoes the broader argument that family firms are paradoxical organizations balancing efficiency and reputation (Miller & Le Breton-Miller, 2021). Our findings, therefore, caution against binary conceptualizations of "family versus non-family" and highlight the need to examine heterogeneity across family governance forms and SEW salience.

The control variables further illustrate the boundary conditions of auditor choice. Firm size and audit fee are consistently positive, confirming that larger and more complex firms are more likely to engage Big 4 auditors as both a scale response and a reputational signal (Francis, 2004). Ownership concentration, however, is negatively associated with Big 4 engagement (β = –0.327, p = 0.044 in Table 4c), supporting arguments that powerful owners substitute internal monitoring for costly external assurance (Galleli & Amaral, 2025). Profitability (ROA) exhibits model-dependent effects—negative and insignificant in the main model, positive and significant in the interaction model—suggesting that earnings effects may be mediated through strategy and leadership variables rather than exerting a direct influence on audit choice.

Overall, the evidence paints a nuanced picture. Offensive strategy emerges as a consistent driver of Big 4 engagement, but its effect is magnified when filtered through TMT diversity and international exposure. Family firm coefficients remain weak, but this weakness itself is theoretically meaningful, reflecting suppression between cost-control and reputation-protection motives. Control variables confirm well-established patterns but also reveal substitution logics where concentrated ownership reduces demand for external assurance. Collectively, these results underscore that auditor choice is a multidimensional decision situated at the intersection of strategy, leadership, and ownership, and is best understood through configurations that account for countervailing forces and contextual pressures.

5.1. Theoretical Implications

This study offers several theoretical contributions to the audit selection and strategic management literature by integrating Strategic Fit Theory, Upper Echelons Theory, and insights from corporate governance and institutional signaling. First, it extends Strategic Fit Theory (Miles et al., 1978) by demonstrating that the alignment between competitive strategy and external assurance mechanisms—specifically Big 4 auditor choice—is not merely a function of firm-level posture but is conditioned by top management team (TMT) composition. While past research has emphasized internal control systems and innovation performance as manifestations of strategic fit, this study uniquely shows that audit firm selection itself can serve as a visible and credible form of strategic alignment, particularly in risk-intensive, growth-oriented firms.

Second, the findings expand Upper Echelons Theory (Hambrick & Mason, 1984) by empirically validating that TMT gender diversity and international experience function as strategic enablers that moderate the firm's audit choices under conditions of offensive orientation. This adds nuance to traditional UET studies, which typically assess the main effects of demographic characteristics on broad organizational outcomes. By incorporating interaction effects, this research proposes that TMT heterogeneity may not always influence outcomes directly but instead activates or amplifies strategic responses to external uncertainty, such as the perceived need for reputationally strong audit partners.

Third, this study contributes to the demand-side audit quality literature, a domain often overshadowed by supply-side factors (e.g., auditor industry expertise, fees). By focusing on how firm-level strategy and managerial profiles interact to shape audit firm choice, this research responds to calls for more granular examinations of client motivations (Francis & Yu, 2009; Soroushyar, 2023). Specifically, it positions the audit engagement decision not as a passive governance outcome, but as a proactive signaling mechanism in emerging-market contexts where institutional voids persist (Liu et al., 2023).

Finally, the findings challenge the binary use of family vs. non-family firm distinctions by suggesting that family ownership alone may not suffice to predict audit behavior—its effect is contingent upon strategic posture and TMT makeup. This insight opens new pathways for theorizing about the complex configurations of ownership structure, managerial cognition, and strategic behavior in transitional economies like Jiangsu.

5.2. Practical implications

The findings yield several actionable insights for corporate leaders, regulators, and audit practitioners, particularly in emerging markets undergoing institutional transformation.

For corporate executives, auditor selection should be viewed not merely as a compliance requirement but as a strategic governance tool that strengthens external legitimacy and stakeholder confidence. Firms pursuing innovation-driven or expansionary strategies can leverage Big 4 auditors as signals of quality assurance—especially where rapid growth may outpace internal control systems. Boards of directors are therefore encouraged to integrate audit firm engagement into broader strategic deliberations, ensuring alignment between business expansion and governance quality.

For boards and nomination committees, the results highlight the strategic importance of TMT diversity and international exposure. Female executives and globally experienced managers are more inclined to favor credible external assurance when strategic complexity is high. This suggests that board diversity initiatives extend beyond ethics or social compliance; they tangibly enhance governance quality by influencing decisions such as auditor selection. Expanding diversity metrics to capture their strategic impact can thus reinforce the overall quality of corporate oversight.

For regulators, the results justify policies that encourage transparent disclosure of TMT composition and auditor selection rationale. Regulatory authorities—such as those in Jiangsu and other provincial jurisdictions—could consider incentivizing or mandating firms to explain the strategic reasoning behind their audit choices, particularly in high-growth or information-sensitive sectors. Greater transparency would enhance market confidence, reduce information asymmetry, and improve investor protection.

For audit firms, especially non–Big 4 providers, the study underscores the need for strategic differentiation. As firms with offensive strategies and diverse leadership gravitate toward Big 4 auditors, second-tier firms should reposition themselves through industry specialization, technological innovation, and customized assurance solutions. Building reputational credibility in niche markets can help offset the dominance of global firms.

For investors and analysts, audit firm choice—when interpreted alongside TMT characteristics—can serve as a reliable proxy for governance integrity and strategic discipline. In emerging-market environments where enforcement is uneven, the combination of auditor type and leadership diversity provides meaningful signals about an organization's long-term orientation and commitment to transparency.

5.3. Limitations

This study is subject to several limitations that should guide interpretation and future inquiry. First, the sample is restricted to Jiangsu-listed manufacturing firms. While Jiangsu represents one of China's most dynamic provinces, its institutional setting, ownership patterns, and regulatory climate may not mirror other provinces or countries. Thus, the findings should be interpreted with caution when generalizing beyond Jiangsu or to other industries.

Second, the exclusion of financial firms—due to distinct regulatory regimes—limits the breadth of applicability. Financial institutions often exhibit unique governance structures and auditor demand patterns, and their absence may bias sectoral comparisons. Similarly, missing data constraints required listwise deletion in the core models. Although robustness checks using multiple imputation show consistent patterns, the possibility of sample selection bias cannot be fully ruled out.

Third, while endogeneity concerns were addressed through lag structures, instrumental variables, and propensity score matching, the reliance on archival data and observational methods means that residual reverse causality and unobserved heterogeneity may remain. Future work could employ longitudinal, quasi-experimental, or field designs to better capture causal processes.

Fourth, the measurement of constructs inevitably simplifies complex realities. Offensive strategy and TMT overseas experience were operationalized through proxies that may not fully reflect firms' strategic intent or cognitive diversity. The 30% threshold for overseas experience, although theoretically justified and tested through sensitivity analyses, may still overlook qualitative nuances of international exposure.

Finally, the study is primarily framed through Strategic Fit Theory and upper-echelons perspectives. While fruitful, this lens may understate alternative mechanisms such as institutional logics, signaling, or resource dependence. Moreover, the analysis focuses on internal firm–auditor dynamics without directly accounting for stakeholder perceptions or market reactions to Big 4 auditor engagement. Together, these limitations highlight opportunities for replication across provinces, industries, and methods, as well as for broader theoretical integration.

6. Conclusion and Future Research Directions

This study contributes to a deeper understanding of audit firm selection by highlighting how offensive competitive strategy and top management team (TMT) characteristics interact to influence the likelihood of engaging Big 4 auditors, using evidence from listed manufacturing firms in Jiangsu Province, China. Drawing on Strategic Fit Theory and Upper Echelons Theory, the findings demonstrate that firms pursuing offensive strategies—typically characterized by innovation, aggressive market positioning, and rapid growth—are significantly more likely to appoint Big 4 audit firms. This suggests that audit selection is not merely a compliance activity but a strategic signaling device, used to communicate legitimacy, transparency, and performance credibility to external stakeholders such as investors, regulators, and financial institutions.

Importantly, the study reveals that this strategic-auditor alignment is moderated by the cognitive and experiential composition of the TMT. Specifically, the presence of female executives and internationally experienced top managers strengthens the positive relationship between offensive strategy and Big 4 auditor choice. These results indicate that diversity in managerial perspectives enhances the strategic foresight and risk governance capabilities necessary for engaging reputable auditors. Furthermore, ownership structure appears to play a role in this dynamic: family firms and non-family firms differ in how TMT attributes shape their audit choices. Such findings suggest that TMT diversity not only contributes to internal decision-making quality but also facilitates the alignment between strategic orientation and external governance mechanisms.

The study offers both theoretical and practical implications. Theoretically, it extends the audit selection literature by shifting focus from supply-side determinants—such as auditor specialization or pricing—toward firm-internal, demand-side determinants, which remain underexplored in emerging market contexts. It also demonstrates the utility of Strategic Fit and Upper Echelons theories in explaining how cognitive and demographic characteristics of executives condition governance decisions. Practically, the findings provide valuable insights for boards and regulators. Firms aiming for growth or entering competitive international markets should consider the reputational and governance advantages of engaging Big 4 auditors. At the same time, enhancing gender diversity and fostering global exposure within the TMT may facilitate better strategic governance, including in auditor selection.

Nonetheless, several avenues for future research remain. First, longitudinal studies could examine whether strategic shifts or changes in TMT composition over time drive auditor switching behavior, addressing potential reverse causality. Second, the offensive strategy

measure used here could be decomposed into specific sub-dimensions—such as innovation intensity or internationalization—to investigate whether different strategic priorities uniquely shape audit demand. Third, while this study focuses on Jiangsu Province as a strategically significant industrial hub, future research should explore regional variation across other provinces in China or extend comparisons to other emerging economies to assess generalizability. Fourth, other TMT variables, such as political connections, tenure heterogeneity, or educational diversity, could provide a more nuanced picture of executive influence on audit decisions. Finally, qualitative or mixed-methods approaches—including executive interviews or case studies—could reveal the informal, institutional, or boardroom dynamics that shape auditor selection in ways not captured through quantitative models.

In sum, this study advances the audit selection literature by showing how competitive strategy and executive diversity converge to shape governance choices in an emerging market context. These insights offer a foundation for future research that more holistically integrates firm strategy, leadership composition, and external governance engagement in understanding corporate audit behavior.

Author Contributions

Conceptualization, Supervision, Mohd Mohid Rahmat; Data curation, Noor Hasni Juhdi; Formal analysis, Wei Zheng; Investigation, Meng Na; Software, Wei Zheng; Visualization, Mohd Fahmi Ghazali, Writing—original draft, Wei Zheng; Writing—review and editing, Wei Zheng and Meng Na, All authors have read and agreed to the published version of the manuscript.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability Statement

The data used in this study are derived from publicly accessible sources. Firm-level financial and governance data were obtained from the China Stock Market and Accounting Research (CSMAR) database, a widely used commercial database for Chinese listed firms. Additional information on top management team (TMT) characteristics—including gender composition and overseas experience—was manually extracted from the "Directors and Senior Management" sections of company annual reports available via the Shanghai and Shenzhen Stock Exchange websites.

Ethical Statement

No human participants or sensitive personal data were involved. Therefore, ethical approval was not required in accordance with institutional guidelines and applicable national regulations. All data collection and analysis procedures adhered to principles of research integrity and responsible data use.

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Appendix

Table A1: Instrument Diagnostics and Endogeneity Tests

Panel A. First-Stage Relevance (OLS)	Coefficient (SE)	t-stat	p-value	Partial R^2	F-stat
Industry–year median offensive score	0.36 (0.06)	6.42	0.000	0.19	18.6
Lagged provincial FDI × industry exp.	0.29 (0.05)	5.87	0.000	0.23	24.3

Panel B. Second-Stage (IV-Logit, 2SRI)	Coefficient (SE)	z-stat	p-value
Offensive strategy	0.47 (0.15)	3.13	0.002
TMT gender diversity	0.38 (0.14)	2.71	0.007
TMT overseas experience	0.52 (0.17)	3.06	0.002
Control variables	Included	—	—

Panel C. Instrument Validity & Endogeneity Diagnostics	Test Statistic	p-value
Sanderson–Windmeijer multivariate F	17.4	0.000
Hansen J (over-ID)	$\chi^2(1) = 1.82$	0.18
Control-function residual term (logit)	$\beta = 0.21$	0.04

Table A2: Sensitivity Analysis of TMT Overseas Experience Operationalization

Specification	Coefficient (SE)	p-value
10% threshold	0.35 (0.14)	0.012
20% threshold	0.41 (0.15)	0.008
30% threshold (main)	0.45 (0.16)	0.006
40% threshold	0.52 (0.18)	0.004
Continuous share	0.012 (0.005)	0.021

Note. Logistic regression coefficients reported. Models include same controls and fixed effects as in main specification.