Board Composition and Underpricing : The Role of Business Experts, Support Specialists, Community Influentials, and Gender Diversity

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Abstract

The objective of this paper was to analyze the influence of resource, structural, and gender diversity on the boardroom of newly listed companies on IPO underpricing. To measure resource diversity, we categorized directors into support specialists, business experts, and community influentials and examined their influence on listing day demand for issue by investors. This study provided evidence in favor that directors with different skill sets, experience, and connections affected the IPO underpricing differently. Not all directors were equally influential; some of them, especially business experts and directors with political ties, were more influential than others. The findings noted an inverted U-shaped non-linear relationship of these directors with underpricing. This means that initially, the diversity affected the underpricing positively, and at a point of inflection, the relationship became negative. The results also indicated that the proportion of women directors had a statistically significant relation with underpricing. Overall, the present study confirmed the relevance of board diversity on demand for a public offering on listing day.

Keywords : **Board resource diversity, support specialists, business experts, community influentials, gender diversity, Blau's Index, underpricing**

JEL Classification Codes : G11, M14, M12, O34

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The market for initial public offerings is a well-researched area amongst the researcher community across the globe. Many research studies have been conducted in the past, which collectively investigated the area of IPO underpricing, determinants of IPO short-run and long-run performance, post-issue financial and operating performance of IPO firms, survival analysis, and so on. Overall, the research studies on the IPO market worldwide have evolved as an interdisciplinary area of research. In this context, a rich body of literature is already available which links corporate governance with the market for new issues. Since corporate governance is a broader concept, these studies have been primarily limited to the role of board-related governance indicators of a firm. Several studies have documented that a carefully selected effective board can serve as a great assistance to the management and ensure a successful listing and superior future performance of a firm (Baker & Gompers, 2003; Certo et al., 2001; Hartzell et al., 2008; Venkatraman & Selvam, 2014).

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In the literature, the commonly used indicators of an effective board are : (a) proportion of non-executive directors on board, (b) board size, (c) women directors on board, (d) CEO duality, (e) proportion of independent directors on board, and other easily accessible factors. The findings on the effect of these indicators of board effectiveness have been contradictory as there is a lack of consensus in reported empirical pieces of evidence. As a result, several researchers began to expand the domain of board diversity by incorporating the effect of board experience, knowledge, and expertise as well. For instance, Thorsell and Isaksson (2014) studied the role of directors' experience in IPO performance by dividing the directors' experience into three sub-parts: external ties (based on resource dependency theory), intra-corporate experience, and specific experience. Hafsi and Turgut (2013) further divided the board diversity into two broad heads of (a) structural diversity comprising of board size, directors' independence, directors' stock ownership, and leadership duality; (b) demographic diversity comprising of gender diversity, directors' ethnicity, age, and experience. In Hillman et al.'s (2000) typology, three different types of director resources exist: support specialists, business experts, and community influentials.

In the context of the Indian security market, and particularly the primary issue market, no prior research sought to study the role of board resource diversity. This is where the present study promises to make a unique contribution to non-existent literature in the context of the Indian security market. The present study heavily draws upon Hillman et al.'s (2000) typology to study the diversity of experience, skill, knowledge, and expertise of the board of directors.

Literature Review

Although only a few pieces of research in the Indian context have studied the role of board resource diversity, plenty of research studies are available in the context of gender diversity of Indian boards. These studies focused on the impact of board gender diversity on listing day performance of firms and post-issue performance in the long run and short run. Kaur and Singh (2017) reported the presence of women directors as a positive signal for corporate reputation. However, the actual number of women directors has no significant influence. Therefore, the influence of women directors may not be statistically significant unless the women directors form a substantial portion of board size.

Contrary to this, Brammer et al. (2009) found that women directors significantly influenced corporate reputation only in sectors dealing closely with final consumers. Examining the effect of percentage of women directors on 'top management team,' Welbourne et al. (2007) reported a significant positive effect on company's performance in the short-run and marginally significant effect on stock price growth and EPS growth in the long run. Kaur and Singh (2016) found that the presence of WD on board of IPO issuing firms failed to act as a quality signal, for it did not reduce under-pricing. Contrary to this, Badru et al. (2019) reported a significant influence of women directors in reducing the under-pricing, however, the authors observed that the proportion of women directors mattered a lot. The significance varied with the business cycles, and it weakened during stock market crises and slowdowns.

Similarly, Singh and Gupta (2018) and Maurya et al. (2019) found that the presence of women directors significantly reduced the IPO underpricing. Although the pieces of evidence on the effect of gender diversity remain inconclusive, a majority of the researchers reported a positive effect of women directors; however, they should form a critical mass of board size for the effect to be significant. Therefore, we propose the following hypotheses :

- **H01 :** The proportion of women directors is not related to listing day gains (underpricing).
- **Ha1 :** The proportion of women directors is negatively related to listing day gains.

Support Specialists

Support specialists are thought of as people who primarily assist the management in the areas of finance, legal and compliance, corporate social responsibility, insurance, capital market, or investment. They are identified as people specialized in professions such as chartered accountants, charter financial analysts, company secretaries, lawyers; people with prior experience in commercial and investment banks, accounting and auditing firms, public relations and advertising firms, consultancy firms, and private investors. Their primary role is to support the management in their decision-making and serve a critical role as independent directors. Their role of management is assumed to be as decision controllers (Jones et al., 2008). It is common to find such support specialists on board (Gray & Nowland, 2014). While they specialize in a broad spectrum of professions, some studies particularly focused on examining the effect of specific professional expertise, such as banking and financial expertise, and found them significant in enhancing accounting conservatism (Krishnan & Visvanathan, 2008) and quality (Badolato et al., 2014). Francis et al. (2015) reported a positive impact of the presence of directors from academia on post-acquisition performance and informativeness of stock prices and reducing accounting accruals. Similarly, practicing lawyers as directors were reported to reduce corporate risk-taking at the cost of shareholders' wealth (Litov et al., 2014). Based on the extant literature, we propose the following hypotheses:

- **H02 :** Proportion of support specialists as a part of overall board diversity has no impact on underpricing.
- **Ha2 :** Proportion of support specialists as a part of overall board diversity reduces the initial underpricing.

Business Experts

Directors are categorized as business experts based on their prior experience and knowledge about the industry in which the firms operate. They are typically skilled at decision-making and problem-solving and are engaged in the day-to-day affairs of a firm. Their presence on boards is crucial, and they possess a strong signal due to their strong industry connections and contacts. A strong voice of such directors on board is found to have a favorable impact on firms' performance (Dass et al., 2014; Drobetz et al., 2014;), innovation and mergers (Faleye et al., 2018), and acquisition decisions (Kroll et al., 2007). Fich (2005) reported a significantly positive announcement effect of the election of a director with CEO experience.

Similarly, Gray and Nowland (2014) also reported a positive announcement effect for the election of a director with business expertise. Further, the positive effect was reported to be growing with the number of years of experience and proportion of such directors on board. Based on the empirical evidence, we propose the following hypotheses:

- **H03 :** Proportion of business experts as a part of overall board diversity has no impact on underpricing.
- **Ha3 :** Proportion of business experts as a part of overall board diversity reduces the initial underpricing.

Community Influentials

Community influentials are directors from academia, government officials, retired army officials, people with political ties, former IAS officers, leaders of foundations and not-for-profit organizations. Hence, these are defined as people commanding reputation, respect, and power. According to Goldman et al. (2009), political directors under the category of community influentials serve as great assistance in dealing with bureaucratic and legislative proceedings. Like support specialists, community influentials are also viewed as critical to board

composition as they justify the role of independent directors and bring the non-business perspectives, which might be valued by the stakeholders (Faccio & Parsley, 2009). Hence, the present study hypothesizes that:

- **H04 :** Proportion of community influentials as a part of overall board diversity has no impact on underpricing.
- **Ha4 :** Proportion of community influentials as a part of overall board diversity reduces the initial underpricing.

Based on Hillman et al. (2000), previous studies used Blau's index (Jost, 2006) to measure the board resource diversity. According to Van Der Walt and Ingley (2003), board diversity should be considered a mix of skills, competencies, and capabilities instead of the traditional 'representation' role of directors. García-Meca and Palacio (2018) reported that professional diversity differed from other types of traditional diversity, such as gender and demographics, which were commonly studied in past research studies. The literature on the effect of board resource diversity is scarce and mainly limited to Western countries. Therefore, the present study attempts to uniquely contribute to available literature by examining the statistical significance of board resource diversity in predicting the likelihood of listing day returns on initial public offerings. Hence, we hypothesize that :

- **H05 :** Board resource diversity is not related to listing day gain (underpricing).
- **Ha5 :** Board resource diversity is negatively related to listing day gain (underpricing).

The present study performs a detailed analysis of diversity on the corporate board of newly listed companies. Therefore, board diversity is defined as resource diversity and demographic diversity, particularly the gender diversity on boards. The study adopts the Hillman et al. (2000) typology in conjunction with the Blau's Index to measure the value of resource diversity index for each company comprising the sample. Thereafter, with the application of OLS with a quadratic term for resource diversity, the statistical significance of the board resource diversity index is examined along with other variables of our interest. The following section discusses the methodology adopted for the present study.

Methodology

Sample and Data Collection

The present study examines the mainline Indian IPOs issued from January 2010 to November 2020 and were listed on NSE/BSE. Table 1 presents the description of the issues. A total of 270 initial public offerings were made during the period under study, out of which 14 issues failed because they were withdrawn and did not list on the stock market. Hence, the sample comprises of 256 successful issues. Consistent with Mnif (2009), the sample excludes the IPOs of financial services firms, banks, and insurance companies as they are different from other businesses in two aspects, firstly, the level of opaqueness in their functioning and secondly, the relatively greater role of government and other regulatory bodies. Further, as the study focuses on investigating the resource diversity of boards, we exclude the public sector undertakings (PSUs) and companies engaged in the manufacturing of defense equipment and machines. Therefore, to eliminate any biases, such companies are excluded from the sample because their board composition is found to be predominantly influenced by directors nominated by government ministries. Therefore, the final sample comprises of 197 IPOs.

The data on the composition of the board were collated through content analysis of the final prospectuses of firms filed with ROC, which was downloaded from the official website of the Securities and Exchange Board of India (SEBI).

Table 1. ***Summary of Initial Public Offerings During the Sample Period (2010 - 2020)***

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Total Number of Issues (A)	66	40	13	5	7	21	27	38	25	16	12	270
Issues Failed (B)	2	3	2	2	2	0	1	0	1	0	1	14
Successful Issue C = (A – B)	64	37	11	3	5	21	26	38	24	16	11	256
Total Fund Raised (₹ Million)	363,621.8	59,774.7	68,341.7	12,839.5	12,009.4	135,131.7	265,008.2	752,785.7	317,312.8	126,873.2	249,775.2	2,363,473.9
Average Issue Size	568.16	161.55	621.29	427.98	240.19	643.48	1,019.26	1,981.02	1,322.14	792.96	2,081.46	919.64
Issue Market							HOT	HOT	HOT		HOT	

Empirical Method

The present study uses a multiple linear regression model with quadratic terms to study the influence of board diversity and related governance variables on initial day return on public offerings. The description of variables and their measurement is presented in Table 2.

To measure the board diversity, the present study adopts the typology of Hillman et al. (2000) and categorizes the board into support specialists, business experts, and community influentials. The proportion of directors in each of the categories is converted into a unique diversity index using Jost's (2006) Blau's Index. It is the most common measure of board diversity (Bear et al., 2010; García-Meca & Palacio, 2018; Harrison & Klein, 2007) and is measured by the formula:

$$Diversity = 1 - \Sigma(pk)^2$$

where, *pk* is the proportion of board members *(p)* in each of the *k*th categories that compose the group. A higher value of diversity index indicates the greater diversity among support specialists, business experts, and community influentials.

Table 2. ***Research Variables and Their Measurement***

Variable	Description	Measurement
Dependent Variable		
LDR	Listing day gain/loss	Adopted from Certo et al. (2001) and Arthurs et al. (2008), IPO underpricing is the dependent variable used in the present study, which is the raw return on listing day calculated as follows: Underpricing = $(P_1 - P_0)/P_0$ where, P_1 : Closing price on listing day on BSE, P_0: Initial offer price or issue price.
Independent Variables		
DiversityCen	Indicates the linear term for diversity index	Measured by centering the diversity index by deducting the mean of diversity index from the individual diversity score.
DiversityCenSq	Indicates the quadratic term for diversity index	Measured by taking a square of the centered diversity score.
SSCen	Indicates the linear term for the proportion of support specialists	Measured by taking a square of the centered support specialist.
SSCenSq	Indicates the quadratic term for the proportion of support specialists	Measured by centering the proportion of support specialists by deducting the mean proportion of support specialists from the individual value.
BECen	Indicates the linear term for the proportion of business experts	Measured by taking a square of centered business experts.
BECenSq	Indicates the quadratic term for the proportion of business experts	Measured by centering the proportion of business experts by deducting the mean proportion of business experts from the individual value.

CICen	Indicates the linear term for the proportion of community influentials	Measured by taking a square of centered community influentials.
CICenSq	Indicates the quadratic term for the proportion of community influentials	Measured by centering the proportion of community influentials by deducting the mean proportion of community influentials from the individual value.
D_Pol	Indicates the presence of directors with political connections	Measured as dummy variables which are given a value of 1 if such political directors are present on the board, and 0 otherwise.
ProportionWD	Measures the gender diversity on a board	The number of women directors on board, divided by the board size.
D_IDLead	Dummy variable to capture the role of board independence via the nature of board leadership	Measured as a binary dichotomous variable. Value 1 is assigned to the variable if the chairperson of the board is an independent director, and the value is 0 otherwise.
Duality	Indicates the presence of CEO duality	Measured as dummy variable which takes the value 1 when CEO is chairman, and 0 otherwise.
LEV	Indicates the level of financial leverage	Measured as total asset divided by total equity. The higher the value, the greater is the portion of debt in capital structure and the greater the leverage.
ROA	Percentage return on the total assets at the time of public offering	Measured as profit before tax divided by the total assets.
LnTA	Indicates the size of a firm	Natural log of the total assets at the time of public offering.
D_IssueMkt	Indicates whether an issue has been made in a hot market or not	Measured as a dummy variable that takes the value 1 if a public issue was made during the hot issue market and 0 otherwise. A hot issue market is defined as a year in which the average size of a public offering is greater than the mean issue size of the entire sample period.

As the proportions of support specialists, business specialists, and community influentials together reflect the diversity index, including these three types of resource categories along with the diversity index in a single model would lead to a collinearity problem. To avoid this while still being able to study the individual significance of each category, they are added separately from the diversity index, one at a time, and the results of such models are presented in Table 5. Further, since directors with political connections are an important constituent of community influentials, a separate dummy variable is included in the model to measure their unique influence. Initial investigation of curve estimation reveals a quadratic relationship of diversity index with underpricing. To avoid the issue of collinearity between the linear and quadratic terms, the diversity index has been centered from its mean, and then a square of such centered diversity index was included as a quadratic term.

Similarly, the proportion of support specialists, business experts, and community influentials has also been centered from their respective means. Taking the centered score reduces the collinearity. To further detect the collinearity and autocorrelation, VIF and Durbin – Watson statistics have been examined. The relationship between resource diversity and other independent variables is examined using OLS with a quadratic term for resource diversity using SPSS 20.0. The following baseline model is predicted:

$$LDR = \beta_0 + \beta_1 DiversityCen + \beta_2 DiversityCenSq + \beta_3 D\_Pol + \beta_4 ProportionWD + \beta_5 D\_IDLead + \beta_6 Duality + \beta_7 D\_IDLead + \beta_8 Leverage + \beta_9 ROA + \beta_{10} LnTA + \beta_{11} D\_IssueMkt + e_i \quad .....(1)$$

Thereafter, to examine the role of individual categories of director resources, the diversity linear term and the

quadratic term are replaced by those of support specialists, business experts, and community influentials. The results of each of these models are presented in Table 5.

Analysis and Results

Descriptive Statistics

Table 3 presents the descriptive statistics of the sample. The average size of the board is eight directors. Consistent with Singh (2020), the proportion of women directors in the overall board is found to be minuscule. The average proportion of support specialists, business experts, and community influentials is 0.17, 0.33, and 0.02, respectively. The majority of the directors in the boardroom belonged to business experts. The proportion of community influentials is minuscule in overall board diversity. The average underpricing for the sample period is 14.45%; on the higher end, the public issues experienced as much as 153.5% underpricing on listing day. The average size of firms coming out with public issues from 2010 – 2020 is ₹11,758.522 million, measured in terms of their total assets. Finally, the average issue size was ₹ 4,651.983 million from 197 firms. Together, total fund mobilization during the sample period was ₹ 916,440.6 million.

Table 4 presents the correlation matrix. The listing day return is observed to be strongly and positively correlated with a quadratic term of overall diversity ($p<0.05$) and the presence of political influence on the boardroom ($p<0.01$). This indicates an inverted U shape non-linear relationship between underpricing and diversity. The presence of political directors reduces the underpricing on listing day. The listing day is significantly positively correlated with the issue market, indicating that underpricing is higher during the hot issue market ($p<0.05$). Several research studies have documented that among the factors affecting underpricing of issues, macroeconomic factors are more significant, such as market condition at the time of issue (Pandey & Pattanayak, 2018). Gupta (2011) reported that the underpricing is generally higher during the period of the market boom. On the other hand, in unfavorable market conditions, issues take random walks due to increased uncertainty. Based on a multilayer perceptron model, Singh et al. (2021) found that technical factors had the highest relative relevance in the prediction of the post-issue performance of the initial public offerings. However, fundamental factors become more relevant in the determination of long-term returns.

An examination of VIF (variance inflation factor) and tolerance statistics indicate that multicollinearity is not a problem as each of the models tested has VIF below 5 for each independent variable (Miles, 2005). The Durbin – Watson statistics for each model are reported in Table 3, which is close to 2 for all models, indicating an absence of autocorrelation.

Regression Results

Table 5 reports the regression coefficients and their respective *p* - values. In Column 1 (Model 1), we test if the overall board diversity affects underpricing. The coefficient of the quadratic board diversity variable is negatively and statistically significant ($p = 0.012$), which is in line with our expectations that greater diversity reduces mispricing and underpricing. It is important to note that the linear term of the diversity index is insignificant ($p = 0.53$), which strongly advocates the presence of a quadratic relationship between overall diversity in a boardroom and underpricing. The negative sign of both linear and quadratic terms indicates an inverse U-shaped curve. Therefore, it indicates that the underpricing initially increases with an increase in diversity index, and then after a point of inflection, it decreases with an increase in diversity. These results are found to be consistent with the results reported by García-Meca and Palacio (2018) for the relationship of board diversity with corporate reputation. Overall, the results confirm our hypothesis Ha5, that is, board diversity is negatively related to listing day gains.

Table 3. ***Descriptive Statistics***

	Issue Size (Million)	*Total Assets* (Million)	*Underpricing* (%)	*Women Director*	*Board Size*	*Support Specialists*	*Business Experts*	*Community Influentials*	*Political Influence*	*Diversity*	*Leverage*	*ROA* (%)
N	197	197	197	197	197	197	197	197	197	197	197	197
Mean	₹4651.983	₹11758.522	14.4585	0.85	7.81	0.17	0.33	0.02	0.01	0.48	3.32	10.33
Median	₹2970	₹4601.93	7.3438	1.00	8.00	0.13	0.25	0.00	0.00	0.49	2.55	9.45
Mode	₹6000	₹29068.71	–5.00[a]	1.00	8.00	0.11	0.25	0.00	0.00	0.44	1.51	4.15[a]
Std. Dev.	₹5709.0031	₹25800.2654	36.27165	0.76	2.21	0.14	0.19	0.04	0.02	0.12	3.33	11.12
Minimum	₹230	₹183.49	–69.83	0.00	4.00	0.00	0.01	0.00	0.00	–0.03	–1.76	–34.11
Maximum	₹41558	₹234740.9	153.5	5	20	0.84	1	0.36	0.18	0.75	34.7	70.96
Sum	₹916440.6	₹2316428.82	2848.32	167	1539	32.76	65.63	3.72	1.49	94.89	654.64	2035.54

[a] Multiple modes exist. The smallest value is shown.

Description of Variables. Table 3 presents the descriptive characteristics of the sample. The *Issue Size* is the number of proceeds raised from the public offerings. *Total Assets* are measured as the total assets of the financial year immediately preceding the public offering. *Underpricing* measures the listing gain/loss based on the closing prices of the listing day. *Women Directors* indicates the number of women directors on board. *Board Size* is the total number of directors comprising of the board at the time of public offering. *Support Specialists* are the proportion of directors with skills and experience in the areas of CA, investment banking, consulting, legal matters, private investors, etc., as defined in the text. *Business Experts* are the proportion of directors who have expertise in the areas of business and are typically skilled at decision-making and problem-solving and engaged in the firm's day-to-day affairs. *Community Influentials* are the proportion of directors who command an excellent reputation and include people from academia, government officials, retired army officials, people with political ties, former IAS officers, leaders of foundations, and not-for-profit organizations. *Political Influence* measures the proportion of directors with political connections and contacts. Finally, *Diversity* measures the overall resource diversity in a boardroom using Blau's Index. *Leverage* measures the ratio of the total assets to total equity. *ROA* is the return on assets. Both the *Leverage* and *ROA* are measured for the financial year immediately preceding the public offering.

Table 4. ***Correlation***

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) *LDR*	1															
(2) *DiversityCen*	.022	1														
(3) *DiversityCenSq*	–.156*	–.515**	1													
(4) *SSCen*	.048	–.009	–.133	1												
(5) *SSCenSq*	–.021	–.357**	.209**	.664**	1											
(6) *BECen*	–.027	–.704**	.420**	–.676**	–.250**	1										
(7) *BECenSq*	–.103	–.693**	.889**	–.108	.213**	.522**	1									
(8) *CICen*	–.105	.372**	.013	–.254**	–.068	–.265**	–.028	1								
(9) *CICenSq*	–.050	.140*	–.005	–.132	–.016	–.176*	.048	.852**	1							
(10) *ProportionWD*	–.055	.087	–.117	.172*	–.011	–.181*	–.090	–.001	.046	1						
(11) *D_IDLead*	–.027	–.031	–.070	.160*	.133	–.099	–.102	.002	.094	.005	1					
(12) *D_Pol*	–.166*	.184**	–.027	–.147*	–.059	–.044	–.046	.169*	.009	–.130	–.027	1				
(13) *LnTA*	–.086	.188**	–.125	.142*	.073	–.223**	–.169*	–.001	–.019	.062	.144*	.241**	1			
(14) *ROA*	.069	–.066	.073	–.009	.039	.062	.107	–.062	–.067	.025	–.020	–.104	–.162*	1		
(15) *LEV*	–.053	–.031	–.056	–.028	–.016	.047	–.062	–.034	–.026	.043	.039	–.028	.217**	–.172*	1	
(16) *D_IssueMkt*	.146*	.179*	–.113	.145*	.037	–.227**	–.119	.034	.040	.313**	.093	.001	.283**	.110	–.093	1

Note. *Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Variables. *DiversityCen* and *DiversityCenSq* are linear and quadratic terms for overall diversity. *SSCen* and *SSCenSq* measure the quadratic relationship for the proportion of support specialists. *BECen* and *BECenSq* capture the quadratic relationship for business experts. *CICen* and *CICenSq* incorporate the quadratic relationship of community influentials. The other board-related governance variables are the proportion of woman directors *(ProportionWD)*, a dummy variable for the presence of political influence *(D_Pol)*, CEO duality *(Duality)*, and independent director as chairperson *(D_IDLead)*. The control variables include Leverage *(LEV)*, Return on Asset *(ROA)*, Total asset *(LnTA),* and a dummy variable for hot issue market *(D_IssueMkt)*.

Interestingly, the presence of political influence on the board also significantly reduces the listing day returns (p = 0.029). This model also reports the statistically significant negative effect of the proportion of women directors on underpricing (p = 0.079). Overall, the model is statistically significant at 1%. This is consistent with our hypothesis Ha1 and hence provides statistically significant evidence in favor of the hypothesis.

Models 2, 3, and 4 measure the effect of the different directors: business experts, support specialists, and community influentials on underpricing. Model 2 tests the effect of the proportion of support specialists on underpricing. Neither the linear nor the quadratic term is statistically significant. However, the negative sign of the quadratic term indicates that as the proportion of support specialists increases, the underpricing increases at a decreasing rate. Therefore, there is no statistically significant evidence to support hypothesis Ha2.

Model 3 reports the effect of the proportion of business experts on underpricing. The insignificant linear term (p = 0.705) and significant quadratic term (p = 0.022) implies a strong quadratic relationship between underpricing and the proportion of business experts. Further, signs of linear and quadratic terms indicate that underpricing increases with an increase in the proportion of business experts at a decreasing rate. This does not conform with hypothesis Ha3. However, the observed relationship is consistent with the findings reported by García-Meca and Palacio (2018) for corporate reputation and board diversity.

Finally, Model 4 exhibits the effect of the proportion of community influentials on underpricing. Although the reported coefficients are statistically insignificant, they indicate that as the proportion of community influentials increase, the underpricing decreases. However, hypothesis Ha4 cannot be supported in the absence of statistically significant evidence. Together, these explain the inverted U-shaped curve of underpricing w.r.t overall diversity index. An increase in the proportion of support specialists and business experts causes the underpricing to be more significant, and the increasing proportion of community influentials pulls down this effect mainly due to the presence of political directors.

For all models, issue market and presence of political influence are found to be statistically significant. Public issues made during hot issue markets are heavily underpriced, and the presence of political directors causes the underpricing to be lower. The proportion of women directors is statistically significant for Model 1 and Model 2; however, it reduces for the other two models, causing it to be significant at a higher significance level. The presence of CEO duality and independent director as chairman are insignificant, and these results are consistent with the findings of Singh and Maurya (2018). However, both are negatively related to underpricing.

Overall, all models are statistically significant, and the Durbin – Watson statistics is approximately equal to 2 for all four models, which indicates no apparent autocorrelation. It is important to note the importance of business experts as the R - square of Model 3 alone is 10%, which is highly significant (p = 0.03) compared to Model 2 (p = 0.064) and Model 4 (p = 0.052). However, the R - square value of Model 1 is the highest and significant at 1%. This means that the combined effect of all resources is higher than their individual effect.

Conclusion and Implications

This paper aims to analyze the influence of resource, structural, and gender diversity on the boardroom of newly listed companies on IPO underpricing. The resource diversity is measured by categorizing the directors into support specialists, business experts, and community influentials based on their skills, expertise, experience, knowledge, and connections. This study provides evidence that directors with different skill sets, experiences, and connections affect the IPO underpricing differently. Not all directors are equally influential; some of them, especially business experts and directors with political ties, are more influential than the others. The findings note an inverted U-shaped non-linear relationship of overall board diversity with underpricing. This means that initially, the diversity affects the underpricing positively to a point of inflection beyond which the relationship becomes negative. This might be due to a strong presence of business experts being viewed as a positive signal by investors, causing the demand for public offerings to be higher on listing, resulting in initial day listing gain.

Table 5. ***Regression Results of Relationship with Underpricing***

Variable	Model 1	Model 2	Model 3	Model 4
Constant	0.488	0.449	0.487	0.414
	(0.004)	(0.009)	(0.005)	(0.014)
DiversityCen	–0.156	–	–	–
	(0.530)			
DiversityCenSq	–2.509	–	–	–
	(0.012)***			
SSCen	–	0.271	–	–
		(0.281)		
SSCenSq	–	–0.778	–	–
		(0.308)		
BECen	–	–	0.060	–
			(0.705)	
BECenSq	–	–	–0.915	–
			(0.068)*	
CICen	–	–	–	–1.507
				(0.217)
CICenSq	–	–	–	3.949
				(0.461)
ProportionWD	–0.500	–0.515	–0.456	–0.463
	(0.079)*	(0.080)*	(0.114)	(0.108)
D_Pol	–0.142	–0.136	–0.148	–0.119
	(0.029)**	(0.040)**	(0.022)**	(0.080)*
Duality	–0.071	–0.060	–0.075	–0.058
	(0.226)	(0.313)	(0.207)	(0.328)
D_IDLead	–0.084	–0.068	–0.083	–0.073
	(0.245)	(0.358)	(0.260)	(0.327)
LEV	–0.003	–0.001	–0.003	–0.002
	(0.716)	(0.881)	(0.738)	(0.824)
ROA	0.001	0.001	0.001	0.001
	(0.682)	(0.732)	(0.667)	(0.829)
LnTA	–0.027	–0.026	–0.027	–0.026
	(0.175)	(0.191)	(0.172)	(0.197)
D_IssueMkt	0.152	0.156	0.152	0.163
	(0.014)**	(0.012)**	(0.015)**	(0.009)***
R	0.339	0.297	0.316	0.302
R Sqaure	0.115	0.088	0.100	0.091
F	2.419	1.797	2.059	1.868
Sig.	0.010***	0.064*	0.030**	0.052**
Durbin-Watson	1.907	1.895	1.904	1.900

Note. *p*-values in parentheses.

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

Similarly, a greater proportion of support specialist directors also increases the underpricing, however, at a decreasing rate. The coefficient of the quadratic term for support specialists is insignificant. Contrary to all, the proportion of community influentials is negatively related to underpricing and is insignificant. It is interesting to note that although the influence of community influentials alone is insignificant, the dummy variable for the presence of political directors is statistically significant. This indicates that among the directors constituting community influentials, directors with political ties and connections are more influential and are more significant as a signaling mechanism.

Further, the results also indicate that the proportion of women directors has a statistically significant negative effect on underpricing. The study does not find any significant influence of structural diversity. Neither CEO duality nor the nature of board leadership has any significant relationship with underpricing, partially due to the box-ticking practices of companies to comply with the governance-related listing requirements. Therefore, for a board to be effective, firms must adopt good governance practices in their true spirit and not merely on paper. Therefore, the study of board resource diversity is a step ahead of simply examining the structural diversity of the board because no regulations govern the composition of the board based on the unique resources they contribute to companies.

Overall, the present study confirms the relevance of board resource diversity on demand for public offerings on the listing day. Most importantly, the evidence suggests that the combined effect of all resources is higher than their individual effect. Therefore, overall diversity is more relevant than concentrated resources on a board. Based on the findings of the present study, corporates can signal their reputation and value by including the right combination of skills and expertise on boards.

Limitations of the Study and Scope for Further Research

The present study limits its scope to listing day return on initial public offerings of mainline IPOs. The role of board resource diversity, structural diversity, and demographic diversity can further be studied in the long-term performance of public firms. Further, several other measures of demographic diversity can be incorporated, such as ethnicity and age. For a comprehensive study on resource diversity of the board, specific skill sets can be identified for their individual consideration, such as expertise in investment banking, private equity, CA and CS, legal and compliance, political ties, academic background, etc. Lastly, more controlled variables can be introduced, and interdisciplinary studies can be conducted to see the influence of board diversity on a variety of other areas of business such as human resource management practices, risk management, financing decisions, etc.

Authors' Contribution

Sheetal Maurya conceived the idea and developed qualitative and quantitative design to undertake the empirical study. Afterward, she extracted research papers with high repute, filtered these based on keywords, and generated concepts and codes relevant to the study design. Dr. Lovleen Gupta verified the analytical methods and supervised the study. The numerical computations were done by Ms. Sheetal Maurya using SPSS 20.0.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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References

Arthurs, J., Hoskisson, R., Busenitz, L. W., & Johnson, R. A. (2008). Managerial agents watching other agents: multiple agency conflicts regarding underpricing in IPO firms. *The Academy of Management Journal, 51*(2), 277–294. https://doi.org/10.2307/20159509

Badolato, P. G., Donelson, D. C., & Ege, M. (2014). Audit committee financial expertise and earnings management: The role of status. *Journal of Accounting and Economics, 58*(2–3), 208–230. https://doi.org/10.1016/j.jacceco.2014.08.006

Badru, B. O., Ahmad-Zaluki, N. A., & Wan-Hussin, W. N. (2019). Signalling IPO quality through female directors. *International Journal of Managerial Finance, 15*(5), 719–743. https://doi.org/10.1108/IJMF-01-2018-0025

Baker, M., & Gompers, P. A. (2003). The determinants of board structure at the initial public offering. *The Journal of Law and Economics, 46*(2), 569 – 598. https://doi.org/10.1086/380409

Bear, S., Rahman, N., & Post, C. (2010). The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics, 97*(2), 207–221. https://doi.org/10.1007/s10551-010-0505-2

Brammer, S., Millington, A., & Pavelin, S. (2009). Corporate reputation and women on the board. *British Journal of Management, 20*(1), 17 – 29. https://doi.org/10.1111/j.1467-8551.2008.00600.x

Certo, S. T., Daily, C. M., & Dalton, D. R. (2001). Signalling firm value through board structure: An investigation of initial public offerings. *Entrepreneurship Theory and Practice, 26*(2), 33–50. https://doi.org/10.1177/104225870102600202

Dass, N., Kini, O., Nanda, V., Onal, B., & Wang, J. (2014). Board expertise: Do directors from related industries help bridge the information gap? *The Review of Financial Studies, 27*(5), 1553–1592. https://doi.org/10.1093/rfs/hht071

Drobetz, W., Von Meyerinck, F., Oesch, D., & Schmid, M. (2014). *Board industry experience, firm value, and investment behavior* (Working Paper No. 2014/01). Hamburg Financial Research Center. http://ux-tauri.unisg.ch/RePEc/usg/sfwpfi/WPF-1401.pdf

Faccio, M., & Parsley, D. C. (2009). Sudden deaths: Taking stock of geographic ties. *Journal of Financial and Quantitative Analysis, 44*(3), 683 – 718. https://doi.org/10.1017/S0022109009990068

Faleye, O., Hoitash, R., & Hoitash, U. (2018). Industry expertise on corporate boards. *Review of Quantitative Finance and Accounting, 50*(2), 441 – 479. http://dx.doi.org/10.1007/s11156-017-0635-z

Fich, E. M. (2005). Are some outside directors better than others ? Evidence from director appointments by Fortune 1000 firms. *The Journal of Business, 78*(5), 1943 – 1972. https://www.jstor.org/stable/10.1086/431448

Francis, B., Hasan, I., & Wu, Q. (2015). Professors in the board room and their impact on corporate governance and firm performance. *Financial Management, 44*(3), 547 – 581. https://doi.org/10.1111/fima.12069

García-Meca, E., & Palacio, C. J. (2018). Board composition and firm reputation: The role of business experts, support specialists and community influentials. *BRQ Business Research Quarterly, 21*(2), 111–123. https://doi.org/10.1016/j.brq.2018.01.003

Goldman, E., Rocholl, J., & So, J. (2009). Do politically connected boards affect firm value ? *The Review of Financial Studies, 22*(6), 2331 – 2360. https://doi.org/10.1093/rfs/hhn088

Gray, S., & Nowland, J. (2014). *Professional expertise and board diversity*. http://dx.doi.org/10.2139/ssrn.2289689

Gupta, K. (2011). Effect of market conditions, oversubscription and market efficiency on IPO underpricing. *Indian Journal of Finance, 5*(2), 15–23. http://www.indianjournaloffinance.co.in/index.php/IJF/article/view/72528

Hafsi, T., & Turgut, G. (2013). Boardroom diversity and its effect on social performance: Conceptualization and empirical evidence. *Journal of Business Ethics, 112*(3), 463 – 479. https://doi.org/10.1007/s10551-012-1272-z

Harrison, D. A., & Klein, K. J. (2007). What's the difference ? Diversity construct as separation, variety or disparity in organizations. *Academy of Management Review, 32*(4), 1198–1228. https://doi.org/10.5465/amr.2007.26586096

Hartzell, J. C., Kallberg, J. G., & Liu, C. H. (2008). The role of corporate governance in initial public offerings: Evidence from real estate investment trusts. *The Journal of Law & Economics, 51*(3), 539–562. https://doi.org/10.1086/589701

Hillman, A., Cannella Jr., A., & Paetz, R. (2000). The resource dependence role of corporate directors: Strategic adaptation of board composition in response to environmental change. *Journal of Management Studies, 37*(2), 235 – 256. https://doi.org/10.1111/1467-6486.00179

Jones, C. D., Makri, M., & Gomez-Mejia, L. R. (2008). Affiliate directors and perceived risk bearing in publicly traded, family-controlled firms: The case of diversification. *Entrepreneurship Theory and Practice, 32*(6), 1007–1026. https://doi.org/10.1111/j.1540-6520.2008.00269.x

Jost, L. (2006). Entropy and diversity. *OIKOS, 113*(2), 363 – 375. https://doi.org/10.1111/j.2006.0030-1299.14714.x

Kaur, A., & Singh, B. (2016). Does gender diversity on Indian boards impede IPO underpricing ? *Management and Labour Studies, 40*(1–2), 194 – 205. https://doi.org/10.1177/0258042X15601540

Kaur, A., & Singh, B. (2017). Construing reputation from gender diversity on boards: Indian evidence. *Paradigm, 21*(2), 111–125. https://doi.org/10.1177/0971890717736195

Krishnan, G. V., & Visvanathan, G. (2008). Does the SOX definition of an accounting expert matter? The association between audit committee directors' accounting expertise and accounting conservatism. *Contemporary Accounting Research, 25*(3), 827 – 858. https://doi.org/10.1506/car.25.3.7

Kroll, M., Walters, B. A., & Le, S. A. (2007). The impact of board composition and top management team ownership structure on post-IPO performance in young entrepreneurial firms. *The Academy of Management Journal, 50*(5), 1198 – 1216. https://doi.org/10.2307/20159920

Litov, L. P., Sepe, S. M., & Whitehead, C. K. (2014). Lawyers and fools: Lawyer directors in public corporations. *Georgetown Law Journal, 102*(2), 413 – 480.

Maurya, S., Singh, A. K., & Mohapatra, A. K. (2019). IPO underpricing and predictive power of board related corporate governance mechanisms: A study of Indian IPO market. *Theoretical Economics Letters, 9*(6), 2002 – 2018. https://doi.org/10.4236/tel.2019.96127

Miles, J. (2005). Tolerance and variance inflation factor. In B. S. Everitt & D. Howell (eds.), *Encyclopaedia of statistics in behavioural science* (1st ed.). Wiley. https://doi.org/10.1002/0470013192.bsa683

Mnif, A. (2009). *Board of directors and the pricing of initial public offerings (IPOs): Does the existence of a properly structured board matter ? Evidence from France*. La place de la dimension européenne dans la Comptabilité Contrôle Audit. https://halshs.archives-ouvertes.fr/halshs-00459257

Pandey, A., & Pattanayak, J. K. (2018). Impact of firm specific and macro-economic factors on the level of underpricing of initial public offerings (IPOs): Evidence from the Indian market. *Indian Journal of Finance, 12*(2), 7 – 25. https://doi.org/10.17010/ijf/2018/v12i2/121367

Singh, A. K., Jain, M. K., Jain, S., & Gupta, B. (2021). A new modus operandi for determining post - IPO pricing: Analysis of Indian IPOs using artificial neural networks. *Indian Journal of Finance, 15*(1), 8 – 22. https://doi.org/10.17010/ijf/2021/v15i1/157011

Singh, A. K., & Maurya, S. (2018). Corporate governance, ownership structure, and IPO underpricing: Evidence from the Indian new issue market. *Indian Journal of Research in Capital Market, 5*(1), 7–24. https://doi.org/10.17010/ijrcm/2018/v5/i1/122905

Singh, B., & Gupta, K. (2018). Relationship between management quality certification and IPO underpricing: Evidence from India. *Journal of Entrepreneurship and Management, 7*(3), 1–10. http://ischolar.info/index.php/jem/article/view/180474

Singh, G. (2020). Corporate governance: An insight into the imposition and implementation of gender diversity on Indian boards. *Indian Journal of Corporate Governance, 13*(1), 99–110. https://doi.org/10.1177/0974686220930839

Thorsell, A., & Isaksson, A. (2014). Director experience and the performance of IPOs: Evidence from Sweden. *Australasian Accounting Business and Finance Journal, 8*(1), 3–24. http://dx.doi.org/10.14453/aabfj.v8i1.2

Van Der Walt, N., & Ingley, C. (2003). Board dynamics and the influence of professional background, gender and ethnic diversity of directors. *Corporate Governance: An International Review, 11*(3), 218–234. https://doi.org/10.1111/1467-8683.00320

Venkatraman, K., & Selvam, M. (2014). Impact of corporate governance practices and firm performance: An empirical study. *Indian Journal of Finance, 8*(12), 34–45. http://dx.doi.org/10.17010/ijf/2014/v8i12/71691

Welbourne, T. M., Cycyota, C. S., & Ferrante, C. (2007). Wall Street reaction to women in IPOs : An examination of gender diversity in top management teams. *Group & Organization Management, 32*(5), 524–547. https://doi.org/10.1177/1059601106291071

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