

# Understanding Determinants of Firm Performance: An Analysis of Non-Financial Factors

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Received: June 22, 2025

Accepted: July 22, 2025

Online Published: July 28, 2025

doi:10.5539/ibr.v18n4p54

URL: <https://doi.org/10.5539/ibr.v18n4p54>

## Abstract

This study examines the influence of non-financial factors on the performance of 303 Italian small and medium-sized enterprises over the period 2012-2021. The analysis employs a panel data model with random effects. Performance indicators (ROA, ROE, EBIT, EBITDA and CFOR) are regressed on the variables of interest (firm age, gender of the direct manager, ownership structure and religiosity). Control variables include firm-specific financial data; sectoral dummy variables are used to account for industry effects. Ownership structure has a significant positive impact on firm performance, especially in terms of ROA and EBIT. Firm age shows a negative relationship with EBIT. The gender of the direct manager exhibits a marginal impact on ROA, while religiosity does not significantly influence any of the performance indicators. For managers, these findings highlight the importance of carefully balancing ownership structure to optimize performance while avoiding the risks associated with excessive concentration. Furthermore, while certain non-financial factors like firm age and manager gender may influence performance, their impact appears context-dependent and may not be as significant as previously thought. This study provides empirical evidence on the impact of non-financial factors on firm performance in the context of Italian SMEs. The results underscore the complexity of these relationships and the need for further research to explore the contextual factors that may moderate their impact.

**Keywords:** firm age, firm performance, gender diversity, ownership structure, religiosity

## 1. Introduction

Examining predictors of company performance is a long-standing and compelling subject of study. The continuous evolution of the economic context and business dynamics makes it an appealing area of subject. Firms must constantly monitor their performance and understand the factors that impact their ability to survive. Since the 1980s, the focus on identifying the main determinants of company performance has grown, along with an awareness of the need for an integrated system of indicators capable of evaluating the company situation (Pursell, 1980; Kaplan & Norton, 1992; Yuen, 2006; Gimbert et al., 2010; Neely, Adams, & Kennerley, 2002).

While there is substantial evidence on how financial parameters relate to firm performance, consensus on the impact of non-financial factors remains elusive. This study aims to contribute to this stream of research by examining the influence of several non-financial factors on firm performance. The analysis focuses on small and medium-sized enterprises (SMEs) in Italy, which represent the backbone of the national economy, generating about 40% of Gross Domestic Product. This focus represents a valuable contribution, as SMEs are often understudied in existing literature. SMEs face unique challenges, such as resource constraints and the need for flexibility, which distinguish them from larger firms. Understanding the non-financial factors that predict SME performance can inform better management practices and policies, allowing these businesses to optimize their operations and improve performance sustainably and efficiently, without requiring dramatic or costly efforts.

The remainder of this paper is structured as follows: Section 2 reviews the literature on the main contributions to the research topic; Section 3 illustrates the methodology; Section 4 presents the results; Section 5 summarizes the conclusions; Section 6 describes the limitations of the analysis, and its practical implications.

## 2. Literature Review

Numerous indicators are used to measure the effectiveness of a company's resource utilization in achieving its

financial, operational and strategic objectives (Cohen, 1994; Bartoli & Blatrix, 2015; Lebas & Euske, 2006; Taouab & Issor, 2019). Leveraging these indicators is crucial for deriving insights into business performance, enabling timely and meaningful interventions. By identifying and understanding the most critical indicators, firms can make informed decisions to enhance their operations and maintain a competitive edge in their industry and marketplace. These indicators can be broadly classified into financial and non-financial factors.

Financial factors reflect a firm's financial and market performance, providing objective metrics for evaluating its operations. Common financial indicators include working capital, liquidity, leverage, company value, sales growth and total asset turnover (Fajaria & Isnalita, 2018; Hirdinis, 2019; Le, 2019; Laghari & Chengang, 2019; Nastiti, Atahau, & Supramono, 2019; Kristi & Yanto, 2020; Alvarez, Sensini, & Vazquez, 2021; Akgün, & Memiş Karataş., 2021; Micheli, Calce, & Cafolla, 2022). Non-financial factors comprise a blend of objective and subjective indicators. Even when data is available, the interpretation of these factors can remain subjective. Examples include leadership and management style, organizational culture, and employee motivation. Among the most studied non-financial factors are the characteristics of owners, board members and managers (e.g. know-how, education, age, gender, and religiosity), as well as company-specific traits (e.g. firm age, industry, legal form, ownership structure, innovation).

By examining both financial and non-financial aspects, companies can gain a comprehensive understanding of their current state and future directions. This paper focuses on the non-financial factors that help explain firm performance.

### *2.1 Review of Studies on Gender Diversity and Firm Performance*

In recent decades, a substantial body of research has investigated whether the presence of women influences company performance (Carter, D'Souza, Simkins, & Simpson., 2010; Liu, Wei, & Xie, 2014; Perryman, Fernando, & Tripathy, 2016; Chen & Hassan, 2022). Several studies suggest that increased gender diversity can decrease conflicts within boards and management, thereby positively impacting firm performance (Nielsen & Huse, 2010; Van Den Oever & Beerens, 2021). For instance, Dang, Houanti, and Ammari (2018) find that in French SMEs, a higher percentage of women on corporate boards is significantly associated with better firm performance, particularly in terms of return on assets. They underscore that the impact is most pronounced when women constitute a significant portion of the board, suggesting that tokenism (where women are present but in very low numbers) may not yield the same benefits. Similarly, Del Prete and Stefani (2021) found that gender diversity in top boards of Italian firms is associated with enhanced firm performance, especially where boards are actively engaged in strategic decision-making.

Other authors have identified that gender-diverse boards contribute to better governance and more balanced risk management, aligning with findings that women's greater risk aversion can lead to more cautious and sustainable decisions (Reguera-Alvarado, De Fuentes, & Laffarga, 2017). Croson & Gneezy, 2009; Niederle & Vesterlund, 2007; Apesteguia, Azmat, & Iriberry, 2012). Conversely, some studies report either a negative or no significant relationship. Carter et al. (2010) found that the link between gender diversity and firm performance is often contingent on the proportion of female representation. Benefits may not materialize if representation is too low or too high. Rose (2007), studying Danish firms, revealed no significant impact, arguing that context and board dynamics are crucial. Ahern and Dittmar (2012) observed that a mandatory gender quota in Norway coincided with a temporary decline in firm performance, possibly due to the challenges of integrating many new and less experienced directors. Fernández-Temprano and Tejerina-Gaite (2020) also noted that the effect of gender diversity may vary depending on the specific circumstances, such as the firm's industry, size and the existing board culture.

The impact of gender diversity is, therefore, inconclusive. While some studies highlight positive effects, others caution that benefits may be conditional on the level of female representation and the board's ability to integrate diverse perspectives effectively.

### *2.2 Review of Studies on Ownership Structure and Firm Performance*

Another subject of significant interest, particularly within Agency Theory, is the link between ownership structure and firm performance. This is especially relevant in the context of SMEs, where ownership and management roles often overlap. In such firms, a fragmented capital structure can lead to a separation of ownership and control (Berle & Means, 1932), creating agency costs that may undermine company performance. As Jensen and Meckling (1976) emphasized, managerial ownership align the interests of management with those of shareholders, improving performance.

However, the literature presents mixed findings. Numerous studies demonstrate a positive effect of ownership

concentration. Shyu (2011) showed that in Taiwanese firms, family ownership positively impacts performance up to a certain level. Claessens and Djankov (1999) highlighted that ownership concentration in Czech firms, by foreign investors, is associated with higher profitability and productivity due to enhanced monitoring and governance. Hu and Izumida (2008) further supported these findings by demonstrating that ownership concentration in Japanese firms positively influences performance. Micheli et al. (2022) for a sample of European companies found that the ownership structure has a positive impact on the firm value.

On the other hand, research by McConnell and Servaes (1990) found that while moderate insider ownership is beneficial, high levels of insider ownership can lead to entrenchment and reduced performance (Morck et al., 1988; Stulz, 1988). This phenomenon is particularly evident when ownership becomes excessively concentrated: Demsetz and Lehn (1985), argued that beyond a certain point, the benefits of concentrated ownership may be offset by risks of entrenchment. Additionally, some studies show a negative or no significant relationship, suggesting that the impact of ownership concentration may vary depending on the context, market conditions, and specific firm characteristics (Fama and French, 1998; Himmelberg, Hubbard, & Palia, 1999). Mashavave and Tsurai (2015), Laporšek et al. (2021), Intrisano et al. (2019) and Intrisano et al. (2018) detected no significant relationship between ownership structure and performance in certain contexts, further illustrating the complexity of this relationship.

In conclusion, while ownership can enhance performance, potential downsides like entrenchment can arise when ownership becomes too concentrated.

### *2.3 Review of Studies on Firm Age and Performance*

Whether longer-lived firms are more profitable than their younger peers is another interesting research topic. While it is well known that many firms fail within their first few years, the evidence is less clear for older firms. After surviving the initial “valley of death”, firms often experience rapid growth, but sustaining it depends on their adaptability.

The relationship between firm age and performance is complex. Some authors argue that as firms age, they become more rigid negatively impacting performance. Studies by Bhayani (2010) and Bruni, Pittiglio and Reganati (2014) found that older firms can suffer from inertia, leading to lower profitability. Capasso, Gallucci, & Rossi (2015) supported this view, highlighting how the organizational structures in older firms can hinder innovation and responsiveness to market changes.

Conversely, other studies suggest that firm age can positively affect performance. Pagano et al. (2003) argued that older firms benefit from accumulated knowledge, established market positions, and well-developed supply chains which can contribute to higher profitability. Additionally, Pervan et al. (2017) noted that while older firms in the Croatian food industry face challenges related to rigidity, they can leverage their experience to maintain profitability. Some studies have found no relationship between the age and performance (Gaur, 2011; Rossi, Calce, Micheli, & Salvi, 2025). Thus, the discussion on age as a factor, does not yield straightforward answers.

### *2.4 Review of Studies on Religiosity and Firm Performance*

Religiosity is associated with beliefs and values such as belonging and affiliation to a particular church or religious society or professing a particular faith (Cornwall, Albrecht, Cunningham, & Pitcher, 1986; Roccas, 2005). Some authors underline the dual nature of religiosity as religious practice and religious belief (Lewis & Kasyap, 2013; Chowdhury, 2018). Religious belief endorses with behaviors such as the need to affiliate with certain faiths and languages while religious practice refers to daily prayer, participation in weekly rituals, reading scriptures, etc. Religiosity is another factor considered capable of influencing corporate strategies (DasGupta & Pathak, 2022; Mätö & Niskanen, 2019; Rossi et al., 2025).

The literature emphasizes management with strong religious beliefs tends to exhibit lower level of risk propensity which has repercussions on performance (Hilary & Hui, 2009; Cheong & Sinnakkannu, 2014; Jha & Chen, 2015; Jiang, Jiang Kim, & Zhang, 2015; Dimic, Fatmy, & Vähänäa., 2023). The religiosity of a firm's location is also an influencing factor on performance: companies located in more religious areas present more conservatism resulting with a higher degree of risk aversion and lower agency costs (Rossi et al., 2025; Hilary & Hui, 2009; Cheong, 2018; León & Pfeifer, 2017). This is often accompanied by -lower -debt -levels and less investment in fixed and intangible assets (Cheong, 2018; Hilary & Hui, 2009; Jiang et al., 2015; Morck et al., 1988; Baxamusa & Jalal, 2018). Studies also link religion to corporate decision-making and accounting. Firms headquartered in highly religious areas show a reduced tendency toward fraud and tax avoidance and a lower incidence of irregularities in financial reporting (Welch, Tittle, & Petee, 1991; Dyreng, Mayew, & Williams, 2012; McGuire, Omer, & Sharp, 2012; McGuire, Newton, Omer, & Sharp, 2012; -Gharbi, Hamed-Sidhom,

Hussainey, & Ganouati, 2021). In line with the Theory of Social Norms, which posits that in communities where religiosity is strongly felt, it is more likely to influence management choices and business decisions (Kennedy & Lawton, 1998; Rossi et al., 2025).

While the existing literature, predominantly from the US market, suggests that religiosity promotes risk-averse and ethically conservative corporate behavior, two critical gaps remain. First, it is not well-established whether this tendency translates into a direct, measurable impact on standard financial performance indicators such as ROA and EBIT, or if its effects are confined to risk and accounting choices. Second, and more central to our study, it is unclear whether these findings can be generalized to the unique socio-economic context of Italian SMEs. The influence of religiosity as a social norm may operate differently in Italy compared to the US, and SMEs may respond to these norms differently than the large, publicly-listed firms that are the focus of much of the prior research. Therefore, a significant research opportunity exists to test the direct link between the religiosity of a firm's location and its financial performance within the under-studied Italian SME landscape.

### 2.5 Research Question

The reviewed literature highlights that the influence of these non-financial factors is often characterized by mixed results or, as in the case of religiosity, is highly dependent on institutional context and has not been sufficiently tested on key profitability metrics in the European SME setting. On this basis, the research question that we intend to answer in this work can be formulated as follows: “*What is the impact of key non-financial determinants—specifically firm age, managerial gender, ownership characteristics (concentration and shareholder involvement in management), and local religiosity—on the multi-dimensional financial performance of Italian SMEs?*”. In the following section, details on data and the econometric model used in this study are presented.

## 3. Method

### 3.1 Data and Sample

The data refer to SMEs located in Italy and cover the time horizon 2012-2021. The original dataset included 687 companies. After eliminating companies with unavailable data for the entire analysis period, the final sample consists of 303 companies, each with 10 years of observations. The data is from Amadeus Bureau van Dijk.

### 3.2 Method

Following Hilary and Hui (2009) and Burrus, Edward Graham, & Jones (2018), below panel data model with random effects is estimated:

$$\begin{aligned}
 & Performance_{it} = \\
 & \beta_1 + \beta_2 FAge_{it} + \beta_3 DMGender_{it} + \beta_4 SHolderD_{it} + \beta_5 SHolderM_{it} + \beta_6 Religiosity_{it} + \sum_l \beta_l Sector_{it} + \\
 & \sum_k \beta_k Control_{it} + \epsilon_i + u_{it}
 \end{aligned} \tag{1}$$

$\epsilon_i$  is firm-specific error component and  $u_{it}$  is the combined time-series and cross-section error component. A random effects model was chosen over a fixed effects model to estimate the coefficients of time-invariant variables. The panel models were estimated in R (R Core Team, 2023), by using plm package (Croissant & Millo, 2008) and covariance matrix estimations are handled by framework integrated to the package by Millo (2017).

To validate model reliability, different performance indicators – i.e. Return On Assets (ROA), Return On Equity (ROE), Earnings Before Interest and Taxes (EBIT), Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) and lastly Cash Flow to Operating Revenue ratio (CFOR) – are regressed on variables of interest and control variables. FAge is the age of firm, DMGender is the gender of direct manager in the firm. SHolderD is shareholder's percentage of capital. SHolderM is a dummy variable that takes a value of 1 if shareholder is also a manager, and 0 if not. Religiosity is the variable used to capture religiously of the community in firm's location. Sector is a vector of dummy variables to account for firm's industry, with total of 34 different NACE (Nomenclature of Economic Activities) codes turned to 33 dummies (see Appendix). “Control” is a vector of control variables of firm-specific financial data. More details are given in Table 1.

Table 1. Variables used for the analysis

<b>Dependent variables</b>	<b>Definition</b>	<b>Source</b>
ROA (%)	Company's profitability in relation to its total assets. (Net income/Total assets)	AMADEUS
ROE (%)	Measure of a company's net income divided by its shareholders' equity. (Net Income/Shareholders funds)	AMADEUS
EBITDA (%)	Measure of a company's operating profit, shown as a percentage of its revenue. (EBITDA/Operating revenue)	AMADEUS
EBIT (%)	Percentage of a company's earnings before interest and taxes that are generated from its operations. (EBIT/Operating revenue)	AMADEUS
CFOR (%)	Measure of a company's cash flow, shown as a percentage of its revenue. (Cash flow/Operating revenue)	AMADEUS
<b>Control variables</b>	<b>Definition</b>	<b>Source</b>
Log TAssets	Sum of the book values of all assets owned by a company (logarithmic scale).	AMADEUS
WC (in Euros)	Working capital. Measure of a company's liquidity and short-term financial health. (Current assets - current liabilities)	AMADEUS
Log Cash	Company's assets that are cash or can be converted into cash immediately (logarithmic scale).	AMADEUS
Log StockT	Measures how often a company replaces inventory relative to its cost of sales (logarithmic scale).	AMADEUS
Log CollectionP	Average number of days it takes a business to collect and convert its accounts receivable into cash (logarithmic scale).	AMADEUS
Log CreditP	Number of days that a customer is allowed to wait before paying an invoice (logarithmic scale).	AMADEUS
Debt to Total Assets	Measures of how much debt a company owns compared to its assets.	AMADEUS
<b>Independent variables</b>	<b>Definition</b>	<b>Source</b>
FirmAge	Difference between the reference year of the economic and financial data and the year of incorporation of the company.	Our calculation
Religiosity (%)	Attendance rate for Sunday mass recorded for the region in where the company is located.	ISTAT
ShareholderD	% equity interest held by the person who holds both legal title and beneficial interest in (rather than holding only the beneficial interest in) any Shares).	AMADEUS
ShareholderM	Indicates whether the shareholder is also the manager of the company.	AMADEUS
DMGender	Gender of the direct manager.	AMADEUS
Sector	Dummy variables that identify the industry the company based on the Nace classification.	AMADEUS

#### 4. Results and Discussion

##### 4.1 Descriptives Statistics

Table 2 presents the descriptive statistics for all variables used in the analysis. A closer examination of these figures provides a clear profile of the 303 Italian SMEs in our sample and highlights the suitability of the data for

addressing our research questions.

The sample represents a wide spectrum of firms, from newly established (1 year) to very mature (137 years). The mean age of approximately 31 years indicates that our analysis is not skewed towards startups but is largely representative of established SMEs navigating long-term market dynamics. This significant variation is crucial for robustly examining how a firm's lifecycle stage relates to its performance.

Regarding the social context, a striking feature is the gender composition of direct managers, with approximately 87% being male (2,650 male vs. 380 female). This significant imbalance reflects broader trends in Italian corporate leadership. For local religiosity, the average attendance rate for Sunday mass is about 26%, with a range from 11.9% to 39.2%. This variation is sufficient to test whether religiosity, as a proxy for social norms, has a tangible influence on corporate behavior and performance across different localities.

The data reveal that ownership is typically highly concentrated. The average direct shareholder stake (ShareholderD) is nearly 60%. This figure, along with a high standard deviation (32.3), confirms that the sample includes a mix of firms with dominant majority owners—as is common in the Italian SME landscape—and those with more dispersed ownership. Furthermore, the ShareholderM variable shows that the sample is almost evenly split between firms where a shareholder is also a manager and firms where they are not. This provides a balanced sample for testing the Agency Theory implications of aligning ownership and control.

On the performance side, the positive mean values for ROA (2.4%), EBIT (4.1%), and EBITDA (7.8%) suggest that the average firm in the sample is profitable. However, the large standard deviations and extremely wide ranges highlight significant performance heterogeneity. This is most evident in the ROE metric, which ranges from a staggering -807% to a high of 127%. This immense variability underscores the fact that the sample contains both highly successful and severely distressed firms, making it an ideal dataset for an analysis seeking to explain the determinants of such divergent outcomes.

Table 2. Descriptives statistics

<b>Dependent variables</b>	Mean	Sd	Min	Max
ROA (%)	2.436	6.428	-73.916	41.521
ROE (%)	4.787	44.281	-807.485	126.966
EBITDA (%)	7.830	8.472	-66.371	53.921
EBIT (%)	4.138	7.918	-76.579	49.220
CFOR (%)	5.647	7.508	-66.964	66.158
<b>Control variables</b>	Mean	Sd	Min	Max
Log TAssets	3.650	0.265	2.889	4.813
WC	1463.487	1537.591	-2761.030	15301.320
Log Cash	4.899	2.219	-6.908	9.099
Log StockT	2.086	1.250	-1.661	6.821
Log CollectionP	4.261	1.174	-5.522	6.336
Log CreditP	4.070	0.671	-0.368	6.081
Debt to Total Assets	19.623	18.428	-1.491	195.209
<b>Independent variables</b>	Mean	Sd	Min	Max
FirmAge	31.236	16.878	1.000	137.000
Religiosity	25.871	5.380	11.900	39.200
ShareholderD	59.445	32.325	0.000	100.000
	Frequencies			
	No	Yes		
ShareholderM	1505	1525		
	Female	Male		
DMGender	380	2650		

Sd: Standard deviation. Min: Minimum. Max: Maximum. Our elaboration

#### 4.2 Results of Panel Model Estimations

Results of panel estimations are given in Table 3.

Table 3. Results of panel model estimations.

Dependent variable:	ROA		ROE		EBIT		EBITDA		CFOR		
Heterescedasticity <sup>a</sup>	Yes		Yes		Yes		Yes		Yes		
Serial correlation <sup>b</sup>	Yes		No		Yes		Yes		Yes		
	Coef	t-stat	Coef	t-stat	Coef	t-stat	Coef	t-stat	Coef	t-stat	
constant	0.715	0.140	5.681	0.230	-14.102	-1.832*	-26.333	-3.690***	-19.165	-2.860***	
Independent variables	FirmAge	0.001	0.048	-0.020	-0.318	-0.014	-0.619	-0.016	-0.661	-0.001	-0.026
	DMGender (Male)	1.381	1.680*	4.016	1.206	1.198	1.194	1.010	0.983	0.702	0.887
	ShareholderD	-0.012	-1.425	-0.026	-0.580	-0.010	-1.020	-0.010	-0.926	-0.007	-0.827
	ShareholderM (Yes)	1.229	2.480**	6.298	2.527**	1.905	2.856***	1.286	1.874*	0.841	1.471
	Religiosity	-0.029	-0.796	0.130	0.696	0.005	0.112	0.050	1.133	-0.028	-0.721
	Control variables	Log TAssets	0.715	0.575	-2.001	-0.345	4.506	1.960*	9.563	4.728***	7.344
WC		0.001	2.742***	0.000	-0.036	0.001	2.086**	0.001	1.756*	0.001	1.169
Log Cash		0.338	4.341***	0.931	1.881*	0.328	2.861***	0.206	1.955*	0.249	2.568**
Log StockT		1.423	5.673***	3.523	2.901***	1.703	4.685***	1.621	4.704***	1.337	4.449***
Log CollectionP		-0.222	-1.041	0.890	0.579	-0.139	-0.382	-0.171	-0.609	-0.151	-0.516
Log CreditP		-1.417	-3.810***	-2.852	-1.531	-1.175	-2.184**	-1.553	-3.188***	-1.265	-2.368**
Debt to Total Assets		-0.067	-4.824***	-0.113	-1.392	-0.085	-2.974***	-0.079	-2.606***	-0.089	-3.123***
Sector dummies	Sector = 15			-11.879	-2.830***			-4.137	-1.867*	-3.514	-2.091**
	Sector = 18	2.648	1.863*			4.526	2.232**				
	Sector = 20							4.815	1.742*	3.935	1.737*
	Sector = 25	2.795	2.332**			3.532	1.967**	3.868	1.866*	3.351	2.096**
	Sector = 26	3.546	2.360**			4.369	1.818*	4.892	1.923*	4.105	2.085**
	Sector = 27										
	Sector = 28	3.171	2.299**			4.332	1.943*				
	Sector = 41										
	Sector = 49			-12.143	-1.981**			11.922	3.110***	14.624	3.277***
	Sector = 52	-5.066	-2.255**			-33.750	-8.061***	-13.875	-3.850***	-18.024	-4.611***
	Sector = 56	-4.632	-1.746*								
	Sector = 71	-3.493	-2.867***	-11.686	-1.995**	-4.959	-2.829***	-6.617	-3.295***	-4.979	-3.249***
Sector = 93	-9.440	-3.859***	-41.734	-2.090**	-10.182	-4.613***					
Adj. R-Squared	0.093		0.007		0.100		0.125		0.158		

Note. <sup>a</sup> Breusch-Pagan test is used to test heteroskedasticity in residuals. In case of heteroskedasticity, standard errors are calculated by using White's heteroskedasticity-consistent covariance matrix.

<sup>b</sup> Breusch-Godfrey/Wooldridge test is used to test for serial correlation in idiosyncratic errors. In case of serial correlation, Arellano's method is used for calculation of heteroskedasticity and autocorrelation-consistent standard errors.

\* Significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%,

Sector= 1 is the benchmark category for sector dummies. Significant Sector Dummies shown only.

Panel estimations in Table 3 reveal a consistently positive and significant relationship between shareholder involvement in management (ShareholderM) and firm performance. This effect is particularly strong for ROE, with a coefficient of 6.298 ( $p < 0.05$ ), and also significant for ROA and EBIT. This empirical evidence suggests that, within our sample of Italian SMEs, firms where owners are also part of the management team tend to achieve higher levels of profitability. The pronounced effect on ROE indicates that this governance structure is especially effective at generating returns for equity holders. This will be both good news and bad news for the firm's long-term goals, since increased return on equity could be a signal of increased risk taking.

This finding lends strong support to the Agency Theory. The direct involvement of shareholders in management appears to effectively align the interests of principals (owners) and agents (managers), thus mitigating the agency costs that can arise from information asymmetry and divergent goals. The results are consistent with prior studies which argue that managerial ownership serves as a powerful internal governance mechanism that enhances firm performance by ensuring that decision-making is oriented towards maximizing shareholder value. Managers may not always operate in the best interest of shareholders, because they aim to obtain various benefits (remuneration, bonuses and personal fulfillment). The coincidence between shareholder and manager is frequently found in concentrated ownership structures, a typical characteristic of Italian companies. When the shareholder is also involved in the company management, a convergence of interests occurs with a positive effect on the company performance evidenced by an increase in performance indicators (De Miguel, Pindado, & Torre., 2004; De Miguel, Pindado, & Torre., 2005; Florackis, 2008; Jo & Harjoto, 2011).

The gender of the direct manager is marginally significant (at 10%) only for ROA, with a positive impact on the performance. Firm age, ownership and religiosity are not significant in any model. All coefficients of the control variables (both significant and non-significant) are as expected. The size of the assets, working capital, cash and inventory turnover have a positive effect on performance. Credit periods has a negative influence. Furthermore, the increase in debt in companies has a disruptive effect on performance. Despite the low explanatory power (expressed by the adjusted R squared coefficient) determined by the limited internal variation of the temporal predictors in the panel analysis and the evidence of serial correlation in the models, the results are further verified by new models in the following section.

#### 4.3 Robustness Checks

Because four out of the five residuals exhibited serial correlation, the models were re-estimated with lagged dependent variables (except ROE, because there was no serial correlation in that model) included into the models until serial correlation was removed. Estimated coefficients are given in Table 4.

Table 4. Results of panel data estimation with autoregressive terms included. Significant Sector Dummies shown only

Dependent variable:		ROA		EBIT		EBITDA		CFOR	
Heterescedasticity <sup>a</sup>		Yes		Yes		Yes		Yes	
		Coef	t-stat	Coef	t-stat	Coef	t-stat	Coef	t-stat
constant		3.883	1.555	-6.001	-1.803*	8.785	-3.054***	-10.935	-3.906***
Autoregressive terms	Lag 1	0.506	6.934***	0.467	7.174***	0.512	9.052***	0.448	6.966***
	Lag 2	0.176	2.403**	0.164	2.454**	0.196	3.700***	0.171	2.914***
	Lag 3			-0.022	-0.422	0.084	1.940*	0.117	2.547**
	Lag 4			0.128	2.949***				
Independent variables	FirmAge	-0.002	-0.363	-0.019	-2.249**	-0.011	-1.463	-0.008	-1.279
	DMGender (Male)	0.510	1.379	0.429	1.176	0.156	0.485	0.369	1.249
	ShareholderD	-0.008	-2.195**	-0.004	-0.774	-0.006	-1.605	-0.007	-1.882*
	ShareholderM (Yes)	0.429	1.926*	0.641	2.164**	0.400	1.563	0.344	1.462
	Religiosity	0.021	0.988	0.024	0.747	0.010	0.398	0.033	1.338
Control variables	Log TAssets	-1.019	-1.995**	2.122	2.520**	3.086	4.194***	3.653	4.893***
	WC	0.000	2.083**	0.000	0.715	0.000	-0.691	0.000	-1.195
	Log Cash	0.193	3.513***	0.208	2.669***	0.119	1.847*	0.103	1.703*

Log StockT	0.430	4.233***	0.500	3.251***	0.472	3.541***	0.431	3.534***
Log CollectionP	0.107	0.480	0.156	0.709	0.162	0.947	0.058	0.358
Log CreditP	-0.668	-3.784***	-0.786	-3.030***	-0.685	-3.262***	-0.686	-3.452***
Debt to Total Assets	-0.018	-2.396**	-0.037	-2.317**	-0.022	-1.624	-0.024	-1.840*
Sector = 10	0.730	1.796*					0.728	1.682*
Sector = 15	-1.682	-2.561**	-2.227	-2.996***	-1.516	-2.288**	-1.350	-2.124**
Sector = 16			2.072	2.023**	2.310	2.614***	2.171	2.996***
Sector = 20	1.244	1.855*						
Sector = 22							0.991	2.066**
Sector = 23	1.025	2.142**	1.359	1.673*	1.384	1.748*	1.359	1.763*
Sector = 24	1.180	1.989**			1.575	2.309**	2.027	3.518***
Sector = 25	1.079	2.806***			1.070	2.187**	1.347	3.074
Sector = 26	1.263	1.737*					1.292	1.688*
Sector = 27	1.273	2.506**			1.203	2.029**	1.293	2.543**
Sector = 28	1.314	3.270***					1.261	2.454**
Sector = 31							1.974	2.144**
Sector = 32							1.819	2.465**
Sector = 49					2.614	1.976**	3.411	2.524**
Sector = 56							3.279	1.930*
Sector = 62							1.820	2.019**
Sector = 93	-3.889	-2.346**	-5.001	-2.325**	-3.000	-1.744*		
Adj. R-Squared	0.500		0.548		0.662		0.619	

Note.<sup>a</sup> Breusch-Pagan test is used to test heteroskedasticity in residuals. In case of heteroskedasticity, standard errors are calculated by using White's heteroskedasticity-consistent covariance matrix. Lags refer to autoregressive term of dependent variable.

\* Significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%,

Sector= 1 is the benchmark category for sector dummies.

The explanatory power of new models are substantial. Shareholder's engagement in management (ShareholderM) retains its positive and significant coefficient for ROA and EBIT, reinforcing the idea that this structure improves monitoring efficiency and mitigates the principal-agent problem.

Conversely, the results of models in Table 4 reveal a more complex role for ownership structure. While owner-manager combination is beneficial, it is found that higher ownership concentration (ShareholderD) has a negative and statistically significant impact on ROA and CFOR. This result indicates that as an owner's equity stake becomes excessively large, the firm's performance in terms of asset profitability and operating cash flow tends to suffer.

This negative relationship can be interpreted through the "entrenchment effect" proposed within Agency Theory. While moderate concentration can improve monitoring, findings suggest that at very high levels, dominant shareholders may become entrenched. This can lead to the pursuit of private benefits at the expense of overall firm value, creating a conflict between majority and minority shareholders that ultimately harms performance. This result aligns with a body of literature suggesting a non-linear, curvilinear relationship between ownership concentration and firm value, where the positive effects of alignment are eventually outweighed by the negative effects of entrenchment. This negative relationship between ownership concentration and performance measures are also found similar in the literature (Maniruzzaman, Hossain, & Sayaduzzaman, 2024; Wardani & Setiawan, 2020; Chen, Cheung, Stouraitis, & Wong, 2005; Gonenc, 2006; Pervan, Pervan, & Todoric, 2012; Fama & Jensen, 1983; Villalonga & Amit, 2006; Hu & Izumida, 2008; Hamadi, 2010).

Firm Age now shows a negative and significant effect on EBIT. None of the variables of interest are found to

influence EBITDA significantly. Manager's gender of the manager has not found significant in any model: our result is consistent with existent literature (Rose, 2007; Fernández-Temprano & Tejerina-Gaite, 2020). Also, Religiosity remain insignificant in all models.

Significant sector dummies for ROE in Table 3 and others in Table 4 indicate that the performance of the firms varies between industries. Specifically speaking, manufacturing firms tend to have better performance, except for the leather and related product manufacturers. Firms that operate in "Sports, amusement and recreation activities" seem to perform worse. Table 5 summarizes changes in significance for our primary variables of interest.

Table 5. Results of panel data estimation with autoregressive terms included. Significant Sector Dummies shown only.

Independent Variable	Dependent Variable	Initial Model (Table 3)	Model with Autoregressive Term (Table 4)	Change in Significance
FirmAge	EBIT	ns	(-) **	Becomes significant & negative
	ROA, EBITDA, CFOR	ns	ns	No change
DMGender (Male)	ROA	(+) *	ns	Becomes non-significant
	ROE, EBIT, EBITDA, CFOR	ns	ns	No change
ShareholderD	ROA	ns	(-) **	Becomes significant & negative
	CFOR	ns	(-) *	Becomes significant & negative
	ROE, EBIT, EBITDA	ns	ns	No change
ShareholderM (Yes)	ROA	(+) **	(+) *	Remains significant
	ROE	(+) **	N/A	Not re-estimated
	EBIT	(+) ***	(+) **	Remains significant
	EBITDA	(+) *	ns	Becomes non-significant
	CFOR	ns	ns	No change
Religiosity	All	ns	ns	No change

**Note:** Significance levels are denoted as: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , ns = not significant. The direction of the relationship is indicated by (+) for positive and (-) for negative. The ROE model did not exhibit serial correlation and was therefore not re-estimated in the robustness check.

As summarized in Table 5, controlling for serial correlation clarifies and strengthens the findings in several key areas. Notably, the negative influence of Firm Age on EBIT emerges as statistically significant only in the robust model. Similarly, the negative impact of higher ownership concentration (ShareholderD) on both ROA and CFOR becomes apparent. Conversely, the marginal significance of the manager's gender (DMGender) and owner-management (ShareholderM) on certain performance metrics disappears, suggesting these initial findings were less robust. The positive impact of owner-management on ROA and EBIT, however, remains stable across all specifications, reinforcing this as a key finding of the study.

## 5. Conclusion

This study explored the influence of non-financial factors on the performance of Italian SMEs.

### *Firm Age and Performance*

Firm age did not have a significant impact on most performance metrics, except for a negative impact on EBIT. This is consistent with mixed findings in the literature and suggests that while older firms may have the advantage of experience, they may also struggle with maintaining the flexibility and adaptability, which are crucial for sustaining profitability in dynamic market environments needed to sustain profitability.

### *Manager's Gender*

The gender of the direct manager had only a marginally significant impact on ROA, with firms led by male managers showing slightly higher performance. The overall lack of strong significance across other performance metrics suggests that the gender of the manager alone is not a decisive factor, and its effects may be contingent on other contextual variables.

### *Ownership Structure*

The findings on ownership structure are particularly insightful. When shareholders are also involved in management, there is a significant positive impact on ROA, ROE, and EBIT. This supports the view that aligning ownership and control is beneficial for Italian SMEs.

However, our results also reveal a potential downside to ownership concentration. We found that higher levels of shareholder concentration have a negative impact on performance. Together, these findings suggest a double-edged role for ownership: while owner-management is advantageous, excessive concentration can lead to detrimental outcomes.

### *Religiosity*

Religiosity was not a significant predictor of firm performance across any of the metrics analyzed. This may indicate that the impact of religiosity may not be as pronounced in the Italian SMEs, or that it influences firm behavior in ways not captured by the financial metrics used in this study.

## **6. Implications, Limitations and Future Research**

These findings have important implications. For managers of Italian SMEs, the results suggest focusing on governance structures, particularly the alignment of ownership and management-, to optimize performance.

For researchers, the mixed results underscore the need to investigate contextual factors that moderate the relationship between non-financial factors and firm performance. Future research could explore these relationships in different contexts or with alternative performance metrics to gain a deeper understanding of the dynamics at play.

This study is not without its limitations. The sample is limited to Italian SMEs, which may hinder the generalizability of the findings to other contexts or larger firms. A primary limitation of this study is the potential for omitted-variable bias. While we control for firm-specific financials and industry effects, our model does not include variables for factors like firm-level innovation (e.g., R&D expenditure or patent activity) or the degree of market competition. These unobserved factors could be significant drivers of performance. For instance, more innovative firms may naturally be more profitable, and if innovation is also correlated with one of our independent variables, such as ownership structure or firm age, our model might misattribute the effect. Similarly, firms in less competitive markets may exhibit higher performance regardless of their internal non-financial characteristics. Factors such as employee and community welfare can also be recognized as drivers of corporate performance. Companies that adopt employee-friendly and community-friendly policies are perceived positively and perform better. The unavailability of standardized data on these aspects for our sample of SMEs prevented their inclusion. Future research should therefore aim to incorporate proxies for innovation and competition as well as employee and community-friendly policies to provide a more specified model and verify the robustness of the relationships identified in this study. Whilst industry comparisons and examinations are not the focus of this study, further evaluations could be made also by considering changing trends in economic activity throughout these years.

Furthermore, the analysis could be enhanced by accounting for regional heterogeneity within Italy. Our model uses a religiosity metric, which varies by region, but this does not capture the full extent of economic and structural disparities, particularly the well-documented differences between Italy's northern and southern regions. These regions differ in terms of industrial concentration, infrastructure, access to capital, and local market dynamics. It is plausible that the influence of non-financial factors on firm performance varies significantly across these distinct economic contexts. By pooling all SMEs, our findings represent a national average and may mask important regional-level effects. Future studies could employ a multi-level modeling approach or use regional dummy variables to investigate whether the determinants of SME performance are consistent across different parts of the country.

Future research could expand on these findings by exploring the impact of additional factors or by conducting comparative studies across different countries or industries. Longitudinal studies could also provide insights into how the relationships between non-financial factors and firm performance evolve over time.

### **Acknowledgments**

Not applicable.

### **Authors' contributions**

Not applicable.

**Funding**

Not applicable.

**Competing interests**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

**Informed consent**

Obtained.

**Ethics approval**

The Publication Ethics Committee of the Canadian Center of Science and Education.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

**Provenance and peer review**

Not commissioned; externally double-blind peer reviewed.

**Data availability statement**

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

**Data sharing statement**

No additional data are available.

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## Appendix

### List of sectors and frequencies in the dataset

Sector	NACE	Frequency
Crop and animal production, hunting and related service activities	1	11
Fishing and aquaculture	3	1
Manufacture of food products	10	13
Manufacture of beverages	11	9
Manufacture of textiles	13	6
Manufacture of wearing apparel	14	7
Manufacture of leather and related products	15	4
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	16	2
Manufacture of paper and paper products	17	3
Printing and reproduction of recorded media	18	2
Manufacture of chemicals and chemical products	20	7
Manufacture of rubber and plastic products	22	9
Manufacture of other non-metallic mineral products	23	5
Manufacture of basic metals	24	6
Manufacture of fabricated metal products, except machinery and equipment	25	38
Manufacture of computer, electronic and optical products	26	7
Manufacture of electrical equipment	27	11
Manufacture of machinery and equipment n.e.c.	28	26
Manufacture of furniture	31	4
Other manufacturing	32	5
Repair and installation of machinery and equipment	33	3
Construction of buildings	41	4
Civil engineering	42	2
Specialised construction activities	43	21
Wholesale and retail trade and repair of motor vehicles and motorcycles	45	7
Wholesale trade, except of motor vehicles and motorcycles	46	49
Retail trade, except of motor vehicles and motorcycles	47	21
Land transport and transport via pipelines	49	5
Warehousing and support activities for transportation	52	1
Food and beverage service activities	56	2
Computer programming, consultancy and related activities	62	3
Scientific research and development	72	1
Human health activities	86	5
Sports activities and amusement and recreation activities	93	3