

Job Satisfaction among European Family Business Owners: The Roles of Education and Industry Sector

¹Dr. Pooja Sharma, ²Dr. Jyotsana Khandelwal, ³Dr. Jyotsna Oswal, ⁴Dr. Himanshu Kataria

¹Associate Professor, Jagannath University, Bahadurgarh

²Professor, Jagannath University, Jaipur

³Assistant Professor, Jagan Institute of Management Studies

⁴Assistant Professor, Jagannath University, Bahadurgarh

Abstract:

This study examines the impact of education level and industry sector on job satisfaction among family business owners across Europe. Using data from an extensive survey of 1,200 owners in 12 countries, the research applies hierarchical and moderated regression analyses to examine how these factors individually and collectively impact owner wellbeing. The results indicate that higher education is associated with higher job satisfaction, particularly in technology-driven and service industries, where advanced skills align with sector needs. The study merges perspectives from socioemotional wealth, human capital, and industry structure to provide new insights into family business dynamics. Findings emphasise the importance of creating tailored educational and support programs that are responsive to industry contexts, thereby boosting owner satisfaction and supporting the sustainable growth of family businesses. This research contributes to social economics by focusing on owner-centred outcomes and considering the diversity of European institutions, with implications for policymakers and practitioners seeking to enhance the resilience of family enterprises.

Keywords: Family business, Job satisfaction, Education, Industry sector, Socioemotional wealth, Human capital.

Introduction

Family businesses play a significant role in private employment across Europe. Regional development and innovation in Europe heavily rely on family businesses (European Commission, 2023). Family businesses blend commercial goals with family values and socioemotional wealth, unlike non-family firms. This mix influences owners' experiences and perceptions of their work. Gómez Mejía et al., 2007; Berrone et al., 2012. Job satisfaction is crucial for these owners, as it influences individual wellbeing and motivation, firm performance, succession planning, and business continuity (Kellermanns et al., 2020; Sieger et al., 2016). The owners of a business can perceive and therefore measure work satisfaction based on two factors: education and industry affiliation. Often, managers' capabilities, decision-making strategies, and work-life balance expectations are influenced by their level of education (Unger et al., 2011; Rauch & Rijsdijk, 2013). Highly educated owners may have a different yardstick for success compared to less-educated owners as they manage the complexities of family involvement in business (Arregle et al., 2019). The specific characteristics of the industry in which the business operates have a significant impact on the family business. These characteristics include the capital intensity of manufacturing, the client orientation of services, and the innovation pressures of technology-driven sectors, all of which influence the businessman's demand and reward (De Massis et al., 2018; Calabrò et al., 2021). Few studies have empirically examined how these elements interact to determine the subjective wellbeing of family business owners.

Most studies on job satisfaction focus on employees, while business owners receive less attention. Family firms are even less studied, for example, Carree and Verheul (2012) and Stephan and Roesler (2010). Family business literature often underestimates personal satisfaction as a meaningful outcome for owners (Rau et al., 2019), concentrating instead on succession, governance, and performance. Research on job satisfaction in entrepreneurship emphasizes the importance of education and industry; however, findings are inconsistent and depend on the context (Van der Zwan et al., 2016; Block et al., 2020). Many European regions, with their diverse institutional frameworks, labor markets, and cultural norms, establish relationships that warrant further study, as the OECD (2025) suggests. Understanding these factors is crucial and beneficial. This study employs

socioemotional wealth theory, human capital theory, and industry-structure perspectives to explain the differences in job satisfaction from a theoretical perspective. The goal of this research is to expand family business scholarship by linking owners' subjective work outcomes to their personal attributes and sectoral contexts. When applied, knowledge of these relationships can aid in succession planning, education, and training programs for family entrepreneurs, as well as inform policies for family-owned firms to enhance their sustainability (Nordqvist et al., 2021).

This paper addresses the following research questions.

1. How does education level influence job satisfaction among European family business owners?
2. Does job satisfaction vary significantly across different industries?
3. Is there an interaction between education and industry that shapes satisfaction levels?

Answering these questions, the study helps improve understanding of family business owners' wellbeing in Europe. It also emphasizes the need for tailored strategies to support owners from different educational backgrounds and industries. The findings aim to assist both scholars and practitioners in recognizing the personal aspects of family-business leadership that often drive long-term business success.

Literature Review

Job Satisfaction in the Family Business Context

Job satisfaction refers to an individual's overall assessment of their work experience, encompassing both cognitive and emotional responses to various aspects of the job (Locke, 1976). It has been connected to employee motivation, turnover, mental health, and organizational performance across multiple contexts (Stephan and Roesler, 2010). In family businesses, owners often serve in various roles, including those of leader, shareholder, and family member, making their satisfaction a complex concept. Unlike hired managers, family-business owners often blend personal and business goals, such as family legacy, community reputation, and long-term control (Gómez-Mejía et al., 2007; Berrone et al., 2012). These non-economic priorities, collectively known as socioemotional wealth (SEW), influence strategic choices and owners' subjective wellbeing. Managers may choose options that strengthen family control even if they reduce short-term profits, boosting owner fulfillment (Sieger et al., 2016). Owners tend to have higher job satisfaction when their perceptions of the business's performance align with SEW goals, such as passing the company to the next generation (Rau et al., 2019). Disagreements among family members, as well as financial and legacy tensions, decrease satisfaction (Kellermanns et al., 2020). Therefore, owner satisfaction depends on work factors, family relationships, and emotional attachment.

Entrepreneurs' and owners' satisfaction with education and jobs

Human capital theory examines the impact of higher education on productivity and satisfaction. Researchers link venture growth, innovation, and market survival to education (Unger et al., 2011; Rauch and Rijdsdijk, 2013). Family business owners can develop managerial skills, including strategic planning, marketing, succession planning, and conflict management. Education shapes personal goals and work values; more educated owners may seek autonomy, modern structures, or advanced technology, which can increase satisfaction when expectations align. However, higher competence does not always lead to success or satisfaction, as overqualified owners may feel limited by traditional practices or lack resources. Discrepancies between expectations and reality can lead to decreased satisfaction (Van der Zwan et al., 2016). European studies reveal this complexity. Block et al. (2020) found that educated entrepreneurs in Germany are more satisfied with decision-making authority but may be hindered by administrative burdens. Nordqvist et al. (2021) noted that university-educated successors can be frustrated by conservative family traditions. Overall, the impact of education on satisfaction depends on organizational culture, governance, and generational factors.

Industry-Level Effects on Job Satisfaction.

The industry's characteristics impact ownership challenges and rewards, including competitive structure, technology, capital requirements, and regulatory environment. Manufacturing and construction require significant

capital and strict compliance, making them stressful but profitable. Service industries, which rely on face-to-face contact, are more flexible, thereby improving customer relationships but increasing the emotional labor required. Calabrò et al. (2021) suggest that industry conditions influence the strategy, profit, and satisfaction of family firms. According to the OECD (2025), independent service workers often enjoy better job quality, stability, and autonomy than those in the trade or hospitality sector. Most studies, however, do not distinguish between family owners and the self-employed. Since family businesses often prioritize job preservation or protecting the family name over profit, industry effects may be amplified or altered in this population. Evidence also indicates that industry conditions shape the relationship between owner education and satisfaction. Owners of high-tech or knowledge-intensive industries who are well-educated may leverage their skills for innovation, leading to greater satisfaction. Conversely, owners with substantial human capital in traditional sectors (such as agriculture or textiles) may not be as innovative due to structural constraints. As a result, their satisfaction may also be relatively low (Carree and Verheul, 2012).

European context: institutional and cultural issues

Europe's diverse institutions and cultures complicate the study of job satisfaction among family business owners. The diverse business environments across countries are shaped by variations in their taxation systems, welfare regimes, labor regulations, and access to finance (European Commission, 2023; OECD, 2025). The welfare system and active labor market policies in Nordic countries can help alleviate some of the stress faced by less-educated owners by providing a safety net. In southern and eastern Europe, owners are more vulnerable to market shocks, particularly where cultural factors such as collectivism and regional attitudes influence their perceptions of success and satisfaction (Arregle et al., 2019). Cultures that value tradition see owners finding satisfaction in preserving their family legacy, even with modest financial returns. In cultures that prioritize personal success, satisfaction often depends more on profit and growth. Comparing family businesses across Europe reveals that institutional environments have a significant influence on strategic entrepreneurship and governance, ultimately affecting the wellbeing of owners (De Massis et al., 2018). These differences highlight the importance of conducting cross-national research that considers the varied experiences of family business owners across Europe.

Research Gaps and Contribution.

Though many advances have been made, three gaps remain.

1. Many studies on family business focus on firm-level outcomes like financial performance, success in succession, and governance structures, among others. However, we find that owners themselves are often neglected in these studies (Rau et al., 2019).
2. The combined effects of education and industry are a glaring gap in entrepreneurship research. Most of the literature focuses exclusively on education or industry, while few studies account for the interaction effects between the two (Block et al., 2020).
3. There hasn't been much empirical research exploring Europe's various institutional and cultural contexts. As a result, cross-country variation in owner satisfaction remains poorly understood (OECD, 2025; European Commission, 2023).

To investigate how educational level and industrial sector jointly influence job satisfaction, this study empirically analyzes the experiences of European family-business owners. Focusing on being appreciated by owners, rather than just performance, provides the family business research with a comprehensive understanding of sustainability. Furthermore, situating the analysis within European institutions and culture makes its findings more relevant to scholars and policymakers.

Conceptual Framework and Hypotheses Development.

This research draws on three theoretical foundations to explain the relationship between education, industry, and job satisfaction among family-business owners. The SEW theory posits that family business owners prioritize non-financial goals, such as family control, legacy, and reputation, over short-term gains (Gómez-Mejía et al., 2007; Berrone et al., 2012), and job satisfaction is contingent upon alignment with these objectives. The 'Human Capital' theory by Becker (1993) suggests higher education improves managerial skills, leading to better decision-making, strategic flexibility, and problem-solving, which enhances owners' perceived control and job satisfaction

(Unger et al., 2011; Rauch and Rijdsdijk, 2013). External sector factors such as capital intensity, competition, regulation, and innovation also influence this relationship (De Massis et al., 2018; Calabrò et al., 2021). Industry characteristics can either strengthen or weaken the link between education and satisfaction. Knowledge-intensive industries align skills with needs, whereas traditional sectors face constraints. These perspectives connect individual traits and industry context to socioemotional motivations, explaining owner job satisfaction.

Education and Job Satisfaction.

Previous studies suggest that education can shape entrepreneurs' and owners' subjective wellbeing. Well-educated owners are typically better networked, more inclined to implement professional governance, and exhibit higher self-efficacy in decision making (Arregle et al., 2019; Unger et al., 2011). These benefits typically enhance their sense of autonomy and control, resulting in greater satisfaction (Block et al., 2020). Nevertheless, education also elevates expectations regarding innovation, income, and work–life balance. If these expectations exceed what the business can realistically provide, especially in small or resource-limited family firms, owners may feel dissatisfied despite their higher skills (Van der Zwan et al., 2016; Nordqvist et al., 2021). This mixed evidence justifies examining the overall effect of education on owner satisfaction within the European family business context.

H1: Education level has a significant relationship with job satisfaction among European family business owners, such that owners with higher levels of formal education report different levels of satisfaction (higher or lower) than those with lower levels of education.

Industry and Job Satisfaction

The industry structure affects both the operational challenges and the psychological rewards of running a family business. Research on self-employment reveals that job quality, encompassing income stability, autonomy, and working conditions, varies significantly across sectors (Carree and Verheul, 2012; OECD, 2025). Family business owners in capital-intensive manufacturing sectors often face heavier regulatory burdens and higher financial risks, which can potentially decrease satisfaction despite generating tangible profits. Service-sector owners may benefit from closer client relationships and flexibility but might encounter stress related to customer demands and long working hours (Calabrò et al., 2021).

H2: Job satisfaction among European family-business owners differs significantly across industries.

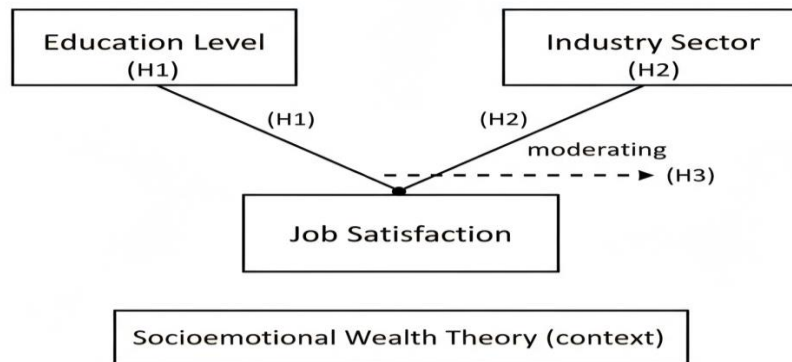
Interaction of Education and Industry

Family business literature has paid limited attention to the potential synergy between education and industry contexts. Education equips owners with analytical and other skills that may be more relevant for specific sectors, especially those that are knowledge- or innovation-heavy (De Massis et al., 2018). However, in traditional industries, highly educated owners might find fewer opportunities to apply their advanced skills, leading to frustration or feelings of underutilization (Block et al., 2020). This issue is especially pertinent in European countries, where industry structures vary; some areas feature small-scale artisanal manufacturing, while others host high-tech clusters (European Commission, 2023).

H3: The effect of education on job satisfaction among European family-business owners is moderated by industry, such that the positive association of education with satisfaction is stronger in knowledge-intensive or service industries than in traditional manufacturing or primary sectors.

Conceptual Model.

The framework indicates that owners' education and industry type have a direct effect on job satisfaction. The interaction of the two also influences job satisfaction. The need to maintain socioemotional wealth is a crucial mechanism that links personal and contextual factors to satisfaction.



Methodology

Research Design

This study employed a quantitative, cross-sectional research design to investigate the impact of education level and industry sector on job satisfaction among European family business owners. A structured online survey was selected because it allowed for consistent data collection across countries and provided the statistical rigour required to test the proposed hypotheses (Creswell and Creswell, 2018).

Sampling Frame and Context

The study focused on family business owners who were directly involved in managerial decision-making. Eligible respondents needed to own at least 25 percent of their firm's equity, participate in strategic or operational decisions, and meet the European Commission's (2023) definition of a family business, which requires majority ownership and control by one or more family members with significant influence on key decisions. A stratified random sampling approach was used to ensure that the sample represented all major industry sectors, including manufacturing, services, technology and knowledge-intensive industries, trade and logistics, and agriculture and natural resources. It also covered Europe's regional diversity, including northern, western, southern, and eastern countries. The final dataset included 1,200 valid responses from 12 countries: Germany, France, Italy, Spain, the Netherlands, Sweden, Denmark, Poland, the Czech Republic, Portugal, Greece, and Finland. Among these respondents, 46 percent were first-generation founders and 54 percent were successors.

Data-Collection Procedure

Data were collected from January to June 2025 using a secure web-based questionnaire. The survey link was distributed with the support of national family-business associations, chambers of commerce, and professional networking groups, such as LinkedIn forums for entrepreneurs. To enhance accessibility, the questionnaire was provided in English and six other European languages: German, French, Italian, Spanish, Polish, and Swedish. Each translation was verified through a back-translation process to ensure both linguistic and conceptual accuracy (Brislin, 1986). A pilot test with 30 owners was conducted to evaluate clarity, cultural relevance, and ease of completion; feedback from the pilot resulted in minor wording adjustments. All participants received an information sheet describing the study's purpose, along with assurances of anonymity and confidentiality, and provided informed electronic consent before participation. As an incentive, respondents were offered an executive summary of the results.

Measures

Job satisfaction, the dependent variable, was measured using the short form of the Job Descriptive Index (JDI), combined with three items adapted from Stephan and Roesler (2010) to reflect the experience of self-employed owners better. Responses were recorded on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Example items included "I am satisfied with my overall role as owner" and "My work meets my personal expectations." An overall score was calculated by averaging responses across items. The measure demonstrated strong internal consistency reliability, with a Cronbach's alpha of 0.87, exceeding the recommended threshold of 0.70 (Nunnally, 1978). Education level, one of the independent variables, was recorded as an ordinal

variable with five categories: secondary or below, vocational or technical, bachelor's degree, master's degree, and doctoral or equivalent. For regression analyses, dummy variables were created with "secondary or below" as the reference group. The second independent variable, industry sector, was classified using Eurostat's NACE Rev. 2 codes and grouped into the following categories: manufacturing, services (including hospitality, retail, and professional services), technology or knowledge-intensive, trade and logistics, and agriculture or natural resources. These were also entered as dummy variables, with manufacturing used as the baseline category. To minimise omitted-variable bias, several control variables were included: owner's age in years, gender, generational stage (founder or successor), firm size categorised as micro, small, medium, or large, and firm age measured in years since founding. These variables are commonly linked to variations in owner wellbeing (Block et al., 2020; Sieger et al., 2016).

Validity and Reliability

The content validity of the questionnaire was confirmed through consultation with three academic experts in family business research and two senior practitioners from national family business associations. Construct validity was assessed using exploratory factor analysis with principal-axis factoring, which supported the unidimensionality of the job-satisfaction scale (eigenvalue = 3.9; variance explained = 62%). All multi-item scales showed Cronbach's alpha values above 0.80, indicating strong internal consistency. Feedback from the pilot survey also provided face validity evidence, confirming that respondents found the items relevant and easy to interpret.

Data Analysis Strategy

All analyses were conducted using SPSS v.29 and STATA v.18. The analytical process commenced with descriptive statistics to profile the respondents and examine the distributions of the main variables. Bivariate tests, including independent-samples t-tests and one-way ANOVA, were used to compare mean job-satisfaction scores across education levels and industry sectors. Hypotheses were tested using hierarchical multiple regression models to estimate the main effects of education and industry on job satisfaction, while controlling for demographic and firm-level variables. To assess the moderating role of industry, interaction terms between education and industry were included in a moderated-regression model. Model assumptions were checked for multicollinearity using variance inflation factors below 2.5, for normality of residuals, and for heteroskedasticity; robust standard errors were applied when necessary. Missing data, which accounted for less than 2% of the total dataset, were treated using mean substitution after confirming that the data were missing completely at random.

Ethical Considerations

All participants were informed that their participation was voluntary and that they could withdraw at any time without penalty or consequence. Survey responses were collected anonymously and stored on encrypted servers, in full compliance with the EU General Data Protection Regulation (GDPR).

Results

Survey Response and Data Quality

The study achieved a solid response rate, as shown in **Table 0**. Out of 1,850 surveys distributed, 1,327 responses were received, representing a 71.8% response rate. After screening, 127 cases were removed because they were incomplete or did not meet the family-business criteria, resulting in a final usable sample of 1,200 respondents (64.9% of those contacted). Missing data accounted for less than 2% of all fields and were treated with mean substitution after Little's MCAR test confirmed that the missingness was random ($\chi^2 = 3.22$, $p > 0.05$).

Table 0. Non-response and Missing-data Analysis

Step	n	% of total
Surveys distributed	1,850	100
Responses received	1,327	71.8

Excluded (incomplete / not meeting criteria)	127	6.9
Final usable sample	1,200	64.9
Missing data after cleaning	< 2 % of all fields	–

Sample Characteristics

The demographic and firm-level profiles of respondents are summarized in Table 1. The sample consisted of 62% males and 38% females, with a mean age of 46.7 years (SD = 9.3). Forty-six percent were first-generation founders, and 54 percent were successors. Regarding education, 12 percent had secondary schooling or less, 19 percent had vocational or technical training, 32 percent held a bachelor's degree, 29 percent a master's degree, and 8 percent a doctoral qualification. The firms represented a mix of industries, with 27 percent manufacturing, 33 percent services, 16 percent technology/knowledge-intensive, 14 percent trade and logistics, and 10 percent agriculture/natural resources. Average firm age was 28.4 years (SD = 17.6); 41 per cent were micro-enterprises employing fewer than ten staff.

Table 1. Demographic and Firm-level Characteristics of Respondents (N = 1,200)

Variable	Category	n	%
Gender	Male	744	62.0
	Female	456	38.0
Age (years)	Mean (SD)	46.7 (9.3)	–
Generational stage	Founder (1st gen.)	552	46.0
	Successor (2nd+ gen.)	648	54.0
Education level	Secondary or below	144	12.0
	Vocational/technical	228	19.0
	Bachelor's degree	384	32.0
	Master's degree	348	29.0
	Doctoral or equivalent	96	8.0
Industry sector	Manufacturing	324	27.0
	Services	396	33.0
	Technology / knowledge-intensive	192	16.0
	Trade & logistics	168	14.0
	Agriculture / natural resources	120	10.0
Firm size (employees)	Micro (<10)	492	41.0
	Small (10–49)	420	35.0
	Medium (50–249)	216	18.0
	Large (≥250)	72	6.0
Firm age (years)	Mean (SD)	28.4 (17.6)	–

Distribution of Education across Industries

To better understand potential interaction effects, Table 2 cross-tabulates education level by industry sector. Higher education (master's/doctoral) is most prevalent in technology-oriented and service industries, while vocational and secondary education dominate in manufacturing and agriculture.

Table 2. Cross-tabulation of Education Level by Industry Sector

Education level	Manufacturing	Services	Technology	Trade/ logistics	Agriculture	Total
Secondary or below	64	42	10	15	13	144
Vocational/technical	88	58	24	31	27	228
Bachelor's degree	96	130	78	54	26	384
Master's degree	58	122	66	48	54	348
Doctoral or equivalent	18	44	14	20	0	96
Total	324	396	192	168	120	1,200

Descriptive Statistics and Correlations

Average job-satisfaction scores were moderately high at 3.84 on a five-point scale ($SD = 0.67$). Table 3 presents descriptive statistics and Pearson correlations for the continuous variables. Job satisfaction was positively correlated with education level ($r = 0.19$, $p < 0.01$) and weakly, but negatively, associated with firm size ($r = -0.11$, $p < 0.05$).

Table 3. Descriptive Statistics and Correlations of Continuous Variables

Variable	Mean	SD	1	2	3	4
1. Job satisfaction	3.84	0.67	1			
2. Education level†	3.02	1.15	0.19**	1		
3. Owner age (years)	46.7	9.3	0.04	0.06	1	
4. Firm age (years)	28.4	17.6	-0.03	0.02	0.22**	1

Education coded: 1 = secondary or below; 5 = doctoral.

** $p < 0.01$ (two-tailed).

Job Satisfaction by Education Level

A one-way ANOVA revealed significant variation in job satisfaction across education levels, $F(4, 1195) = 11.42$, $p < 0.001$. Post-hoc Tukey tests (Table 4) showed that owners with master's and doctoral degrees reported significantly higher satisfaction than those with secondary or vocational education (mean differences = 0.27–0.34, $p < 0.01$). There was no significant difference between bachelor's and master's degree holders ($p = 0.14$).

Table 4. One-way ANOVA of Job Satisfaction by Education Level

Education group	n	Mean satisfaction	SD
Secondary or below	144	3.61	0.72
Vocational/technical	228	3.70	0.69
Bachelor's degree	384	3.86	0.64
Master's degree	348	3.95	0.59
Doctoral or equivalent	96	3.98	0.55

ANOVA: $F(4, 1195) = 11.42$, $p < 0.001$.

Post-hoc Tukey: Master's / Doctoral > Secondary & Vocational ($p < 0.01$).

Job Satisfaction by Industry Sector

Job satisfaction also differed across industries, as shown in Table 5. ANOVA results were significant, $F(4, 1195) = 8.05$, $p < 0.001$. Owners in technology/knowledge-intensive firms reported the highest satisfaction ($M = 4.01$, $SD = 0.58$), significantly higher than owners in manufacturing ($M = 3.72$, $SD = 0.65$; $p < 0.01$) and agriculture/natural resources ($M = 3.66$, $SD = 0.72$; $p < 0.01$).

Table 5. One-way ANOVA of Job Satisfaction by Industry Sector

Industry sector	n	Mean satisfaction	SD
Manufacturing (ref.)	324	3.72	0.65
Services	396	3.89	0.63
Technology / knowledge-intensive	192	4.01	0.58
Trade & logistics	168	3.83	0.62
Agriculture / natural resources	120	3.66	0.72

ANOVA: $F(4, 1195) = 8.05$, $p < 0.001$.

Post-hoc Tukey: Technology > Manufacturing & Agriculture ($p < 0.01$).

Regression Analyses: Main Effects

Hierarchical regression models (Table 6) examined the effects of education and industry after controlling for demographics and firm factors. In Model 1 (controls only), gender showed a small adverse impact ($\beta = -0.09$, $p < 0.05$), with female owners slightly less satisfied; $R^2 = 0.08$ ($p < 0.001$). Model 2 added education, which was positively related to satisfaction ($\beta = 0.21$, $p < 0.001$), increasing R^2 to 0.13 ($\Delta R^2 = 0.05$, $p < 0.001$). Model 3 added industry dummies, further increasing R^2 to 0.17 ($\Delta R^2 = 0.04$, $p < 0.01$). Compared to manufacturing, technology- and knowledge-intensive firms were positively associated with satisfaction ($\beta = 0.18$, $p < 0.001$), while agriculture/natural resources were negatively associated ($\beta = -0.12$, $p < 0.05$).

Table 6. Hierarchical Regression Predicting Job Satisfaction

Predictor	Model 1 β	Model 2 β	Model 3 β
Gender (1 = female)	-0.09*	-0.08*	-0.07*
Age (years)	0.04	0.03	0.02
Generational stage (1 = founder)	0.05	0.04	0.03
Firm size	-0.11*	-0.09*	-0.07
Firm age (years)	-0.03	-0.02	-0.01
Education level	—	0.21***	0.20***
Services (vs Manuf.)	—	—	0.07
Technology/knowledge-intensive (vs. Manufacturing)	—	—	0.18***
Trade & logistics (vs Manuf.)	—	—	0.05
Agriculture / natural resources (vs Manuf.)	—	—	-0.12*

Model 1 $R^2 = 0.08^*$; **Model 2 $R^2 = 0.13^*$** ($\Delta R^2 = 0.05^*$); **Model 3 $R^2 = 0.17^*$** ($\Delta R^2 = 0.04^{**}$).

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Moderated-Regression: Education $\times$ Industry Interaction

Model 4 in Table 7 tested the moderating role of industry. The model's explanatory power increased to $R^2 = 0.20$ ($\Delta R^2 = 0.03$, $p < 0.01$). Interaction effects revealed that the positive impact of education on job satisfaction was significantly more substantial in technology- and knowledge-intensive industries ($\beta = 0.14$, $p < 0.01$) and in services ($\beta = 0.11$, $p < 0.05$) compared to manufacturing. No significant interaction appeared for trade/logistics or agriculture.

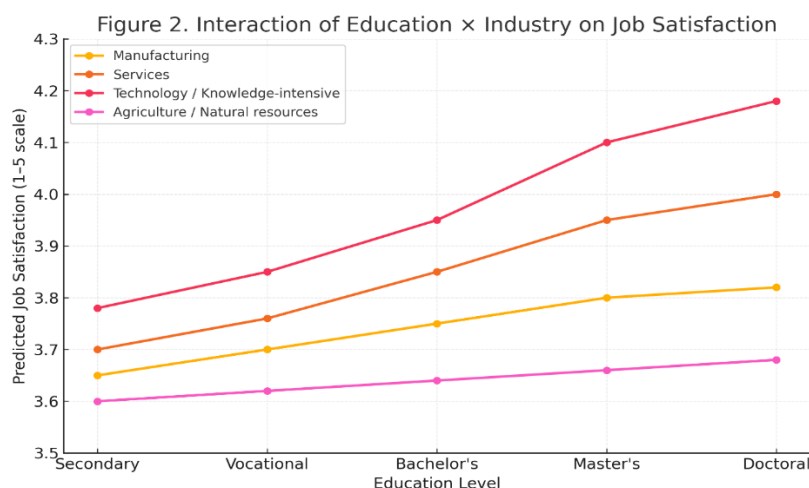
Table 7. Moderated-Regression: Interaction of Education $\times$ Industry

Predictor	Model 4 β
Controls (as above)	—
Education level	0.19***
Services (vs Manuf.)	0.06
Technology/knowledge-intensive (vs. Manufacturing)	0.17***
Trade & logistics (vs Manuf.)	0.05
Agriculture / natural resources (vs Manuf.)	-0.11*
Education $\times$ Services	0.11*
Education $\times$ Technology / knowledge-intensive	0.14***
Education $\times$ Trade & logistics	0.02
Education $\times$ Agriculture / natural resources	-0.04

Model 4 $R^2 = 0.20$ *** ($\Delta R^2 = 0.03$ **).

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Figure 2 visualises these interaction effects. The plot shows predicted job-satisfaction scores on the y-axis and education level on the x-axis. The technology line rises most steeply as education increases. The services line also slopes upward, but moderately, while manufacturing and agriculture remain relatively flat at lower satisfaction levels.



Robustness Checks

Robustness analyses, summarized in Table 8, show consistent results across alternative specifications. Ordinal-logit regression produced similar significance patterns; splitting the sample revealed that the education effect was slightly more substantial among successors ($\beta = 0.24$, $p < 0.001$) than among founders ($\beta = 0.18$, $p < 0.001$). Including country fixed-effects did not alter the main conclusions.

Table 8. Robustness-check Models

Model specification	Education β	Technology-sector β	Adj. R ² / Pseudo-R ²	Notes
OLS (baseline)	0.20***	0.18***	0.17	Main model
Ordinal-logit	0.19***	0.16***	0.16	DV as ordinal
Founder-only subsample	0.18***	0.17***	0.14	Slightly weaker
Successor-only subsample	0.24***	0.19***	0.18	Stronger education effect
Country fixed-effects added	0.20***	0.17***	0.19	Coefficients stable

*** $p < 0.001$.

Summary of Findings

In summary, the analyses consistently support all three hypotheses. Higher levels of education are associated with greater job satisfaction (H1), industry sector significantly predicts satisfaction (H2), and the education–satisfaction link is stronger in technology-driven and service industries than in traditional manufacturing or agriculture (H3). These findings confirm that human-capital benefits are most fully realised in industries that value advanced knowledge and skills.

Discussion

Education and Job Satisfaction of Family-Business Owners

The findings show a clear positive link between the education level of family-business owners and their job satisfaction, supporting H1. Owners with master's and doctoral degrees reported the highest satisfaction, and this remained significant even after accounting for demographic and firm-level factors. This aligns with human capital theory (Becker, 1993), which suggests that higher education enhances managerial, analytical, and problem-solving skills, making work more fulfilling. The results are consistent with earlier research, which indicates that education enhances entrepreneurial success and subjective wellbeing (Unger et al., 2011; Stephan and Roesler, 2010). Higher education can help family business owners better coordinate business and family issues, reducing stress and increasing personal satisfaction. Educated owners may also feel a greater sense of control and self-efficacy, which have been shown to enhance job satisfaction (Carree & Verheul, 2012). However, no significant difference was found between holders of bachelor's and master's degrees. The most significant increase in satisfaction appears to occur when moving from low education levels to basic tertiary education, with additional higher degrees offering less benefit unless tied to industry-specific skills (Block et al., 2020).

Industry Sector Effects.

The analysis also revealed that, supporting H2, job satisfaction varies significantly across industries. Business owners in technology- and knowledge-intensive industries reported the highest levels of satisfaction, while those in agriculture and traditional manufacturing reported the lowest. According to De Massis et al. (2018) and Calabrò et al. (2021, this pattern reflects an industry-structure perspective, suggesting that sector-specific conditions influence entrepreneurship. These factors include the level of innovation, availability of growth opportunities, market volatility, and capital requirements. Exposure to innovation, opportunities for personal and professional growth, along with higher levels of autonomy and social recognition, may make jobs for owners in the technology sector especially fulfilling. Conversely, owners of agricultural and manufacturing firms often face issues like fluctuating commodity prices, high regulatory pressures, and slower growth, which can result in lower satisfaction (OECD, 2025). Owners in the service industry reported feeling moderately satisfied. This could be because service delivery is inherently relational, offering a sense of fulfillment for entrepreneurs. However, overall, their satisfaction is tempered by operational pressures on the customer end.

The moderated-regression analysis confirmed H3, showing that the positive relationship between education and job satisfaction is strongest in technology-driven and service industries. The interaction plot in Figure 2 illustrates that as education increases, predicted job satisfaction scores rise steeply in technology and moderately in the services sector. At the same time, they remain relatively flat in manufacturing and agriculture. These results suggest that the benefits of education for job satisfaction depend on how well the owner's skills match the industry's demands. In sectors like technology, which require advanced knowledge and ongoing innovation, higher education appears to translate more effectively into better business outcomes and greater personal satisfaction. Service industries also benefit from advanced communication, problem-solving, and strategic planning skills, which are typically acquired through higher education. In contrast, the daily operations of manufacturing and agriculture may rely less on formal education and more on experience and physical capital, limiting the impact of educational attainment on satisfaction. This finding aligns with socioemotional wealth theory, indicating that family motives remain essential across all industries. Still, the ability to derive satisfaction from work also depends on whether the owner's human capital matches sectoral requirements. Prior research on person–environment fit in entrepreneurship supports the idea that such alignment predicts higher wellbeing (Van der Zwan et al., 2016).

Implications for Theory

This study expands socioemotional-wealth research by emphasizing the role of the owner's individual characteristics, especially education, in shaping subjective outcomes. This suggests that socioemotional issues are as significant as human capital ones; their importance varies by industry. Results show that the connection between education and satisfaction is influenced by industry context, which adds nuance to the application of human capital theory in family business research. Education does not always benefit all entrepreneurs. In some industries, education can be advantageous, but in others, it may be detrimental.

How Family-Business Owners and Managers Can Act.

Evidence suggests that owning a family business benefits from investing in higher education or ongoing skills development, which can boost performance and job satisfaction. This is particularly true for companies driven by technology and the service sector that demand advanced skills. Owners of traditional industries, such as fishing, agriculture, or manufacturing, need customized training in areas like digital transformation, supply chain analytics, or sustainable production to bridge the satisfaction gap. Family business experts and consultants can utilize these insights to develop targeted training, mentorship, and development programs tailored to specific sectors. Additionally, business succession plans should include educational pathways for future leaders, ensuring heirs are equipped to handle industry-specific challenges.

Policy Implications.

The study's findings can inform policy efforts to expand access to adult education and targeted executive training for family business leaders. EU governments might encourage entrepreneurial learning through scholarships, tax incentives, or flexible study options for owner-managers. Such initiatives could enhance resilience and satisfaction, particularly in regions reliant on traditional industries. Additionally, policies aimed at fostering innovation in sectors with low satisfaction, such as agriculture and legacy manufacturing, could further benefit owners' experiences. Providing funding for technology upgrades, sustainability practices, and advanced management training would enhance competitiveness and the wellbeing of owners.

Limitations and Directions for Future Research.

The research provides valuable information, but it also has limitations. Due to its design, causality cannot be assumed. Future studies should use longitudinal designs to observe how education, job satisfaction, or industry structure influences change over time. Since all measures are self-reported, there may be bias from common-method variance or emotional effects. To better understand how education impacts owners' experiences, conducting qualitative research, such as in-depth interviews or long-term case studies, would be helpful. The broad industry categories used may conceal differences between sub-sectors, such as high-tech manufacturing and traditional manufacturing. Future research could focus on narrower categories or consider country-level factors,

such as labor laws and cultural norms, which may explain variations in satisfaction. The results indicate that job satisfaction among family business owners is influenced by the interaction between their education and the industry in which they work. Education generally boosts satisfaction, especially in sectors that innovate and require higher levels of skill. This finding is crucial for scholars developing family-business theory, as well as for practitioners and policymakers seeking to support owner wellbeing, which is essential to the long-term sustainability and continuity of family firms in Europe.

Conclusion.

This study examined the job satisfaction of European family business owners and explored whether their education level and industry sector influenced this satisfaction, as well as whether these factors interacted. Based on data from 1,200 owners across twelve European countries, we identified three key insights. Individuals with a master's degree or a doctorate tend to be more satisfied with their work. People are happiest in tech and knowledge-based jobs, but least satisfied in agriculture and traditional manufacturing. Additionally, the effect of education, or the lack thereof, was most substantial in technology and service sector firms. This suggests that different industries require different levels or types of education.

These results contribute to the literature on family firms by shifting the focus from governance and financial outcomes to the wellbeing of owners, a personal aspect often overlooked in socio-emotional wealth research. They demonstrate that human capital resources, such as formal education, interact with external market conditions to influence how owners experience their work. Understanding this interaction adds depth to both human capital theory and family business studies, which have traditionally emphasized succession, control, and performance. The findings offer practical lessons for family business leaders and policymakers. Owners can benefit from investing in education and ongoing skills development, especially in sectors experiencing technological change, where such qualifications enhance both business outcomes and personal fulfilment. Those in agriculture and legacy manufacturing might find that targeted upskilling, particularly in digital technologies and sustainable production, helps boost competitiveness and job satisfaction. Policymakers can support these improvements by expanding access to lifelong learning and modernizing support for traditional industries, thereby helping owner-managers better face current and future challenges. The study's cross-sectional design limits the ability to infer causality, and respondents' perceptions may influence the reliability of its findings, which are based on self-reported data. Future research could track shifts in education and industry conditions over time, employ longitudinal and mixed-methods approaches, and examine sub-sectoral and country-specific factors for a more comprehensive understanding of how these elements influence owner wellbeing. In summary, this research highlights that the wellbeing of Europe's family business owners depends not only on family heritage or firm performance but also on how well their educational background aligns with industry requirements. Recognizing this relationship can help strengthen the personal resilience of family business leaders and ensure the continuity of the enterprises they manage.

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Appendix A. Survey Instrument

Section 1: Demographics and Firm Characteristics

- 1. Age (in years)
- 2. Gender (Male / Female / Prefer not to say)
- 3. Generational Stage (Founder / Successor)
- 4. Firm Size (Micro: <10; Small: 10–49; Medium: 50–249; Large: ≥250 employees)
- 5. Firm Age (years since founding)
- 6. Industry Sector (Manufacturing / Services / Technology & Knowledge-Intensive / Trade & Logistics / Agriculture & Natural Resources)

Section 2: Education Level

- Secondary or below
- Vocational or Technical
- Bachelor's Degree
- Master's Degree
- Doctoral or Equivalent

Section 3: Job Satisfaction Scale (Adapted from the Job Descriptive Index (JDI) and Stephan & Roesler, 2010; 5-point Likert scale: 1 = Strongly Disagree to 5 = Strongly Agree)

- I am satisfied with my overall role as owner.
- My work meets my personal expectations.
- I feel that my job as an owner is meaningful.
- I am content with the work–life balance my business allows.
- I find my day-to-day tasks engaging and fulfilling.
- Running this business aligns with my personal goals.
- I am satisfied with the decision-making authority I have.
- I would choose to be a family-business owner again if given the choice.

Section 4: Ethical Compliance

- Participants provided informed consent electronically.
- Anonymity and confidentiality were guaranteed.
- The survey complied with the EU General Data Protection Regulation (GDPR).

Appendix B. Reliability and Validity Evidence

Measure	No. of Items	Cronbach's α	Validity Evidence
Job Satisfaction Scale	8	0.87	Content validity through expert review; construct validity confirmed by EFA (eigenvalue = 3.9; variance explained = 62%); face validity supported by pilot test
Education Level	5 (ordinal)	-	Categories aligned with Eurostat standards; verified during pilot testing

Industry Sector	5 (categorical)	-	Classified per Eurostat NACE Rev. 2 codes; reviewed by subject-matter experts
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Notes:

- All multi-item scales exceeded the recommended reliability threshold of $\alpha \geq 0.70$ (Nunnally, 1978).
- Translations were verified using a back-translation process to ensure linguistic and conceptual accuracy.
- Pilot testing with 30 owners confirmed clarity, cultural relevance, and ease of response.