



Female Leadership and Customer Satisfaction: Is the Family Business the Optimal Context?

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Abstract. This study analyses the relationship between female leadership, specifically in the role of CEO (Chief Executive Officer), and customer satisfaction within the context of family businesses. It also examines the moderating role of the company's sustainability and innovation strategies. The study focuses on a sample of Ecuadorian micro, small, and medium-sized enterprises in a post-pandemic context, using a logistic regression model. The results show non-uniform effects that depend on the organizational context. Family businesses exhibit a lower customer orientation, which may be due to an intensification of the steward role following the pandemic. Similarly, the study finds that female CEOs drive higher levels of customer satisfaction in non-family businesses, supporting the idea of the distinct role of women in family businesses. In these companies, women appear to adopt the steward role more intensely than men, prioritizing the defense of internal interests over those of customers. The results also show how strategic orientations toward sustainability and innovation can enhance the effect of female leadership and the family nature of the business in certain contexts.

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PALABRAS CLAVE

Liderazgo femenino;
Empresa familiar;
Satisfacción del
cliente; Sostenibilidad;
Innovación

Liderazgo femenino y satisfacción de los clientes: ¿Es la empresa familiar el contexto idóneo?

Resumen. Este trabajo analiza la relación entre el liderazgo femenino, en la figura del CEO (Chief Executive Officer), y la satisfacción de los clientes en el contexto de la empresa familiar. Se analiza también el papel moderador de las estrategias de sostenibilidad y de innovación de la empresa. El estudio se centra en una muestra de micro, pequeñas y medianas empresas ecuatorianas, en un contexto postpandemia, a través de un modelo de regresión logística. Los resultados muestran efectos no uniformes que dependen del contexto organizativo. Se encuentra una menor orientación al cliente en las empresas familiares, pudiendo deberse a una intensificación del *rol steward* tras la pandemia. Así mismo, encontramos cómo las mujeres CEO impulsan mayores niveles de satisfacción de los clientes cuando se trata de empresas no familiares, apoyando la idea del papel diferencial de las mujeres en empresas familiares. En estas empresas, las mujeres parecen adoptar el *rol steward* de forma más intensa que los hombres, priorizando la defensa de los intereses internos frente a los de los clientes. Los resultados también muestran cómo las orientaciones estratégicas de sostenibilidad e innovación pueden potenciar el efecto del liderazgo femenino y del carácter familiar de la empresa en determinados contextos.

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Introduction

Women's participation in leadership positions has been a topic of growing interest in business research, although there is still a long way to go (Maseda et al., 2023). While the proportion of women in management positions is gradually increasing, their presence in executive and senior management roles remains a minority, standing below 35% (World Economic Forum, 2024). Specifically, only 22% of CEO (Chief Executive Officer) positions are held by women (Grant Thornton, 2025). Despite this low representation, empirical evidence is compelling regarding the significant impact of female leadership on corporate performance and competitive advantage, which has increased academic and professional interest in this area (Buss et al., 2025; Hernández-Cuevas et al., 2022).

The literature analyzing the effectiveness of female leadership focuses primarily on its effects on companies' financial results (Bjuggren et al., 2018), such as ROA and Tobin's Q, with mostly positive findings (Qian & Deng, 2025). However, this represents a limited view of a company's performance (Orozco-Collazos & Botero, 2024), overlooking the impact that this leadership can have on other forms of performance. Some authors identify a significant gap in the literature exploring how female leadership directly influences customer-oriented outcomes, such as customer satisfaction, a widely recognized measure of business success that is closely interdependent with other key performance indicators (Korenkiewicz & Maennig, 2023).

The literature points to the need to consider contextual factors that may influence the effectiveness of female leadership (Buss et al., 2025; Orozco-Collazos & Botero, 2024). Among these factors, family businesses have been one of the most supported in the literature, identified as a favorable context for studying female leadership (Buss et al., 2025). These businesses offer opportunities for women to hold leadership positions and become entrepreneurs, unlike non-family businesses (Meroño-Cerdán et al., 2018), thanks to the interaction between the private and professional spheres. Although the literature on women's involvement in senior management positions in family businesses is still in its early stages, fragmented, and conceptual, interest in this area has grown in recent years (Campopiano et al., 2017; Hernández-Linares et al., 2023; Maseda et al., 2023). The literature points out how female directors possess different cognitive frameworks, experiences and knowledge that influence decision-making (Beji et al., 2021), with the family business being a context of greater acceptance of their opinions and perspectives

(Orozco-Collazos & Botero, 2024), as they are more accustomed to the female presence in ownership (Montemerlo et al., 2013) and to female leadership (Hernández-Linares et al., 2023).

Based on these premises, this work seeks to contribute to the literature by investigating the influence of female leadership, exercised by the CEO, on customer satisfaction. The study will focus on the context of micro, small, and medium-sized enterprises (MSMEs) in Ecuador, an emerging Latin American country where cultural gender norms are more traditional (Orozco-Collazos & Botero, 2024). The CEO role is chosen due to their position of highest authority and their capacity to influence the firm's strategic decisions (Srivastava et al., 2023). Furthermore, our study will differentiate between family-owned and non-family-owned businesses, allowing us to determine whether this is a conducive context for the development of female leadership (Buss et al., 2025) and whether they receive better customer evaluations due to greater reliability, as some research indicates (Orth & Green, 2009). Although studies specifically addressing the connection between the presence of female directors and customer satisfaction are scarce (Korenkiewicz & Maennig, 2023), the literature on female leadership suggests mechanisms through which a positive influence might exist. Thus, the moderating effect of innovation orientation and sustainability orientation, closely linked to female leadership, will be examined. Regarding innovation, female leaders, with their unique perspectives and focus on cooperation, can foster innovative behaviors in their firms (Hernández-Linares et al., 2023). As for sustainability, the literature indicates that female directors have a greater commitment to sustainability (Beji et al., 2021), better ESG performance (Cambrea et al., 2024), and a stronger social reputation (Qian & Deng, 2025). Seok et al. (2024) also point out how strong sustainability performance directly contributes to greater customer satisfaction by increasing transparency, legitimacy and trust in the company.

In conclusion, this paper explores how female leadership within the family business context can foster customer satisfaction through two avenues: a focus on sustainability and a commitment to innovation. By jointly analyzing the influence of female leadership, a focus on sustainability, innovation, and family ownership structure, our work offers a holistic and integrative perspective (Buss et al., 2025). Our results reveal effects that are not uniform. Thus, this research aims to fill a significant gap in the literature, providing valuable insights for companies seeking to improve their customer satisfaction performance through

female leadership and inclusive, contextualized innovation and sustainability strategies for the post-pandemic era, where consumer expectations regarding social responsibility and relational connection have significantly increased (Oliver et al., 2024).

2. THEORETICAL BACKGROUND

2.1. The influence of female leadership on customer satisfaction: the importance of context

In recent years, the literature has provided evidence about the distinctive characteristics of female leaders that can influence organizational outcomes, through different approaches such as agency theory, resource dependence theory, stakeholder theory, and top-level theory (Korenkiewicz & Maennig, 2023). These effects result from several factors: on the one hand, their contribution to decision-making, helping to generate different perspectives on complex problems (Dezsö & Ross, 2012); on the other hand, the skills and attributes they bring to management teams, such as empathy, collaboration, solidarity, and communication (Eagly & Johannesen-Schmidt, 2001), which foster creativity; and finally, their leadership styles, which are more relational, interactive, and collaborative (Nekhili et al., 2018; Oliver et al., 2024; Orozco-Collazos & Botero, 2024), foster trust, open communication, and collaboration. However, empirical evidence analyzing the impact of female leadership (measured either as CEO or as a board member or member of the top management team) on business outcomes has been mixed (Korenkiewicz & Maennig, 2023; Orozco-Collazos & Botero, 2024), with positive relationships showing a greater influence (Qian & Deng, 2025). Similarly, studies have mostly focused on financial results (Bjuggren et al., 2018), with little attention given to customer-oriented results (Korenkiewicz & Maennig, 2023), despite their role as a relevant business outcome and as a mediator in the relationship with financial results (Seok et al., 2024). Among the arguments in favor of the influence of female leadership on customer satisfaction, their more collaborative and personal leadership style stands out. This style can emphasize communication not only with employees but also with other stakeholders such as customers, fostering customer loyalty and satisfaction, and a tendency to focus more on service-oriented performance metrics (Korenkiewicz & Maennig, 2023). However, these authors point out the scarcity of literature focused on its analysis, making it a novel perspective. Based on these

arguments, in this work we propose the positive role of female leadership, measured in the figure of the CEO, in generating customer satisfaction:

Hypothesis 1: The presence of a female CEO in the company has a positive impact on customer satisfaction levels.

Regarding the factors that can influence this relationship, in addition to those related to specific leadership characteristics, contextual factors have a significant influence (Buss et al., 2025; Cambrea et al., 2024; Dezsö & Ross, 2012; Oliver et al., 2024; Orozco-Collazos & Botero, 2024), as they determine when and how female leadership is effective. In this sense, the importance given in the literature to the family nature of the business is noteworthy (Bjuggren et al., 2018; Buss et al., 2025; Orozco-Collazos & Botero, 2024).

On the one hand, the family nature of the business has been one of the most analyzed factors, though not without contradictory results (Hernández Cuevas et al., 2022). However, its effect on customer outcomes has been scarcely analyzed. In this regard, Orth and Green (2009) discussed how family businesses can generate greater customer trust and satisfaction, stemming not only from their operational characteristics but also from consumers' perceptions of their identity. Similarly, some studies indicate that communicating a company's family nature can improve its image and build customer trust (Bargoni et al., 2023), generating more positive attitudes (Rajan et al., 2023). This leads us to propose the following hypothesis:

Hypothesis 2: Family businesses exhibit higher levels of customer satisfaction than non-family businesses.

The literature also highlights the effect of family businesses on the effectiveness of female leadership, through the unique dynamics generated in this type of company: a confluence of values (Hernández-Linares et al., 2023), opportunities for women to hold leadership positions (Meroño-Cerdan et al., 2018), and unique environments for women to deploy their leadership styles (Orozco-Collazos & Botero, 2024). Some studies even indicate that the impact of female leadership on profitability is greater in family businesses (Bjuggren et al., 2018). However, other studies suggest that family control can mitigate or even neutralize these positive effects of female leadership, due to factors such as appointment based on family ties, alignment with dominant norms, or tokenism (Cambrea et al., 2024; Gonzales-Bustos et al., 2020; Sarkar &

Selarka, 2021; Orozco-Collazos & Botero, 2024). So, it is expected that both dimensions will have a combined effect on customer satisfaction. Thus, some research indicates how, in complex and uncertain circumstances, a coordinated and collaborative effort among various stakeholders becomes necessary, facilitated by the relational leadership style of women in family businesses, which is perceived as an advantage (Oliver et al., 2024). Furthermore, the literature points out how their distinctive characteristics, not only in terms of relationships but also conflict resolution, resilience, and risk avoidance, give them a greater capacity to adapt to these situations (Hernández-Cuevas et al., 2022; Oliver et al., 2024; Zhen et al., 2018), with this effect being amplified in the case of a family business (Odehnalova & Pizorek, 2018). Conversely, in the case of emerging countries, some studies suggest that the positive effects of female directors or CEOs on financial results can be attenuated or neutralized due to factors such as tokenism or family control (Hoang et al., 2021; Sarkar & Selarka, 2021). Furthermore, we believe that this effect can be amplified by the family nature of the company, not only because of the opportunities it offers female executives to develop their skills, but also because of its perceived greater trustworthiness among customers. This leads us to propose the following hypothesis:

Hypothesis 3: The presence of a female CEO and the family nature of the company have a combined positive impact on customer satisfaction.

2.2. The mediating role of sustainability and innovation in generating customer satisfaction

As mentioned, studies analyzing the relationship between female leadership and business performance do not reach conclusive results. This suggests that the relationship is not always direct and does not depend solely on the presence of women in management positions but may be mediated by the decisions and strategic direction adopted by the company. Among the main mechanisms that may mediate this relationship, the literature highlights the role of strategic factors such as sustainability and innovation, both closely linked to female leadership.

The literature also points to the importance of companies' sustainability strategies on customer perceptions and satisfaction, due to the social impact of these policies, which improves the company's legitimacy and reputation and, consequently, the trust of its stakeholders (Chen et al., 2023; Seok et al., 2024). Seok et al. (2024) also note that women have a greater sensitivity to the needs of different stakeholders. Furthermore, by developing a more relational

and collaborative leadership style compared to their male counterparts (Oliver et al., 2024), female leaders may demonstrate greater sensitivity to ethical judgments and a greater interest in corporate philanthropy and altruistic endeavors (Korenkiewicz & Maennig, 2023). These characteristics can foster a group-oriented and commitment-driven organizational culture and lead to communication that emphasizes customer loyalty and long-term satisfaction (Korenkiewicz & Maennig, 2023). Regarding the family nature of the business, Bargoni et al. (2023) point out how the term "family business" is positively associated with longevity, tradition, a strong culture, and customer focus, with customers perceiving these companies as more trustworthy and authentic. In these companies, women are often driven by long-term sustainability goals, including a concern for legacy and reputation (Cambrea et al., 2024), using social responsibility as a means to differentiate themselves and enhance their image (Bargoni et al., 2023). Thus, the literature seems to indicate that the presence of women on governing bodies can promote the implementation of sustainable practices (Aparicio & Iturralde, 2023). This leads us to propose the following hypothesis:

Hypothesis 4a: The development of a sustainability-oriented strategy within the company has a positive impact on customer satisfaction levels.

Hypothesis 4b: The interaction between a female CEO and a strong focus on sustainability has a significant positive impact on customer satisfaction.

Hypothesis 4c: The interaction between the family-owned nature of the company and a strong focus on sustainability has a significant positive impact on customer satisfaction.

A significant portion of the literature has linked female leadership with innovation (Hernández-Cuevas et al., 2022), as women have been found to bring fresh perspectives, experiences, and knowledge to management teams. This can be particularly beneficial for innovation due to their deeper understanding of consumer behavior and needs (Galia & Zenou, 2012). Some studies indicate that a greater presence of women on boards is associated with a higher number of patents (Chen et al., 2018), with these long-term investments in innovation being linked to greater customer satisfaction (Korenkiewicz & Maennig, 2023). When these variables are combined with the family nature of the company, a positive outcome can be generated, as the values of female leaders align with the family business culture to foster an entrepreneurial orientation based on learning and an open mindset (Hernández-Linares et al., 2023). However, this relationship is mitigated or

even negative when female leadership is strongly linked to family ties rather than merit and risk aversion, which can hinder genuine innovation (Hernandez-Cuevas et al., 2022; Sarkar & Selarka, 2021). These arguments lead us to propose the following hypothesis:

Hypothesis 5a: Developing an innovation-oriented strategy within the company has a positive impact on customer satisfaction levels.

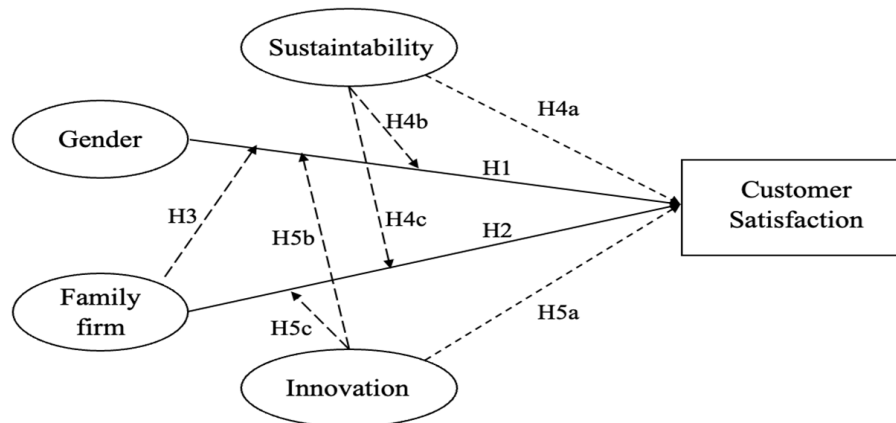
Hypothesis 5b: The interaction between a female CEO and a strong focus on innovation has a significant positive impact on customer satisfaction.

Hypothesis 5c: The interaction between the family nature of the company and a strong focus

on innovation has a significant positive impact on customer satisfaction.

Based on these ideas, we propose a strategic focus on sustainability and innovation as two paths that can improve customer satisfaction. Given that both are strongly linked to female leadership in the literature, we suggest that they can positively influence customer satisfaction, helping to enhance the impact of female leaders on governing bodies. We will also analyze whether these strategic orientations have different effects in the case of family businesses, whose customer focus appears to be more intense. All of this leads us to propose the research model shown in Figure 1.

Figure 1. Research Model.



3.- SAMPLE DESCRIPTION AND METHODS

3.1 Data source and sample

The data source used was a survey conducted between 2022 and 2023 as part of the study “Digitalization and Sustainable Development of MSMEs in Ibero-America” developed by the Foundation for Strategic Analysis and Development of Small and Medium Enterprises (FAEDPYME), CLADEA (Latin American Council of Management Schools), and supported in Ecuador by the National Polytechnic School (EPN). Specifically, the data corresponding to Ecuador were used to avoid the effect of using multi-country samples. This data source collects information on potential sustainability strategies in Ecuadorian MSMEs through a structured questionnaire. The 2022 survey was used to avoid the impact of the COVID-19 pandemic on previous years. Although this survey was also conducted the previous year, its content and the companies that responded were different, making it impossible to construct a longitudinal database. The 2022 data not only captures the information relevant to the study’s objectives better, but

also includes more companies and is further removed from the pandemic years, thus avoiding potential distortions. A total of 2,059 companies participated in this research by fully responding to the survey (1,403 are family-owned and 738 are women-led).

3.2. Variables and method

Dependent Variable: Customer satisfaction. This variable was measured using a five-point Likert scale questionnaire. Specifically, the question posed was: “Compared to your direct competitors, indicate your company’s position in relation to customer satisfaction.” Possible response values ranged from 1 (much worse) to 5 (much better). This variable measures the company’s self-perception of its customers’ satisfaction, which can stem from various interaction processes between the company and its customers (direct communication, social media, customer service, etc.).

Independent Variables: In accordance with the model and hypotheses, two independent variables were used: female leadership and the family nature of the company. Two additional

variables were proposed as both independent and moderating factors: sustainability strategy and innovation strategy. All these variables were measured using the questionnaire. Specifically, the *family business* variable was dichotomous (1 = family business; 0 = non-family business). The self-definition of the companies as family firms has been used in numerous studies on family businesses (Cruz & Nordqvist, 2012; Pieper et al., 2015), given that the companies themselves are aware of their ownership and governance structure and future expectations in these areas. The questionnaire included a footnote explaining the concept of a family business to assist companies in their responses. Regarding *gender*, this was measured using another dichotomous variable where 0 represents a female CEO and 1 represents a male CEO. The CEO was chosen to measure female leadership due to their position of ultimate authority and their ability to influence the firm's strategic decisions (Srivastava et al., 2023). The *sustainability* strategy was measured using a 5-item scale, which is detailed in Appendix 1. This scale is sufficiently reliable, achieving a Cronbach's alpha of 0.927 (Bonett & Wright, 2015; Yu et al., 2022). The *innovation* strategy was also generated using a 7-item scale (see appendix) that offered high reliability (Cronbach's alpha = 0.912).

Control variables. The models consider a wide range of control variables. First, company size was considered through the number of employees (in logarithmic form to better approximate its normal distribution). Along with size, company age was considered, through the difference between the year of the research and the year of its founding (also using the natural logarithm). We also included company growth between 2020 and 2021 as a control variable to monitor the extent to which the company began to recover from the shock of the COVID-19 pandemic. Regarding human and management resources, we have controlled two aspects. The first is the CEO's level of *education*, using a dummy variable that takes the value 1 if the CEO has a university degree and 0 otherwise. The second variable is the number of employees in the field of *information and communication technologies* (in logarithmic form), as a measure of the technological capabilities available to the company's human resources. Related to this variable, we included the company's degree of *digitalization* as the final control variable related to technological capabilities. This was measured using a scale of 12 items (each related to a type of technology), which showed a Cronbach's alpha value of 0.900 (see appendix). Finally, we introduced two additional variables related to the company's international performance. The

first (*export intensity*) represents the percentage of sales abroad relative to the company's total sales, while the second measures the *geographical diversity* of international markets through the logarithm of the number of countries to which the company exports.

Given the nature of the dependent variable, ordinal logistic regression was applied in this study. This model uses a set of explanatory variables to calculate the predicted probabilities of belonging to the categories of an ordinal dependent variable. In this analysis, as previously mentioned, the ordinal dependent variable differentiates between five levels of customer satisfaction (in relation to the competition).

4. RESULTS

4.1. Main analysis

Table 1 presents the descriptive statistics and correlations between the different variables, while the estimation results are shown in Table 2. Model 1 includes only the control variables. Among them, three show slight significance. The first is the CEO having a university degree ($B=0.814$; $p<0.05$); the second is related to company growth ($B=0.003$; $p<0.05$), just after the most drastic effect of the pandemic (between 2020 and 2021); The third is the development of digitization activities ($B=0.274$; $p<0.05$). Model 2 incorporates the direct effects of the four independent and moderating variables, of which only the development of innovation activities is significant ($B=0.438$; $p<0.005$). Model 3 includes the interaction effect between gender and family nature, which is not significant. Model 4 considers the interaction effects of sustainability strategies with the family nature of the company ($B=0.872$; $p<0.01$) and with the CEO's gender ($B=0.826$; $p<0.005$), both of which are significant. Similarly, Model 5 includes the interaction effects of the innovation strategy with the family nature of the company and with gender, neither of which reaches a sufficient level of significance. Model 6 includes all interaction effects together, with some modifications to the significant relationships compared to the separate models.

Table 1. Descriptives and Correlation Matrix

	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Satisfaction	3,74	2,34	1,000												
2 Universitario	0,43	0,66	0,229**	1,000											
3 Ln (employees)	5,19	3,56	0,119	0,208*	1,000										
4 Ln (age)	2,71	5,11	0,188+	0,177*	0,329**	1,000									
5 TIC employment	0,19	0,30	0,082	0,210+	0,226*	0,055	1,000								
6 Export intensity	0,13	0,31	0,043	0,022	0,115+	0,188+	0,132	1,000							
7 Growth	0,16	0,26	0,196*	0,081	0,025	0,070	0,015	0,092	1,000						
8 Ln (#Countries)	1,39	1,04	0,001	0,004	0,006	0,002	0,019	0,038	0,007	1,000					
9 Digitalization	3,87	1,82	0,018	0,072	0,043	0,055	0,038	0,009	0,033	0,109	1,000				
10 Family Firm	0,74	0,45	-0,229*	-0,006	-0,129	0,177	-0,195	0,001	-0,004	-0,003	0,005	1,000			
11 Gender (Male)	0,72	0,59	-0,328*	0,004	-0,033	-0,054	-0,007	-0,002	-0,004	-0,005	-0,019	0,054	1,000		
12 ESG	2,17	2,34	0,082	0,120	0,099	0,028	0,095	0,034	0,088	0,110	0,066	-0,195+	0,006	1,000	
13 Innovation	3,21	2,77	0,106	0,119	0,199	0,044	0,047	0,100	0,920	0,901	0,072	-0,089	0,022	0,254*	1,000

Table 2. Results

P_Satisfaccion	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firm		-0,255	-1,029	-1,419 †	-0,411	-1,704	-7,435 **
		0,293	0,547	0,623	1,680	1,781	2,643
Gender		-0,113	-0,889	-0,620	-0,904	-0,351	-5,604 †
		0,267	0,557	1,533	0,592	1,543	2,814
Sustainability		0,274	0,301	0,976 **	0,294	0,862 **	0,511
		0,165	0,170	0,293	0,253	0,311	0,338
Innovation		0,438 **	0,424 **	-0,228	0,557	0,112	0,638
		0,137	0,138	0,254	0,290	0,377	0,578
FF x Gender			1,063	1,436 †	1,080	1,371 †	9,222 **
			0,645	0,710	0,672	0,695	3,324
FF x Sustainability				-0,872 *		0,215	1,095 †
				0,350		0,344	0,510
Gender x Sustainability				0,826 **		-0,913 **	-0,244
				0,282		0,343	0,483
Gender x Innovation					0,017	0,818 **	1,416 †
					0,336	0,277	0,654
FF x Innovation					-0,183	-0,150	0,353
					0,310	0,325	0,647
FF x Sustainability x Gender							-1,306 †
							0,647
FF x Innovation x Gender							-0,580
							0,739
Size	0,023	0,093	0,113	0,115	0,121	0,127	0,122
	0,108	0,117	0,118	0,121	0,119	0,122	0,125
Age	0,055	0,040	0,036	0,047	0,037	0,042	0,031
	0,122	0,124	0,123	0,125	0,123	0,125	0,128
Growth	0,003 †	0,003 †	0,003 †	0,003 *	0,004 †	0,003	0,004 †
	0,001	0,002	0,002	0,002	0,002	0,002	0,002
Universitario	-0,814 †	-0,832 *	-0,850 *	-0,885 **	-0,849 **	-0,894 **	-0,947 **
	0,329	0,316	0,318	0,312	0,315	0,309	0,321
TIC-Empl.	0,001	0,001	0,001	0,001	0,001	0,001	0,001
	0,002	0,002	0,002	0,002	0,002	0,002	0,002
Digitalization	0,274 †	0,070	0,066	0,092	0,069	0,090	0,077

P_Satisfaccion	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	0,111	0,127	0,126	0,135	0,125	0,135	0,138
Export Intensity	-0,002	-0,002	-0,003	-0,002	-0,002	-0,002	-0,002
_	0,004	0,004	0,004	0,004	0,004	0,004	0,004
#Countries	0,166	0,061	0,087	0,144	0,078	0,130	0,129
	0,159	0,153	0,155	0,164	0,156	0,166	0,168
/cut1	-4.707.112	-279.694	-3.320.084	-3.201.182	-2.839.705		
/cut2	-3.590.122	-1.672.264	-2.192.834	-2.072.539	-1.703.989		
/cut3	-1.798.018	.1807716	-.3342155	-.1692971	.1683581		
/cut4	.0219783	2.094.478	1.593.936	1.834.037	2.096.781		

† if p-value < 0,05
 * if p-value < 0,01
 ** if p-value < 0,005
 *** if p-value < 0,001

4.2. Additional analysis

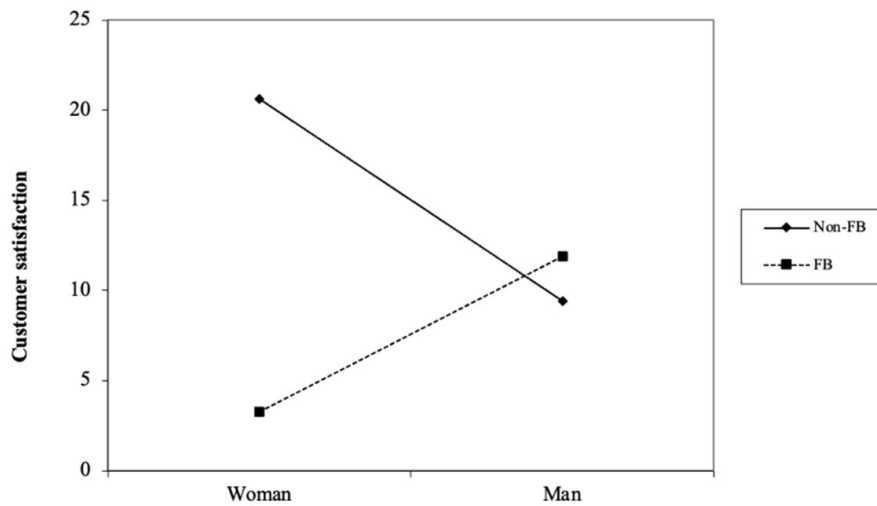
To better understand the potential simultaneous effect of the moderating variables considered in the research, we added a final model incorporating two triple-interaction effects. This Model 7 demonstrates the greatest overall explanatory power and yields some interesting results that allow us to evaluate the different hypotheses proposed in Section Two. Firstly, we observe that only two of the four direct effects are significant: the family nature of the business ($\beta=-7.435$; $p<0.005$) and the CEO's gender ($\beta=-5.604$; $p<0.005$). However, the sign of the effect of the family business variable is the opposite of what was expected, meaning that these family businesses are precisely the ones that achieve the lowest customer satisfaction after the pandemic. In the case of gender, the sign and significance have allowed us to support hypothesis 2. Furthermore, both variables show a significant joint effect ($\beta=9.222$; $p<0.005$), although with the caveat mentioned above regarding the sign of the beta coefficient, so hypothesis 3 must be rejected, with companies with female CEOs

showing lower customer satisfaction rates after the pandemic.

The results demonstrate that sustainability and innovation strategies do not have a significant direct effect, so hypotheses 4a and 5a cannot be supported. However, Model 7 shows that the sustainability strategy moderates the effect of family nature on customer satisfaction ($\beta=1.095$; $p<0.05$) and that the innovation strategy moderates the effect of gender ($\beta=1.416$; $p<0.05$). These results support only hypotheses 4c and 5b, but not the others. Finally, of the two triple interaction effects explored, only one is significant, the one that combines the family nature of the firm, the innovation strategy and gender ($\beta=0.647$; $p<0.05$).

To better understand the moderating effects, we have graphically represented those that appear significant. Figure 2 shows that customer satisfaction is higher when the company is non-family-owned and led by a female CEO. However, when the female CEO is in a family-owned company, customer satisfaction tends to decrease, becoming very similar to the case where the CEO is male.

Figure 2. Interaction between the CEO’s gender and family nature of the company



Figures 3 and 4 illustrate the significant interaction effects of the two strategies analyzed: sustainability and innovation. Figure 3 shows how non-family businesses are the ones that work hardest on customer satisfaction immediately after the COVID-19 crisis. Family businesses appear to have other priorities than improving customer satisfaction during these difficult times, although, as shown in Figure 3, the family businesses that develop sustainability strategies improve customer satisfaction compared to

those that do not. In this sense, the results seem to indicate that, in times of crisis, such as the COVID-19 pandemic, family businesses focus more on internal issues than on external ones (customer satisfaction, sustainability, etc.). Similar results are seen in Figure 4. In this case, it can be observed that companies led by women are more focused on customer satisfaction, although in the case of companies where the CEO is male, customer satisfaction improves in the more innovative companies.

Figure 3. Interaction between the family nature of the company and sustainability strategy

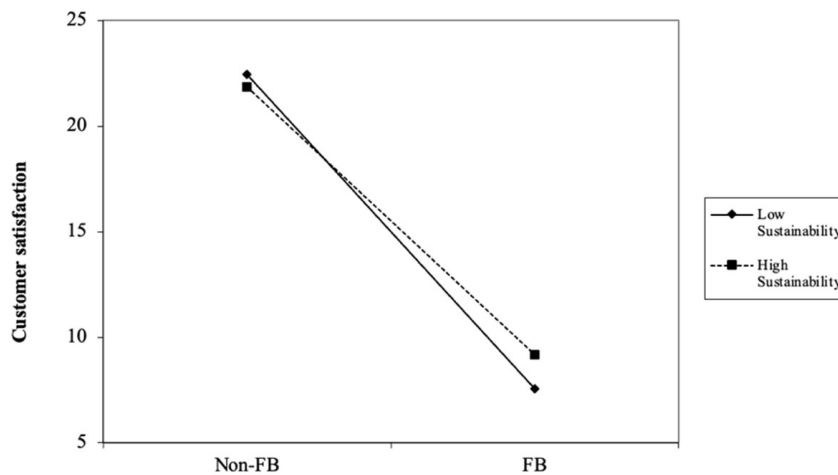
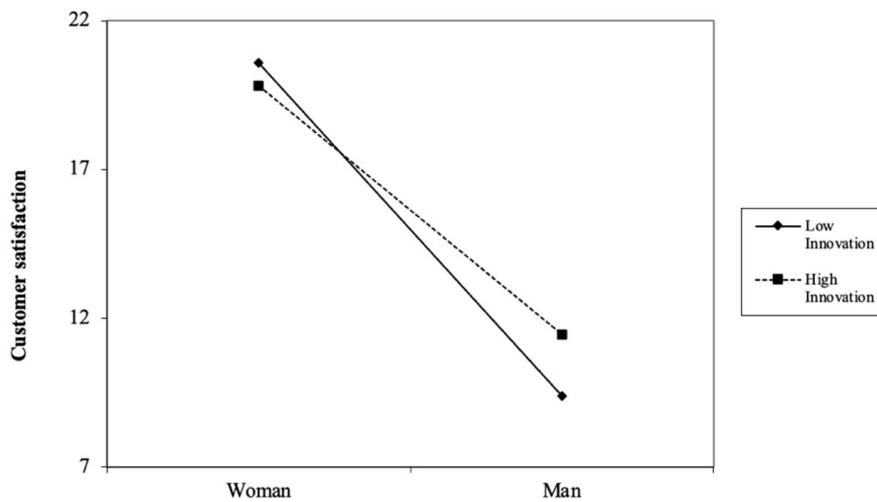


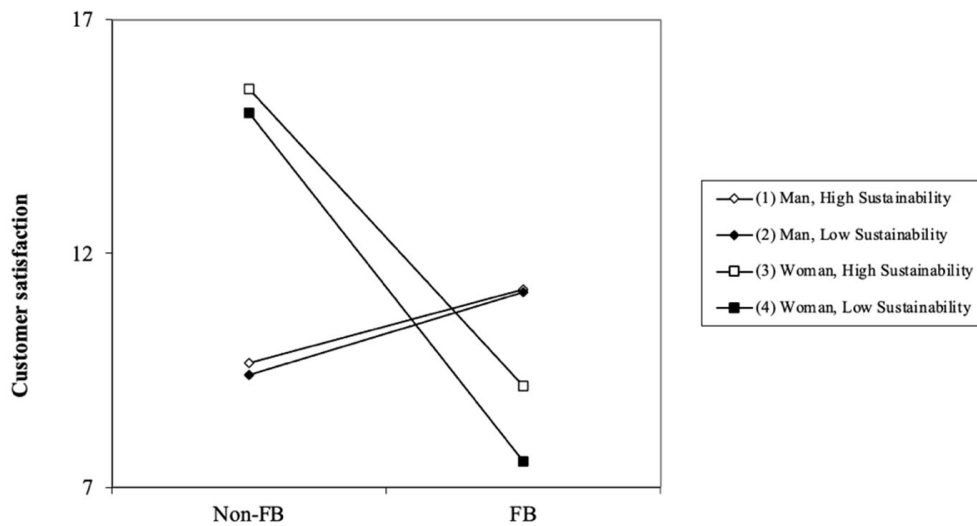
Figure 4. Interaction between the CEO’s gender and innovation strategy



Finally, we identified an interaction effect among three of the four variables considered. Specifically, the results are significant when the CEO’s gender, the company’s family or non-family nature, and the development of a sustainability strategy interact simultaneously. As shown in

Figure 5, non-family businesses exhibit greater activity focused on customer satisfaction, especially those led by women who develop a sustainability-oriented strategy. Conversely, family businesses, led by women, show less focus on customer satisfaction and engage in fewer sustainability-related activities.

Figure 5. Interaction between the family nature of the company, CEO’s gender, and sustainability strategy



5. DISCUSSION

This study delves into the analysis of the effect of female leadership, exercised by the CEO, on customer satisfaction within family businesses and in the context of Ecuadorian MSMEs following the COVID-19 pandemic. Our results have only allowed us to verify one direct effect, specifically the role of female leadership on customer

satisfaction. However, contrary to what was proposed, we have found that the family nature of the companies negatively influences customer satisfaction. Regarding the role of sustainability and innovation strategies, these do not appear to have a significant effect and, only in some cases, seem to moderate some of the direct relationships described above.

These results are interesting for several reasons, two of which stand out. The first is the reduced customer focus of family businesses immediately after a crisis such as the pandemic. This reduced external focus may stem from these types of companies' preferences for prioritizing other types of stakeholders, more internal or linked to the organization itself, such as the owning family or even the employees. This result would support the idea that the stewardship role - which involves defending the interests of the other members of the owning family (Davis et al., 2010; Eddleston & Kellermanns, 2006; Miller et al., 2008) - of family owner-managers intensifies during times of crisis.

Secondly, the differential role of female CEOs in family and non-family businesses is relevant. While women show a high customer satisfaction orientation in non-family businesses, they are precisely the ones who show the least customer orientation when they are in a family business. Thus, as Srivastava et al. (2023) pointed out, the positive influence of women on customer orientation is attenuated in companies with high family ownership, given that these companies already are oriented to their customers, leaving little room for women leaders to drive significant additional change. This supports the idea that the role of women is different in both types of companies (family versus non-family), so that in family companies women adopt the role of stewards, even more intensely than men (Miller et al., 2008), prioritizing the defense of the internal interests of the organization over those of the customers.

5.1. Theoretical and Practical Implications.

From a theoretical perspective, this research makes several significant contributions to the literature on female leadership and family businesses. First, it challenges the dominant approach that links female leadership almost exclusively to financial performance, proposing customer satisfaction as an alternative and relevant outcome within the multidimensional framework of business performance. In doing so, it broadens the conceptual spectrum from the financial paradigm to a more relational and stakeholder-oriented view of leadership. Second, it introduces a contingent and configurational perspective by demonstrating that the effectiveness of female leadership depends not only on the presence of women in positions of power, but also on the interaction with contextual factors such as ownership structure and strategic orientation. This represents an advance over essentialist approaches that presuppose that female leadership has universal effects, proposing instead a model in which gender acts as a

catalyst conditioned by organizational culture and dominant values.

Third, the study reinforces the value of integrating theoretical frameworks traditionally treated separately, such as top-level theory, stakeholder theory, and stewardship theory, proposing that female managerial behavior can oscillate between an external, customer-oriented approach and the prioritization of internal interests depending on the organizational context. This dynamic view allows us to move beyond simplistic dichotomies between female transformational leadership versus male instrumental leadership, offering an interpretation in which leadership strategically adapts to institutional and cultural incentives. Finally, by focusing on an emerging Latin American context, the research contributes to the de-Westernization of knowledge, challenging the uncritical generalization of findings based on developed economies.

At an empirical level, the study offers robust and novel evidence thanks to the use of a large database of 2,059 Ecuadorian MSMEs in the post-pandemic period, a context scarcely explored in the international literature. This context is especially interesting given the lack of studies focused on this type of company in emerging countries, particularly in the so-called Global South (Arikan & Shenkar, 2022; Duran et al., 2019). The main contribution lies in demonstrating that female leadership does not generate homogeneous effects on customer satisfaction; rather, these effects depend on the type of company and the strategies implemented. It is observed that female CEOs show a high level of customer orientation only in non-family businesses, while in family businesses, this effect is reversed or neutralized. This finding challenges the recurring argument that family businesses always constitute a favorable environment for female leadership and provides empirical evidence that qualifies this assumption.

Furthermore, the moderating effects analysis reveals that sustainability acts as a catalyst for customer satisfaction in family businesses, while innovation particularly enhances female leadership in non-family businesses. These interactive effects, rarely explored in previous work, highlight the need to analyze leadership not as a direct predictor of performance, but as part of more complex strategic configurations. The introduction of triple interaction effects constitutes another significant empirical contribution, demonstrating that the combination of gender, ownership, and strategic orientation generates divergent results depending on how organizational values are aligned. Overall, the study not only provides relevant contextual evidence for Latin America but also lays empirical

groundwork for rethinking corporate and public policies on equality, innovation, and sustainability, proposing that the impact of female leadership depends less on access to positions and more on the accompanying organizational environment.

5.2. Limitations and Future Research

Like all empirical research, this study has several limitations that must be acknowledged to properly interpret its results. First, the use of data from a single national source—Ecuadorian MSMEs—limits the generalizability of the findings to other geographic and cultural contexts. Although this choice allowed for controlling for institutional and sociocultural heterogeneity, it would be advisable to replicate the analysis in other Latin American countries or compare it with developed economies to explore the stability of the observed effects. Second, the measurement of key variables, such as female leadership or the family nature of the business, is based on self-reports and dichotomous scales, which can introduce social desirability bias and reduce the variability of the analyzed phenomenon. Furthermore, customer satisfaction was measured by the CEO's perception of the company and not directly through direct questions to customers. Future research could incorporate more sophisticated measures, such as the proportion of women on the management team, the degree of family involvement in management, or the use of direct measures of customer satisfaction.

Third, although the statistical model incorporates complex interactions, the cross-sectional design prevents the establishment of robust causal relationships, especially in the case of sustainability and innovation strategies, whose effect could be bidirectional. A longitudinal design would provide greater clarity on the temporal sequence between leadership, strategic orientation, and customer satisfaction. Finally, the study focuses on the CEO as the representative figure of leadership, overlooking the role of the management team or the leadership styles perceived by employees, which opens the door to multilevel analysis in future work.

From the identified limitations, multiple opportunities to develop new lines of research arise. First, it would be valuable to explore the relationship between female leadership and customer satisfaction using qualitative or mixed methodologies, which would allow for an understanding of the underlying mechanisms behind the observed effects. Interviews with female CEOs in family and non-family businesses could reveal emotional management strategies, role negotiation, and identity tensions not captured by quantitative models.

Secondly, it is suggested to move towards

multilevel models that integrate the perceptions of different stakeholders - employees, customers, and owners - to more comprehensively assess how customer satisfaction is built from a collective perspective, rather than solely from a managerial one. Furthermore, future research could compare different types of female leadership (e.g., founders vs. successors, family vs. non-family CEOs), given that the literature suggests that the origin of the appointment can influence perceived legitimacy and scope of action.

Another promising avenue involves considering other mediating or moderating variables, such as digitalization (Lanzolla et al., 2020; Soluk & Kammerlander, 2021), especially considering its growing relevance in customer interactions (Furr et al., 2022). Finally, it would be pertinent to delve deeper into the long-term effects of sustainability and innovation, differentiating between symbolic initiatives and genuinely transformative strategies. Taken together, these lines of thought would allow for the development of a more sophisticated agenda that goes beyond the mere question of whether female leadership is positive or negative, focusing instead on when, how, and for whom it generates value.

6. CONCLUSION

This study offers a fresh perspective on female leadership by analyzing its impact on non-financial outcomes, specifically customer satisfaction, while also incorporating the role of family businesses and sustainability and innovation strategies. The findings show that female leadership does not generate uniform effects but rather depends critically on the organizational context. While female CEOs drive higher levels of satisfaction in non-family businesses, this effect is attenuated—and even reversed—when they operate in family businesses, demonstrating that gender interacts with ownership structure in complex and non-linear ways. Furthermore, strategic orientations toward sustainability and innovation do not act as direct determinants of performance but rather as contextual triggers that enhance—or inhibit—the effect of leadership and family dynamics. Taken together, these results challenge essentialist views of female leadership and underscore the need to address it as a relational and contingent phenomenon. For researchers, the study encourages a shift toward configurational frameworks that integrate gender, ownership, and strategy. For business leaders, the message is clear: promoting women in senior management is necessary, but insufficient without organizational cultures and support structures that allow them to fully realize their transformative potential.

Author contribution statement

The authors contributed equally to the work.

Conflict of interest statement

The authors declare no conflicts of interest.

Ethical statement

The authors confirm that data collection for the research was conducted anonymously, and there was no possibility of identifying the participants.

Declaration on the use of generative AI in the writing process

Generative AI was used to assist us in language editing.

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Data availability statement

The data that supports the findings of this study are available from the corresponding author, upon reasonable request.

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Appendix. Measurement of variables (Based on the study “Digitalization and Sustainable Development of MSMEs in Ibero-America”, 2022-2023; FAEDPYME, CLADEA y EPN).

Sustainability:

Indicate your level of agreement with the following statements regarding the benefits of business sustainability (1- Strongly Disagree to 5- Strongly Agree):

1. Sustainability increases employee motivation
2. Sustainability in the company generates advantages over the competition
3. Adopting sustainable policies improves the company’s image and reputation
4. Sustainability increases the company’s profitability
5. Sustainability increases the level of satisfaction of our customers

Innovation:

Indicate whether your company has implemented the following innovations in the last two years and, if so, rate the importance of each one (1-Not very important to 5-Very important):

1. Changes or improvements to existing products/services
2. Launch of new products/services
3. Changes or improvements to production processes
4. Acquisition of new capital goods
5. New changes or improvements to organization and/or management
6. New changes or improvements to purchasing and/or procurement
7. New changes or improvements to marketing and/or sales

Digitalization:

What technologies does your company use and how important are they? (1-Not very important to 5-Very important):

1. Own website
2. We sell on our own e-commerce portal
3. E-commerce on Marketplace (Amazon or equivalent)
4. Social media for commercial purposes
5. Digital banking
6. Teleworking
7. ERPs (integrated management systems)
8. Corporate intranet
9. Cybersecurity services
10. Big data and data analysis software
11. Robotization, sensorization
12. Location, Internet of Things