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Impact of brand authenticity, trust in companies, and organizational cynicism perceived by customers on attitudinal and behavioral loyalty in SMEs

Impacto de la autenticidad de la marca, la confianza en las empresas y el cinismo organizacional percibido por los clientes en la lealtad actitudinal y comportamental en PYMES

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ABSTRACT

This study investigates the impact of brand authenticity, trust in companies, and organizational cynicism on customers' attitudinal and behavioral loyalty in SMEs. In a competitive business environment, the lack of authenticity and trust is recognized as a factor that undermines customer loyalty. This analysis provides a strategic roadmap for addressing these challenges and highlights their relevance to long-term business success. A mixed-methods approach was adopted, combining qualitative data obtained from focus groups and analyzed using QDA Miner Lite, with quantitative data collected from a sample of 412 customers. Validated measurement scales and Partial Least Squares Structural Equation Modeling (PLS-SEM) were employed to assess perceptions of brand authenticity, trust, and organizational cynicism within companies. This research design enabled a deeper understanding of customer experiences. The results reveal that organizational cynicism undermines customer loyalty by eroding trust and violating the implicit psychological contract. However, brand authenticity and trust in companies can mitigate these effects by strengthening emotional bonds and fostering loyal behaviors that are essential for attracting and retaining customers. This study contributes to the literature by providing a theoretical framework that links organizational cynicism to customer loyalty. Its theoretical implications highlight the need for a multidimensional approach in organizational behavior research. The practical implications suggest the urgency of implementing strategies that promote authenticity and trust, aligning with the Sustainable Development Goals and fostering a more equitable and fair business environment.

Keywords: Attitudinal loyalty; Behavioral loyalty; Brand authenticity; Organizational cynicism; PLS-SEM; Trust.

RESUMEN

Este estudio investiga el impacto de la autenticidad de la marca, la confianza en las empresas y el cinismo organizacional en la lealtad actitudinal y comportamental de los clientes en PYMES. En un contexto empresarial competitivo, se reconoce que la falta de autenticidad y desconfianza erosionan la lealtad del cliente. Este análisis ofrece una hoja de ruta estratégica para abordar estos desafíos y su relevancia en el éxito empresarial a largo plazo. Se adoptó un enfoque metodológico mixto, combinando datos cualitativos obtenidos de grupos focales, analizados con QDA Miner Lite y datos cuantitativos de una muestra de 412 clientes. Se utilizaron escalas validadas y modelos de ecuaciones estructurales PLS SEM para evaluar las percepciones de autenticidad de marca, confianza y cinismo organizacional en las empresas. Este diseño permitió una comprensión más profunda de las experiencias del cliente. Los resultados revelan que el cinismo organizacional socava la lealtad de los clientes al erosionar la confianza y violar el contrato psicológico implícito. Sin embargo, la autenticidad de marca y la confianza empresarial pueden mitigar estos efectos, fortaleciendo vínculos emocionales, fomentando conductas leales esenciales para atraer y retener clientes. Este estudio, contribuye a la literatura al proporcionar un marco teórico que conecta el cinismo con la lealtad del cliente. Sus implicaciones teóricas resaltan la necesidad de un enfoque multidimensional en la investigación sobre comportamiento organizacional. Las implicaciones prácticas sugieren la urgencia de implementar estrategias que promuevan autenticidad y confianza, alineándose con los Objetivos de Desarrollo Sostenible y promoviendo un entorno más equitativo y justo.

Palabras clave: Lealtad actitudinal; Lealtad comportamental; Autenticidad de la marca; Cinismo organizacional; PLS-SEM; Confianza.

1. INTRODUCCIÓN

Contemporary markets, characterized by information overload, advertising saturation, and recurring corporate scandals, have led customers to develop more critical attitudes toward companies (Burrell *et al.*, 2022; Kapoor & Banerjee, 2021). In this context of growing distrust, building customer loyalty has become a strategic challenge for organizations, particularly for small and medium-sized enterprises (SMEs), whose sustainability largely depends on long-term relationships and emotional bonds with their customers (Agu *et al.*, 2024; Udeh & Dugba, 2025).

Three factors emerge as key determinants of loyalty: perceived brand authenticity, trust in companies, and organizational cynicism as perceived by customers. The latter is defined as the perception that companies lack integrity, honesty, or genuine concern for their stakeholders, and has gained relevance as a complex attitude involving cognitive judgments, negative emotions, and defensive behaviors toward brands (Gökerik, 2024; Indibara *et al.*, 2023). Unlike the traditional employee-centered approach, this study analyzes how customers experience and respond to this phenomenon in their role as consumers, offering a novel perspective on the variables under investigation.

In contrast, brand authenticity —defined as the perception that a brand is true to its values, consistent, and transparent— as well as trust in companies, have been shown to act as protective factors capable of strengthening customer loyalty even under adverse conditions (Campagna *et al.*, 2023; Cinelli & LeBoeuf, 2020). However, although these constructs have been widely examined individually, few studies have analyzed in an integrated manner how they interact to shape customers' attitudinal and behavioral loyalty, particularly in emerging markets such as Colombia.

Furthermore, a significant theoretical gap remains in the analysis of organizational cynicism from the consumer's perspective. Existing research has predominantly examined this construct from an internal, employee-centered perspective, while largely neglecting its growing manifestation among end customers (Gökerik, 2024; Indibara *et al.*, 2023). To address this gap, this study jointly examines the effects of organizational cynicism, brand authenticity, and corporate trust on two key dimensions of customer loyalty: attitudinal loyalty (emotional and cognitive bonds) and behavioral loyalty (repurchase, recommendation, and retention). Furthermore, it introduces a new hypothesis examining the relationship between attitudinal and behavioral loyalty, thereby providing a more comprehensive understanding of the customer loyalty-building process in SMEs.

SMEs constitute an ideal context for analyzing the proposed model because, unlike large corporations, they tend to maintain closer relationships with their customers, thereby intensifying the effects of trust, authenticity, and perceived cynicism on loyalty. Given their resource constraints, SMEs do not primarily compete through price or advertising; rather, they rely on trust and customer loyalty as key mechanisms of differentiation. Furthermore, their lower level of diversification makes them more vulnerable to reputational damage and the erosion of customer loyalty.

In Colombia, as in much of Latin America, SMEs account for the largest share of both business activity and employment; however, they remain underrepresented in the relationship marketing literature. Taken together, this context provides a rigorous test of the proposed model and strengthens its potential for broader generalization.

The mixed-methods approach —combining qualitative and quantitative techniques— allowed us to capture both the interpretive richness of customer experiences and the statistical robustness of the hypothesized relationships. As a result, this study provides valuable empirical and theoretical evidence for understanding how loyalty dynamics are shaped in contexts marked by cynicism and the search for authenticity.

This article is organized into seven sections. Section 2 presents the background and literature review. Section 3 describes the methodology. Section 4 presents the results. Section 5 discusses the findings. Section 6 outlines the limitations and future research directions. Finally, Section 7 presents the conclusions.

2. BACKGROUND AND LITERATURE REVIEW

2.1. *Brand authenticity*

Brand authenticity has emerged as a key strategic factor in consumer behavior, particularly in contexts where customers value consistency, integrity, and emotional connection with companies. It is defined as the perception that a brand is true to itself, acts consistently with its stated values, and operates transparently toward its stakeholders (Moulard *et al.*, 2021).

From a theoretical perspective, authenticity is a subjective psychological experience that triggers processes of identification and connection with the brand. It implies a perceived alignment between the brand's identity, its actual actions, and consumer expectations, generating a sense of truth or legitimacy in the value proposition that strengthens emotional and cognitive bonds with the company (Napoli *et al.*, 2014).

Empirically, it has been shown that consumers are more willing to engage with brands they perceive as authentic, even when facing more affordable or popular alternatives. This engagement translates into attitudinal loyalty —emotional attachment, sustained preference, or identification with the brand— and behavioral loyalty, expressed through repurchase, recommendation, or active brand advocacy (Campagna *et al.*, 2023; Morhart *et al.*, 2015).

Brand authenticity also acts as a mechanism of competitive differentiation, especially in markets where SMEs face positioning barriers against large corporations. By being perceived as more human, consistent, and approachable, SMEs can build long-term relationships that enhance customer retention and long-term engagement (Cinelli & LeBoeuf, 2020).

Given that authenticity fosters emotional identification, a sense of belonging, and favorable repeat behaviors toward the brand, it is expected to positively influence both dimensions of loyalty.

Therefore, the following hypotheses are proposed:

H1. Perceived brand authenticity has a positive effect on attitudinal loyalty.

H2. Perceived brand authenticity has a positive effect on behavioral loyalty.

2.2. Trust in the Company

Trust in the company is a central component in the development of sustainable and long-term business relationships (Agu *et al.*, 2024; Glaveli, 2021). From a relationship marketing perspective, it is defined as the belief that a company will act honestly, predictably, and for mutual benefit, even in situations characterized by risk or ambiguity (Guerola-Navarro *et al.*, 2024).

Trust is gradually developed through accumulated experiences in which customers assess the consistency between the company's promises and its actions. It is not merely an affective disposition; it also involves a rational judgment regarding the organization's integrity, competence, and benevolence (Kähkönen *et al.*, 2021). Several studies indicate that trust encompasses at least three key dimensions: integrity (fulfillment of promises and ethical conduct), competence (technical and operational capability), and benevolence (genuine concern for the consumer) (Dandotiya *et al.*, 2024).

Empirical evidence demonstrates that trust significantly influences customer loyalty processes by generating security, emotional attachment, and a reduction in perceived risk (Huo *et al.*, 2022; Liu *et al.*, 2021; Urdea & Constantin, 2021). Consequently, it becomes a robust predictor of both attitudinal loyalty (preference, commitment, identification) and behavioral loyalty (repurchase, recommendation, retention) (Alnoor *et al.*, 2022; Cardoso *et al.*, 2022).

Although trust may be conceptually related to brand authenticity, it is important to clearly distinguish between the two constructs. While authenticity is based on perceptions of consistency and truthfulness (i.e., what the brand "is" from the customer's perspective), trust is built upon the cumulative and evaluative interaction derived from actual experiences with the company (Campagna *et al.*, 2023; Napoli *et al.*, 2014). This distinction reinforces its discriminant validity in explanatory models.

In the context of SMEs, where customer relationships tend to be more direct and personalized, trust plays an even more critical role. These organizations can leverage their proximity to customers and reliability in fulfilling commitments to develop strong relationships that compensate for structural limitations when competing with larger firms (Cinelli & LeBoeuf, 2020).

Given its role in strengthening the company–customer relationship and its ability to foster favorable attitudes and behaviors, the following hypotheses are proposed:

H3. Trust in the company has a positive effect on attitudinal loyalty.

H4. Trust in the company has a positive effect on behavioral loyalty.

2.3. Customer-perceived organizational cynicism

Organizational cynicism is understood as a generalized negative attitude toward an organization, based on the belief that it lacks honesty, integrity, or genuine intentions (Dean *et al.*, 1998). Although the construct has been extensively studied from an employee-centered perspective, recent research has begun to examine its manifestation among customers, who may perceive companies as entities that act hypocritically or are driven solely by utilitarian motives (Gökerik, 2024; Indibara *et al.*, 2023).

From this perspective, customer-perceived organizational cynicism can be defined as an attitude formed through negative judgments regarding the authenticity of a company's actions, which may give rise to adverse affective reactions and rejection behaviors. This attitude emerges when consumers detect inconsistencies between an organization's discourse —for example, regarding sustainability or social responsibility— and its actual practices, which are interpreted as manipulative, hollow, or inconsistent (Aydın, 2021; Tuna *et al.*, 2018).

This form of cynicism has been conceptualized as a three-dimensional attitude comprising cognitive dimensions (beliefs about the organization's lack of integrity), affective dimensions (emotions such as indignation, annoyance, or disillusionment), and behavioral dimensions (intentions to punish, abandon, or discredit the brand) (Brandes *et al.*, 2008; Chylinski & Chu, 2010). This multidimensional structure makes it a consistent predictor of relational breakdowns, as it involves not only negative beliefs but also emotional and behavioral dispositions toward disengagement.

Drawing on the general framework of attitudes (Ajzen *et al.*, 2018), scholars have argued that complex negative attitudes, such as customer-perceived organizational cynicism, can predict specific behavioral intentions, including avoiding interactions, ceasing purchases, or sharing negative messages. This effect becomes stronger when perceptions of cynicism are not limited to isolated incidents but are generalized to the organization's overall image.

Recent literature has demonstrated that this form of cynicism significantly affects loyalty-building processes by weakening emotional (attitudinal) loyalty and reducing desirable behaviors such as repurchase intentions, positive word-of-mouth recommendations, and brand advocacy (Gökerik, 2024; Gupta *et al.*, 2020; Indibara *et al.*, 2023). Furthermore, it erodes other key relational variables, such as trust and perceived authenticity, thereby triggering a progressive deterioration of the customer–firm relationship.

Therefore, the following hypotheses are proposed:

H5. Customer-perceived organizational cynicism has a negative effect on attitudinal loyalty.

H6. Customer-perceived organizational cynicism has a negative effect on behavioral loyalty.

2.4. Relationship between attitudinal loyalty and behavioral loyalty

Customer loyalty has been conceptualized as a multidimensional phenomenon comprising an attitudinal dimension, related to the emotional and cognitive bond with a brand, and a behavioral dimension, reflected in repeated actions such as repurchase and recommendation (Singh *et al.*, 2023).

Attitudinal loyalty represents the affective and symbolic ties that connect customers to a brand. It encompasses feelings of identification, pride, and trust, as well as a favorable psychological disposition characterized by a sustained preference over time (Goyal & Verma, 2023). This form of loyalty is often associated with perceptions of authenticity, alignment with consumers' values, and a sense of belonging, which foster emotional attachment and positive attitudes toward the brand (Soedarto *et al.*, 2019).

Behavioral loyalty, in contrast, is manifested through observable actions such as repurchase behavior, purchase frequency, and active recommendations to other consumers. This type of loyalty is particularly valuable in contexts where brands face distrust, cynicism, or widespread skepticism, as it represents a tangible source of revenue, growth, and long-term sustainability (Kaur *et al.*, 2021; Saini & Singh, 2020).

Numerous studies have demonstrated that attitudinal loyalty is a significant antecedent of behavioral loyalty, as consumers who are emotionally committed to a brand tend to express this bond through concrete behaviors of support, retention, and advocacy (Liu *et al.*, 2021). From the perspective of the Theory of Planned Behavior, stable and positive attitudes toward an object increase the likelihood that such beliefs will be translated into congruent actions, provided that facilitating conditions are present (Ajzen *et al.*, 2018).

Accordingly, when a brand succeeds in consolidating attitudinal loyalty through positive experiences, authenticity, and trust, it is expected that this affective and cognitive connection will translate into sustained behaviors that benefit the organization.

Therefore, the following hypothesis is proposed:

H7. Attitudinal loyalty has a positive effect on behavioral loyalty.

3. METHODOLOGY

Given the complex nature of the phenomenon under analysis, a sequential exploratory mixed-methods approach was adopted (Clark & Plano Clark, 2022), combining qualitative data (focus groups) and quantitative data (structured survey). This strategy allowed for an in-depth understanding of consumers' perceptions and motivations and provided an empirical basis for testing the hypothesized relationships.

In the qualitative phase, seven face-to-face focus groups were conducted with a total of 52 participants (7–8 participants per group), following the recommendations of Krueger and Casey (2015). Participants were selected through purposive sampling to ensure diversity in terms of age, gender, educational level, and consumption patterns, while acknowledging limitations in statistical generalizability. The inclusion criterion required participants to have interacted with a small or medium-sized enterprise (SME) in the commerce or service sector at least once per month. This diversity allowed for the capture of a broad range of perspectives concerning organizational practices and their effects on trust, perceived authenticity, and customer loyalty.

The focus groups explored topics such as perceptions of corporate practices, experiences of trust and disappointment, factors that foster or undermine loyalty, and emotional responses toward authentic and cynical brands. The semi-structured discussion guide was developed based on relevant literature (Indibara *et al.*, 2023; Morhart *et al.*, 2015; Napoli *et al.*, 2014) and reviewed by two external experts.

All sessions were moderated by an experienced researcher, audio-recorded, transcribed, and independently coded by three researchers using QDA Miner Lite software. Data analysis followed a thematic coding procedure involving exploratory reading, pattern identification, development of representative codes (e.g., "loyalty," "cynicism," "trust," and "consistency"), and iterative refinement. Intercoder reliability was assessed using percentage agreement, reaching a satisfactory level of 85%. Researcher triangulation and cross-validation with the existing literature were employed to strengthen analytical validity.

The qualitative findings played a crucial role in the development of the conceptual model by refining the study constructs and providing support for the proposed hypotheses. For instance, the relationship between perceived authenticity and loyalty emerged as an emotional bond grounded in the congruence between organizational discourse and actual behavior. Likewise, cynicism manifested as accumulated disappointment, distrust, and a breakdown in the customer–brand relationship. These findings were used to validate, adapt, or eliminate theoretical relationships, ensuring consistency between theory, empirical evidence, and context, while also informing the design of the survey instrument.

For example, participants' distinction between "saying the right things" (discourse) and "acting consistently" (behavior) led to prioritizing, within Napoli *et al.*'s (2014) scale, items capturing discourse–action congruence (e.g., "This brand stays true to itself"). Regarding cynicism, both cognitive components (distrust) and affective components (anger and disappointment) were identified, leading to the prioritization of items reflecting negative emotional responses (e.g., "This company irritates me"). Furthermore, the distinction between attitudinal loyalty ("feeling loyal") and behavioral loyalty ("acting loyally") was reinforced, justifying their separate measurement.

Two nuances were not operationalized due to the scope of the study: the temporal dimension of cynicism (gradual versus sudden emergence) and the influence of prior experiences with other brands. These aspects are proposed as avenues for future research.

In the quantitative phase, a structured questionnaire was designed and administered between July 2024 and March 2025 to a sample of 412 Colombian consumers. Purposive sampling was employed, targeting individuals who maintained frequent contact with SMEs operating in the commerce or service sectors. The inclusion criteria required participants to be at least 18 years old, reside in medium-sized or large cities, and have at least one commercial interaction per month with an SME. Although the sociodemographic profile of this sample was not identical to that of the focus groups, partial overlap was ensured in terms of age, educational level, and purchasing behavior. This methodological decision was intended to enhance analytical robustness by extending sample coverage and empirically testing the patterns identified during the qualitative phase.

The questionnaire included sociodemographic variables and an adaptation of five widely used scales based on the qualitative findings: organizational cynicism (Brandes *et al.*, 2008; Indibara *et al.*, 2023), brand authenticity (Napoli *et al.*, 2014), trust in the company (Delgado-Ballester & Munuera-Alemán, 2005; Morgan & Hunt, 1994), attitudinal loyalty (Goyal & Verma, 2023; Liu *et al.*, 2021), and behavioral loyalty (Saini & Singh, 2020; Soedarto *et al.*, 2019). All scales employed a seven-point Likert format (1 = strongly disagree; 7 = strongly agree) and were adapted to the Colombian context. A pilot test involving 30 participants was conducted to assess clarity and contextual appropriateness. No items were eliminated following the pilot test; however, minor wording adjustments were made to three cynicism items to improve fluency in Spanish.

Quantitative data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0 software. In the first stage, the measurement model was evaluated through internal consistency reliability (Cronbach's alpha, rho_A, and composite reliability), convergent validity (Average Variance Extracted, AVE), and discriminant validity (Fornell–Larcker criterion and Heterotrait–Monotrait ratio, HTMT). Subsequently, the structural model was assessed by examining path coefficients (β), coefficients of determination (R^2), effect sizes (f^2), predictive relevance (Q^2), and statistical significance using a bootstrapping procedure with 5,000 resamples.

In addition, a configurational approach based on fuzzy-set Qualitative Comparative Analysis (fsQCA) was employed to identify sufficient configurations of conditions associated with high levels of attitudinal and behavioral loyalty. This approach is particularly useful for examining complex and non-linear causal relationships, as well as equifinality and combinatorial effects among variables (Fiss, 2011; Ragin, 2009). The analysis was conducted using fsQCA 3.1 software (Ragin, 2018). The variables included in the configurational model were Organizational Cynicism, Brand Authenticity, and Trust in the Company as causal conditions, and Attitudinal Loyalty and Behavioral Loyalty as outcome variables.

Because all variables were measured using seven-point Likert scales, direct calibration was performed using the following anchor points: threshold for full membership = 6, crossover point (point of maximum ambiguity) = 4, and threshold for full non-membership = 2. These thresholds were selected based on theoretical rather than empirical (percentile-based) considerations. On a 1–7 Likert scale, a value of 4 represents the theoretical midpoint (neither agreement nor disagreement), 6 reflects a high level of agreement (full membership), and 2 reflects a low level of agreement (full non-membership). These calibration points capture the conceptual interpretation of the constructs and are appropriate when the constructs possess clear substantive meaning (Ragin, 2009). The calibrated values were used to construct the truth table, applying a consistency threshold of 0.80 to identify relevant configurations. Configurations exhibiting the highest levels of consistency and coverage were subsequently interpreted.

This approach complemented the net-effects analysis provided by PLS-SEM by incorporating a configurational perspective that recognizes the existence of multiple pathways leading to high levels of loyalty. It also acknowledges that organizational cynicism, authenticity, and trust may interact in synergistic or compensatory ways depending on the context. All research procedures complied with the ethical principles established by the Declaration of Helsinki (Miranda-Novales & Villasis-Keever, 2019), ensuring informed consent, participant anonymity, and approval by the university's institutional ethics committee.

4. RESULTS

The qualitative and quantitative findings reveal the complex relationships among brand authenticity, trust in the company, customer-perceived organizational cynicism, and their impact on customers' attitudinal and behavioral loyalty. The main patterns identified are presented below:

4.1. Qualitative results

The thematic analysis of the focus groups identified five themes related to customers' perceptions and attitudes toward organizational cynicism, brand authenticity, trust, and loyalty. These themes reveal complex perceptual trajectories through which consumers emotionally process their experiences with firms, strengthening or weakening relational bonds depending on the values and practices they perceive (Tables 1 and 2).

Table 1
Core theme, Key indicators, and representative quotation regarding the Consumer experience

Core Theme	Key Indicators	Representative Quotation
Generalized distrust toward corporate promises	Perceived dishonesty, discredit, lack of credibility, advertising distrust	"Nowadays, you cannot believe everything brands say; they exaggerate or lie about their products."
Ethical and emotional rejection of profit-centered practices	Anger, disappointment, hypocrisy, perceived cynicism	"It really bothers me when companies do things solely to make money without caring about customers or the environment."
Positive evaluation of authenticity and consistency	Transparency, integrity, authenticity, alignment between discourse and actions	"I highly value a brand that is honest, does not lie, and genuinely delivers on its promises."
Loyalty toward brands demonstrating sustained integrity	Responsibility, genuine concern, social commitment, customer well-being	"If a brand shows through its actions that it genuinely cares about customers and does the right thing, you become very loyal to it."
Reactive emotions toward perceived betrayals	Distrust, disappointment, insensitivity, loss of trust	"I felt very angry and disappointed when a company appeared in the news because of that scandal; I no longer trust them."

Source: Authors' own elaboration.

Table 2
Core theme and key indicators related to the customer experience

Core Theme	Key Indicators
Widespread skepticism and distrust toward companies and their advertising claims. “Nowadays, you can’t believe everything brands say; they often exaggerate or misrepresent their products.”	Perceived Dishonesty Discredit Lack of Credibility Advertising Distrust
Sensitivity and indignation toward practices perceived as unethical, misleading, or solely profit-driven. “It really bothers me when companies do things just to make money without caring about customers or the environment.”	Anger Disappointment Cynicism Perceived Hypocrisy
Appreciation for transparency, authenticity, and consistency between brands’ words and actions. “I highly value brands that are honest, don’t mislead consumers, and truly deliver on their promises.”	Transparency Integrity Authenticity Alignment Between Words and Actions
Tendency to remain loyal to brands perceived as ethical, responsible, and genuinely concerned about customers and society. “When a brand demonstrates through its actions that it truly cares about customers and does the right thing, people become very loyal.”	Responsibility Genuine Concern Customer Well-Being Social Commitment
Negative emotions such as anger, disappointment, and cynicism when hypocrisy or a breach of trust is perceived. “I felt very angry and disappointed when a certain company appeared in the news because of that scandal; I no longer trust them.”	Distrust Perceived Dishonesty Lack of Integrity Insensitivity Cynicism Perceived Hypocrisy

Source: Authors’ own elaboration.

Emerging perceptual dynamics

Participants indicated that perceptions of organizational cynicism —particularly when brands fail to fulfill their promises or prioritize profit over ethical considerations— trigger negative emotional responses such as anger, disappointment, and rejection. These emotions reduce customers’ willingness to recommend, remain loyal to, or repurchase from such brands, suggesting that cynicism undermines both the affective and cognitive bonds that support attitudinal and behavioral loyalty acting as a relational barrier.

In contrast, brand authenticity was consistently perceived as a key factor in counteracting the effects of cynicism. Participants highlighted the importance of consistency between what a brand communicates and what it does not, noting that when they perceive integrity, commitment to values, and responsibles behaviors, they tend to maintain and even strengthen their loyalty.

Trust in the company also emerged as a fundamental pillar of the customer–brand relationship. Brands perceived as genuinely concerned about the well-being of consumers and society generated stronger commitment, greater tolerance toward mistakes, and higher levels of retention. Enhanced trust appeared to function as an emotional bridge, enabling customers to overcome previous negative experiences.

A cross-cutting finding concerned the relational dynamics among cynicism, authenticity, and trust. When customers detected hypocrisy, inauthenticity, or inconsistent messaging, levels of cynicism intensified. Conversely, when experiences were perceived as coherent, ethical, and honest, trust and loyalty remained stable or even increased. These findings suggest reciprocal relationships and moderating effects among the three key phenomena, providing important insights for the development of the conceptual model, subsequently evaluated through quantitative analysis.

Figure 1 summarizes the relationships emerging from participants’ perceptions, emotions, and relational experiences with brands. The figure illustrates how customer-perceived organizational cynicism —triggered by incoherent, dishonest, or exclusively profit-oriented practices— generates negative emotional responses, such as anger and distrust, which ultimately affect both attitudinal and behavioral loyalty.

The figure also highlights the buffering role of brand authenticity and trust in the company. When consumers perceive integrity, consistency, and genuine concern, they are more likely to maintain stable affective and behavioral bonds with the brand.

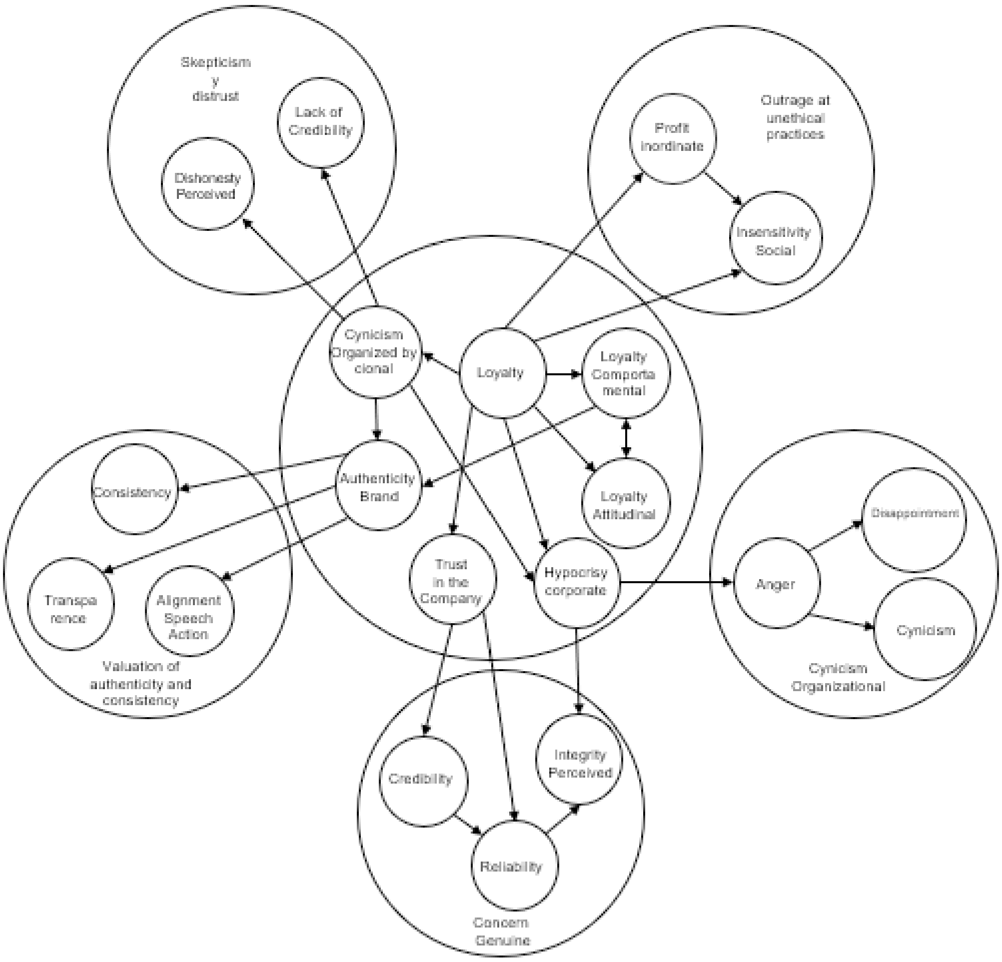

Figure 1
Concept map: qualitative analysis

Source: Authors' own elaboration. Note: Emerging relationships among organizational cynicism, brand authenticity, trust, customer loyalty, and customers' emotional and behavioral responses.

Furthermore, Figure 1 contributed to refining the study's conceptual model by informing the hypothesized relationships later tested through PLS-SEM. It also provides a visual representation of the reciprocal dynamics among the study's key constructs as expressed by the participants themselves.

Transition to the quantitative analysis

The qualitative findings enabled further refinement of the conceptual model, particularly regarding the negative effect of organizational cynicism, the protective role of authenticity and trust, and the relationship between attitudinal and behavioral loyalty. These insights provided the foundation for the subsequent quantitative analysis using PLS-SEM.

4.2. Quantitative results

Sample description

The final sample consisted of 412 Colombian consumers, of whom 48.1% were male and 51.9% were female. Participants ranged in age from 18 to 65 years, with a mean age of 36 years. Regarding educational attainment, 43.0% reported having completed technical or technological studies, 29.1% held a university degree, and 27.9% had completed secondary education. In terms of socioeconomic status, 29.4% belonged to lower socioeconomic strata, 47.1% to the middle stratum, and 23.5% to higher socioeconomic strata. Participants' primary occupations included employees (40.5%), students (27.9%), self-employed workers (21.1%), and unemployed individuals (10.5%). Concerning purchasing frequency, 42.0% reported making purchases once per month, 30.8% once per week, 16.3% less than once per month, and 10.9% several times per week (Table 3).

Table 3
Sample descriptive statistics

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	198	48.1%
	Female	214	51.9%

Variable	Category	Frequency (n)	Percentage (%)
Age (in years)	18 a 30	23	5.58%
	31 a 40	187	45.39%
	41 a 50	123	29.33%
	Over 50	79	19.70%
Educational level	High school graduate	115	27.90%
	Technical	177	43.00%
	College graduate	120	29.10%
Socioeconomic status	Low (1–2)	121	29.40%
	Middle (3)	194	47.10%
	High (4–6)	97	23.50%
Primary occupation	Student	115	27.90%
	Employee	167	40.50%
	Self-employed	87	21.10%
	Unemployed	43	10.50%
Frequency of purchase	Several times a week	45	10.90%
	Once a week	127	30.80%
	Once a month	173	42.00%
	Less than once a month	67	16.30%

Source: Authors' own elaboration

Table 4 presents the means and standard deviations of the five principal constructs measured using seven-point Likert scales.

Table 4
Construct descriptive statistics (n = 412)

Construct	Mean (M)	Standard Deviation (SD)
Organizational Cynicism	4.422	0.872
Brand Authenticity	5.173	0.824
Trust in the Company	5.691	0.858
Attitudinal Loyalty	5.831	0.783
Behavioral Loyalty	5.016	0.806

Source: Authors' own elaboration.

Measurement model assessment

The measurement model was evaluated following established guidelines for Partial Least Squares Structural Equation Modeling (PLS-SEM) (Hair *et al.*, 2021).

Reliability and convergent validity

Internal consistency reliability was assessed using Cronbach's alpha and Composite Reliability (CR). All values exceeded the recommended threshold of 0.70 (Hair *et al.*, 2021; Nunnally & Bernstein, 1994). Convergent validity was evaluated through the Average Variance Extracted (AVE), with all constructs exceeding the recommended threshold of 0.50 (Fornell & Larcker, 1981).

Customer-perceived organizational cynicism was measured using an adapted version of the scale developed by Brandes *et al.* (2008), which captures the cognitive (e.g., "I doubt this company's motives"), affective (e.g., "I feel irritated with this company"), and behavioral (e.g., "I criticize this company's practices") dimensions of the construct.

Brand authenticity was measured using the four-item scale proposed by Napoli *et al.* (2014), including indicators such as "This brand is genuine and real" and "This brand stays true to itself." The scale achieved a Cronbach's alpha coefficient of .87. Attitudinal loyalty was assessed through adapted items from Saini and Singh (2020) and Goyal and Verma (2023), capturing both affective and cognitive dimensions of loyalty (e.g., "I recommend this brand to others" and "I am loyal to this brand"). Behavioral loyalty, in turn, was measured using five items focused on repeated behavioral patterns (e.g., "I have purchased this brand more than once").

Consistent with Marcos and Coelho (2021) and Zeithaml *et al.* (1996), recommendation behavior was treated as a behavioral manifestation of loyalty and distinguished from recommendation intention, which reflects an attitudinal disposition. This distinction aligns with recent research differentiating intention from actual behavior in the context of word-of-mouth communication (Becker *et al.*, 2024), as well as studies examining recommendation behaviors as observable actions distinct from attitudes and intentions (Álvarez-Santamaría *et al.*, 2024). Furthermore, this distinction was supported by the qualitative findings, where participants clearly differentiated between "wanting to recommend" (attitude) and "having recommended" (behavior).

As shown in Table 5, all indicator loadings were statistically significant and exceeded the recommended threshold of .70, suggesting that the observed indicators adequately represent their corresponding latent constructs. Composite Reliability (CR) values ranged from .83 to .92, surpassing the recommended minimum of .70 and indicating satisfactory internal consistency. Similarly, AVE values ranged from .62 to .69, exceeding the recommended threshold of .50 and indicating that more than 50% of the variance of each construct is explained by its indicators. Taken together, these results provide strong evidence of reliability and convergent validity for the study's core constructs: organizational cynicism, brand authenticity, trust in the company, attitudinal loyalty, and behavioral loyalty.

Table 5
Factor loadings, composite reliability (CR), and average variance extracted (AVE)

Construct and Items	Factor Loading
Organizational Cynicism (CR = 0.92, AVE = 0.69)	
This company appears to have little integrity	0.843
I doubt this company's true motives	0.872
This company's policies create conflicts	0.796
This company irritates me	0.834
This company represents the worst aspects of this type of organization	0.813
This company's actions make me feel indignant	0.852
I believe this company takes advantage of whoever it can	0.825
I perceive a lack of sincerity in what this company says and does	0.848
Brand Authenticity (CR = 0.87, AVE = 0.63)	

Construct and Items	Factor Loading
This brand is genuine and real	0.766
This brand stays true to itself	0.815
This brand is honest	0.794
This brand is authentic	0.827
Trust in the Company (CR = 0.89, AVE = 0.68)	
This company is trustworthy	0.794
This company has high integrity	0.845
This company cares about its customers	0.856
This company is credible	0.821
Attitudinal Loyalty (CR = 0.89, AVE = 0.67)	
I consider myself loyal to this brand	0.810
This brand is my first choice	0.844
I would recommend this brand to others	0.798
I have an emotional bond with this brand	0.831
I feel proud to be a customer of this brand	0.825
Behavioral Loyalty (CR = 0.83, AVE = 0.62)	
I have purchased this brand more than once	0.760
I usually buy products from this brand	0.829
I am very likely to continue purchasing this brand	0.792
I have actively recommended this brand	0.797
I will continue choosing this brand as my preferred option	0.864

Source: Authors' own elaboration

Discriminant validity

Discriminant validity was assessed using two approaches: the Fornell–Larcker criterion and the Heterotrait–Monotrait Ratio (HTMT). As shown in Table 6, the square root of the AVE for each construct was greater than its correlations with the others, satisfying the traditional Fornell–Larcker criterion (Fornell & Larcker, 1981).

Table 6
Fornell-Larcker criterion

	OC	BA	TC	AL	BL
Organizational Cynicism (OC)	**0.83**				
Brand Authenticity (BA)	−0.68	**0.79**			
Trust in the Company (TC)	−0.72	0.75	**0.82**		
Attitudinal Loyalty (AL)	−0.61	0.73	0.69	**0.82**	
Behavioral Loyalty (BL)	−0.49	0.57	0.51	0.72	**0.79**

Note: Square roots of the AVE are reported on the main diagonal (bold values).

Source: Authors' own elaboration.

In addition, the HTMT criterion proposed by Henseler *et al.* (2015) was applied to further assess discriminant validity. All values were below the 0.85 threshold (Table 7).

Table 7
HTMT Matrix

Construct	OC	BA	TC	AL	BL
OC	—	0.65	0.71	0.59	0.45
BA		—	0.76	0.72	0.61
TC			—	0.74	0.58
AL				—	0.69
BL					—

Source: Authors' own elaboration.

Satisfying the Fornell–Larcker and HTMT criteria provides support for the discriminant validity of the model, confirming that the constructs represent conceptually distinct phenomena.

Collinearity assessment

Variance Inflation Factor (VIF) values were calculated to rule out multicollinearity among predictors. As shown in Table 8, all VIF values were below the critical threshold of 5, indicating that there is no problematic multicollinearity among the predictors included in the model.

Table 8
VIF Values for predictor constructs

Relationship	VIF
Organizational Cynicism → AL	2.13
Brand Authenticity → AL	1.87
Trust in the Company → AL	2.42
Organizational Cynicism → BL	2.11
Brand Authenticity → BL	1.94
Trust in the Company → BL	2.36

Source: Authors' own elaboration.

The model explained 61% of the variance in Attitudinal Loyalty ($R^2 = .61$) and 38% of the variance in Behavioral Loyalty ($R^2 = .38$), which represents an adequate level of fit for social and consumer behavior studies.

Effect size (f^2)

The effect size of each predictor on the dependent variables was assessed using f^2 values Cohen's (1988). The results revealed large, medium, and small effects depending on the specific relationship examined. Brand authenticity exerted the strongest influence on attitudinal loyalty ($f^2 = 0.35$), whereas organizational cynicism showed moderate effects on both loyalty dimensions (Table 9).

Table 9
Effect size (f^2)

Relationship	f^2	Interpretation
Organizational Cynicism → Attitudinal Loyalty	0.18	Medium
Brand Authenticity → Attitudinal Loyalty	0.35	Large
Trust in the Company → Attitudinal Loyalty	0.22	Medium
Organizational Cynicism → Behavioral Loyalty	0.07	Small
Brand Authenticity → Behavioral Loyalty	0.15	Medium
Trust in the Company → Behavioral Loyalty	0.10	Small

Source: Authors' own elaboration.

The blindfolding procedure was used to assess the predictive relevance of the endogenous constructs. All Q^2 values exceeded the 0.15, indicating satisfactory predictive capability. In particular, Attitudinal Loyalty achieved a Q^2 value of 0.39, which can be considered high (Table 10).

Table 10
Predictive relevance (Q^2)

Dependent Construct	Q^2	Interpretation
Attitudinal Loyalty	0.39	High predictive relevance
Behavioral Loyalty	0.24	Moderate predictive relevance

Source: Authors' own elaboration.

Structural model assessment – Path Coefficients

The structural model was estimated using PLS-SEM based on the survey data (n = 412). Age, gender, and educational level were included as control variables and modeled as additional predictors of both attitudinal and behavioral loyalty. None of these control variables were statistically significant (Table 11).

Table 11
Effects of sociodemographic variables on loyalty

Variable	Attitudinal Loyalty (β)	p	Behavioral Loyalty (β)	P
Age	0.04	0.52	−0.02	0.71
Gender	0.06	0.31	0.03	0.59
Education	−0.05	0.41	0.07	0.28

Source: Authors' own elaboration.

The path coefficients revealed statistically significant effects for all hypothesized relationships, with directions and magnitudes consistent with the theoretical expectations (Table 12).

Table 12
Structural Model results

Relationship	B	SD	t	P	Results
H1: Brand Authenticity → Attitudinal Loyalty	0.622	0.105	5.93	<0.01	Supported
H2: Brand Authenticity → Behavioral Loyalty	0.315	0.093	3.39	<0.01	Supported
H3: Trust in the Company → Attitudinal Loyalty	0.475	0.119	3.99	<0.01	Supported
H4: Trust in the Company → Behavioral Loyalty	0.227	0.104	2.18	<0.01	Supported
H5: Organizational Cynicism → Attitudinal Loyalty	−0.386	0.078	−4.95	<0.01	Supported
H6: Organizational Cynicism → Behavioral Loyalty	−0.209	0.065	−3.21	<0.01	Supported
H7: Attitudinal Loyalty → Behavioral Loyalty	0.482	0.045	9.76	<.001	Supported

Source: Authors' own elaboration.

The findings indicate that customer-perceived organizational cynicism has a negative and statistically significant effect on both attitudinal loyalty (β = −.386, p < .01) and behavioral loyalty (β = −.209, p < .01). Conversely, perceived brand authenticity exerts a very strong positive effect on attitudinal loyalty (β = .622, p < .01) and a moderately positive effect on behavioral loyalty (β = .315, p < .01). Similarly, trust in the company is positively associated with higher levels of both attitudinal loyalty (β = .475, p < .01) and behavioral loyalty (β = .227, p < .01). Overall, the model demonstrated satisfactory fit, with an SRMR value of .048 (below the recommended threshold of .08) and an NFI value of .91 (above the recommended threshold of .90).

In Figure 2, organizational cynicism, brand authenticity, and trust in the company function as exogenous constructs, whereas attitudinal and behavioral loyalty constitute the primary endogenous constructs. The arrows represent the hypothesized structural relationships among the study variables

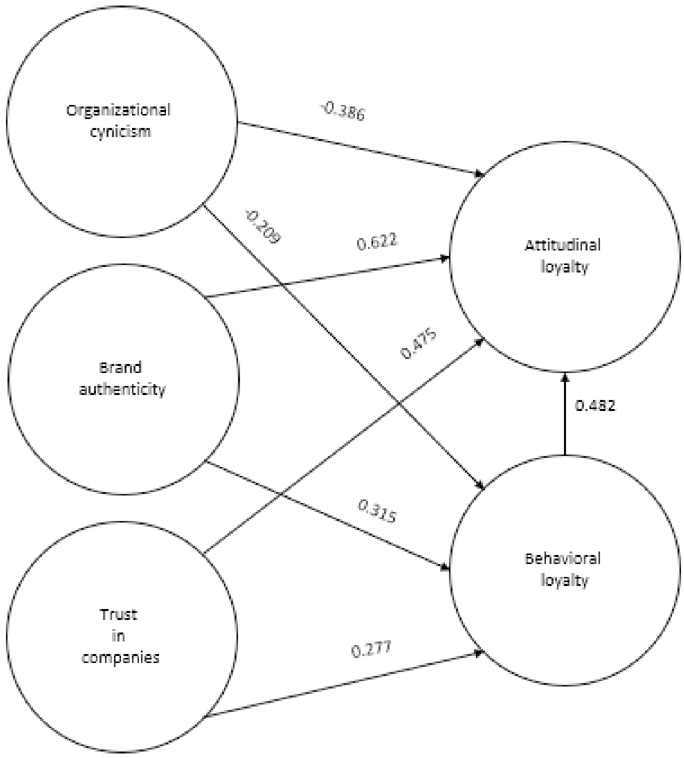

Figure 2
Proposed hypothetical model
Source: Authors' own elaboration.

These findings corroborate and complement the evidence obtained from the focus groups, providing empirical confirmation that customer-perceived organizational cynicism significantly undermines customer loyalty, whereas brand authenticity and trust in the company operate as powerful drivers that strengthen loyalty, even in the presence of cynical attitudes.

Brand authenticity emerged as the strongest predictor, followed by trust in the company, while organizational cynicism functioned as an inhibiting factor. Collectively, the model explained 61% of the variance in attitudinal loyalty and 38% in behavioral loyalty, demonstrating substantial explanatory power within the context of consumer behavior toward Colombian SMEs.

These empirical findings reinforce previous qualitative results and provide robust evidence regarding how consumers' perceptions of corporate ethics, consistency, and authenticity shape their attitudes and behaviors toward brands in the context of Colombian SMEs.

Fuzzy-Set Qualitative Comparative Analysis (fsQCA) results

To complement the PLS-SEM findings, a fuzzy-set Qualitative Comparative Analysis (fsQCA) was conducted to identify causal configurations of sufficient conditions associated with high levels of attitudinal and behavioral loyalty. This configurational approach recognizes that multiple combinations of conditions may lead to the same outcome (equifinality), making it particularly suitable for capturing the complexity of consumer behavior.

Calibration and thresholds

The data were calibrated following the direct method proposed by Ragin (2009), transforming the original Likert-scale values (1-7) into fuzzy-set membership scores ranging from 0 to 1. The following calibration thresholds were applied to each variable:

- Full membership threshold: 6
- Crossover point: 4
- Full non-membership threshold: 2

This calibration logic allowed each case to be mapped according to its degree of membership in the sets of high brand authenticity, high trust, high organizational cynicism, and high customer loyalty.

Analysis of necessary conditions

Before examining causal configurations, potential necessary conditions for high loyalty were assessed. A condition is considered necessary when its consistency value is equal to or greater than .90 (Fiss, 2011; Ragin, 2009). Consistency indicates the degree to which a condition is reliably associated with the outcome. Values above .90 indicate necessity, whereas values above .80 generally indicate sufficiency (Table 13).

Table 13
Necessary Conditions for High Attitudinal and Behavioral Loyalty

Condition	Attitudinal Loyalty (Consistency)	Behavioral Loyalty (Consistency)
Brand Authenticity (BA)	0.91 ✓	0.87
Trust in the Company (TC)	0.89	0.86
~Organizational Cynicism (~OC)	0.88	0.90 ✓

Note: ✓ *indicates consistency ≥ .90.*

Source: Authors' own elaboration.

The results indicate that brand authenticity constitutes a necessary condition for high attitudinal loyalty, whereas the absence of organizational cynicism emerges as a necessary condition for high behavioral loyalty. These findings reinforce the results obtained from the PLS-SEM analysis.

Analysis of sufficient conditions (Truth Table Analysis)

Subsequently, a truth table was constructed, and causal configurations were refined according to established fsQCA standards (Fiss, 2011; Ragin, 2009). A consistency threshold of ≥ .80 was adopted to identify sufficient solutions, while a coverage threshold of ≥ .25 was applied to ensure empirical relevance (table 14). Parsimonious and conservative solutions were compared to assess the stability and robustness of the findings.

Table 14
Causal configurations for high attitudinal loyalty

Configuration	OC	BA	TC	Consistency	Coverage
1	~OC	BA	TC	0.89	0.41
2	~OC	BA	—	0.85	0.36
3	—	BA	TC	0.83	0.33

Note: Overall solution: Consistency = 0.88 | Coverage = 0.57.

Source: Authors' own elaboration.

The three configurations reveal that brand authenticity (BA) appears as a core condition in all pathways leading to high attitudinal loyalty. Trust in the company (TC) and the absence of organizational cynicism (~OC) function as complementary conditions across different combinations.

Table 15
Causal configurations for High behavioral loyalty

Configuration	OC	BA	TC	Consistency	Coverage
1	~OC	BA	TC	0.86	0.39
2	~OC	BA	—	0.81	0.31

Note: Overall Solution: Consistency = 0.85 | Coverage = 0.52.

Source: Authors' own elaboration.

Behavioral loyalty is likewise facilitated by the combination of high brand authenticity, trust in the company, and the absence of organizational cynicism. However, consistent with the quantitative findings, the explanatory coverage for behavioral loyalty is slightly lower than that observed for attitudinal loyalty, suggesting that attitudinal loyalty may be more readily influenced by perceptual factors.

Integrated interpretation

The fsQCA results confirm that there is no single pathway leading to customer loyalty. Instead, multiple equivalent routes were identified, all centered on two fundamental pillars:

- The presence of brand authenticity as a core condition (present in all configurations).
- The absence of organizational cynicism as a condition that strengthens willingness to be loyal

Furthermore, trust in the company, although not always necessary, operates as an important reinforcing condition in most configurations. These causal pathways reflect a logic of complementarity among the constructs: when authenticity, trust, and the absence of cynicism coexist, virtuous cycles are activated that strengthen both emotional commitment (attitudinal loyalty) and repeated behavioral support (behavioral loyalty).

5. DISCUSSION

The findings of this study demonstrate that customer-perceived organizational cynicism constitutes a critical factor in shaping brand loyalty, exerting a negative influence on both its attitudinal and behavioral dimensions. These results are consistent with and complement the qualitative findings, in which participants expressed feelings of distrust, anger, and disappointment toward brands perceived as unethical or dishonest, explicitly reporting a lower willingness to recommend such brands or remain loyal to them.

A key explanation lies in the violation of the implicit psychological contract that customers expect organizations to uphold. When consumers perceive that their expectations regarding integrity, transparency, and genuine concern for their well-being have been betrayed, they develop cynical attitudes as a defensive mechanism to protect themselves from future abuses and disappointments.

Organizational cynicism erodes customer trust, undermining the emotional and cognitive bonds that sustain loyalty. This erosion affects not only loyalty toward a specific brand but may also generalize across the marketplace, making consumers more skeptical toward organizations in general, reducing their willingness to establish loyal relationships in the future.

In contrast, brand authenticity and trust in the company emerge as stabilizing mechanisms within the customer–brand relationship. When customers perceive consistency between a firm's communications and its actions, as well as a genuine commitment to its stated values, they are more likely to maintain loyal attitudes and behaviors. These findings confirm the conclusions reported by Chylinski and Chu (2010) and suggest that authenticity functions as a protective mechanism that shields brands from the corrosive effects of cynicism. Likewise, the results underscore the fundamental importance of building and maintaining trust in the company as a cornerstone of customer loyalty. As cynicism increases and trust deteriorates, customers become more likely to switch brands or engage in negative word-of-mouth communication. Conversely, when a brand is perceived as trustworthy, ethical, and genuinely concerned about customer well-being, consumers are more likely to remain loyal and committed.

The fsQCA analysis complements these findings by demonstrating that there is no single causal pathway leading to customer loyalty. Rather, multiple equifinal configurations were identified. This configurational logic suggests that different combinations of trust, authenticity, and low levels of organizational cynicism can generate similar loyalty outcomes through distinct causal pathways, thereby enriching both the theoretical and practical understanding of the phenomenon (Ragin, 2009; Fiss, 2011).

From a theoretical perspective, this study contributes to the literature by integrating three key constructs —brand authenticity, trust in the company, and organizational cynicism— into an explanatory framework of customer loyalty that combines quantitative, qualitative, and configurational analyses. The findings confirm that organizational cynicism is not a unidimensional phenomenon but rather encompasses interrelated beliefs, emotions, and behavioral tendencies that significantly influence the customer–brand relationship.

This contribution is particularly valuable given that the study was conducted in the Colombian context, an environment characterized by relatively high levels of institutional distrust and consumer skepticism toward organizations, as well as a notable underrepresentation in the relationship marketing literature. Consequently, the study helps address an important empirical gap in the literature on customer loyalty in emerging economies while providing contextually grounded and culturally sensitive evidence.

From a managerial perspective, the findings suggest that transactional loyalty programs alone are insufficient to sustain customer loyalty. Organizations must cultivate authentic relationships grounded in ethical values, integrity, and social responsibility. Consistency between what a brand communicates and what it actually does emerges as a critical strategic factor. Achieving this requires the implementation of marketing strategies and organizational cultures that foster transparency, accountability, and a genuine commitment to customer well-being.

Similarly, establishing mechanisms for active listening and continuous dialogue with consumers may help prevent the emergence of customer-perceived organizational cynicism or, when such cynicism has already developed, facilitate the restoration of trust. Organizations should adopt a proactive approach to accountability, acknowledge mistakes when they occur, and demonstrate through concrete actions their willingness to correct them and rebuild damaged relationships.

6. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Although this study employs a robust methodological triangulation, certain limitations must be acknowledged. First, the sample was non-probabilistic, which may limit the generalizability of the findings. Additionally, the sample exhibited: (a) an age concentration between 31 and 40 years (48%), with limited representation of younger aged 18-30 (12%), which may bias perceptions toward individuals with greater brand experience and potentially higher accumulated cynicism; (b) a high educational profile (67% holding university-level qualifications or higher), which may be associated with greater critical scrutiny of corporate practices; and (c) a predominance of middle- and upper-income socioeconomic groups. Future research should incorporate multigenerational and multi-strata research designs.

Second, the cross-sectional nature of the study prevents the establishment of strictly causal relationships over time. Furthermore, although fsQCA provides valuable configurational insights, the technique is sensitive to calibration decisions, requiring caution when interpreting causal configurations.

An additional limitation concerns the partial overlap between attitudinal loyalty, intention, and behavior in some items, particularly in the recommendation, which may be interpreted as either an intention or an behavior.

Although the classification proposed by Becker *et al.* (2024) and Zeithaml *et al.* (1996) was followed and actual recommendation behavior was prioritized as a behavioral manifestation, future studies could employ more objective measures (e.g., purchase records or observed behaviors) to improve conceptual clarity and measurement precision.

Furthermore, future research should continue exploring the strategic role of corporate social responsibility and value co-creation as mechanisms for strengthening trust and reducing organizational cynicism. Additional studies could examine how social media, artificial intelligence, and data analytics influence the formation of perceptions of authenticity and credibility, particularly among younger consumers.

Likewise, future investigations could explore cultural, generational, and contextual differences in the relationships among cynicism, trust, and loyalty. Such studies may also incorporate dimensions that were beyond the scope of the present research, including the temporal nature of cynicism (gradual versus sudden) and the influence of prior experiences with other brands. Integrating factors such as brand communities, influencers, online reputation, and crisis management into this line of inquiry would contribute to a more comprehensive understanding of the phenomenon.

Finally, the use of longitudinal or experimental designs, as well as the replication of the proposed model across different sectors, would help assess the stability and generalizability of the observed relationships.

7. CONCLUSIONS

This study confirms that customer-perceived organizational cynicism constitutes a critical obstacle to the development of loyal and sustainable relationships with brands. Both the quantitative and qualitative findings indicate that perceptions of dishonesty, hypocrisy, or lack of integrity on the part of organizations undermine both attitudinal loyalty (emotional attachment) and behavioral loyalty (repurchase and recommendation behaviors), consistent with recent studies such as Aydın (2021) and Gökerik *et al.* (2024).

A central explanation lies in the disruption of the implicit psychological contract established between consumers and brands. When customers perceive that a company has violated their ethical expectations, a cynical response is activated as a self-protective mechanism, leading to a substantial deterioration of trust. This corrosive dynamic not only compromises the relationship with a specific brand but may also extend to a broader distrust of the business environment as a whole (Khan *et al.*, 2023).

However, the findings also highlight the protective role of perceived brand authenticity. As suggested by Morhart *et al.* (2015) and Darmawan *et al.* (2019), brands perceived as genuine, consistent, and faithful to their values are more capable of sustaining customer loyalty even in contexts characterized by high levels of distrust. In this sense, authenticity functions as a form of "reputational shield," mitigating the adverse effects of cynicism by providing clear signals of integrity, commitment, and purpose.

Similarly, trust in the company emerged as a necessary condition for strengthening loyal customer relationships. When consumers perceive a company as trustworthy, honest, and genuinely concerned about their well-being, they are more likely to remain loyal even in the face of mistakes or organizational crises, as demonstrated by Kähkönen *et al.* (2021) and Delgado-Ballester and Munuera-Alemán (2005). Trust therefore occupies a central position as a relational mechanism that not only mitigates the impact of cynicism but also amplifies the positive effects of authenticity.

One of the most significant contributions of this study is the demonstration of a reciprocal and reinforcing dynamic among organizational cynicism, brand authenticity, and trust in the company. This complex interrelationship suggests that the erosion of any one of these pillars may negatively affect the others, whereas their simultaneous strengthening creates a synergistic protective system that consolidates customer loyalty.

In this context, organizations' ability to reduce cynicism, project authenticity, and cultivate trust will be a decisive factor in achieving long-term sustainability and competitiveness. In markets increasingly characterized by consumer empowerment and social skepticism, only those organizations capable of building genuine emotional and cognitive bonds with their customers will be able to establish enduring loyalty relationships (Beverland *et al.*, 2021; Indibara & Varshney, 2020).

8. AUTHORSHIP

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The role of emotions in the adoption and use of programmatic advertising by organizations

El papel de las emociones en la adopción y el uso de la publicidad programática por parte de las organizaciones

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A B S T R A C T

This paper focuses on the role of emotions in innovation adoption within organizations. Rather than adopting the traditionally individualistic lens through which emotions have often been examined, this study explores emotions as part of the organizational context in which they emerge. Programmatic advertising is used as a specific case of marketing innovation to examine the underlying process of its adoption or non-adoption by digital marketing experts. Based on fifteen in-depth, semi-structured qualitative interviews with digital marketing managers, we aim to understand how emotions may influence the adoption or rejection of innovations such as programmatic advertising within organizations. Prior to the fieldwork, a literature review was conducted on both programmatic advertising and the relationship between emotions and innovation adoption. Our findings reveal a range of discrete emotions, both positive and predominantly negative, directed towards different targets. Some results confirm previous research on the functional and psychological factors that affect the adoption or rejection of innovations. However, one of the main contributions of this paper is that, unlike previous studies that adopt an individualistic lens to examine emotions, we explore them as the outcome of collective dynamics related to organizational culture, cultural norms concerning innovation adoption, risk-taking, and implicit career consequences. The study also provides further empirical insights into how cultural perceptions of certain controversial innovations affect the activation and expression of emotions. Managerial implications and future research avenues are also discussed.

Keywords: Programmatic advertising; Qualitative research; Emotions; Innovation adoption; Organizational culture; Controversy.

RESUMEN

Este artículo se centra en el papel de las emociones en la adopción de innovaciones dentro de las organizaciones. Sin embargo, en lugar del enfoque individualista tradicionalmente adoptado para entender las emociones, se han vinculado con el contexto organizativo en el cual surgen. La publicidad programática se utiliza como un caso concreto de una innovación en marketing para explorar el proceso subyacente de su (no) adopción por parte de expertos en marketing digital. A través de quince entrevistas cualitativas en profundidad de carácter semiestructurado realizadas a responsables de marketing digital, se pretende entender el papel que pueden desempeñar las emociones en la (no) adopción de innovaciones como la PA dentro de las organizaciones. Con carácter previo al trabajo de campo, se llevó a cabo una revisión de la literatura tanto en el ámbito de la publicidad programática como en el de las emociones y la adopción de innovaciones. Los resultados muestran la existencia de una diversidad de emociones discretas, tanto positivas como mayoritariamente negativas, dirigidas a distintos objetos. Se confirman resultados de investigaciones previas en relación con factores funcionales y psicológicos que pueden afectar su adopción o rechazo. Sin embargo, una de las contribuciones principales del estudio es que, a diferencia de la literatura previa que adopta un lente individualista para estudiar emociones, estas se exploran como resultados de dinámicas colectivas relacionadas con la cultura organizativa, las normas culturales sobre la adopción de innovaciones y la toma de riesgos, así como las percepciones colectivas sobre posibles consecuencias profesionales. También, se proporcionan otros resultados empíricos interesantes sobre las percepciones culturales acerca de ciertas innovaciones controversiales que afectan la activación y expresión de emociones. Finalmente, se discuten las implicaciones para la gestión y las futuras líneas de investigación.

Palabras clave: Publicidad programática; Investigación cualitativa; Emociones; Adopción de innovaciones; Cultura organizativa; Controversia.

1. INTRODUCTION

A substantial body of previous research has advocated the adoption of innovations in organizations as a means of increasing firms' competitiveness and efficiency (Fernández-Rovira *et al.*, 2021; Zeng *et al.*, 2015). Some studies have focused on organizational structure and design, including resources, incentives, and governance structures, to explain firms' propensity to adopt innovations (González-Blanco *et al.*, 2024; Ritchie *et al.*, 2015). Others have examined factors related to the innovation to be adopted, the company seeking to adopt it, and the service provider (Hussein & Mourad, 2014; Zeng *et al.*, 2015). For example, the company's attitude towards risk-taking and organizational learning, the degree of trialability, understood as the extent to which the innovation can be tested or experimented with, its compatibility with the organization, and its perceived complexity are among the variables that have already been examined. A lack of knowledge about certain innovations and a weak legal framework governing their use can also hinder adoption because of the uncertainty they generate (Pérez-Elizundia *et al.*, 2020). Although innovative tools such as artificial intelligence, big data solutions, and programmatic advertising can improve company performance and efficiency, as well as facilitate advertising and promotional decision-making, organizations may still lack clarity regarding the advantages and disadvantages of their use or may resist their adoption (Amado *et al.*, 2018; Campbell *et al.*, 2022).

However, while these studies provide valuable insights into the structural, technological, and strategic determinants of innovation adoption, they pay considerably less attention to the emotional processes underlying organizational decision-making.

The adoption of innovations, such as new digital tools, is closely linked to organizational decision-making processes and their underlying psychological mechanisms. Organizational decision-making can be shaped by emotions (George & Dane, 2016). In line with Martin and Briggs (1986), emotion and cognition are closely intertwined. For instance, the affect-as-information hypothesis suggests that people draw information from how they feel (Clore *et al.*, 2001; Lan, 2002). In some cases, affect has even been found to be a stronger predictor of people's decisions than careful, rational decision-making (Pham *et al.*, 2001). Valor *et al.* (2022) argue that "the cognitive evaluation of an innovation follows from the immediate feelings of consumers (e.g., if one feels anxious about using the innovation, then the innovation must be difficult to use)" (p. 5). Overall, positive emotions can encourage the adoption of new technologies, whereas negative emotions, such as anxiety and anger, can hinder it (Ahn & Shin, 2015; Zheng & Bensebaa, 2020; Zhou *et al.*, 2024). Nevertheless, much of the research on emotions has adopted an individualistic lens. Emotions, like cognitions, although felt and expressed by individuals, are generated within specific contexts and are shaped by collective dynamics and organizational and societal norms. Therefore, further insight is needed into how broader organizational and cultural contexts influence individual affective states in relation to innovation adoption.

With this gap in mind, this study aims to provide insight into how emotions are embedded in processes of collective sensemaking and shaped by the organizational culture within which innovation is interpreted. It also examines how these emotions, in turn, may enable or hinder the adoption of certain innovations, such as programmatic advertising, within organizations.

This study aims to move beyond the individualistic lens often adopted in the study of emotions, in which decision-makers are viewed as isolated and independent actors. Instead, it conceptualizes both emotions and cognitions as emerging from complex collective processes and dynamics related to several factors: cultural norms concerning professional agency and identity, innovation and risk adoption, the perceived broader repercussions of professional decisions, and other boundary conditions, such as organizational and cultural factors that may amplify or attenuate these repercussions. The context of this study is programmatic advertising (PA) and its adoption by digital marketing professionals. Drawing on fifteen in-depth, semi-structured interviews with digital marketing managers, we aim to uncover how these collective organizational dynamics influence participants' emotional responses and ultimately shape the decision to adopt, or not adopt, PA. However, our findings extend beyond this specific digital tool, particularly given that most industries are undergoing profound transformations that encourage the adoption of digital tools and smart technologies (Gerli *et al.*, 2022).

Although PA has been studied in various contexts, we argue that it still represents a significant innovation within the digital marketing landscape. Several authors have described it as disruptive (Busch, 2016; Jensen & Sund, 2018) and as having "the potential to change the way advertisement space is sold to advertisers and presented to the wider society" (Jensen & Sund, 2018, p. 36). Despite its growing adoption, PA continues to evolve rapidly, introducing new challenges and opportunities for marketers (Malthouse *et al.*, 2018). The complexity of PA systems, together with persistent privacy concerns and ongoing technological developments, means that many organizations are still in the process of understanding and integrating this technology (Talukder & Quazi, 2010). In this study, we examine PA as an innovation from the perspective of marketing professionals grappling with its implementation and implications, thereby providing fresh insights into the emotional and cognitive processes involved in its adoption. Unlike previous studies, we focus on the specific challenges and opportunities presented by PA within a rapidly evolving digital marketing landscape. Our work extends the existing literature by exploring how the perceived complexity and risks of PA influence marketing professionals' emotional responses and decision-making processes. This context-specific approach allows us to uncover nuanced emotional dynamics that may not be present in other technological innovations, contributing to a more comprehensive understanding of the role of emotions in the adoption of complex, data-driven marketing technologies.

This study makes several key contributions to the literature on emotions and innovation adoption in marketing. First, we develop a conceptual framework that integrates emotional dimensions, emotional targets, influencing factors, and perceived adoption outcomes, based on empirical evidence from the context of programmatic advertising. This framework offers an exploratory approach to understanding the complex interplay between emotions and innovation adoption decisions in organizations, conceptualized as a collective process of sensemaking. Its main novelty lies in showing how emotions related to the potential adoption of an innovation may be triggered by ideological factors, such as the ethical concerns and controversies surrounding the innovation under study, as well as by its perceived impact on professionals' identity and agency. The study also sheds light on the boundary conditions related to organizational culture that may amplify the professional threat experienced by participants. Finally, our findings offer practical insights for managers seeking to implement PA, highlighting the importance of addressing emotional barriers and leveraging positive emotional drivers.

The remainder of the manuscript is structured as follows. First, we provide a brief overview of programmatic advertising and the literature on emotions, innovation adoption, and resistance. Although there is a well-established stream of research on emotions and innovation adoption, much of this work has focused on consumer contexts and on the early stages of innovation adoption (Wood & Moreau, 2006). Next, we describe the methodological design of the study. Finally, we present and discuss the main findings.

2. THE EMERGENCE AND GROWTH OF PA

Digital media sales were traditionally conducted through direct negotiations between advertisers and media agencies (Carrillo-Durán & Rodríguez-Silgado, 2018). This process was time-consuming, labour-intensive, and costly, and was often prone to delays and errors. With the rapid expansion of the internet, new technologies emerged to manage the massive growth of digital advertising (Campbell, 2023). Among these, programmatic advertising (PA) emerged as a technology designed to facilitate the management of advertising transactions (Chen *et al.*, 2019). Programmatic buying refers to the process of managing and executing media purchases through technology in order to improve the effectiveness and efficiency of buying, placing, and optimizing media inventory (Li *et al.*, 2017).

Programmatic advertising (PA) has evolved from traditional models of ad space purchasing into a real-time trading system driven by big data analytics and sophisticated bidding techniques, enabling highly granular transactions at the level of individual ad impressions (Li *et al.*, 2018). Alongside traditional actors, such as advertisers and agencies, new stakeholders have emerged, including ad networks, ad exchanges, trading desks, demand-side platforms (DSPs), supply-side platforms (SSPs), and publishers or websites (Cozzolino *et al.*, 2021). In digital media, impressions refer to the number of times an ad appears on a user's screen. Programmatic buying allows advertisers to leverage technology and data to purchase individual impressions that reach target audiences at the most relevant moment and in the most relevant context. This represented a breakthrough in the digital landscape, as advertisements were traditionally purchased on the basis of webpages, whereas PA enables "audiences to be bought", meaning that advertisers can reach individuals with specific profiles based on their prior browsing behaviour (McGuigan, 2019).

Among the advantages of programmatic advertising (PA) is the ability to purchase digital ads in real time, often at a lower cost, by leveraging data and technologies that automate parts of the buying process and thereby improve audience targeting (Lee *et al.*, 2015). Furthermore, advertising can be simultaneously targeted across news platforms, social media, and mobile apps, creating more personalized offerings for users (Palos-Sanchez *et al.*, 2019; Samuel *et al.*, 2021). This approach is not limited to large platforms or corporations; it can also be adopted by retailers, delivering significant improvements in consumer performance outcomes (Ciuchita *et al.*, 2023).

At the same time, several concerns have been raised, including issues related to brand safety and the appearance of ads on undesirable or low-quality websites. In this regard, PA increasingly focuses on the media context for bidding as a response to the reliance on personal data, which raises legal and ethical challenges (Häglund & Björklund, 2024). Although strategies such as blacklists can be used to avoid certain websites, the process of monitoring and control remains effortful and time-consuming for those in charge of digital strategy (Shehu *et al.*, 2021). Another issue that has been widely discussed concerns the perceived invasiveness of PA for users. In their study, Palos-Sanchez *et al.* (2019) review previous work on users' perceived privacy on the internet in relation to tools such as PA. Cooper *et al.* (2023) examine the impact of PA across multiple levels, including consumers, ad tech platforms, advertisers, and publishers. Similarly, White and Samuel (2019) discuss data privacy as a major concern for PA adoption, together with the difficulty of using PA due to its technical complexity and the possibility of locking customers "into an 'eco-chamber' of exposure to repetitive adverts" (p. 160). Indeed, this is a rapidly evolving field. Studies such as that by Malthouse *et al.* (2019) propose a multi-objective approach that integrates programmatic advertising and recommender systems (RS), establishing a new frontier for research in advertising and RS. Alongside this, artificial intelligence can play a key role in essential aspects of programmatic advertising, such as the automation of purchasing processes (Ford *et al.*, 2023).

In addition to these concerns, it appears that, although the growth of PA has been rapid, many practitioners do not have a clear understanding of what PA is and may often lack the skills and knowledge required to adopt it as a new marketing technique (Samuel *et al.*, 2021). A report published by the Internet Advertising Bureau (hereinafter, IAB) in 2013 highlighted misconceptions in this area regarding terminology, with several terms being used interchangeably, such as "programmatic," "RTB," "programmatic direct," "programmatic premium," "programmatic guaranteed," "automation," among others. Moreover, PA growth rates vary from market to market. In specific markets, such as Spain, PA adoption rates and growth lag significantly behind those of the US or UK markets (Martínez-Martínez *et al.*, 2017). Considering these considerations, PA emerges as an innovative marketing technique that can bring important benefits to companies but may also raise significant controversy.

3. EMOTIONS: ADOPTION VERSUS RESISTANCE TO INNOVATIONS AND DIGITAL TOOLS

There is a broad field of research on innovation adoption and resistance. These studies address a variety of factors that can affect both employees and managers (Fang & Zhang, 2021).

The theory of reasoned action (Fishbein & Ajzen, 1975) and the Technology Acceptance Model (Davis, 1989) have commonly been used, often focusing on an innovation's perceived ease of use and perceived usefulness (Claudy *et al.*, 2015). Claudy *et al.* (2015) provide a comprehensive review of several functional and psychological barriers, such as tradition and image barriers, which may generate resistance to innovation adoption.

Nevertheless, Valor *et al.* (2022) point out that previous research on innovation adoption has largely overlooked the role of emotions. In their integrative review, they identify five dimensions that explain how emotions affect innovation adoption. These include the discrete emotions involved in innovation adoption decision-making, such as fear, anger, and pride; the targets of these emotions; the role of emotions at different stages of innovation adoption and use; emotion regulation; and the interplay between emotions and cognitive appraisals in final decision-making regarding innovations.

Regarding discrete emotions, Valor *et al.* (2022) distinguish between anticipated, experienced, and retrospective emotions. Anticipated emotions refer to how individuals believe they will feel and mainly emerge during the contemplation phase, before adoption or initial trial. Experienced emotions refer to those felt during the actual use or trial of an innovation, such as when trying out a new product, whereas retrospective emotions refer to emotions felt in the past in similar situations. Regarding the targets of emotions, four are identified: the innovation itself, the process of replacing the existing option, the self, and significant others.

Previous research has focused extensively on the complexity of innovations and the emotions associated with it. Some authors (Choi *et al.*, 2011; Chiu *et al.*, 2021) appear to limit the evaluation of innovations to their perceived ease of use and usefulness. Perceptions of complexity may generate negative anticipated emotions, such as fear; therefore, companies that sell innovative products need to communicate clearly to customers how easy their products are to use (Wood & Moreau, 2006). However, if a product is marketed as "easy to use" but does not meet this expectation, this may facilitate initial trial and adoption but later lead to experienced emotions such as frustration and dissatisfaction, as well as product return, due to disconfirmed complexity expectations.

Other studies focus on emotions related to the self and self-image. Rezvani *et al.* (2015) found that, in the case of electric vehicles, positive anticipated emotions such as joy, pleasure, and pride can positively affect purchase and use. This may be due to feelings of pride, or reduced guilt, associated with choosing an environmentally friendly product. It may also be because consumers "are thrilled by the electric car as the latest toy" (Moons & DePelsmacker, 2012, p. 219). Alternatively, consumers may experience anticipated regret because they "may delay purchases of the current best technology in favour of future technology" (Shih & Schau, 2011, p. 243).

The research identified in this field concurs that emotions play an important role in innovation acceptance across different contexts. Research on strategic decision-making has increasingly acknowledged emotions as core mechanisms shaping how decision-makers interpret information, assess risks, and anticipate outcomes, particularly in complex and uncertain organizational contexts (Neumann, 2017). However, studies on emotions and innovation adoption or non-adoption have often considered decision-makers as individual and independent actors. This is problematic because emotions, like cognitions, are often shaped by collective organizational dynamics, which remain undertheorized.

Several authors (Fang & Zhang, 2021; Raffaelli *et al.*, 2019) argue that framing an innovation in positive emotional terms by top management may be key to its acceptance by employees. Apostolidis *et al.* (2022) studied employees' emotions in response to rapid technology adoption during COVID-19, revealing both positive and negative emotions and highlighting the importance of established organizational practices that enable adoption, reduce resistance, and increase employee satisfaction and well-being. Gaudine and Thorne (2001, p. 183) suggested that "organizations may adopt strategies so that transient emotional states may have time to change before a decision not requiring immediate closure is made. This may reduce the effect of biased probabilities due to affective states". This discussion shows that employees' emotions do not depend solely on individuals themselves, but also on the organizational context to which they belong, including established organizational practices, organizational culture, leadership, and the organizational emphasis placed on the role of emotions in individual and collective decision-making. In fact, Maitlis and Ozcelik (2004) coined the term "toxic decision-making processes" to describe inappropriate organizational cultures in which organizational decision-making practices produce widespread and pervasive negative emotions among employees, such as indignation, anger, anxiety, and fear. Furthermore, certain collective understandings are implicit and invisible. For instance, several authors (Beaudry & Pinsonneault, 2010; Montargot & Ben Lahouel, 2018; Zheng & Montargot, 2021) have found that whether an innovation is perceived by employees as a threat or an opportunity, and the degree of control they feel they have over it, may generate both positive emotions, such as excitement and happiness, and negative emotions, such as anger and fear, thereby affecting innovation adoption at the organizational level. Cieslak and Valor (2025) add that resistance often emerges from perceived threats to professional roles, autonomy, identity, and established work practices within organizations. Therefore, how these perceptions and emotions emerge depends on broader organizational culture, shared norms, and collective sensemaking, which require further investigation.

4. METHODOLOGY

This study adopted a qualitative methodological design to provide holistic, in-depth insights into the role of emotions in the adoption of PA within organizations (Lim, 2025). Fifteen semi-structured interviews were conducted via video call with digital marketing managers. The sampling process was purposive and theoretical (Patton, 2014). The selection criteria were that respondents should have: i) knowledge of digital advertising; ii) prior professional experience in the field; and iii) a current professional role in digital advertising. Within this sample, diversity was sought in terms of years of experience, type of company, and the sectors in which participants worked (see Table 1). Data collection and data analysis took place in parallel, thereby shaping the sampling process. For example, given that the first participants resisted PA adoption, "negative cases" of PA adoption were later included for comparison regarding the role of emotions in such cases (Grodal *et al.*, 2021). During the final stages of data collection, no substantially new themes emerged, indicating that theoretical saturation had been reached. Therefore, it was decided not to conduct additional interviews (Thornberg & Charmaz, 2014).

Table 1 provides a description of the sample. Participants had an average of 6.6 years of professional experience in digital advertising across different work positions. We acknowledge that varying levels of decision-making authority among respondents may influence their emotional responses to PA adoption. To address this potential contextual influence, we categorized participants according to their decision-making power and analysed their responses accordingly. This approach aligns with previous research on emotions in organizational decision-making (Ashkanasy & Dorris, 2017). In addition, participants worked in different types of companies: companies with fewer than 250 employees, hereinafter referred to as SMEs; companies with more than 250 employees, hereinafter referred to as big companies; and media agencies. These companies belonged to different sectors, and some used PA whereas others did not.

Table 1
List of Respondents

	Company type	Position	Experience (years)	Currently using PA
Respondent 1	Small Company	Chief Marketing Officer	5.0	No
Respondent 2	DSP	Indirect Channels	4.0	Yes
Respondent 3	Agency	Senior Affiliate Account Manager	15.5	No
Respondent 4	Big Company	Brand Marketing Manager	4.0	Yes
Respondent 5	Agency	Digital Marketing Specialist	3.0	Yes
Respondent 6	DSP	Chief Operating Officer	1.5	Yes
Respondent 7	Big Company	Senior Manager Digital Partner	6.0	Yes
Respondent 8	Technology	Head of Growth	8.0	No
Respondent 9	Small Company	Head of Ecommerce	8.0	No
Respondent 10	Big Company	Brand manager	1.5	Yes
Respondent 11	Small Company	Marketing Manager	6.0	Yes
Respondent 12	Agency	Account Director	16.0	Yes
Respondent 13	Small Company	E-commerce Manager	11.0	No
Respondent 14	Technology	Client Solutions Manager	5.0	No
Respondent 15	Technology	Growth Associate DACH	4.6	No

Source: Elaborated by the authors.

In order to preserve respondents' anonymity, interviewees' names were replaced with identifiers such as Respondent 1 or Respondent 2, and company names were not disclosed. Semi-structured interviews were conducted following a scripted interview guide. Nevertheless, additional follow-up questions were asked based on interviewees' responses. One of the paper's authors, who is an expert in PA, conducted the interviews. The interviews were recorded and transcribed verbatim.

The concept of theoretical saturation guided our sampling and data collection process. We followed the approach described by Guest *et al.* (2006), who define saturation as the point at which no new themes or information emerge from additional data collection. To determine saturation, we used the constant comparative method (Glaser & Strauss, 2017), analysing data concurrently with data collection. After each interview, we conducted a preliminary analysis to identify emerging themes and concepts. We tracked the emergence of new codes and themes across interviews, noting when new information became less frequent. By the thirteenth interview, we observed a significant decrease in the emergence of new themes. We then conducted two additional interviews to confirm that saturation had been reached, finding that these interviews primarily reinforced existing themes rather than introducing new ones. To further ensure saturation, we applied the following criteria proposed by Hennink *et al.* (2017): 1) code saturation, meaning that no new codes were generated from the data; 2) meaning saturation, meaning that a comprehensive understanding of the identified themes had been achieved; and 3) inductive thematic saturation, meaning that no new themes or refinements to existing themes were emerging.

This approach allowed us to determine with confidence that theoretical saturation had been reached, thereby supporting the methodological rigour of our study.

The data analysis strategy was based on thematic analysis (Hernández *et al.*, 2014). The authors reviewed the transcripts and identified themes related to the role of emotions and emotional discourse. First, in vivo codes were assigned following an inductive logic, which initially involved identifying emotions in participants' discourse, including whether they were positive or negative and the type of emotion expressed, such as fear or shame. Once this first round of coding was complete, the next step was to further contextualize the emotions described, including their target, why they emerged, and the factors that mediated their emergence, such as organizational culture, the participant's position and previous professional experience, and their ideological stance regarding the morality of the innovation.

Following the process traditionally described in Grounded Theory and in Gioia's methodology (Gioia *et al.*, 2013), the first round of coding was informant-centric, whereas the second round was more researcher-driven, guided by the researchers' theoretical sensitivity and prior knowledge. This approach makes it possible to link the empirical findings with previous research in the field and to continue the ongoing debate, while also allowing new insights to emerge. For example, previous research has found that the organizational framing of specific innovations as either a threat or an opportunity affects their adoption (Raffaelli *et al.*, 2019). Thus, during the second round of coding, when analysing first-order codes, we explored how these framings could potentially relate to specific emotions described by participants. We found that previous literature was confirmed to some extent, as framings of innovations as risky within the organization were linked to emotions such as fear. However, new insights also emerged regarding emotions, participants' attitudes towards adoption, and broader cultural framings of innovations, both in the media and in society, particularly in relation to the perceived ethicality of the innovation.

The second-order coding process involved reading the interview transcripts multiple times. We aimed to examine whether factors previously identified as significant were relevant in this particular empirical context, following a deductive process. To do so, we asked multiple questions, many of them open-ended in order to remain receptive to new insights, while interpreting the data one interview at a time. For example, we asked whether the participant was familiar with and experienced in the use of PA; whether this familiarity led to certain emotions, either positive or negative; whether, in the absence of such familiarity, the emotion described was limited to fear or included other emotions; and whether the described emotion was linked to other personal, professional, or organizational factors. We then compared patterns across interviews, asking, for instance, why two participants with no experience of PA differed in whether they described fear, or whether a perceived threat to participants' autonomy or empowerment also appeared in other interviews. Grodal *et al.* (2021) describe "asking questions" as one of the analytical moves commonly used by qualitative researchers. Overall, following Gioia *et al.* (2013, p. 21), we combined "knowing and not knowing" by approaching the data with theoretical sensitivity while remaining open to new empirical insights.

5. FINDINGS

In this section, we adopt an emotional lens to analyse participants' discourse and explore the emotions that emerge when the adoption of programmatic advertising (PA) is considered, as well as the reasons underlying their emergence.

5.1. So, how do I feel about it? Individual factors, expressed emotions and their target

Some participants use this technology, although the majority do not. Therefore, most of the emotions expressed here are anticipated rather than experienced. Most respondents who use PA express excitement when discussing it and its multiple perceived benefits.

> "Well it has so many benefits, to me [PA] seems wonderful, like the best invention in the world. That you can address someone..., well..., everything is now personalized and automated, so you say "I want to find this person now and this morning and the day after tomorrow and then reuse that in other ways..., come on, it's that is wonderful to me. Even with its risks, which are great, but quite manageable. It seems less risky to me than buying a space randomly, because it might not be relevant." (Respondent 7)

> "It can provide enormous support for the omnichannel, which is what we were talking about. It generates a 360 scope of the user. You are not only focusing on when they are in Instagram, but you can also focus on when they are reading the newspaper." (Respondent 2)

> "Optimizing the campaign through a platform, which you yourself have so that you can exercise, shall we say, the independence to manage and optimize. It is a tool that lends itself to being optimized based on your objectives …., KPIs defined for each one of the campaigns, in different formats." (Respondent 3)

Only one respondent who already used PA expressed frustration with it, describing it as a difficult tool to use. She stated that PA "drives her crazy" and that she does not fully understand it, unlike other tools such as Google, Facebook, and TikTok, which she perceives as very clear and easy to use. In this case, frustration is not anticipated but experienced, and is related to the value barriers, understood as perceived value in relation to competing products, and complexity barriers, related to ease of use, identified by Castro *et al.* (2020).

> "When you get into at the heart of all this and you say here I have a DSP, how do I put it in, how do I serve it, how do I buy it. I have already seen 1000 times what the ad is, what the structure itself is, but even so, it still seems awful to me." (Respondent 14)

By contrast, most non-users express anticipated negative emotions, most commonly uncertainty, mistrust, frustration, and fear, regarding the adoption of PA. The word "risk" is frequently repeated in their responses, reflecting their fear of using a new technology that they do not fully understand or trust. The following quotes are representative of these emotions. Several quotes are included so that we can subsequently examine the targets of these emotions.

> "I have spoken to firms who do programmatic advertising, and they have offered me their services, and I have never said yes because I have never fully understood it." (Respondent 1)

> "They tried to sell it to me as something magic… If they come telling me that ads can do magic when I have tried ads on websites and I know that nothing is magic, well I simply don't believe it." (Respondent 10)

> "I am more of an e-commerce background, so I do not believe in display ads, unfortunately. I will spend 3000 euros and if this will not mean any purchases, pff.." (Respondent 9)

Respondents 7, 2, and 3, who already use PA, mention greater personalization, automation, and efficiency (Chen *et al.*, 2019; Helberger *et al.*, 2020; Li *et al.*, 2017). However, these advantages are either not understood or are not sufficiently convincing for respondents who do not use PA or do not wish to use it. One common denominator across the different quotes is the discrete emotions expressed discursively: anticipated anxiety and fear regarding the use of PA. Unlike other negative emotions, such as anger, fear and anxiety emerge in contexts characterized by low certainty and low control (Valor *et al.*, 2023). PA is clearly perceived as high-risk by these respondents. The targets of these negative emotions are the self, PA itself, and the process of replacing other tools.

Regarding fear and uncertainty towards the self, managers perceive themselves as lacking the necessary skills and knowledge to make proper use of the technique. Some participants attribute this to themselves, which may also be interpreted as eliciting feelings of shame, as they did not search for information or make sufficient effort. Others attribute it to external actors, such as those selling PA to their company, who are not perceived as providing sufficient or reliable information. For example, some respondents suggest that PA is presented as something "magic", eliciting feelings of frustration towards these actors. Previous literature has already shown that innovations often elicit feelings of fear, anticipated stress, and anxiety when they are perceived as risky (Rieple & Snijders, 2018; Valor *et al.*, 2023).

However, it is important to examine why these emotions emerge or, in other words, what is really perceived to be at risk. Rieple and Snijders (2018) examine Irish farmers' resistance to new innovations and explain how they fear losing their autonomy, stability, links to their community, and traditional ways of life. Valor *et al.* (2023) find that some consumers reject photovoltaics because they fear losing considerable time and energy in paperwork, learning how to use the technology, or dealing with possible malfunctioning. In the present case, while respondents may be apprehensive that the product will not perform well enough or may not be reliable, as also observed by Castro *et al.* (2020), they also fear its impact on themselves: they may not be able to perform their work tasks properly and may be held accountable. It is worth noting that respondents holding senior managerial positions, and thus responsible for deciding which marketing tools are used, would be accountable for this decision; if PA did not work as expected, this could affect them professionally. By contrast, respondents who already use PA and are satisfied with it display pride in themselves for being able to make good use of these tools and to make a sound investment for their company.

> "The risk if you don't do it well (defining your audience) is that you'll be connecting with an audience that you don't want to reach and who probably have a bad opinion of your brand, and who have no relation to what you're trying to sell them. I think that's happened to all of us." (Respondent 10)

> "But in the beginning… For the managers of this department who have to defend the investment [on PA], well, until now you do not know how much you need to invest to get it back later, you don't know." (Respondent 13)

For those reluctant to use PA, their perception of risk is related to their inability to fully justify and defend the investment decision that PA adoption would require before their superiors and/or clients, as well as to the potential implications of this decision for their career development.

> "Risk wises there's obviously, there's some risk in terms of transparency and seeing exactly where your ads run. Are they in good quality spaces? Are we actually getting them in front of real eyeballs? Are people paying attention when they see our ads pop up? Beyond that there's often risks and I guess depending on how you're buying, if you're buying like open auction stuff, it could potentially end up in not the greatest placement in the world. Where you are buying really cheaply but it's not the greatest advertising in the world. A lot of clients want to see exactly where they've run, where did their ads end up and where their consumers are hanging out […] we have a lot of clients that may not be aware of exactly what they want to avoid until after it's happened. Just like, *"oh I showed up on this random site like the news site I didn't I didn't really want to be on news sites"*. Those are just things you kind of learn along the way. (Respondent 12)

5.2. *Delving into the organizational culture: Organizational attitude towards PA and sense of empowerment within the organisation*

Several authors have highlighted the importance of organizational attitudes towards innovations and new technologies in their adoption (Fang & Zhang, 2021; Raffaelli *et al.*, 2019). Raffaelli *et al.* (2019) examine innovation adoption in relation to how organizations positively frame innovations in emotional and cognitive terms, and how these innovations are interpreted in relation to a company's legacy. In our sample, the perceived strategic organizational focus on innovation appears to influence managers' emotional predisposition to adopt new technologies or to continue using existing tools.

> "In my current company we don't invest in any platforms to be honest no, at least, at the moment. We focus on SEO". (Respondent 15)

> "People do not want to get involved. This means changing many of the already acquired vices. Noone wants to get in the middle of that." (Respondent 8)

Once managers have internalized the broader organizational stance on innovation adoption, they may either agree or disagree with it. However, even when they disagree, they may refrain from proposing changes due to fear of getting "in trouble" (Gambarotto & Cammozzo, 2010) or of suggesting an innovation perceived as risky, as illustrated in the previous quote from Respondent 8. Perceived empowerment and autonomy within the organization are also worth exploring in order to further understand the sense of risk explained in the previous section. In the following three quotes, we examine three different situations. In the first, Respondent 11 clarifies that he cannot participate in these decisions, without explaining his own attitude towards PA, which may indicate a low perceived sense of empowerment. In the second, Respondent 13, as already mentioned in a previous quote, acknowledges the risk and uncertainty of investing in PA, but is interested in this technology and feels sufficiently empowered to propose it to her superiors and investigate it further. This suggests a high perceived sense of empowerment. In the third, Respondent 4 feels that PA is a complex tool that may generate additional fatigue, but that it will be adopted because the company is interested in it, regardless of her own or other employees' feelings. This suggests a low perceived sense of empowerment.

> "it's centralized […] all the online activity is centralized at the Berlin office" (Respondent 11)

> "I proposed it a few weeks ago and we will probably, at least, do some more research about it." (Respondent 13)

> "Well, it requires a lot more work in the end. In other words, if you want to do it well you have to have a very good planning done. You must have studied your target very well; you must have a suitable message for each phase of the journey or for each moment of the day or for each user [...] I am telling you. Soon they won't let you do anything else. I believe that what they want is this: to create maximum synergies between all countries and have control of both costs and activity by brand." (Respondent 4)

5.3. *The cultural embedding of PA*

Two main themes emerged from our analysis regarding the emotional and cultural framing of PA: i) its perceived widespread acceptance and adoption in the market; and ii) its perceived framing as either an opportunity or a threat for different actors, beyond its efficiency as an advertising tool.

The current literature emphasizes that PA will be increasingly adopted. Samuel *et al.* (2021) predicted that PA could account for up to 80% of all digital advertising and provided examples of its use across sectors, from loyalty programmes to gaming. Similarly, Stevens, Rau and McIntyre (2016) identify PA as one of the latest innovative trends in the industry. However, our empirical findings show that participants believe only a limited number of companies are currently using PA, despite its strong future potential.

> "Yes, without a doubt it is a medium in which you have to be and more on a day-to-day basis, right now I think that it is all about this. Not appearing in digital media does not make any sense, even the smallest players start to appear. They assign their budget more at the level of programmatic purchase and do not get to do big actions on TV, radio or these more traditional media." (Respondent 4)

Although PA's potential is acknowledged, some participants discuss regulatory changes that could interfere with its adoption, such as the elimination of cookies and access to third-party data. This uncertainty in the broader macroenvironment generates further feelings of anxiety and anticipation regarding future developments.

> "I would define programmatic advertising as an opportunity, okay, a way to reach a potential consumer in the most optimal way possible. Let's say this is the definition, the beautiful story, to put it in some way, of an ideal world of advertising in which you get that person with the best message at the best time. What happens is that certain barriers occur along the way. Or if you don't have enough information, if you don't have cookies, or if you don't have access to third party data, you can't update the message or evolve the message depending on when the message is located. So I think in the end we're very early in the story of being able to customize this." (Respondent 8)

Other concerns are also raised, many of which have often appeared in previous research, such as ethical concerns related mainly to privacy and data security, but also to more limited access to information (Palos-Sanchez *et al.*, 2019; White & Samuel, 2019). Some respondents shift from their role as managers and organizational customers to that of citizens and individual consumers who evaluate PA's broader societal implications.

> "There are people who say: It is a bit scary to think that they know that I want a bicycle, isn't it?" (Respondent 4)

> "The risk is that it seems a little bit like spam because these pop-ups usually come at a point in time where you don't look for the product anymore. And also, in terms of data security people could feel like their personal data is not secured from their perspective. (Respondent 15)

> "I will add something else. It is about ideologies and politics, like when they do electoral campaigns. It is kind like brainwashing. You condition people to watch the same type of stimuli over and over, the same type of ads or products or ideologies. You are not exposed to other things which you might not be interested in the beginning, but they could finally enrich you. You see the ad of that company that would pay more for you." (Respondent 10)

These framings present PA as a potential threat with broader societal implications. However, some participants suggest that these concerns are largely linked to how PA has been portrayed in the media, as noted by Respondent 14, or to the fact that it has not been adequately explained to consumers, as suggested by Respondent 8. These consumers may require further education about new technologies, as illustrated by the case of Tesla.

> "All these stories about clickbait have made a bad name out of PA." (Respondent 14)

> "To solve the fears and risks, well work needs to be done. Pedagogical and educational work is necessary. Say yes, we know we have this problem, but we are solving it. Let's take the example of Tesla cars. Obviously, people were afraid in the beginning to buy them. So, what did Tesla do? They said: we are fixing it. If this is explained, then the doubts that people have about investing in PA would be reduced." (Respondent 8)

6. DISCUSSION

Although much research on innovation adoption and resistance in organizations focuses on functional dimensions, such as ease of use, or on what the process of change entails, including new learning and organizational restructuring (Beaudry & Pinsonneault, 2010; Wood & Moreau, 2006), more recent research has pointed to how the perceived impact of innovation adoption on individuals and organizations may shape emotional responses (Yin *et al.*, 2024). Cieslak and Valor (2025) introduce an emotional lens to explore the phenomenon of resistance, finding that it is often linked to fear and anxiety concerning potential job loss, negative impacts on professional identity, and changes in socialization. Specifically, anticipated fear and anxiety have been linked to several potential situations: loss of professional autonomy, curtailed creativity at work, becoming outpaced by more tech-savvy colleagues, and diminished teamwork and socialization. The results of our study enrich our understanding of emotions not as individual psychological responses, but as the outcome of broader organizational and cultural sensemaking. Participants' emotions are embedded in a wider organizational and cultural context, which needs to be examined in order to understand how context shapes the activation, experience, and expression of emotions towards innovation (see Figure 1). This constitutes the main contribution of this study.

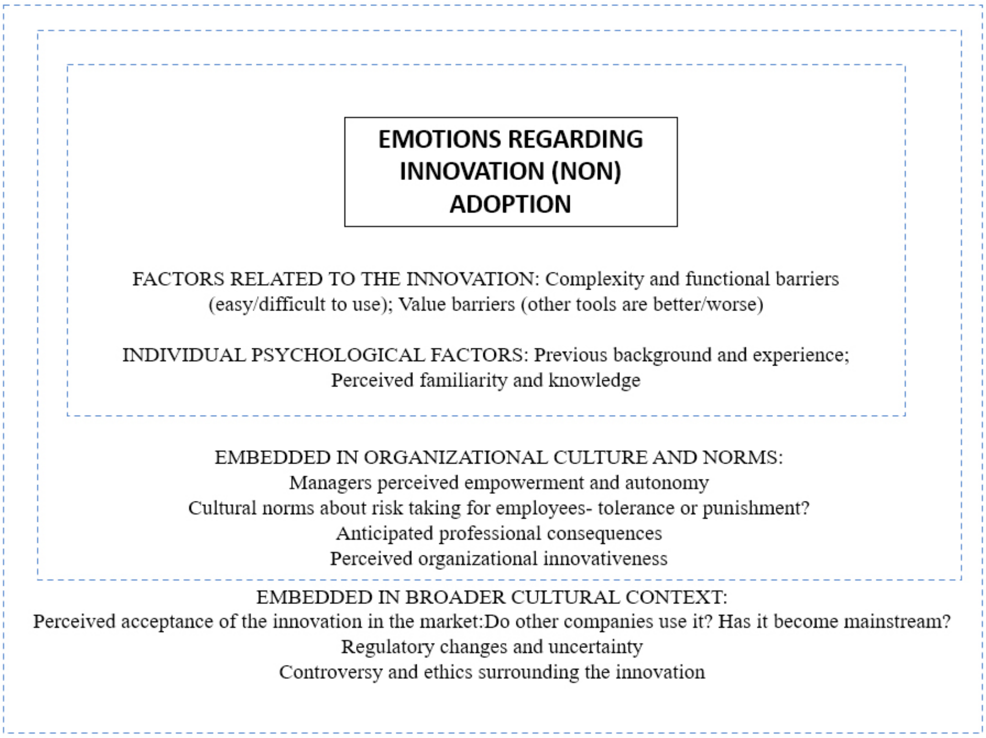

Figure 1
Embedding emotion activation and expression in their organizational and cultural context
Source: Elaborated by the authors.

For example, a substantial body of research has examined fear as a common emotion experienced by employees, managers, and entrepreneurs in relation to the adoption of new innovations (Beaudry & Pinsonneault, 2010; Rieple & Snijders, 2018; Wood & Moreau, 2006; Zheng & Montargot, 2021). However, we emphasize the importance of interpreting what exactly is at stake when these emotions emerge. We observe that innovation resistance among those involved in decision-making may also be related to the possibility of being held responsible if the innovation does not work as expected, which could jeopardize their future promotion and professional prestige. They may be held accountable by both their superiors and their clients. In addition, participants internalize organizational norms regarding risk-taking and innovation adoption; a favourable organizational context may elicit positive anticipated emotions, and vice versa. Perceived autonomy and empowerment are also particularly relevant here, as they shape how safe and confident employees may feel when proposing changes or defending positions that are not yet supported by top management.

Furthermore, participants draw attention to the broader social impact of the innovation examined. PA has been culturally represented as a controversial or even unethical innovation. Martínez-Martínez *et al.* (2017) described PA as a “new method that scares the media” (p. 206). However, beyond its novelty, PA has been discussed within the broader ongoing debate around cookies, privacy violations, and data security. Therefore, our study extends previous literature by suggesting the importance of considering the perceived cultural, social, and professional impact of innovations both within and outside organizations, especially when they have been depicted as controversial or unethical in public debates. It is worth remembering that organizational employees are also citizens, and they may hold certain ideological and affective positions regarding the use of new technologies and digital transformation (Cieslak & Valor, 2025), which in turn may be shaped by broader cultural beliefs about certain innovations.

Our study points to specific boundary conditions related to cultural and organizational factors, such as perceived empowerment within the organization and marketplace perceptions of the innovation, including whether it is seen as ethical or unethical, or as a passing trend or a lasting development.

Furthermore, guided by previous frameworks and empirical research, we analysed the typology and targets of discrete emotions in relation to the adoption of PA. Our inductive approach makes it possible to unveil a blend of different emotions (Valor *et al.*, 2023), both negative and positive, whose combination produces different behavioural outcomes, such as advocating for the innovation, rejecting it, liking the innovation but remaining silent about it, and so forth. Anticipated and experienced emotions, such as fear and excitement, directed towards the self, the innovation, the change process, and others, ultimately influence adoption and resistance intentions. Some of our findings confirm previous research on innovation adoption and resistance. Our findings on the relationship between lack of familiarity and negative emotions align with Wood and Moreau’s (2006) work on complex product adoption. We also found that perceived complexity can lead to negative anticipated emotions such as fear. Additionally, our results on decision-making responsibility and fear echo the findings of Beaudry and Pinsonneault (2010), who identified fear as a key emotion in IT adoption processes. The diverse perceptions of PA's benefits and drawbacks highlight the multifaceted nature of innovation adoption, as discussed by Claudy *et al.* (2015) in their review of functional and psychological barriers to innovation adoption. Our findings on positive emotions, such as excitement and pride, support the work of Rezvani *et al.* (2015), who found similar emotions to positively affect the adoption of electric vehicles. For some participants, the perceived complexity of the tool elicits self-conscious emotions (Valor *et al.*, 2022), such as shame or pride, depending on whether they feel that they lack or possess the ability to understand and use PA. This differs from cases in which complexity is attributed to the tool's technical characteristics or to the lack of clear information provided about it, as reflected in statements such as "very few people understand it" or "those selling it cannot explain it well". In the latter case, the elicited negative emotions are different, namely fear and frustration. Therefore, it is important to understand the exact emotional response elicited, its target, and why it emerges. Figure 2 summarizes the main findings regarding the type and target of the emotions expressed in this study.

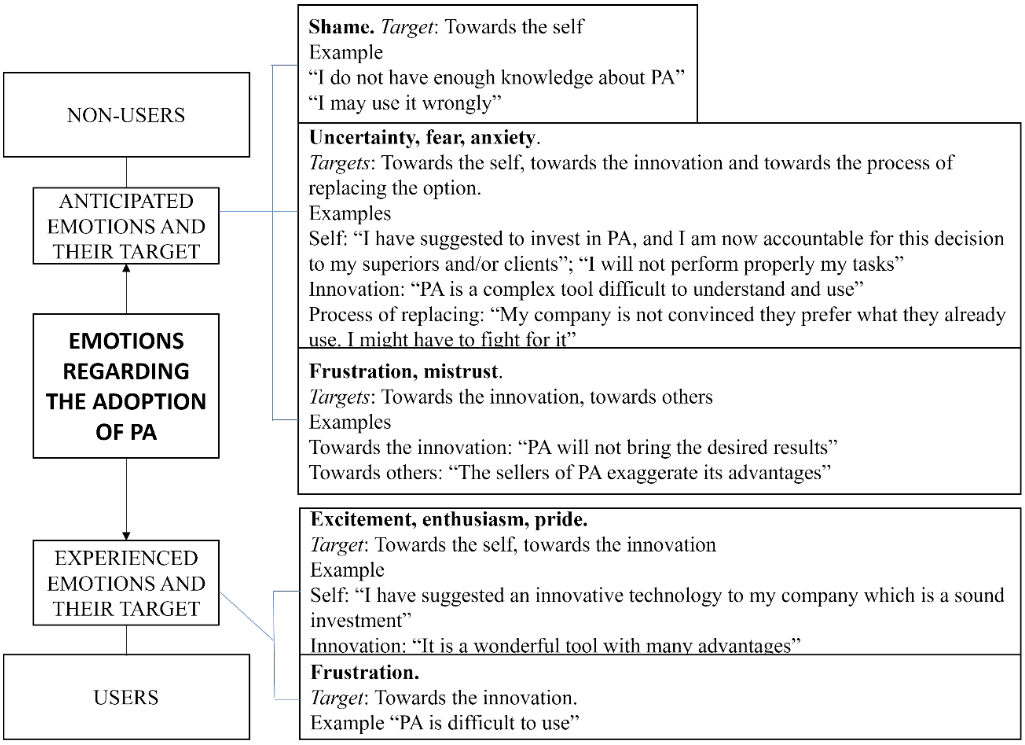

Figure 2
Emotions and their target in relation to PA
Source: Elaborated by the authors.

In terms of epistemological positioning, we adopt a social constructionist paradigm. In our study, participants are our "knowledgeable agents" (Gioia *et al.*, 2013), and we therefore interpret their emotional responses within their constructed reality. We have identified specific factors at different levels, namely innovation-related, individual, organizational, and cultural factors, whose interplay shapes the emergence of different emotions in innovation adoption processes. Our findings particularly highlight the interplay between emotional reactions and the perceived complexity of PA, contributing to a more refined understanding of how technical sophistication affects innovation adoption in marketing contexts and underscoring the need for prior professional education (Stam & Stanton, 2010).

Finally, by examining PA adoption through an emotional lens, we provide practical insights for marketing managers navigating the implementation of advanced advertising technologies, thereby addressing a gap in the literature noted by Kumar *et al.* (2019). More specifically, we underline the following managerial implications. A negative cultural framing of an innovative technology, either in the marketplace or in broader society, can influence the emotional responses of organizational clients. If the innovation is perceived as complex and/or unethical, this may counteract the product's selling points. Therefore, marketing managers of innovative products need to frame them in positive emotional terms, educate potential clients, and reduce the uncertainty surrounding the product and its underlying processes.

Beyond these general recommendations, our findings suggest several concrete managerial actions. First, organizations should invest in internal education and training programmes aimed at reducing employees' perceived complexity and uncertainty surrounding programmatic advertising. Our results show that negative emotions often stem from a lack of familiarity and perceived technical opacity. Structured training, cross-functional workshops, and internal knowledge-sharing practices can therefore play a key role in reducing fear and frustration while increasing feelings of empowerment. Beyond this, organizations need to explore other, often invisible, collective dynamics concerning professional autonomy, empowerment, and the professional consequences faced by employees who advocate change. All these factors are relevant to innovation adoption and acceptance, as well as to the activation and expression of specific emotions.

Second, organizations should carefully manage the internal communication of innovation adoption decisions. Because managers may fear being held personally responsible if the innovation fails, creating psychologically safe environments for experimentation becomes critical. Pilot projects, incremental implementation strategies, and shared decision-making processes can help reduce perceived personal risk and encourage more proactive innovation advocacy.

Third, our findings highlight the importance of addressing the cultural and societal framing of programmatic advertising. Marketing and AdTech firms should proactively communicate ethical practices, data privacy safeguards, and transparency mechanisms. By doing so, they can counteract negative societal narratives and reduce the emotional resistance of both clients and employees.

Fourth, vendors and technology providers should adapt their sales and onboarding strategies. Participants frequently expressed distrust towards vendors who "sell programmatic advertising as magic". This suggests the need for more transparent, educational, and consultative selling approaches that focus on realistic expectations and long-term value creation.

Finally, organizations should acknowledge that emotions play a key role in innovation adoption and should be actively managed as part of change management strategies. Emotional monitoring, feedback mechanisms, and leadership support can facilitate smoother adoption processes and reduce resistance to complex marketing technologies.

7. FUTURE RESEARCH

Our research has revealed several promising areas for future research. Future studies should explore how emotions interact with organizational dynamics such as leadership styles, group decision-making processes, and organizational readiness for innovation (Raffaelli *et al.*, 2019). For instance, transformational leadership may moderate the relationship between emotions and PA adoption decisions. Vuori and Huy (2016), for example, demonstrated how emotional dynamics between top and middle managers influenced strategic change at Nokia. Similarly, investigating how emotional contagion affects PA adoption decisions, as well as the adoption of other innovations, across different organizational levels and sectors could provide valuable insights. Another area worth exploring is the fit between the company's brand identity and the branding of the innovation to be adopted.

Additionally, examining in greater depth how organizational culture shapes emotional responses after PA adoption, and from a longitudinal perspective, could further enrich our understanding of the evolution and complex interplay between emotions and organizational behaviour in this process. For instance, future studies could build on previous research (Ashkanasy & Dorris, 2017) and qualitatively explore how emotions are expressed and managed throughout the innovation adoption and implementation process.

Further research could also examine the organizational practices that support the implementation of innovations perceived as risky and complex by employees, particularly those practices aimed at managing and regulating negative emotions and behaviours, such as active or passive employee resistance and employee silence (Gambarotto & Cammozzo, 2010). The acceptance and use of innovations could also be examined through an emotional lens across different tools and stakeholders. Finally, further research could explore how innovations are culturally framed and how this affects their adoption. For instance, in the advertising field, AI has generated considerable debate regarding the promises and risks it represents for different stakeholders, including brand managers, strategists, producers, and consumers, among others. Societal debates about innovations, such as data privacy in this case, need to be understood in relation to the legitimization processes of certain innovations over others. It would be insightful to understand the different emotional responses elicited by negatively framed innovations among these actors, as well as the psychological and cultural mechanisms that shape behaviours and decisions in organizational contexts.

8. DECLARATION ON THE USE OF ARTIFICIAL INTELLIGENCE TOOLS

The authors declare that no generative artificial intelligence tools were used in the writing, analysis, or interpretation of the results of this study. Such tools were employed solely for the purpose of reviewing grammar and enhancing linguistic clarity in the English text. All conceptual content, empirical data, statistical analyses and conclusions are the exclusive work of the authors.

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Risk Management in Family Franchises: Analysis of the behaviour differences between founding and heir leaders

Gestión del Riesgo en Franquicias Familiares: Análisis de las diferencias de comportamiento entre líderes fundadores y herederos

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ABSTRACT

This study examines generational differences in risk-taking behaviour in family franchise firms by integrating upper echelons theory and the socioemotional wealth (SEW) perspective. Specifically, it analyses whether founder and successor leaders differ in their propensity to assume risk, and under what individual and governance conditions these differences become more pronounced. Using primary survey data from 215 Spanish family franchise chains, the study measures risk through outlet discontinuation rates over a three-year period (2015–2017). The analyses compare founder and heir leaders across three positions of influence within the franchise system: ownership, management, and board membership. The findings reveal that heir leaders consistently exhibit higher levels of risk-taking than founders across all three governance roles. Furthermore, the results show that these generational differences vary according to leader characteristics and ownership structure. The relationship between heir leadership and higher risk propensity is stronger among younger leaders, male leaders, and both majority and minority shareholders occupying ownership and managerial positions. By contrast, board participation tends to attenuate generational differences in risk orientation, suggesting that collective governance mechanisms constrain individual preferences. Robustness analyses confirm the stability of the findings across alternative specifications and controls. Overall, the study contributes to the franchising and family business literature by demonstrating how generational leadership, socioemotional priorities, and governance roles jointly shape strategic risk behaviour in family-controlled franchise systems.

Keywords: Risk; Generation Leadership; Family firms; Franchise firms.

RESUMEN

Este estudio analiza las diferencias generacionales en la asunción de riesgos en empresas franquiciadoras familiares mediante la integración de la teoría de los altos directivos (*upper echelons theory*) y la perspectiva de la riqueza socioemocional (SEW). En concreto, se examina si los líderes fundadores y sucesores difieren en su propensión a asumir riesgos y bajo qué condiciones individuales y de gobernanza estas diferencias se intensifican. Utilizando datos primarios obtenidos mediante encuesta a 215 cadenas de franquicias familiares españolas, el estudio mide el riesgo a través de la tasa de discontinuidad de establecimientos durante un período de tres años (2015-2017). Los análisis comparan a fundadores y herederos en tres posiciones de influencia dentro del sistema de franquicia: propiedad, dirección y participación en el consejo de administración. Los resultados muestran que los líderes herederos presentan sistemáticamente mayores niveles de riesgo que los fundadores en los tres roles analizados. Asimismo, las diferencias generacionales varían según las características del líder y la estructura de propiedad. La relación entre liderazgo heredero y mayor propensión al riesgo es más fuerte en líderes jóvenes, hombres y accionistas tanto mayoritarios como minoritarios que ocupan posiciones de propiedad y dirección. Por el contrario, la participación en el consejo de administración atenúa las diferencias generacionales, sugiriendo que los mecanismos de gobernanza colectiva limitan las preferencias individuales. Los análisis de robustez confirman la estabilidad de los resultados. En conjunto, el estudio contribuye a la literatura sobre franquicias y empresa familiar al demostrar cómo el liderazgo generacional, las prioridades socioemocionales y los roles de gobernanza configuran conjuntamente el comportamiento estratégico de riesgo en sistemas de franquicia controlados por familias.

Palabras clave: Riesgo; Liderazgo generacional; Empresas familiares; Franquicias.

1. INTRODUCTION

The study of business risk has long been central to strategic management because it shapes firm growth, survival and performance (Das & Teng, 1998; Hardy *et al.*, 2020; Miller, 1998; Sharfman & Fernando, 2008; Soane *et al.*, 2016). Prior research shows that risk-taking is a strategic outcome rooted in both context (e.g., networks and structural characteristics) and leadership (e.g., managerial cognition and judgment) (Jacobides *et al.*, 2016; Jiang *et al.*, 2015; Mullins *et al.*, 2002). This dual emphasis is especially important in family firms, where decision makers often evaluate risk not only in economic terms but also in socioemotional terms (Fernández Méndez *et al.*, 2021; Gomez-Mejia *et al.*, 2011; Kraus *et al.*, 2016; Lude & Prügl, 2019). The socioemotional wealth (SEW) perspective suggests that risk preferences of family decision makers depend on the extent to which they prioritize family control, identity, reputation, or transgenerational continuity (Gomez-Mejia *et al.*, 2011). Therefore, risk decisions in family firms often involve a "mixed bet" that simultaneously affects financial wealth and socioemotional wealth (Cruz & Justo, 2017).

Even though a growing body of scholars examine risk preferences and strategic choices in family enterprises (Bianco *et al.*, 2013; Fang *et al.*, 2021; Kotlar *et al.*, 2014; Patel & Chrisman, 2014; Peláez-León & Sánchez-Marín, 2021), we know little about risk-taking in family franchise businesses (Chirico *et al.*, 2011). This omission matters because risk in franchising is amplified by the common brand and the potential for reputational spillovers across the entire network. We define a family franchise business as a franchise chain in which a family holds a significant ownership stake, exercises meaningful control over key strategic decisions, and intends to retain ownership and control across generations. Franchising consists of distinctive governance structures with the franchisor coordinating a dispersed plural network through hierarchical control over company-owned outlets, and through contractual monitoring and relational mechanisms over independent franchisees (Baker & Dant, 2008; Bradach, 1997; Hajdini, 2024; Hajdini & Windsperger, 2019). Therefore, in franchising, the effects of perceived risk are amplified by the plural form of governance and a geographically dispersed network operating under a shared brand. Beyond financial objectives, socioemotional considerations of family name or family reputation may intensify brand-protection priorities, while family involvement in decision-making can influence risk orientation and competence across generations and potentially create governance challenges such as blurred decision rights, or intra-family conflict (Chirico *et al.*, 2021).

Accordingly, we examine whether and why founder and successor leaders continue to differ in risk orientation in franchise systems (Chirico *et al.*, 2011). More specifically, we ask: How does leadership generation influence risk-taking in franchise family firms, and under what conditions do these generational effects vary? Drawing on the upper echelons theory, we expect risk taking to differ across first, second and third generation leaders due to their different experiences and cognitive frames as well as managerial discretion and governance constraints. We also complement this view with the SEW perspective, which highlights that generational differences in socioemotional priorities (i.e., reputation, identity, and legacy protection) influence risk-taking in family franchise businesses. In doing so, we fill the research gap presented by Chirico *et al.*, (2011) on the need to analyze generational succession in family businesses within the franchising context. We also respond to recent research demands suggested by Yeoh & Hooy (2020) on the need to explore the effects of the second and third generation on transgenerational leadership. In addition, we consider three individual factors that may condition leaders' risk orientation, such as: age, gender, and ownership profile (majority vs. minority shareholder). Given that family members' presence in the top management team may interact with CEOs' propensity to take risks (Cruz *et al.*, 2010; Kraiczy *et al.*, 2015), we identify three positions of influence a family leader may hold in the franchise chain: owner, manager, and active member of the board of directors, each of which may affect the chain's risk propensity. We test our hypotheses using three-year primary data on 215 Spanish family franchise firms, which allows us to conduct a behavioral test of founder–successor differences across generational leadership and governance roles.

This study makes two important contributions. First, we extend strategic leadership and strategic management research by showing how leadership generation relates to risk behavior in franchise family business through an upper echelon and the SEW perspective (Cruz & Justo, 2017; Cruz *et al.*, 2010; Kraiczy *et al.*, 2015). Second, we advance franchising and family business research by explaining why founders and successors may differ in risk orientation and by identifying moderators of leaders' age, gender, ownership profile, and position of influence (owner, manager, or board member), which determine when such generational differences in risk-taking are most important (Chirico *et al.*, 2011; Christensen *et al.*, 2020; Kauppila *et al.*, 2018; Yao & Chang, 2017; Yeoh & Hooy, 2020; Yeoh & Hooy, 2022). From a practical standpoint, our findings suggest that family franchise businesses can better manage risk during succession by aligning governance roles and decision rights with the incoming leader's incentives and SEW priorities, and by aligning contractual safeguards and incentives to reduce negative reputational spillovers across the franchise network (Cruz *et al.*, 2010; Kraiczy *et al.*, 2015).

The present work is structured as follows. We first do a review of the literature and state our study hypotheses in Section 2. In Section 3 we present the study methodology and the analysis measures of our variables. We examine the differences in risk propensity in Section 4 where the analyses and results are presented. In section 5 we discuss our findings. Finally, in Section 6 we present our conclusions and expose the contributions of this study, its limitations, and propose future avenues of research.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Risk management and generational leadership in family franchise systems: Upper echelons and the SEW perspectives

Risk management remains a central concern for strategic management researchers because it shapes firm survival and performance (Bromiley *et al.*, 2015; Miller, 1992). In franchising, the effects of perceived risk are amplified by the plural form of governance and a geographically dispersed network operating under a shared brand (Blair & Lafontaine, 2005; Bradach, 1997). While franchising enables rapid replication of a business model, adverse outcomes can also diffuse across outlets with reputational spillovers. At the same time, monitoring and enforcing franchise guidelines across distant locations can delay timely and accurate corrective action.

Upper echelons theory explains how leaders' experiences and characteristics shape strategic choices through cognitive frames and values (Hambrick & Mason, 1984; Hambrick, 2007). It therefore explains why franchise businesses facing similar environments adopt different governance structures and risk strategies, reflecting top decision makers' values and cognitive differences. In family franchise firms, this heterogeneity may be further amplified because family decision makers often consider strategic choices as a "mixed gamble" involving both financial outcomes and socioemotional wealth (SEW) including family control, identity, reputation, and transgenerational continuity (Cruz & Justo, 2017; Gomez-Mejia *et al.*, 2011). SEW priorities may vary across generations: founders often place greater weight on preserving accumulated socioemotional endowments (e.g., reputation), whereas successors may place relatively greater weight on renewal and continuity through adaptation and change. Therefore, risk-related decisions in family franchise systems are influenced not only by decision makers' cognitive frames and values (Hambrick & Mason, 1984; Hambrick, 2007) or governance and market conditions (Combs *et al.*, 2011; Williamson, 1985), but also by the extent to which family leaders prioritize SEW aspects versus undertaking risky investments in franchise renewal, product or market expansion (Berrone *et al.*, 2012; Gómez-Mejía *et al.*, 2007). In other words, founders pay more attention to preserving the franchise reputation, making them more sensitive to actions that could jeopardize the family legacy or trigger negative network-level spillovers. On the other hand, successor leaders show less attention to the historical endowment and more orientation toward investments in innovations (e.g., modernizing the franchise system), which can increase willingness to pursue strategies with higher risk. Consistent with this combined logic, we expect successors to exhibit higher risk propensity than founders in family franchise firms. Formally,

H1: *Family franchise firms led by heirs exhibit higher levels of risk-taking than those led by founding leaders.*

2.2. Age and leader discretion in intergenerational risk differences

Age reflects a biological and career-stage attribute that upper echelons research links to systematic differences in risk preferences (Hambrick & Mason, 1984; Wiersema & Bantel, 1992). Empirical work suggests that younger executives invest more in R&D and are more likely to enter or exit business lines, which can increase discontinuation risk (Li *et al.*, 2017), whereas older leaders tend to maintain the status quo (Lee & Moon, 2016) and display more conservative behavior (Serfling, 2014). Yeoh and Hooy (2020) further suggest that risk propensity varies with age and highlight the need to distinguish generational lineage effects from age effects.

Upper echelons theory implies that leader age fosters conservatism due to biological decline, fear of losing power, and a preference for financial security (Barker & Mueller, 2002; Hambrick & Mason, 1984). Younger executives, by contrast, tend to innovate and take risks (Bantel & Jackson, 1989; Serfling, 2014). This theory also notes that both age and generation condition strategic choices and thus risk orientation at the chain level.

Psychology and management research add that younger individuals show overconfidence, leading to greater risk-taking (Forbes, 2005; Yim, 2013). Consistent with this logic in franchising contexts, Seo and Sharma (2018) find that successor CEO overconfidence is associated with higher risk-taking in U.S. franchise systems. From a socio-cognitive perspective, generational values also shape perceptions of risk. New leaders, exposed to cultural shifts such as sustainability demands, adopt risky strategies more openly (Bonsu *et al.*, 2020; Schulte & Hallstedt, 2018). Duran *et al.* (2016) confirm this, showing that successor CEOs drive greater innovation output than founders, consistent with a greater propensity to pursue change-oriented initiatives.

From a SEW perspective, age may also influence the extent to which leaders prioritize preservation versus renewal. Older leaders may have greater accumulated socioemotional endowments at stake (e.g., reputation and legacy), reinforcing a preference for protecting the status quo, whereas younger leaders may assign greater value to continuity through adaptation. Importantly, although leader age and generational status are related in family firms, they capture conceptually distinct dimensions. Age reflects a life-cycle characteristic commonly used in upper echelons research to explain variation in managerial risk preferences (Hambrick & Mason, 1984; Wiersema & Bantel, 1992), whereas generational leadership reflects a family-based role shaped by succession dynamics, socialization, and intergenerational differences in SEW priorities (Gómez-Mejía *et al.*, 2007; Handler, 1994; Miller & Miller (2013)). Building on this evidence, and consistent with upper echelons theory and SEW, we expect the difference in risk propensity between founder and heir leaders to be stronger when leaders are younger. Formally, we argue the following:

H2: *The positive association between heir leadership (vs. founder leadership) and risk propensity is stronger for younger leaders than for older leaders.*

2.3. Risk in transgenerational succession: Influence of gender and the ownership profile

Gender

Numerous studies have empirically demonstrated that there are gender differences in risk management (Charness & Gneezy, 2012; Croson & Gneezy, 2009; Falk & Hermle, 2018; Yang *et al.*, 2017). Explanations commonly point to hormonal influences (Cronqvist *et al.*, 2016), perceptual biases (Trumbo, 2002), limited information processing under uncertainty (Schubert, 2006), and gendered socialization and stereotyping (Lepp & Gibson, 2003), which together suggest that men tend to be more risk-seeking than women. Rajdev & Raninga (2016), combining behavioral finance with the psychology and management literature, find that men display higher confidence and optimism than women, which increases their propensity to make riskier decisions. Consistent with this, evidence from social contexts also shows that men tend to take greater risks than women. Friedl *et al.*, (2020) using a laboratory experiment to analyze gender differences in social risk taking, found that not only culture, but women's risk aversion is largely driven by their stronger aversion to inequality. In the family business context, founder gender has likewise been identified as an important determinant of firms' risk management. Wang *et al.*, (2022) in a study with Chinese public family companies, found that when the founders' wives exert greater influence through greater voting rights, a generalized trend towards the financial risk assumption is observed.

Turning to generational change, some studies indicate that women hold a prominent role in the top management team of the family business when they are part of the second generation of owners, that is, when they are heir leaders (Breton-Miller, Miller, and Steier, 2004; Hewlett, 2002). Based on this assumption, Merono-Cerdan & Lopez-Nicolas (2017) found that the presence of women in the top management team is higher in the second generation of leaders than in the first generation. Furthermore, this study revealed that women preferred to run businesses within the service sector, even though they might have the possibility of accessing all types of industries. This widespread preference for managing businesses that are less prone to risk-taking reveals that the gender of the second generation may also affect risk management in family businesses.

Building on prior evidence that men, on average, exhibit greater risk tolerance than women (Charness & Gneezy, 2012; Croson & Gneezy, 2009; Falk & Hermle, 2018; Yang *et al.*, 2017), we expect gender to effect how generational leadership translates into risk propensity. In family franchise systems, this effect may be reinforced by SEW considerations because reputational spillovers can diffuse across outlets and directly affect the family name. To the extent that female leaders place relatively greater weight on socioemotional goals such as on family harmony and reputational protection, they may be less inclined to pursue high-risk strategies that could jeopardize the brand or intensify intra-family conflict. Accordingly, the generational increase in risk-taking associated with heir leadership should be weaker when the leader is female. We expect that:

H3: *The positive association between heir leadership (vs. founder leadership) and risk propensity is stronger for male leaders than for female leaders.*

2.4. Ownership profile: Majority vs. Minority shareholder

Agency-based perspectives suggest that ownership structure influences risk taking behaviour because they shape incentives and control rights. Within the family context, Aabo *et al.* (2011) suggest that the agency problem is mitigated when the founder controls the property together with the family members. However, risk management in family businesses does not only include economic issues, but also socio-emotional aspects, which affect corporate decisions (Gottardo & Moisello, 2017). From a SEW perspective, ownership concentration shapes the degree of socioemotional "exposure" to strategic outcomes because control rights heighten the stakes associated with preserving family influence and reputation. Majority family shareholders may therefore experience stronger SEW preservation motives than minority shareholders who may have weaker control-related SEW incentives (or different incentives altogether) leading to reduced risk related decisions.

Empirically, ownership participation has been linked to variation in family leaders' risk behavior (Aabo *et al.*, 2011; Caprio *et al.*, 2011; Jiang *et al.*, 2015). For example, Aabo *et al.* (2011), using survey data and public data from Danish firms, found that family companies owned by the founders tend not only to protect themselves, but also to speculate more widely than other companies. In relation to the founding property, a study with a large sample of family businesses in China (Jiang *et al.*, 2015) found that culture, religion, altruism and when founders were siblings affected risk seeking behaviours. Relatedly, Caprio *et al.* (2011) argue that family leaders are less likely to push their firms toward risk-seeking strategies when family ownership is not at the majority level. Therefore, the effects of the type of owner, namely, majority versus minority shareholders, interact with the risk propensity assumed by the founding leaders and heirs. Based on the previous evidence, we expect that when family ownership is concentrated, heirs are more likely to interpret risk-taking as a means of preserving transgenerational continuity, whereas founders are more likely to interpret the same risks as threats to accumulated socioemotional endowments. Accordingly, ownership profile conditions the strength with which SEW preferences translate into risk decisions. We formulate the following hypothesis:

H4: *The association between heir (vs. founder) leadership and risk-taking is stronger when the family holds a majority ownership stake than when it holds a minority stake.*

3. METHODOLOGY

3.1. Data collection

To carry out this study, data has been collected from the Spanish franchise market, including all sectors of activity. Within this sample spectrum, we focus on family franchise companies. To collect data related to the leadership profile and franchise risk, an online survey was sent to all the leading franchisors who belong to the Spanish Franchise Association ("AEF" according to its Spanish acronym). This directory of franchises is the most important in the country since it brings together all the franchisors that carry out activities in Spain. Furthermore, all of them are committed to complying with the standards of the European Code of Ethics for Franchising. In another line of affairs, the AEF is part of the European Franchise Federation (EFF) which is the main advocate of the franchise industry in Europe. Therefore, all franchisor members associated with the AEF represent the most relevant and comprehensive set of franchise chains in terms of economic and ethical business conduct. During the data collection period, in 2017, the Spanish franchise system had 1,348 brands, of which 82.8% were of national origin and 17.2% of international origin (Spanish Franchise Association, 2018). Currently, the franchise system is made up of 1,381 national and international brands, which indicates a slight increase in the number of operating entities, despite the current turbulent times (Spanish Franchise Association, 2020). The data collection method used is in line with other research on franchising that has also used national business directories as the main source for the sample selection of franchise systems (see: Meiseberg & Ehrmann, 2012 in the German market; Perrigot *et al.*, 2015 in the French market).

Data were collected through a paper-based questionnaire distributed by postal mail to all 1,381 franchise systems operating in Spain at the time of the study. The survey was accompanied by a cover letter explaining the purpose of the research and the participation procedure. Prior to distribution, the questionnaire was piloted with a small group of franchise professionals and academics to ensure clarity and relevance. Participation was voluntary, and responses were treated with strict confidentiality. A total of 246 usable questionnaires were returned, yielding an overall response rate of 17.8%. Of these, 215 corresponded to family franchise networks and constitute the final sample used in the main analyses.

A firm was classified as a family franchise network when ownership was substantially held by members of the same family and at least one family member was actively involved in management or governance. This definition aligns with prior research emphasizing family ownership and influence over strategic decisions as defining characteristics of family firms (Astrachan *et al.*, 2002; Chrisman *et al.*, 2005; Chua *et al.*, 1999). Beyond a self-identification item, respondents reported the percentage of family ownership, generational ownership and management participation, board involvement, and the number of active family members, allowing us to verify the fulfilment of the family condition.

Respondents were top-leaders of franchise companies (i.e., the general directors, owners and managers of the franchise business in general) who are responsible for setting standards in the franchise network. Of the 215 companies, 135 companies were run by founding leaders, whilst 80 companies were managed by heir leaders (see Appendix A for more a full summary of sample demographics).

3.2. Variables and measures

A. Chain Risk Measure

We measured the risk assumed by franchise chains through their respective outlet discontinuation rates for a three-year period (2015-2017). This indicator has been used in the literature on risk management (Everett & Watson, 1998; Watson & Everett, 1996) and recommended by experts in the franchise arena such as Lafontaine (1992), who points out that this index has an advantage over measures based on the variation of sales in the risk measurement. This is due to the franchisors are generally reluctant to close outlets. The main reason franchisors tend to be risk averse is because they are unwilling to bear the loss of the initial investment involved in setting up and developing the establishment. Thus, a high discontinuation rate will indicate that franchisors assume a greater degree of risk at the chain level.

B. Leader´s generation

To analyse this variable, two groups of family leaders were created: founding leaders which included the first generation of leaders who founded the company, and heir leaders, which were composed of second- and third-generation successor leaders (i.e., founders' children and grandchildren).

C. Leader´s age

We measured this variable through the age of the leader grouped into two main categories: franchisors leaders in young age (Up to 50 years) and franchisors leaders in mature age (50 years and over).

D. Gender

This study considered two genders of leaders (male and female) identified by the respondents.

E. Leader´s shareholder

Using the sample of owners, this study reported on the number of family leaders who were either majority or minority shareholders of the company. Non-shareholder leaders were not included in these analyses, which were 39 cases out of the total sample of 215 family leaders.

In order to offer relevant information on the risk behaviour of founders and heirs based on the above factors, three positions of power that family leaders can hold in franchise chains were considered: ownership, management and board of directors.

4. ANALYSIS AND RESULTS

4.1. The influence of generation leadership in management risk (H1)

To analyse the generation differences on the risk in which franchise chains participate, one-way ANOVA tests were run with a bias corrected accelerated bootstrapping procedure of 5,000 samples. Results from ANOVA show a significant difference between generations for three leadership positions (owner leaders, manager leaders and active leaders on the board of directors). Our analyses reveal that heir leaders show a higher discontinuation rate than founder leaders for each case. We find empirical support for Hypothesis 1 which proposes that: "Heir leaders run their companies to a higher level of risk than founding leaders." This risk rate is higher for the sample of heir leaders who are owners compared to the founding leaders: $F(10.542) = 1$, $p = 0.001$ $h^2 = 0.047$, $M_f = 0.174$ [0.08; 0.27] ($SD = 0.502$); $M_h = 0.581$ [0.35; 0.81] ($SD = 1.173$) (see Table 1). The same happens when we compare the risk rate of heir leaders and founders when both are managers of the franchise chain: $F(12.907) = 1$, $p = 0.000$ $h^2 = 0.57$, $M_f = 0.112$ [0; 0.22] ($SD = 0.349$); $M_h = 0.433$ [0.29; 0.57] ($SD = 0.935$) (see Table 1). Finally, the same finding is supported when we analyse the generational differences for the sample of leaders on the board of directors: $F(5.175) = 1$, $p = 0.024$ $h^2 = 0.024$, $M_f = 0.170$ [0.07; 0.27] ($SD = 0.494$); $M_h = 0.395$ [0.23; 0.56] ($SD = 0.936$) (see Table 1).

Table 1
ANOVA analysis for generation differences in chain risk

GENERATION DIFFERENCES BETWEEN OWNER LEADERS (s = 215)			*(Support found for Hypothesis 1)*
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 185)** **HEIR LEADERS (s = 30)**	0.174 [0.08; 0.27] SD = 0.502 0.581 [0.35; 0.81] SD = 1.173	F(10.542)=1, p=0.001 η^2=0.047
GENERATION DIFFERENCES BETWEEN MANAGER LEADERS (s = 215)			*(Support found for Hypothesis 1)*
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 135)** **HEIR LEADERS (s = 30)**	0.112 [0;0.22] SD = 0.349 0.433 [0.29; 0.57] SD = 0.935	F(12.907)=1, p=0.000 η^2=0.57
GENERATION DIFFERENCES BETWEEN LEADERS IN THE BOARD OF DIRECTORS (s = 214)			*(Support found for Hypothesis 1)*
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 155)** **HEIR LEADERS (s = 59)**	0.170 [0.07; 0.27] SD = 0.494 0.395 [0.23; 0.56] SD = 0.936	F(5.175)=1, p=0.024 η^2=0.024

Note: Bootstrapping BCa 95% confidence intervals are outlined in the brackets.
Source: Own elaboration.

4.2. The influence of leader age in management risk (H2)

When we explore the interaction between the generation and the age of the leader, our analysis reveal findings for each of the leader's samples. First, when we control the age for the sample of owner leaders, we find differences in risk only in the segment of mature-age leaders. Here, heir leaders age 50 and over have a higher discontinuation rate than founding leaders age 50 and over: F (8.534) = 1, p = 0.004 η^2 = 0.075, M_f = 0.175 [0.06; 0.29] SD = 0.453; M_h = 0.669 [0.36; 0.98] (SD = 1.125) (see Table 2).

Table 2
ANOVA analysis for the interplay effect between generation and leader´s age (leader´s age – constant)

GENERATION DIFFERENCES BETWEEN OWNER LEADERS (S = 215)			*Support found for Hypothesis 2*
YOUNG LEADERS (Up to 50 years)			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 91)** **HEIR LEADERS (s = 17)**	0.173 [0.03; 0.32] SD = 0.550 0.513 [0.18; 0.85] SD = 1.238	F(3.393) = 1, p = 0.068 η^2 = 0.031
MATURE LEADERS (50 years and over)			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 94)** **HEIR LEADERS (s = 13)**	0.175 [0.06; 0.29] SD = 0.453 0.669 [0.36; 0.98] SD = 1.125	F(8.534) = 1, p = 0.004 η^2 = 0.075

Note: Bootstrapping BCa 95% confidence intervals are outlined in the brackets.
Source: Own elaboration.

Whilst for the segment of founding leaders and heirs under 50 years of age, no significant differences are revealed in the risk index. Interestingly, when we analyse the sample of leader managers, we find that heir leaders have significant differences in the risk rate with respect to founding leaders for both age groups. That is when both of them are mature leaders: F(6.675) = 1, p = 0.011 h^2 = 0.059, M_f = 0.074 [–0.10; 0.25] (SD = 0.281); M_h = 0.418 [0.22; 0.62] (SD = 0.985) (see Table 3). The same happens when both generation leaders are young: F(6.570) = 1, p = 0.012 η^2 = 0.59, M_f = 0.142 [-0.10; 0.25] (SD = 0.394); M_h = 0.454 [0.22; 0.62] (SD = 0.869) (see Table 3).

Table 3
ANOVA analysis for the interplay effect between generation and leader´s age (leader´s age – constant)

GENERATION DIFFERENCES BETWEEN MANAGERS LEADERS (s = 215)			*(Support found for Hypothesis 2)*
YOUNG LEADERS (Up to 50 years)			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 60)** **HEIR LEADERS (s = 48)**	0.074 [–0.10; 0.25] SD = 0.281 0.418 [0.22; 0.62] SD = 0.985	F(6.675) = 1, p = 0.011 η^2 = 0.059
MATURE LEADERS (50 years and over)			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 75)** **HEIR LEADERS (s = 32)**	0.142 [-0.10; 0.25] SD = 0.394 0.454 [0.22; 0.62] SD = 0.869	F(6.570) = 1, p = 0.012 η^2 = 0.59

Note: Bootstrapping BCa 95% confidence intervals are outlined in the brackets.
Source: Own elaboration.

Nevertheless, when we compare the differences between generations in the risk assumed by the sample of leaders on the board of directors, we do not find significant differences between the risk assumed by the heir leaders and the founding leaders for any age group. Sample of mature leaders: F(2.050) = 1, p = 0.155 $\eta^2 = 0.019$ and sample of young leaders: F(3.348) = 1, p = 0.070 $\eta^2 = 0.031$ (see Table 4).

Table 4

ANOVA analysis for the interplay effect between generation and leader´s age (leader´s age – constant)

GENERATION DIFFERENCES BETWEEN LEADERS IN THE BOARD OF DIRECTORS (s = 214)			*(Not support found for Hypothesis 2)*
YOUNG LEADERS (Up to 50 years)			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 77)** **HEIR LEADERS (s = 31)**	0.165 [0.01; 0.32] SD = 0.537 0.379 [0.13; 0.63] SD = 1.009	F(2.050) = 1, p = 0.155 $\eta^2 = 0.019$
MATURE LEADERS (50 years and over)			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 78)** **HEIR LEADERS (s = 28)**	0.175 [0.04; 0.31] SD = 0.450 0.412 [0.19; 0.63] SD = 0.866	F(3.348) = 1, p = 0.070 $\eta^2 = 0.031$

Note: Bootstrapping BCa 95% confidence intervals are outlined in the brackets.

Source: Own elaboration.

Therefore, our results offer partial support to the second study hypothesis that: "The positive association between heir leadership (vs. founder leadership) and risk propensity is stronger for younger leaders than for older leaders".

4.3. The influence of leader gender in management risk (H3)

Afterwards, we explore the generation differences controlling the gender of the leader and our results show that for all leadership cases, men have a higher discontinuation rate than women. When we analyse the sample of owner leaders, we find that only heirs maintain a higher discontinuation rate than founders, though these differences are only significant for the sub-sample of male leaders: F(12.297) = 1, p = 0.001 $\eta^2 = 0.073$, $M_f = 0.203$ [0.08; 0.32] (SD = 0.551); $M_h = 0.782$ [0.48; 1.09] (SD = 1.344) (see Table 5).

Table 5

ANOVA analysis for the interplay effect between generation and leader´s gender (leader´s gender – constant)

GENERATION DIFFERENCES BETWEEN OWNER LEADERS (s = 215)			*(Support found for Hypothesis 3)*
MALE LEADERS			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 137)** **HEIR LEADERS (s = 21)**	0.203 [0.08; 0.32] SD = 0.551 0.782 [0.48; 1.09] SD = 1.344	F(12.297) = 1, p = 0.001 $\eta^2 = 0.073$
FEMALE LEADERS			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 48)** **HEIR LEADERS (s = 9)**	0.092 [0.00; 0.18] SD = 0.313 0.111 [-0.10; 0.32] SD = 0.333	F(0.028) = 1, p = 0.868 $\eta^2 = 0.001$

Note: Bootstrapping BCa 95% confidence intervals are outlined in the brackets.

Source: Own elaboration.

The same occurs when we repeat the analyses for the sample of managerial leaders, where heir male leaders show a higher discontinuation rate than founder leaders: F(11.106) = 1, p = 0.001 $\eta^2 = 0.066$, $M_f = 0.133$ [–0.01; 0.27] (SD = 0.383); $M_h = 0.520$ [0.34; 0.70] (SD = 1.040) (see Table 6).

Table 6

ANOVA analysis for the interplay effect between generation and leader´s gender (leader´s gender – constant)

GENERATION DIFFERENCES BETWEEN MANAGER LEADERS (s = 215)			*(Support found for Hypothesis 3)*
MALE LEADERS			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 98)** **HEIR LEADERS (s = 60)**	0.133 [-0.01; 0.27] SD = 0.383 0.520 [0.34; 0.70] SD = 1.040	$F(11.106) = 1$, $p = 0.001$ $\eta^2 = 0.066$
FEMALE LEADERS			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 37)** **HEIR LEADERS (s = 20)**	0.054 [−0.05; 0.16] SD = 0.229 0.171 [0.03; 0.31] SD = 0.424	$F(1.830) = 1$, $p = 0.182$ $\eta^2 = 0.032$

Note: Bootstrapping BCa 95% confidence intervals are outlined in the brackets.

Source: Own elaboration.

Finally, we also evidence this finding through the sample of active leaders on the board of directors, in which heir male leaders show a greater risk orientation than founder male leaders: $F(4.454) = 1$, $p = 0.036$ $\eta^2 = 0.028$, $M_f = 0.208$ [0.08; 0.34] (SD = 0.549); $M_h = 0.485$ [0.26; 0.71] (SD = 1.077) (see Table 7).

Table 7

ANOVA analysis for the interplay effect between generation and leader´s gender (leader´s gender – constant)

GENERATION DIFFERENCES BETWEEN LEADERS IN THE BOARD OF DIRECTORS (s = 214)			*(Support found for Hypothesis 3)*
MALE LEADERS			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 117)** **HEIR LEADERS (s = 41)**	0.208 [0.08; 0.34] SD = 0.549 0.485 [0.26; 0.71] SD = 1.077	$F(4.454) = 1$, $p = 0.036$ $\eta^2 = 0.028$
FEMALE LEADERS			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 38)** **HEIR LEADERS (s = 18)**	0.053 [−0.05; 0.15] SD = 0.226 0.190 [0.04; 0.34] SD = 0.444	$F(2.361) = 1$, $p = 0.130$ $\eta^2 = 0.042$

Note: Bootstrapping BCa 95% confidence intervals are outlined in the brackets.

Source: Own elaboration.

Therefore, our findings allow solid evidence of what was proposed by Hypothesis 3 that: "The positive association between heir leadership (vs. founder leadership) and risk propensity is stronger for male leaders than for female leaders."

4.4. *The influence of owner type in management risk (H4)*

Ultimately, we study the differences in risk that the founding leaders and heirs are willing to incur when both are shareholders of the company. When dividing the sample between majority and minority shareholders for the three leadership positions, we observe interesting findings. When leaders are owners, both majority and minority shareholders present differences in the risk assumed by generations of leaders. Again, heir leaders have a higher rate of discontinuation than founding leaders: Sample of majority shareholder leaders: $F(10.673) = 1$, $p = 0.002$ $\eta^2 = 0.114$, $M_f = 0.087$ [−0.02; 0.19] (SD = 0.324); $M_h = 0.592$ [0.35; 0.83] (SD = 0.839) and sample of minority shareholder leaders: $F(5.938) = 1$, $p = 0.017$ $\eta^2 = 0.063$, $M_f = 0.105$ [−0.15; 0.36] (SD = 0.333); $M_h = 0.529$ [0.29; 0.76] (SD = 1.083) (see Table 8).

Table 8

ANOVA analysis for the interplay effect between generation and owner type (owner type – constant)

GENERATION DIFFERENCES BETWEEN OWNER LEADERS (s = 176)			*(Support found for Hypothesis 4)*
MAJORITY SHAREHOLDERS (s = 85)			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 77)** **HEIR LEADERS (s = 8)**	0.113 [.,01; 0.21] SD = 0.414 0.655 [0.34; 0.97] SD = 0.714	$F(10.673) = 1$, $p = 0.002$ $\eta^2 = 0.114$
MINORITY SHAREHOLDERS (s = 91)			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 75)** **HEIR LEADERS (s = 16)**	0.242 [0.05; 0.43] SD = 0.611 0.762 [0.35; 1.17] SD = 1.499	$F(5.170) = 1$, $p = 0.025$ $\eta^2 = 0.055$

Note: Bootstrapping BCa 95% confidence intervals are outlined in the brackets. In these analyses, 39 cases corresponding to the sample of non-owner CEO´s have been excluded.

Source: Own elaboration.

Similarly, when leaders manage the company, we find that heir leaders outnumber founding leaders for both shareholder profiles, when they are majority shareholders: F(14.653) = 1, p = 0.000 $\eta^2 = 0.150$, $M_f = 0.087$ [–0.02; 0.19] (SD = 0.324); $M_h = 0.592$ [0.35; 0.83] (SD = 0.839) and when they are minority shareholders: F(5.938) = 1, p = 0.017 $\eta^2 = 0.063$, $M_f = 00.105$ [–0.15;0.36] (SD = 0.333); $M_h = 0.529$ [0.29;0.76] (SD = 1.083) (see Table 9).

Table 9
ANOVA analysis for the interplay effect between generation and owner type (owner type – constant)

GENERATION DIFFERENCES BETWEEN MANAGER LEADERS (s = 176)			*(Support found for Hypothesis 4)*
MAJORITY SHAREHOLDERS (s = 85)			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 72)** **HEIR LEADERS (s = 13)**	0.087 [–0.02; 0.19] SD = 0.324 0.592 [0.35; 0.83] SD = 0.839	F(14.653) = 1, p = 0.000 $\eta^2 = 0.150$
MINORITY SHAREHOLDERS (s = 91)			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 42)** **HEIR LEADERS (s = 49)**	0.105 [–0.15; 0.36] SD = 0.333 0.529 [0.29; 0.76] SD = 1.083	F(5.938) = 1, p = 0.017 $\eta^2 = 0.063$

Note: Bootstrapping BCa 95% confidence intervals are outlined in the brackets. In these analyses, 39 cases corresponding to the sample of non-owner CEO´s have been excluded.

Source: Own elaboration.

Interestingly, when we segment the sample by active leaders on the board of directors, we find that only the majority shareholders present significant differences in the risk management carried out by the two generations of leaders, in which the heirs again show a greater aversion to risk than the founders: F(12.497) = 1, p = 0.001 $\eta^2 = 0.132$, $M_f = 0.089$ [–0.02; 0.19] (SD = 0.328); $M_h = 0.549$ [0.31; 0.79] (SD = 0.822) (see Table 10).

Table 10
ANOVA analysis for the interplay effect between generation and owner type (owner type – constant)

GENERATION DIFFERENCES BETWEEN IN THE BOARD OF DIRECTORS (s = 175)			*(Support found for Hypothesis 4)*
MAJORITY SHAREHOLDERS (s = 84)			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 70)** **HEIR LEADERS (s = 14)**	0.089 [–0.02; 0.19] SD = 0.328 0.549 [0.31; 0.79] SD = 0.822	F(12.497) = 1, p = 0.001 $\eta^2 = 0.132$
MINORITY SHAREHOLDERS (s = 91)			
Discontinuation rate (chain risk)	**FOUNDER LEADERS (s = 58)** **HEIR LEADERS (s = 33)**	0.271 [0.05; 0.49] SD = 0.659 0.442 [0.15; 0.74] SD = 0.659	F(0.855) = 1, p = 0.358 $\eta^2 = 0.010$

Note: Bootstrapping BCa 95% confidence intervals are outlined in the brackets. In these analyses, 39 cases corresponding to the sample of non-owner CEO´s have been excluded.

Source: Own elaboration.

These findings offer empirical support for the fourth study hypothesis that that: "The association between heir (vs. founder) leadership and risk-taking is stronger when the family holds a majority ownership stake than when it holds a minority stake."

4.5. Robustness Checks and Additional Analyses

To assess the robustness of the main generational effect, we conducted several additional analyses. First, we estimated OLS regression models, which confirm the positive and statistically significant association between heir leadership and outlet discontinuation rates (Model 1).

Second, to mitigate the potential influence of extreme observations, we winsorized the dependent variable at the 95th percentile. The generational effect remains positive and statistically significant (Model 2), indicating that the findings are not driven by outliers.

Third, we estimated models including structural firm-level controls (sector, firm age, and network size). As shown in Model 3, the generational effect remains stable and statistically significant ($\beta = .263$, $p < .01$), while none of the structural controls exhibit significant associations with discontinuation rates. This suggests that variations in outlet discontinuation are not primarily explained by firm maturity, size, or sectoral context, but rather by leadership characteristics linked to generational differences.

Bootstrap analyses based on 5,000 resamples (BCa confidence intervals) and non-parametric Mann-Whitney U tests yield consistent results. Thereby, these analyses reinforce the robustness of the generational effect.

Table 11
Robustness Analyses: OLS estimates of chain's discontinuation rate

Variables	Model 1	Model 2	Model 3
Generation	0.27***	0.196***	0.263***
Sector	—	—	0.037
Firm Age	—	—	0.012
Firm Size	—	—	0.045
Observations	215	215	215
Adjusted R^2	0.052	0.043	0.061

Note: Bootstrap 5,000 resamples (BCa) confirm significance. Mann–Whitney U test p = .005.

Source: Own elaboration.

5. DISCUSSION

In franchising, the importance of assessing risk-related outcomes is enhanced given its plural form of governance and its geographically dispersed network operating under a common brand, where adverse events and reputational shocks may propagate across outlets. In response, our study examined whether leadership generation influences risk-taking in family franchisors, and under what conditions such generational effects vary. In this attempt, we integrated the assumptions of the upper echelons and the SEW perspective to investigate individual factors that may affect the risk propensity of family leaders who hold a position in the top management team (TMT). Family franchising is a particularly revealing setting for this combined logic because franchisors' strategic actions—implemented through governance structures, monitoring, and coordination routines—translate into network-wide outcomes (Hajdini, 2024; Jell-Ojobor *et al.*, 2025). Our evidence that founders and successors differ in risk-taking, consistent with their tendency to weigh economic payoffs alongside SEW concerns such as reputation and transgenerational continuity (Gomez-Mejia *et al.*, 2011; Cruz & Justo, 2017), underscores that leadership effects in franchising are reflected in observable strategic outcomes, including outlet discontinuity.

Our findings support the view that successor (heir) leaders exhibit higher risk-taking than founders in family franchise firms. However, the strength of this relationship varies systematically depending on individual and governance characteristics. Age appears to condition generational risk patterns in a manner consistent with both upper echelons and SEW reasoning: age is linked to time horizons and tolerance for uncertainty, and it may also correspond to how much accumulated legacy and reputation leaders perceive to be at stake. Gender-based moderation is likewise informative because gender can shape both general risk preferences and the weighting of SEW dimensions such as harmony and reputational protection. Specifically, the generational gap in risk-taking is more pronounced among younger leaders, male leaders, and both majority and minority shareholders when occupying ownership or managerial positions. By contrast, when family leaders act as board members, these differences tend to attenuate, suggesting that collective governance mechanisms constrain individual risk preferences. Our findings are consistent with prior research suggesting that successor leaders tend to pursue more change-oriented and risk-prone strategies (e.g., Duran *et al.*, 2016; Seo & Sharma, 2018). At the same time, our results extend this literature by demonstrating that these differences are particularly salient in the franchising context, where risk has network-wide implications due to brand interdependence.

Our first study hypothesis, which predicted that heir leaders run their companies at a higher level of risk than founding leaders, was true for all three positions of power in the top management team: owner, manager, and active member of the board of directors. This finding provides empirical support for the main assumption made by the upper echelon theory that suggests that young leaders or those with less experience in the organisation are more risk-oriented than senior leaders or those with a long professional trajectory. Unlike the predecessor leaders, Bigley & Wiersema (2002) considers that the socialization process of the inheriting leaders is unique due to their involvement in decision-making before being appointed leader of the company. It is possible that the influence of past family decisions and the need of group membership lead heirs to making riskier decisions in order to legitimize their authority as a leader. These findings fit in with the suggestion by Sa'aban *et al.*, (2013) about the disposition towards change and openness in the organisational structure of the part of the Y generation or millennial generation. Based on our findings, we suggest that this flexibility to accept changes and take risks may be due to having grown up in a diverse and changing environment, which can influence information processing and complex decision making.

When analyzing the interaction between generation and age among family leaders who hold ownership positions, we find that generational differences in risk propensity emerge only among mature leaders. Consistent with upper echelons theory, we find that when family leaders are younger, founders and heirs do not differ significantly in risk propensity. Franco & Prata (2019) argue that the personal characteristics of the founding leader are associated with a greater tolerance to ambiguity, proactive personality and self-efficacy, which fosters their ability to manage risk in a balanced way. After approximately age 50, however, heir leaders become clearly differentiated from founders. While mature leaders are often expected to display conservative behaviour to preserve the status quo regardless of generational status, our results show that mature heirs exhibit a higher propensity to take risks than mature founders. This finding challenges the common assumption that greater tenure in ownership necessarily increases the desire to preserve the status quo (Bigley & Wiersema, 2002). Instead, it aligns with more recent evidence on the distinction between age and generational effects in risk-taking (Yeoh & Hooy, 2022). Yeoh and Hooy (2022) suggest that age effects may lead individuals to become more conservative as they grow older, whereas generational effects—shaped by external conditions and formative experiences—can stabilize risk orientations across the life course. This is because generational effects are the result of the influence of external factors and individual experiences. According to our results, it makes sense to think that the founding leaders are more aware of the future of the company or value more the effort that it took to build and maintain it over time than the heir leaders, who entered when everything was already up and running. Nevertheless, this gap in risk management does not become significant until leaders reach 50 years of age. Although the socio-emotional and financial stake made by family leaders is much higher for these kinds of companies than for non-family companies (Gomez-Mejia *et al.*, 2019), our results allow us to observe that mature founders are those who recognise the risk involved in the decision to discontinue the business, as well as the possible loss of family assets. Consequently, they exhibit more cautious behaviour than mature heir leaders. This is in line with the results obtained by Yeoh & Hooy (2020) that suggest that risk taking increases only until reaching an age close to retirement. This finding partially aligns with prior upper echelons research linking age to greater risk aversion (Hambrick & Mason, 1984; Serfling, 2014), while also extending more recent work (Yeoh & Hooy, 2022) by showing that generational effects may persist independently of age in family-controlled franchise systems.

On the other hand, when both family leaders are managers, there are generational differences in both age groups. Young and mature heirs assume a greater level of risk than young and mature founders. That is, the generation determines the risk strategic orientation that the family leader is willing to assume. The social learning view could reveal additional insights as to why mature heirs risk more than founders in the same age range. According to Berkes (2009), social learning allows for solving problems jointly and exchanging experiences. As a result of this adaptive process, the authors argue that: "maturing co-management arrangements become adaptive co-management in time, through successive rounds of learning-by-doing" (p. 1699). Relatedly, it is possible that companies led by founders use different governance models than those employed by the heirs (for governance models, see: hierarchical governance; self-governance and co-governance, by Kooiman, 2003). Since founding leaders start from a background opposite to that of their successors (and this starting point is part of a transition process), each leader's worldview will vary according to the acquired knowledge and experience. Consequently, it will be possible to observe differences in risk management models depending on the generation that leads the company. This pattern is consistent with prior research highlighting that successor leaders are more likely to adopt adaptive and change-oriented strategies (Duran *et al.*, 2016), while also extending this view by showing that such differences remain robust across managerial roles in franchising contexts.

Interestingly, when leaders are active on the board of directors, no generational differences are observed for any age range. According to Gormley *et al.*, (2013) by adjusting the incentives that affect the risk-taking of managers, the boards reduce the exposure to activities that involve risks. Therefore, when family leaders are in this position of power, there are no significant differences in risk seeking between founders and heirs for any age group. After separately analysing the behaviour of family leaders in the senior management team, we offer partial empirical support for the second hypothesis, since we observe that there are differences in the risk rate both in the group of owner leaders and in that of managers. But such differences do not exist differences for the active leaders on the board of directors. Hence, our results not only reveal that age and generation affect risk management, but the position of the leader in decision making hierarchical level also determines the risk propensity of the family franchises.

When family leaders are owners, managers or are active on the board of directors, only male leaders present differences in risk management depending on the generation. These findings support our proposition that gender affects the differences in risk propensity between founder and heir leaders. We found that for all three positions on the top management team, male heirs commit companies to a higher level of risk than male founders. While being women, for both founders and heirs, a linear behaviour in aversion to risk is observed. Our results reveal that this happens in all positions of power and for both family generations. This is in line with the bulk of literature that suggests that in general, women tend to be more risk averse than men (Apicella *et al.*, 2008; Faccio *et al.*, 2016; Hibbert *et al.*, 2013; Nofsinger *et al.*, 2018). McGuinness (2018) argues that risk attitudes based on gender produce differences in corporate risk management. Thereby, the strategic orientation of the company will vary depending on whether it is led by a man or a woman. This is in line with the results obtained by Datta *et al.*, (2021) which indicate that companies led by women tend to make safer financial decisions in terms of risk than companies led by men. Explanations from the area of behavioural finance suggest that men are more prone to the risk of profit, while women are more prone to suffer losses (Schubert *et al.*, 1999). According to the risk measure presented by this study, the business discontinuation rate implies both a risk to obtain future profits and to suffer losses of the invested capital, therefore, our findings fit with what is expected from the literature on risk-taking behaviour by male leaders. According to the risk measure presented by this study, the business discontinuation rate implies both a risk to obtain future profits and to suffer losses of the invested capital, therefore, our findings extend the literature on risk-taking behaviour and gender to the franchising family business literature. These results are consistent with extensive evidence on gender differences in risk-taking (Croson & Gneezy, 2009; Faccio *et al.*, 2016), while further contributing to the family business literature by showing how gender interacts with generational leadership to shape risk behaviour in franchising contexts.

When the owner leaders are majority shareholders, the heirs exceed the founders in the risk rate and when they are minority shareholders the same result is observed. Interestingly, this is repeated for the owners who are also managers of the company. Again, we find generational differences between both types of shareholders. This finding is in line with the suggestion by Anderson *et al.*, (2009) regarding the presence of founding leaders or heirs in ownership and corporate opacity. According to these authors, it is possible that generational leaders solve agency problems by acting as controlling shareholders. In turn, this is consistent with what found by Anderson and Reeb (2003) about improving business performance when family leaders are owners and act as managers. Consequently, it is possible to observe risky behaviour in both profiles of owner-shareholders. In the present study, we reveal that the inheriting leader makes a difference by exhibiting again a higher discontinuation rate than the founding leader. Besides, we reveal that founding leaders are more risk averse in both types of ownership, which adds to the evidence presented by Shleifer & Vishny (1986) on risk aversion in general on the part of large shareholders. This finding is also in line with prior studies on ownership structure and risk incentives (Aabo *et al.*, 2011; Caprio *et al.*, 2011), while extending this perspective by highlighting how generational leadership interacts with ownership positions to influence risk-taking in family franchise firms.

Notwithstanding, when in franchising family business, owners are active leaders on the board of directors, only majority shareholders present generational differences in risk, with heirs showing a higher risk rate compared to their predecessors. Although the board of directors is conceived as a control mechanism to alleviate the agency problem (Richardson *et al.*, 2013), the responsibility for implementing policies that involve risk decisions rests in the management sphere (Rae *et al.*, 2008). Therefore, active owner leaders on the board of directors are more likely to hold a more conservative view than owners who are managers. The fact that generational differences appear only under majority ownership aligns with Caprio *et al.* (2011), who argue that firms are less likely to pursue risk when family ownership is insufficient to secure enduring control. In this sense, minority shareholders may have weaker incentives to bear uncertainty or to "spend" risk in ways that could threaten control and socioemotional endowments. In contrast, when leaders are majority shareholders, the heirs present on the board of directors tend to repeat the pattern of assuming risk. Again, heir leaders may exhibit riskier behaviour in response to seeking external approval as agents of authority before the board of directors. However, as our findings reflect, the heirs do not show differences in the assumption of risk in certain situations, in this case, when they are minority shareholders.

Building on our findings, we further clarify several implications for practitioners in family franchise systems. First, succession processes should explicitly account for differences in risk orientation between founders and successors. Our results suggest that heirs—particularly younger and male leaders—tend to exhibit higher risk propensity, which implies that firms should design gradual transition processes and structured decision-making frameworks to mitigate excessive risk-taking. Second, governance mechanisms play a critical role in balancing individual risk preferences. The absence of generational differences at the board level suggests that collective decision-making structures (e.g., boards or advisory committees) can effectively constrain individual biases. Practitioners should therefore strengthen governance bodies during and after succession. Third, ownership structure and leadership roles should be carefully aligned. Given that risk-taking varies depending on whether leaders act as owners, managers, or board members, firms should clearly define decision rights and responsibilities to avoid unintended risk exposure at the network level. Finally, given the presence of gender differences in risk behaviour, fostering diversity in leadership teams may contribute to more balanced and sustainable strategic decisions, particularly in franchise systems where reputational spillovers can affect the entire network.

6. LIMITATIONS AND FUTURE RESEARCH

This study is subject to several limitations, which can serve as promising avenues for future research. First, the study is confined to Spanish franchise chains, which limits generalizability. Family franchising can vary substantially across countries in terms of legal systems, governance norms, succession traditions, and franchise market maturity. Second, the dependent variable captures risk through chain discontinuation rate, which reflects one manifestation of risk. Future scholars may investigate additional dimensions such as innovation risk, international expansion risk, or reputational risk. Next, while the study includes structural controls, there may still be omitted franchise-specific factors affecting discontinuation risk, such as franchisor support quality and brand name, franchisee recruitment standards, contract design, local market saturation, or digital transformation (Hajdini & Raha, 2018; Hajdini and Windsperger, 2019; Maseda *et al.*, 2025). These could partly influence the reported generation effects. Finally, the fact that the generational effect is attenuated in board settings indicates that not all forms of family involvement translate equally into strategic risk. Future work should therefore continue to differentiate among family roles and levels of influence rather than treating family leadership as a uniform construct (Chirico *et al.*, 2011). In addition, while this study distinguishes between leader age and generational leadership, we acknowledge that we do not observe CEO tenure, which could provide complementary insights into leadership experience. Future research may benefit from jointly examining age, tenure, and generational position to further disentangle their respective effects on risk-taking in family franchise firms. It thus provides a foundation for future studies on family business leadership and risk management at the chain level.

Beyond these limitations, future research should further unpack the underlying mechanisms driving generational differences in risk-taking. In particular, more fine-grained empirical designs could examine how cognitive frames, socioemotional priorities, and decision-making processes evolve across generations and how these mechanisms translate into strategic risk outcomes at the network level. Future studies may also benefit from longitudinal and process-based approaches to better capture how risk orientations develop and change over time, particularly during succession processes. Such designs would allow scholars to move beyond cross-sectional comparisons and provide deeper insights into the dynamics of intergenerational transitions in family franchise systems. More broadly, our data did not allow us to observe SEW dimensions directly. Subsequent studies could incorporate direct measures of SEW priorities—such as family control concerns, legacy preservation, family identity, or transgenerational intentions—to test the underlying mechanisms more explicitly. Finally, given the unique characteristics of franchising as a network-based organizational form, future research could explore how risk-taking behaviours interact with network-level dynamics, such as franchisee–franchisor relationships, coordination mechanisms, and reputational spillovers. This would further advance our understanding of how individual leadership differences scale into system-wide strategic outcomes.

7. CONCLUSION

This study examined how leadership generation shapes risk-taking in family franchise firms, and when these generational differences vary across individual and governance conditions. Drawing on upper echelons theory, we argued that founders and successors differ in risk-related strategic choices because they bring different cognitive frames, time horizons, and levels of discretion to decision making. We complemented this view with SEW theory, which explains why family leaders may evaluate risky actions as mixed gambles that affect both financial outcomes and socioemotional endowments such as reputation, identity, and transgenerational continuity (Cruz & Justo, 2017; Gomez-Mejia *et al.*, 2011). Using primary data from 215 franchise chains, our findings confirm that heirs generally assume higher risk than founders across positions of ownership, management and board membership. We also reveal how age, gender and shareholder type moderate this generation–risk relationship. Younger leaders and male heirs show higher levels of risk-taking than their counterparts, while board members—regardless of generation—tend to adopt more conservative positions, likely due to collective decision-making dynamics. Collectively, the findings underscore that risk management in family franchising is not only a function of market context or governance form, but also of who leads the organization and how socioemotional priorities interact with discretion and constraints across roles.

These results carry important practical implications for founders and family owners of franchise systems. First, succession processes should not be designed solely around generational transfer, but also around the individual risk profiles of successors. Our findings suggest that younger and successor leaders tend to display higher risk propensity; therefore, founders may benefit from gradually involving heirs in strategic decision-making and exposing them to structured governance mechanisms before full leadership transfer. Second, in succession processes, the suitability of the risk profiles of the successors to the characteristics of the firms and their environments must be assessed. Whether a leader with a higher or lower risk propensity is suitable for a company depends on both the company´s situation and its environment. A risk-prone leader might be more appropriate, for example, when the company needs to grow to improve its competitiveness or operates in highly competitive or technological markets (Maseda *et al.*, 2025). A les risk-prone, more conservative leader might be suitable when the business is already profitable and the main objective is to protect dividends and optimize internal processes (Markin *et al.*, 2024), or in highly regulated sectors. Third, given the observed gender differences in risk-taking, family franchise firms may benefit from fostering gender-diverse leadership teams, particularly in ownership and managerial roles. The presence of female leaders may contribute to more balanced risk decisions, especially in periods of strategic change or expansion. Fourth, the results highlight the importance of governance structures in moderating excessive risk-taking. Board involvement appears to attenuate generational differences in risk propensity, suggesting that founders should strengthen collective decision-making forums—such as boards or advisory committees—to counterbalance individual risk preferences during and after succession. Therefore, these practices can help family franchise firms align entrepreneurial risk-taking with long-term sustainability. Family franchise firms should approach succession not only as a transfer of authority, but also as a transition in risk orientation. Founders may benefit from gradually socializing successors into network-level decision making, while using boards, advisory committees, and clearly specified decision rights to prevent excessive risk-taking during and after succession. More broadly, the results suggest that governance design can serve as a balancing mechanism, helping family franchisors preserve entrepreneurial adaptability without undermining long-term network stability.

On the theoretical front we show that risk management in family franchising is shaped not only by market conditions or organizational structure, but also by who leads the chain and how that leader's generational position interacts with governance constraints and socioemotional priorities. This helps explain why family franchise firms facing broadly similar conditions may still pursue markedly different strategic paths. Our first contribution is to strategic leadership research: we extend an upper echelons explanation of risk behaviour to the underexplored context of family franchising and show that generational leadership is associated with meaningful differences in risk outcomes, while governance roles condition the extent to which leader preferences translate into realized risk. Our second contribution is to family business and franchising research: we clarify SEW-based mechanisms—especially reputation and legacy concerns—and demonstrate how these mechanisms operate in a networked brand setting where spillovers magnify the consequences of risk decisions. Together, these contributions help explain heterogeneity in family franchisor behaviour and connect the franchising context to current debates on family versus non-family franchisors and ownership-related outcomes.

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8. AUTHORSHIP

All authors should have contributed substantially to several stages of the research design and conduct process. Conceptualization: María Fernández Muiños; Methodology: María Fernández Muiños & Ilir Hajdini; Formal analysis and investigation: María Fernández Muiños, Ilir Hajdini & Luis Vázquez Suárez; Writing - original draft preparation: María Fernández Muiños & Ilir Hajdini; Writing - review and editing: Luis Vázquez Suárez, Ilir Hajdini, & María Fernández Muiños; Funding acquisition: Luis Vázquez Suárez; Resources: Luis Vázquez Suárez; Supervision: Luis Vázquez Suárez & Ilir Hajdini.

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APPENDIX. SAMPLE SIZE FREQUENCES

Table A.1
Generation leaders

Generation	Sample	Percent
Founding leaders	135	62.8
Heir leaders	80	37.2
TOTAL	215	100

Source: Own elaboration.

Table A.2
Generation and leader´s age

		Leader´s age		TOTAL
		Mature leader	Young leader	
GENERATION	*Founder Leader*	75	60	135
	Heir Leader	32	48	80
TOTAL		107	108	215

Source: Own elaboration.

Table A.3
Generation and gender

		Leader´s age		TOTAL
		Male leader	Female leader	
GENERATION	*Founder Leader*	98	37	135
	Heir Leader	60	20	80
TOTAL		158	57	215

Source: Own elaboration.

Table A.4
Shareholders´ leaders

		Leader´s shareholder			TOTAL
		Mayority shareholder	Minority shareholder	Non-shareholder	
GENERATION	Founder Leader	72	42	21	135
	Heir Leader	13	49	18	80
TOTAL		85	91	39	215

Source: Own elaboration.

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How Financially Literate Is Generation Z? A Cross-Country Study

¿Qué nivel de alfabetización financiera tiene la Generación Z? Un estudio comparativo entre países

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ABSTRACT

This study investigates the determinants of financial literacy among Generation Z, the first financially educated and highly digitalised generation, in Spain and Ecuador, two countries characterised by different levels of financial inclusion, institutional development, and financial education policies. Particular attention is given to gender disparities and the role of structural, educational, sociocultural, and technological factors in shaping financial literacy outcomes. Using primary microdata collected from 1,653 university students, the study applies multivariate regression models and Blinder–Oaxaca decomposition techniques to examine both the determinants of financial literacy and the sources of gender gaps. Our findings indicate that academic background and technological exposure are the most robust positive correlates of financial literacy across both contexts. However, significant gender disparities persist, especially in Spain, where the gender gap is considerably larger and mainly explained by structural and behavioural factors rather than observable characteristics. Our results also reveal important cross-country differences in the composition of financial knowledge, particularly between traditional financial concepts and digital financial domains associated with informal learning environments. Overall, the study highlights the multidimensional and context-dependent nature of financial literacy and emphasises the need for tailored public policy interventions, particularly those aimed at strengthening the financial capabilities of girls and women.

Keywords: Financial literacy, Gender disparities, Generation Z, Higher education, Technological exposure.

RESUMEN

Este estudio analiza los factores determinantes de la alfabetización financiera entre la Generación Z —la primera generación con formación financiera y altamente digitalizada— en España y Ecuador, dos países que se caracterizan por niveles distintos de inclusión financiera, desarrollo institucional y políticas de educación financiera. Se presta especial atención a las disparidades de género y al papel de los factores estructurales, educativos, socioculturales y tecnológicos en la configuración de los resultados de la alfabetización financiera. Utilizando microdatos primarios de 1.653 estudiantes universitarios, el estudio aplica modelos de regresión multivariante y técnicas de descomposición de Blinder-Oaxaca para examinar tanto los determinantes de la alfabetización financiera como las fuentes de las brechas de género. Nuestros resultados indican que la formación académica y la exposición a la tecnología son los correlatos positivos más sólidos de la alfabetización financiera en ambos contextos. Sin embargo, persisten importantes disparidades de género, especialmente en España, donde la brecha de género es considerablemente mayor y se explica principalmente por factores estructurales y de comportamiento, más que por características observables. Los resultados también revelan importantes diferencias entre países en la composición de los conocimientos financieros, en particular entre los conceptos financieros tradicionales y los ámbitos financieros digitales asociados a entornos de aprendizaje informales. En general, el estudio pone de relieve la naturaleza multidimensional y dependiente del contexto de la alfabetización financiera y subraya la necesidad de intervenciones de política pública adaptadas a cada caso, en particular aquellas destinadas a reforzar las capacidades financieras de las niñas y las mujeres.

Palabras clave: Alfabetización financiera, Disparidades de género, Generación Z, Educación superior, Exposición tecnológica.

1. INTRODUCTION

Financial literacy has become a fundamental component of individual economic well-being and financial stability in increasingly complex and digitalised financial environments. Globalised markets, fintech environments, crypto assets, stagflation, among others, have become part of our every-day economic and financial challenges; new generations will be entering adulthood in a context characterised by rapid financial innovation, increasing individual responsibility for financial decision-making, and growing reliance on digital financial services.

Traditionally, former generations faced their financial projects without much support from public administrations or even from the education system. This situation has improved in last decades being Generation Z, the first one that has received specific financial training since secondary school, under the assumption that financial habits are formed early in life and tend to persist throughout the life cycle, the early acquisition of financial knowledge is essential for promoting sound financial behaviour (Whitebread & Bingham, 2013).

However, previous literature clearly detects a life-cycle pattern in the financial literacy function, indicating that younger individuals often lack the market experience necessary to translate structural economic advantages into effective financial behaviour (Lusardi *et al.*, 2010). This situation may persist since, despite the expansion of formal financial education programmes and the rapid digitalisation of financial services, financial literacy levels among young individuals remain persistently low. Empirical evidence consistently documents limited financial knowledge among younger cohorts, increasing their vulnerability to over-indebtedness, inadequate financial planning, and restricted participation in financial markets (Mudzingiri *et al.*, 2018; Yew *et al.*, 2017). From a life-cycle perspective, financial literacy typically follows an inverted U-shaped pattern, with lower levels observed among younger individuals, peaking during middle adulthood, and declining again in older age groups (Lusardi & Mitchell, 2014; OECD, 2020a; Preston & Wright, 2024). This pattern suggests that the transition into adulthood constitutes a structurally vulnerable phase in the accumulation of financial capabilities. Evidence from Spain confirms this profile, with correct response rates increasing from 52% among individuals under 34 years old to 56% among those aged 45-64, before declining again in older age groups (Banco de España, 2021). Similar patterns are observed in the United States, where a substantial proportion of Generation Z enters adulthood with limited financial knowledge, despite heightened interest in financial literacy following the COVID-19 pandemic (Yakoboski *et al.*, 2021).

In this context, Generation Z represents a structurally distinctive cohort. Evidence indicates that participation in financial education programmes is significantly higher among this generation than in previous cohorts, reflecting the progressive institutionalisation of financial education within secondary and higher education systems (Yakoboski *et al.*, 2021). At the same time, it is the first cohort to reach adulthood in a fully digitalised financial ecosystem characterised by widespread use of fintech platforms, neobanks, and mobile-based financial management tools (World Economic Forum, 2023). In such an environment, mobile devices function as the primary gateway to financial services, reinforcing the centrality of digital competencies in contemporary financial engagement (OECD, 2023). The coexistence of expanded formal education and intensified digital exposure (informal education) makes Generation Z a particularly informative group for analysing how financial capabilities are formed under new institutional and technological conditions.

Over recent decades, international organisations such as the Organisation for Economic Co-operation and Development (OECD) have promoted financial education as a strategic tool to enhance individual well-being and support inclusive economic growth (OECD, 2005, 2020b). As a result, many countries have progressively incorporated financial education into national policy frameworks. Yet these institutional transformations have not occurred uniformly across countries. Spain and Ecuador provide a particularly informative comparative setting, as both countries have integrated financial education into public policy agendas and linked it to broader development goals, including the Sustainable Development Goals (SDG 4 and SDG 8) (United Nations Development Programme, 2015). However, important differences persist in their institutional maturity, financial inclusion levels, and digital financial ecosystem development. Spain, as a high-income economy, exhibits near-universal access to banking services, whereas Ecuador, classified as an upper-middle-income economy, displays significantly lower levels of financial inclusion (World Bank Group, 2021, 2023). Moreover, their approaches to financial education differ markedly: Spain implemented its Financial Education Plan (PEF) in 2008 (Comisión Nacional del Mercado de Valores & Banco de España, 2008), while Ecuador incorporated financial education into its national curriculum only in 2023 (Junta de Política y Regulación Financiera, 2023).

A substantial body of literature identifies several individual-level determinants of financial literacy, including gender, educational background, family environment, and socio-economic characteristics (Ergün, 2018; Philippas & Avdoulas, 2019). More recent research highlights the role of sociocultural norms, gender stereotypes, and digital exposure in shaping financial knowledge acquisition (Bottazzi & Lusardi, 2021; Ceyla *et al.*, 2024; Evans, 2018; Tinghög *et al.*, 2021). However, three key gaps remain. First, comparative evidence across structurally different institutional and socio-economic contexts remains limited, particularly outside advanced economies. Second, most studies treat financial literacy as a unidimensional construct, overlooking differences in the composition of financial knowledge across traditional and digital domains. Third, although gender gaps in financial literacy are well documented, the relative contribution of observable characteristics versus structural or behavioural mechanisms remains insufficiently explored in cross-country settings.

This paper contributes in three ways to the existing literature. First, it provides new cross-country evidence on financial literacy determinants among Generation Z using primary microdata from two structurally different economies. Second, it conceptualises financial literacy as a multidimensional construct by distinguishing between traditional and digital financial knowledge domains (formal versus formal education). Third, it combines multivariate regression analysis with Blinder–Oaxaca decomposition to disentangle the relative role of observable characteristics and unexplained factors in shaping gender disparities in financial literacy. Accordingly, this study addresses two research questions: (1) Which individual-level factors are associated with financial literacy among Generation Z university students? and (2) Do these associations differ across countries and gender groups?

The remainder of the article is organised as follows. Section 2 reviews the literature. Section 3 presents the methodology and the Blinder–Oaxaca framework. Section 4 reports the empirical results. Section 5 discusses the findings in relation to previous research. Section 6 concludes and outlines policy implications.

2. LITERATURE REVIEW

2.1. Conceptualisation of financial literacy

Financial literacy is defined as the ability to make informed judgements and effective decisions in managing money. Over time, its scope has broadened to include financial awareness, skills, attitudes and behaviours necessary for economic well-being (OECD, 2020b). Lusardi and Mitchell (2014) emphasise its relationship to financial planning, wealth accumulation, borrowing and pensions, while Remund (2010) links it to understanding key concepts and confidence in managing personal finances in the short and long run. Recent research integrates behavioural and psychological dimensions into its definition. Warmath and Zimmerman (2019) highlight self-efficacy in financial decision-making, and Kamiya (2017) highlights the interaction between financial knowledge, consumer behaviour and cognitive biases. Aydin and Akben Selcuk (2019) identify the impact of attitudes towards money and time preferences, while Potrich *et al.* (2016) evidence the interrelationship between behaviour, knowledge and financial attitude, with the latter being the most important determinant. In sum, financial literacy is a dynamic and interdisciplinary construct that integrates cognitive abilities, practical skills and behavioural factors, transcending the mere acquisition of financial knowledge.

2.2. Importance of financial literacy for Generation Z

Financial education is crucial for young people's economic well-being, enabling them to make informed decisions and face economic challenges (Philippas & Avdoulas, 2019; Stepnova *et al.*, 2024). Students with low financial literacy tend to be more impulsive, take high risks and exhibit inappropriate financial behaviours, contributing to economic crises (Mudzingiri *et al.*, 2018). This lack of knowledge underscores the need to strengthen financial education (Yew *et al.*, 2017). The impact of financial education spans several areas, improving savings decisions (Pangestu & Karnadi, 2020), promoting entrepreneurship (Alshebami & Seraj, 2021) and facilitating more efficient money management, reducing unnecessary indebtedness (Zulfaris *et al.*, 2020). In addition, it fosters risk tolerance and security in economic decisions, especially in volatile contexts (Suherman *et al.*, 2023).

Financial education also promotes the use of financial technologies (Bermeo-Giraldo *et al.*, 2023) and improves understanding of investment risks, such as those associated with cryptocurrencies (Cascavilla, 2024). Access to financial education from an early age is vital to ensure economic stability and better opportunities in adulthood (Nguyen, 2025). In the post-COVID-19 context, financial literacy has become an essential skill to adapt to new market trends and generate income, which justifies its inclusion in university curricula (Kang *et al.*, 2024). Underpinned by human capital theory, financial literacy improves economic decision-making and individual and collective financial progress (Loza *et al.*, 2024). Given its relevance to personal financial management and economic stability, several studies suggest implementing national financial literacy policies to prepare university students for an increasingly complex financial environment (Elrayah & Tufail, 2024; Mireku, 2024).

2.3. Determinants of financial literacy and hypothesis development

A substantial body of empirical research has documented the existence of systematic gender differences in financial literacy, with men consistently outperforming women on standard measures of financial knowledge and women exhibiting higher levels of financial vulnerability and lower confidence in their responses (Agnew & Harrison, 2015; Bucher-Koenen *et al.*, 2017; Espinoza-Delgado & Silber, 2024; Potrich *et al.*, 2018). Paradoxically, several studies report that gender gaps in financial literacy tend to be more pronounced in developed economies, despite women's greater access to higher education and increased participation in the financial sector, pointing to the role of institutional and cultural mechanisms (von Hippel *et al.*, 2015). At the same time, cross-country evidence shows that the magnitude of the gender gap varies across socio-economic and cultural contexts, indicating that gender operates as a conditioning factor rather than a universal determinant (Cupák *et al.*, 2018; Duarte *et al.*, 2022; Tan *et al.*, 2024). In line with this literature, the following hypothesis is proposed:

H1. Gender is significantly associated with financial literacy.

Beyond gender, age has been widely analysed within a life-cycle framework as a determinant of financial literacy. Seminal contributions show that financial knowledge follows a non-linear, inverted U-shaped pattern, with lower levels among younger individuals, a peak during middle adulthood, and a subsequent decline at older ages (Lusardi & Mitchell, 2011, 2014). This pattern has been replicated in international surveys, including recent evidence for Europe (Banco de España, 2021; Preston & Wright, 2024). Although age-related differences are naturally compressed within university samples, age may still proxy accumulated experience, exposure to financial decision-making, and learning-by-doing processes. Nevertheless, evidence from digitally intensive contexts suggests that age alone may not be a robust predictor of financial literacy when financial interactions increasingly occur through digital platforms (Adnan *et al.*, 2023; Lantara & Kartini, 2015). Based on this reasoning, the following hypothesis is formulated:

H2. Age is positively associated with financial literacy within Generation Z.

Contextual factors related to the place of residence may further shape financial literacy outcomes. Living in urban areas is generally associated with higher levels of financial knowledge, reflecting better access to educational institutions, financial services, and information technologies, as well as greater exposure to complex financial environments (Ceyla *et al.*, 2024; González-Núñez *et al.*, 2024; Lotto, 2023). However, empirical findings remain mixed, with several studies reporting weak or statistically insignificant differences between urban and rural residents, particularly in settings characterised by widespread digital access (Horobet *et al.*, 2020; Kaur, 2023). Given these contrasting results, the relationship between residential context and financial literacy warrants empirical testing:

H3. Students residing in urban areas exhibit higher financial literacy than those in rural areas.

Educational specialisation constitutes another important source of heterogeneity in financial literacy. Students enrolled in business, economics, and finance programmes consistently demonstrate higher levels of financial knowledge, largely due to sustained exposure to financial concepts through formal curricula and greater familiarity with economic reasoning (Chen & Volpe, 1998; Ergün, 2018; Horobet *et al.*, 2020). More recent evidence also points to relatively strong performance among students in science and engineering fields, possibly reflecting higher quantitative skills (Tan *et al.*, 2024). In contrast, students from disciplines outside the economic and business domain tend to display significantly lower levels of financial literacy (Alkan *et al.*, 2020; Douissa, 2020; Jacobsen & Correia, 2019). Accordingly, the following hypothesis is proposed:

H4. Students enrolled in business and economics programmes exhibit higher financial literacy.

The intergenerational transmission of human capital, particularly through parental education, has also been examined as a determinant of financial literacy. Some studies find that higher parental educational attainment is associated with better financial knowledge among young adults, emphasising early socialisation and the transmission of cognitive skills (Duarte *et al.*, 2022; Philippas & Avdoulas, 2019). Other contributions, however, report weak or insignificant effects, arguing that parental influence has diminished in the presence of expanding digital learning environments, peer effects, and broader social influences (Ergün, 2018; Mahapatra *et al.*, 2024). Moreover, while parental influence appears relevant for shaping financial attitudes, its impact on objective financial knowledge is often limited (Jorgensen & Savla, 2010). Despite these mixed findings, a positive association remains theoretically plausible:

H5. Parental education level is positively associated with students' financial literacy.

Beyond observable demographic and educational characteristics, recent research has increasingly highlighted the role of sociocultural mechanisms, particularly gender stereotypes and social norms, in shaping financial literacy outcomes. Social contexts play a central role in shaping gender-related attitudes, beliefs, and behaviours by establishing normative frameworks that define what is socially expected and legitimate (Cislaghi *et al.*, 2018; Cislaghi & Heise, 2020). From this perspective, individuals can be understood as enculturated agents whose beliefs are not formed in isolation, but rather emerge from socialisation processes that interact with specific social, cultural and institutional structures (United Nations Development Programme, 2022). Gender norms and stereotypes are internalised from an early age, especially through the family environment and parenting practices, and are subsequently reinforced by school, the workplace, institutions and the media (Marcus & Harper, 2014; Overseas Development Institute, 2015; Tenenbaum & Leaper, 2002). This socialisation process contributes to reproducing traditional gender roles and consolidating differentiated expectations regarding the capabilities and spheres of action of men and women.

In the financial sphere, the literature consistently shows that these social and cultural dynamics influence the gender gap in financial literacy. Various studies, framed within the theory of family financial socialisation and sociocultural approaches, argue that gender differences in financial knowledge are shaped by gender roles, cultural norms and early socialisation processes (Agnew & Cameron-Agnew, 2015; Aguiar-Díaz & Zagalaz-Jiménez, 2022; Bottazzi & Lusardi, 2021; Driva *et al.*, 2016). In particular, it has been documented that gender stereotypes and early financial conversations at home play a significant role in the development of economic and financial skills.

Empirical evidence shows that women have, on average, lower levels of financial literacy, not so much because of differences in mathematical skills, but because of factors associated with social norms, family background and lower perceived self-efficacy (Al-Bahrani *et al.*, 2020; Bottazzi & Lusardi, 2021; Tinghög *et al.*, 2021). Despite the increase in female participation in the financial sector (von Hippel *et al.*, 2015), finance continues to be perceived as a predominantly male domain, and gender stereotypes manifest themselves from childhood, contributing to the persistence of the gender gap in financial literacy (Driva *et al.*, 2016). From a broader cultural perspective, the model of cultural dimensions of Hofstede's (1984) suggests that societies with a stronger orientation towards masculinity tend to reinforce traditional gender roles, which could amplify gender differences in the financial sphere. In line with this approach, Filipiak and Walle (2015) show that in matrilineal societies there is no significant gender gap in financial literacy, whereas in patriarchal contexts marked differences do emerge, reinforcing the importance of social and cultural structures in explaining these inequalities. Taken together, this literature suggests that gender stereotypes and social norms internalised through socialisation processes are a key mechanism in the generation and persistence of the gender gap in financial literacy. This leads to the following hypothesis:

H6. Gender stereotypes are significantly associated with financial literacy outcomes.

Technological exposure has emerged as a central determinant of financial literacy in increasingly digitalised societies. Access to digital technologies lowers information costs, facilitates learning, and expands opportunities for engagement with financial content across cultural contexts (French *et al.*, 2020; Van Nguyen *et al.*, 2022). The use of social media and online platforms to follow economic news and financial content has been shown to enhance advanced financial literacy, particularly among younger cohorts (Adnan *et al.*, 2023; Karaa & Kuğu, 2016), while digital media exposure also plays a key role in shaping financial attitudes and motivation (Kharel *et al.*, 2024). These dynamics were further reinforced during the COVID-19 pandemic, when increased reliance on digital platforms heightened interest in financial knowledge among university students (Stepnova *et al.*, 2024). Accordingly, the following hypothesis is formulated:

H7. Technology exposure is positively associated with financial literacy.

Finally, differences in financial literacy may also reflect broader national contexts shaped by institutional development, educational systems, and sociocultural norms. Comparing Spain and Ecuador provides a meaningful framework to assess how these structural factors influence financial literacy outcomes and whether gender gaps persist across different socio-economic settings. Cross-country benchmarking is therefore essential for identifying systematic differences and informing context-specific policy interventions. In this regard, Spain and Ecuador offer a meaningful comparative setting, as they differ in their levels of economic development, institutional maturity, and gender equality. According to the World Economic Forum (2024), Spain exhibits a smaller gender gap, with a score of 0.797 and a global ranking of 10th, while Ecuador scores 0.788 and ranks 16th, indicating that, despite progress in both countries, notable structural differences persist. By jointly analysing a developed and an emerging economy within a unified empirical framework, this study contributes to the literature by assessing whether well-documented determinants of financial literacy operate similarly across distinct institutional and socio-cultural settings. Based on this perspective, two additional hypotheses are proposed:

H8. There are significant cross-country differences in financial literacy between Spain and Ecuador.

H9. Gender differences in financial literacy persist within both countries.

3. METHODOLOGY

3.1. Data and sample

Data were collected through a self-administered online survey, implemented through the Qualtrics Research Suite platform and distributed through official university channels between February and June 2024. Informed consent was obtained, and anonymity was ensured through the use of unique alphanumeric identifiers.

The study focuses on university students in Ecuador and Spain belonging to Generation Z. The target population consisted of individuals born between 1994 and 2006 and aged between 18 and 30 at the time of the survey, consistent with previous research on financial literacy among young people (Philippas & Avdoulas, 2019; Vinkóczi *et al.*, 2024).

The minimum required size per country was estimated using Cochran's (1963) formula, with 95% confidence and a 5% margin of error, yielding 384 cases per country. The final sample exceeded these minimums, with 849 participants in Ecuador and 804 in Spain, which increased statistical precision (Hair *et al.*, 2019).

3.2. Measurement of variables

Dependent variable

Financial literacy (FLI) is constructed as an additive index based on eight items capturing both traditional and digital financial knowledge dimensions, adapted from Lusardi and Mitchell (2011), Mack and Kissell (2018), Bannier *et al.* (2019) and Islam Khan *et al.* (2023). Each item is coded as a binary indicator (1 = correct response; 0 = incorrect response). The index corresponds to the unweighted sum of correct answers, yielding a total score ranging from 0 to 8. Higher values indicate greater levels of financial literacy.

Independent variables

The empirical model includes a set of individual-level characteristics commonly identified in the financial literacy literature. Gender (GEN) is introduced as a binary variable (1 = female) to account for persistent gender disparities documented in previous research (Espinoza-Delgado & Silber, 2024; Potrich *et al.*, 2018). Age (AGE) is included as an ordinal measure, given its well-established association with financial knowledge over the life cycle (González-Núñez *et al.*, 2024; Lusardi & Mitchell, 2011). Residential setting (URB) captures potential urban–rural differences in access to financial services and information. Academic major (EDU) distinguishes students enrolled in Business or Economics programmes from those in other fields, reflecting differences in formal exposure to financial concepts. Parental education level (PARENTS) captures the highest level of education attained by either parent and is specified as an ordinal variable reflecting family educational background.

In addition, the model incorporates two indices capturing sociocultural and technological dimensions. The Gender Stereotypes Index (GSI) is a four-item Likert-scale measure adapted from Bottazzi and Lusardi (2021), with higher values indicating stronger adherence to traditional gender norms. The Technology Exposure Index (TECH), ranging from 0 to 5, reflects respondents' access to and use of digital tools, following Bannier *et al.* (2019).

3.3. Statistical analysis

To examine the determinants of financial literacy, we estimate a multivariate regression model in which financial literacy is modelled as a function of demographic, educational, sociocultural and technological characteristics at the individual level. All explanatory variables are included simultaneously in the baseline specification, allowing us to assess their partial associations with financial literacy conditional on the full set of covariates. The estimated coefficients should therefore be interpreted as conditional associations rather than causal effects.

The baseline empirical specification is given by:

$$FLI_i = \alpha + \beta_1 GEN_i + \beta_2 AGE_i + \beta_3 URB_i + \beta_4 EDU_i + \beta_5 PARENTS_i - \beta_6 GSI_i + \beta_7 TECH_i + \varepsilon \quad (1)$$

We assessed multicollinearity and heteroscedasticity; robust standard errors were used to ensure valid inference. For H8 and H9 testing, the decomposition method of Blinder (1973) and Oaxaca (1973) was applied to estimate the financial knowledge gap by gender and country. This technique distinguishes between the portion of the gap attributable to observable characteristics and the portion due to unexplained differences in coefficients. This approach has been widely adopted in the analysis of gender and cross-country disparities in financial literacy (Cupák *et al.*, 2018; Espinoza-Delgado & Silber, 2024; Fonseca *et al.*, 2012).

Figure 1 illustrates the aspects considered in relation to the determinants of financial literacy, the development of the hypotheses, and the types of statistical analysis carried out.

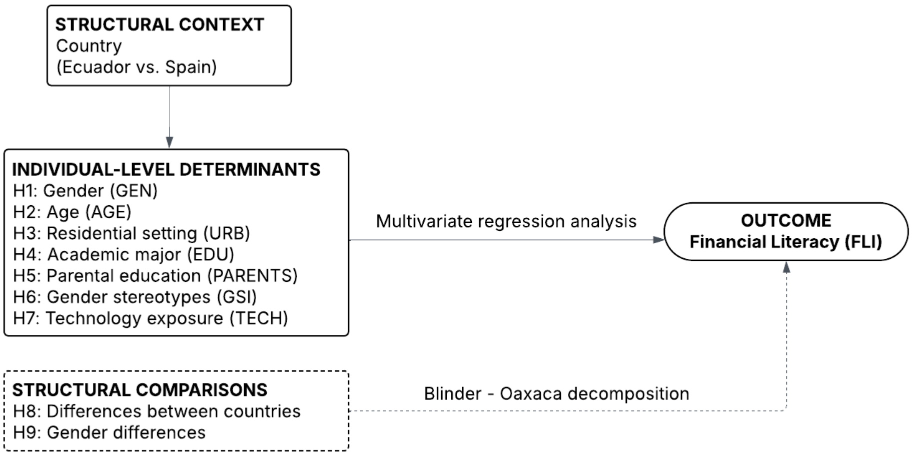

Figure 1
Conceptual framework and hypothesis structure
Source: Own elaboration.

4. RESULTS

We proceed in steps: we first document sample composition, then item-level knowledge profiles, test mean differences by country and gender, estimate multivariate models, explore gender heterogeneity, and finally decompose the gender gap into explained and unexplained components.

4.1. Descriptive statistics and sample characteristics

Table 1 reports the main socio-demographic, educational and contextual characteristics of the Generation Z university student samples from Ecuador and Spain, revealing several structural differences between the two countries that justify the comparative nature of the analysis. In terms of gender composition, women are overrepresented in both samples, with a higher proportion in Ecuador (67.0%) than in Spain (61.3%). This pattern is consistent with recent evidence on female participation in higher education and underscores the relevance of explicitly addressing gender differences in financial literacy in both descriptive and structural analyses.

Regarding age distribution, the Spanish sample is, on average, younger than the Ecuadorian one. A substantial majority of Spanish students fall within the 18-21 age group (69.3%), compared to 54.8% in Ecuador. By contrast, Ecuador exhibits a more even age distribution, with relatively higher shares of students aged 22-25 and 26-30. These differences point to distinct educational trajectories and transition patterns between higher education and the labour market, which may influence cumulative exposure to financial knowledge and experience. With respect to the residential setting, most respondents reside in urban areas in both countries, although the proportion is notably higher in Spain (78.0%) than in Ecuador (68.9%). Given that urban environments are typically associated with greater access to financial services, digital infrastructure and educational resources, this disparity constitutes a relevant contextual factor for subsequent analyses of financial literacy.

Marked cross-country differences also emerge in terms of academic major. In Ecuador, nearly half of the students (45.6%) are enrolled in business or economics programmes, whereas in Spain this share is substantially lower (9.5%), with the vast majority of students pursuing degrees in other fields. This contrast reflects differences in the structure of higher education systems and in the relative prominence of economic disciplines, and suggests heterogeneous exposure to formal financial education across countries. Similarly, parental education level differs considerably between the two samples. In Spain, a large proportion of students come from households in which at least one parent holds a university degree (68.4%), compared with only 27.6% in Ecuador. In the latter, secondary or incomplete parental education is much more prevalent. These disparities highlight intergenerational inequalities in educational capital that may shape financial socialisation processes and early human capital formation.

The distribution of gender stereotypes presents a particularly striking contrast. Spain exhibits a substantially higher prevalence of high levels of gender stereotypes (69.9%) compared to Ecuador (24.4%), where moderate and low levels dominate. From a comparative perspective, this finding is noteworthy, as it suggests that higher levels of economic development and educational attainment do not necessarily coincide with weaker gender-biased norms. This reinforces the relevance of empirically examining the role of gender stereotypes in shaping financial literacy outcomes. Finally, technological exposure is high in both countries, reflecting the digital-intensive nature of Generation Z. However, exposure is markedly higher in Spain, where 89.1% of students fall into the very high technology exposure category, compared to 71.0% in Ecuador. This difference indicates a deeper integration of digital tools and platforms in the Spanish context, with potential implications for the channels through which financial knowledge is acquired.

Overall, the descriptive evidence in Table 1 highlights substantial heterogeneity between the Ecuadorian and Spanish samples in terms of socio-educational context, academic orientation, family background, gender norms and technological exposure. These differences underscore the importance of adopting a multivariate and comparative analytical framework, as well as decomposing gender and cross-country gaps, to better understand how financial literacy among Generation Z is shaped within structurally diverse environments.

Table 1
Descriptive statistics and sample characteristics by country

Variable	Alternative	Ecuador		Spain		Mean	Std. Dev.
		Frequency	Percentage	Frequency	Percentage		
GEN	Woman	569	67.00	493	61.30	0.64	0.48
	Man	280	33.00	311	38.70		
AGE	18 - 21	465	54.80	557	69.30	1.52	0.73
	22 - 25	226	26.60	177	22.00		
	26 - 30	158	18.60	70	8.70		
URB	Urban	585	68.90	627	78.00	0.73	0.44
	Rural	264	31.10	177	22.00		
EDU	Business/Economics	387	45.60	76	9.50	0.28	0.45
	Other	462	54.40	728	90.50		
PARENTS	Incomplete education	314	37.00	134	16.70	1.20	0.84
	High school	301	35.50	120	14.90		
	University degree	234	27.60	550	68.40		
GSI	Minimum	61	7.20	8	1.00	3.26	0.83
	Under	163	19.20	42	5.20		
	Moderate	418	49.20	192	23.90		
	High	207	24.40	562	69.90		
	Very high	0	0.00	0	0.00		
TECH	Minimum	11	1.30	2	0.20	4.71	0.67
	Basic	19	2.20	0	0.00		
	Moderate	55	6.50	9	1.10		
	High	161	19.00	77	9.60		
	Very high	603	71.00	716	89.10		
Total observations		849	100.00	804	100.00		

Source: Own elaboration.

Table 2 reports the correlation matrix, the pairwise correlations among the dependent variable and the explanatory variables are generally low, indicating the absence of strong linear associations. Consistent with this, the correlation structure does not suggest multicollinearity concerns among the variables included in the analysis.

Table 2
Correlation matrix

	FLI	GEN	AGE	URB	EDU	PARENTS	GSI	TECH
FLI	1.000							
GEN	−0.269***	1.000						
AGE	0.085***	−0.066***	1.000					
URB	0.091***	−0.053**	0.014	1.000				
EDU	0.182***	0.007	0.060**	−0.014	1.000			
PARENTS	0.073***	−0.027	−0.163***	0.195**	−0.173***	1.000		
GSI	−0.056**	0.197***	−0.090***	0.064***	−0.269***	0.225***	1.000	
TECH	0.209***	−0.092***	0.052**	0.186***	0.065***	0.179***	0.161***	1.000

Note: Statistical significance levels are denoted as follows: ***p < 0.01, **p < 0.05 and *p < 0.10.

Source: Own elaboration.

4.2. Financial literacy levels: descriptive evidence

Table 3 presents the percentage of correct answers by financial concept, disaggregated by country and gender. Spanish students consistently outperform Ecuadorian students in core financial concepts such as interest rates, inflation, and risk diversification. For instance, correct responses to the inflation item reach 94.21% among Spanish men and 80.12% among Spanish women, compared to 57.86% and 32.69% in Ecuador, respectively. A similar pattern is observed for interest rates and risk diversification.

By contrast, knowledge of digital finance-related concepts is generally low in both countries. Blockchain, cryptocurrencies, fintech, and crowdfunding display correct response rates below 30% in most groups, with particularly low levels among women. Bitcoin is comparatively better understood, especially among Spanish men (83.3%).

Table 3
Percentage of correct answers by financial concept, country and gender

Financial concept	Ecuador (Men)		Ecuador (Women)		Spain (Men)		Spain (Women)	
	Percentage	Std. Dev.	Percentage	Std. Dev.	Percentage	Std. Dev.	Percentage	Std. Dev.
Interest rate	66.43	0.473	52.90	0.500	80.06	0.400	54.97	0.498
Inflation	57.86	0.495	32.69	0.469	94.21	0.234	80.12	0.399
Risk diversification	62.50	0.485	55.89	0.497	82.96	0.377	70.18	0.458
Cryptocurrency	40.71	0.492	41.30	0.493	30.55	0.461	18.86	0.392
Blockchain	40.71	0.492	30.23	0.460	43.73	0.497	18.46	0.388
Bitcoin	62.86	0.484	49.38	0.500	83.28	0.374	50.91	0.500
Crowdfunding	11.79	0.323	11.25	0.316	36.98	0.484	23.12	0.422
Definition of fintech	26.43	0.442	27.77	0.448	22.51	0.418	12.17	0.327

Source: Own elaboration.

Table 4 reports the Global Financial Literacy Index by country and gender. On average, students in Spain display higher levels of financial literacy than those in Ecuador (3.85 vs. 3.24), suggesting a stronger overall financial knowledge base in the Spanish sample. This difference may reflect broader institutional and socio-economic factors, including higher levels of financial inclusion, greater exposure to formal financial systems, and a longer institutional trajectory of financial education initiatives in Spain.

In both countries, men outperform women, indicating the presence of a persistent gender gap in financial literacy. However, the magnitude of this gap differs substantially across contexts. In Spain, the difference between men and women reaches 1.45 points, whereas in Ecuador the gap is notably smaller (0.68 points). This pattern reminds us of those situations where the lower the degree of development, the lower the gender gap (as it occurs with the gender wage gap). Gender gaps may then persist in contexts with stronger financial systems and broader access to financial education. These descriptive patterns provide an initial indication of cross-country differences that are further examined in the multivariate analysis.

Table 4
Global Financial Literacy Index by country and gender

Country and gender		Observations	Mean	Std. Dev.
Ecuador	Men	280	3.693	2.014
	Women	569	3.014	2.137
Spain	Men	311	4.743	1.653
	Women	493	3.288	1.766
Total	Ecuador	849	3.238	2.120
	Spain	804	3.851	1.863

Source: Own elaboration.

4.3. Mean comparison tests (t-tests) by country and gender

Table 5 reports the results of independent-sample t-tests comparing Ecuador and Spain separately for men and women. For men, Spanish students perform significantly better in interest rates, inflation, risk diversification, Bitcoin, and crowdfunding, whereas Ecuadorian men only outperform their Spanish counterparts in the cryptocurrency irreversibility item. No significant differences are observed for blockchain and fintech.

For women, Spanish students outperform Ecuadorian women in inflation, risk diversification, and crowdfunding, while Ecuadorian women show significantly higher performance in cryptocurrency, blockchain, and fintech. No statistically significant differences are found for interest rates and Bitcoin, whereas the opposite holds for traditional financial concepts such as inflation, risk diversification and crowdfunding. This indicates that the cross-country difference among women is not a matter of overall financial knowledge, but rather of the composition of that knowledge across domains.

In other words, the evidence points to differentiated profiles of financial literacy: Spanish women exhibit stronger performance in conventional financial concepts, while Ecuadorian women display relatively greater familiarity with digital and alternative financial instruments. Overall, these results indicate that cross-country differences are not uniform across financial domains and suggest heterogeneous profiles of financial knowledge, particularly in digital finance.

Table 5
Mean comparison tests of financial literacy components by country and gender (t-tests)

Financial concept	Male-Female gap (Ecuador)	Male-Female gap (Spain)	Country diff. Ecuador-Spain (Men)	Country diff. Ecuador-Spain (Women)
Interest rate	13.53%	25.09%	–0.1364***	–0.02070
Inflation	25.17%	14.09%	–0.3636***	–0.47433***
Risk diversification	6.61%	12.78%	–0.2046***	–0.14295***
Cryptocurrency	–0.59%	11.68%	0.1017***	0.22436***
Blockchain	10.49%	25.27%	–0.0302	0.11770***
Bitcoin	13.47%	32.37%	–0.2042***	–0.01528
Crowdfunding	0.54%	13.85%	–0.2519***	–0.11876***
Definition of fintech	–1.34%	10.34%	0.0392	0.15598***

Note: Statistical significance levels are denoted as follows: ***p < 0.01, **p < 0.05 and *p < 0.10.

Source: Own elaboration.

4.4. Multivariate analysis: determinants of financial literacy

Table 6 reports the regression estimates for Ecuador and Spain. Three main results emerge. First, gender differences are large, systematic and persistent across contexts. Being female is associated with significantly lower financial literacy in both Ecuador ($\beta = -0.569$, $p < 0.01$) and Spain ($\beta = -1.284$, $p < 0.01$), conditional on demographic, educational, sociocultural and technological characteristics. The substantially larger coefficient in Spain indicates that higher levels of economic development and digitalisation do not attenuate gender gaps in financial literacy; rather, such gaps appear more pronounced in more complex financial environments.

Second, formal education and digital exposure constitute the most robust positive correlates of financial literacy. Enrolment in business or economics programmes is strongly and positively associated with financial literacy in both Ecuador ($\beta = 1.233$, $p < 0.01$) and Spain ($\beta = 0.870$, $p < 0.01$), confirming the central role of curricular exposure to financial content. Similarly, technology exposure exhibits a positive and highly significant association in both countries, with a larger magnitude in Spain ($\beta = 0.472$, $p < 0.01$) than in Ecuador ($\beta = 0.365$, $p < 0.01$), suggesting that digital engagement operates as a key channel for financial knowledge acquisition, particularly in more technologically advanced settings.

Third, the relevance of demographic and sociocultural factors varies across contexts. Age and urban residence are positively associated with financial literacy in Spain, but not in Ecuador, indicating steeper within-cohort gradients and stronger spatial disparities in the Spanish context. Gender stereotypes are negatively and significantly related to financial literacy in Ecuador ($\beta = -0.174$, $p < 0.05$), whereas no statistically significant association is observed in Spain. This pattern suggests that, in emerging economies, normative constraints remain a salient barrier to financial knowledge accumulation, while in more developed contexts gender disparities are less directly mediated by observable attitudes and more likely driven by structural or behavioural mechanisms.

Overall, the model explains a larger share of the variation in financial literacy in Spain ($R^2 = 0.203$) than in Ecuador ($R^2 = 0.155$). Diagnostic tests indicate no multicollinearity concerns and confirm the robustness of the estimates. Taken together, the results point to a common structure of financial literacy determinants centred on gender, education and technology, while highlighting meaningful cross-country heterogeneity in the role of demographic and sociocultural factors.

Table 6
Regression results for financial literacy by country

Variable	Ecuador	Spain
GEN	–0.569*** (0.148)	–1.284*** (0.128)
AGE	0.092 (0.087)	0.428*** (0.095)
URB	0.084 (0.152)	0.253* (0.144)
EDU	1.233*** (0.139)	0.870*** (0.208)
PARENTS	0.036 (0.088)	0.073 (0.079)
GSI	–0.174** (0.082)	–0.156 (0.100)
TECH	0.365*** (0.088)	0.472*** (0.148)
Constant	1.656 (0.465)	1.916 (0.775)
Observations	849	804
R squared	0.155	0.203
Change in F	25.917	7.736
Sig. change in F	0.000	0.000
Average VIF	1.081	1.073
Breusch-Pagan	0.523	0.482

Note: Robust standard errors in parentheses. Statistical significance levels are denoted as follows: ***p < 0.01, **p < 0.05 and *p < 0.10.

Source: Own elaboration.

4.5. Gender-specific regressions

To explore heterogeneity in the determinants of financial literacy, the regression models are estimated separately by country and gender. This specification allows assessing whether the effects of these factors differ across institutional contexts and between male and female students, thereby providing additional insight into the mechanisms underlying the baseline estimates. The results are reported in Table 7 and reveal two main patterns. First, the role of gender stereotypes differs markedly by gender and country. In Spain, gender stereotypes are negatively and significantly associated with financial literacy among men ($\beta = -0.303$, $p < 0.05$), while no significant association is observed among women. This asymmetric pattern suggests that adherence to traditional gender norms constrains financial knowledge primarily among male students, whereas women's financial literacy appears to be shaped more strongly by formal educational pathways and digital engagement. This heterogeneity helps explain the lack of statistical significance of the GSI coefficient in the baseline Spanish models reported in Table 6.

Table 7
Gender-specific regression results by country

Variable	Ecuador		Spain	
	Men	Women	Men	Women
AGE	0.110 (0.145)	0.093 (0.110)	0.304** (0.138)	0.512*** (0.129)
URB	0.450* (0.270)	–0.073 (0.184)	0.143 (0.226)	0.314* (0.187)
EDU	1.134*** (0.235)	1.263*** (0.174)	0.758*** (0.276)	0.994*** (0.309)
PARENTS	–0.032 (0.151)	0.055 (0.109)	–0.001 (0.120)	0.100 (0.106)
GSI	–0.208 (0.131)	–0.158 (0.105)	–0.303** (0.127)	0.035 (0.159)
TECH	0.535*** (0.184)	0.319*** (0.102)	0.547** (0.231)	0.433** (0.193)
Constant	0.761 (0.869)	1.321 (0.550)	2.436 (1.152)	–0.109 (1.068)
Observations	280	569	311	493
R squared	0.166	0.129	0.079	0.070
F	9.052	13.849	4.327	6.097

Note: Robust standard errors in parentheses. Statistical significance levels are denoted as follows: ***p < 0.01, **p < 0.05 and *p < 0.10.
Source: Own elaboration.

Second, formal education and technological exposure remain the most stable and robust predictors across subsamples. Enrolment in business or economics programmes is positively and highly significantly associated with financial literacy for both men and women in Ecuador and Spain, confirming the central role of curricular exposure to financial content irrespective of gender. Similarly, technology exposure exhibits a strong positive association across all subsamples, although the magnitude of the coefficient is generally larger for men, particularly in Spain, suggesting gender differences in the returns to digital engagement.

By contrast, demographic and contextual variables display more heterogeneous effects. Urban residence is positively associated with financial literacy among Ecuadorian men and Spanish women, but not in the remaining subsamples, indicating context- and gender-specific spatial gradients. Age is only statistically significant among Spanish students, with larger effects observed for women, pointing to steeper within-cohort accumulation of financial knowledge in the Spanish context. Overall, the gender-specific estimates highlight substantial heterogeneity in the determinants of financial literacy across both gender and country. While education and technology emerge as universal correlates, the influence of sociocultural norms and demographic characteristics is highly context-dependent, reinforcing the need to move beyond baseline estimates when analysing gender gaps in financial literacy.

4.6. Decomposing the gender gap: Blinder–Oaxaca results

While the regression results confirm the presence of gender differences in financial literacy, they do not reveal the extent to which these disparities are explained by observable characteristics. To further examine this issue, we implement a Blinder–Oaxaca decomposition, which allows separating the gender gap into an explained component—associated with differences in observable characteristics—and an unexplained component capturing structural or behavioural factors. The results, reported in Table 8, indicate substantial and statistically significant gender gaps in both Ecuador and Spain, although their magnitude and composition differ across contexts.

Table 8
Blinder–Oaxaca decomposition of the gender gap in financial literacy by country

Financial literacy	Ecuador		Spain	
	Coefficient	Robust std. err.	Coefficient	Robust std. err.
Overall				
Mean (men)	3.693***	0.120	4.743***	0.094
Mean (women)	3.014***	0.090	3.288***	0.080
Difference	0.679***	0.150	1.455***	0.123
Difference %	18.39%		30.68%	
Explained	0.110	0.066	0.171***	0.052
Unexplained	0.569***	0.145	1.284***	0.128

Note: Statistical significance levels are denoted as follows: ***$p < 0.01$, **$p < 0.05$ and *$p < 0.10$.

Source: Own elaboration.

In Ecuador, the average financial literacy gap between men and women amounts to 0.679 points, corresponding to an 18.39% difference relative to men's mean score. In Spain, the gap is substantially larger, reaching 1.455 points, or 30.68% of the male mean. These figures indicate that gender disparities in financial literacy are not only persistent across contexts, but also considerably more pronounced in the more economically developed setting. The decomposition results show that only a limited share of the gender gap can be attributed to differences in observable characteristics. The explained component accounts for 0.110 points in Ecuador and 0.171 points in Spain, representing a small fraction of the total gap. By contrast, the behavioural component dominates in both countries, accounting for 83.8% of the gap in Ecuador and 88.3% in Spain. This component largely mirrors the magnitude of the gender coefficient estimated in the baseline regressions.

The predominance of the unexplained component suggests that structural, behavioural or institutional factors—rather than differences in endowments—are the primary drivers of gender gaps in financial literacy. Moreover, the larger behavioural share observed in Spain indicates that higher levels of development, education and digitalisation are not translated into more gender-equal financial knowledge outcomes, but may instead amplify the role of behavioural mechanisms. Overall, the Blinder–Oaxaca results reinforce the regression findings by showing that gender differences in financial literacy are largely structural in nature and persist even after accounting for a broad set of individual characteristics. This provides strong empirical support for analysing gender gaps beyond observable endowments and motivates the discussion of deeper normative and behavioural mechanisms.

4.7. Robustness checks

Table 9 reports logistic regression estimates using a binary indicator of financial literacy equal to one for individuals scoring above the sample median. The results closely mirror the baseline OLS estimates, indicating that the main findings are not sensitive to the functional form of the dependent variable.

Table 9
Robustness check: Logistic regression estimates

Variable	Ecuador	Spain
GEN	–0,347** (0,044)	–1,403*** (0,000)
AGE	0,062 (0,547)	0,462*** (0,000)
URB	0,056 (0,761)	0,109 (0,590)
EDU	1,183*** (0,000)	0,689** (0,011)
PARENTS	0,092 (0,381)	–0,028 (0,791)
GSI	–0,249*** (0,010)	–0,198 (0,135)
TECH	0,444*** (0,002)	0,573** (0,018)
Constant	–2,873 (0,000)	–2,719 (0,028)
Observations	849	804

Note: Coefficients are log-odds estimates. Robust standard errors in parentheses. Statistical significance levels are denoted as follows: ***$p < 0.01$, **$p < 0.05$ and *$p < 0.10$.

Source: Own elaboration.

Gender remains a strong and statistically significant predictor in both countries, with women exhibiting a lower probability of attaining high levels of financial literacy, particularly in Spain. Formal education and technology exposure continue to emerge as the most robust positive correlates across contexts, while parental education remains insignificant. The effects of age, residence and gender stereotypes display the same context-dependent patterns observed in the baseline models. Overall, these results confirm the stability and robustness of the baseline findings.

Taken together, the empirical evidence indicates that gender, academic background and technology exposure constitute the most robust correlates of financial literacy among Generation Z. Gender gaps are large and persistent across both countries and are largely explained by behavioural characteristics. By contrast, age, residential setting and gender stereotypes exhibit context- and subgroup-specific effects, while parental education does not display an independent association once individual characteristics are accounted for. These findings highlight substantial cross-country heterogeneity and motivate the discussion of structural mechanisms in the next section.

5. DISCUSSION

To further contextualise the empirical findings, it is useful to briefly consider selected institutional, educational and gender-related characteristics of Spain and Ecuador. Spain exhibits a substantially higher level of human development (HDI) and higher average years of schooling among the adult population, reflecting a more consolidated educational environment. At the same time, gender inequality as measured by the Gender Inequality Index is markedly lower in Spain, while the Gender Development Index indicates broadly similar average development levels between women and men in both countries. Despite these favourable aggregate indicators, gender-based disparities in financial literacy persist, consistent with the structural nature of the observed gaps.

Beyond formal development and education, gender norms constitute an additional layer of context. According to the UNDP Gender Social Norms Index, gender-biased attitudes remain substantially more widespread in Ecuador than in Spain, particularly in the economic dimension. Moreover, the share of the population reporting no gender bias is considerably lower in Ecuador, indicating a more pervasive normative environment. While these indicators are not part of the empirical models, they provide relevant background for interpreting the cross-country heterogeneity observed in the role of gender stereotypes—being robustly associated with financial literacy in Ecuador, but not in baseline models for Spain, where effects emerge only in subgroup estimates.

Differences in financial and institutional settings further shape this landscape. Spain has near-universal access to formal banking services, with over 90% of young adults aged 15-24 holding an account with a financial institution or mobile money service provider. It has also implemented a coordinated national financial education strategy for over a decade, supported by institutions aligned with OECD standards. By contrast, Ecuador exhibits lower levels of formal financial inclusion and has introduced national financial education initiatives more recently. These institutional differences provide relevant background for interpreting the cross-country patterns observed in this study, including Spain's stronger performance in traditional financial concepts and the differentiated profile of digital financial knowledge observed in Ecuador. Importantly, these contextual indicators frame—but do not determine—the empirical results, which are based on individual-level data.[1]

Against this background, the study provides novel comparative evidence on the level, structure and determinants of financial literacy among Generation Z in two markedly different socio-economic contexts. Beyond confirming well-documented disparities in aggregate financial literacy, the results reveal three substantive insights that move the discussion beyond a purely confirmatory framework. First, the gender gap in financial literacy persists in both countries and is substantially larger in Spain, despite its higher level of economic development and financial inclusion. Second, financial literacy emerges as a multidimensional construct, with cross-country differences not only in levels but also in the composition of financial knowledge, particularly between traditional and digital financial domains. Third, education and technological exposure operate as the most robust and systematic correlates of financial literacy across contexts, while the role of gender stereotypes differs markedly between countries.

Across all empirical strategies, gender remains one of the strongest predictors of financial literacy. Women exhibit significantly lower levels of financial knowledge than men in both Spain and Ecuador, a finding consistent with a large body of international evidence (Lusardi & Mitchell, 2014; Potrich *et al.*, 2018; Tinghög *et al.*, 2021). Importantly, the Blinder–Oaxaca decomposition reveals that the majority of this gap is explained by behavioural characteristics, particularly in Spain, where nearly 90% of the difference cannot be attributed to education, age, parental background or technological exposure. This result is central to the contribution of the paper. It suggests that gender disparities in financial literacy are not merely the outcome of unequal endowments, but rather reflect deeper structural and behavioural mechanisms. Prior research associates this behavioural component with differences in self-efficacy, confidence, stereotype threat and risk attitudes, which systematically affect learning processes and engagement with financial content (Alessie *et al.*, 2011; Bucher-Koenen *et al.*, 2017; Fonseca *et al.*, 2012). Evidence from the STEM education literature further suggests that implicit bias and stereotype internalisation shape performance and participation in quantitatively intensive domains, reinforcing gendered patterns of skill formation even in contexts with formal gender equality (Lindström Månefjord *et al.*, 2025). These mechanisms may plausibly extend to financial literacy, which similarly relies on numeracy, analytical reasoning and confidence in decision-making under uncertainty. In this sense, the findings reinforce the view that policies focused exclusively on expanding access to education may be insufficient to close gender gaps in financial capabilities.

One of the most striking results of this study is that the gender gap in financial literacy is substantially larger in Spain than in Ecuador. This apparent paradox aligns with emerging cross-country evidence showing that gender gaps in financial literacy and financial participation are often more pronounced in advanced economies (Bottazzi & Lusardi, 2021; Bucher-Koenen *et al.*, 2021), as it occurs for the gender wage gap. Several complementary mechanisms may explain this pattern. First, more developed financial systems are characterised by greater product complexity and higher informational requirements. These features raise cognitive and behavioural barriers to entry, which may disproportionately penalise individuals with lower confidence or higher risk aversion, even when formal access to education is similar. Second, persistent horizontal segregation in education and labour markets, particularly in finance- and STEM-related domains, limits women's exposure to financial decision-making environments, thereby constraining learning opportunities. Third, sociocultural research emphasises that formal gender equality does not eliminate implicit biases or internalised norms that shape preferences, expectations and self-perceived competence, especially in quantitative and financial domains (Cislaghi & Heise, 2020; Driva *et al.*, 2016). Taken together, these mechanisms help explain why higher

[1] Institutional indicators are drawn from the United Nations Development Programme (HDI, GDI, GII, GSNI), the World Bank Group (World Development Indicators), and official national financial education strategies.

levels of development and financial inclusion do not automatically translate into smaller gender gaps in financial literacy.

The analysis also reveals a nuanced and context-dependent role of gender stereotypes. In Ecuador, adherence to traditional gender norms is directly and negatively associated with financial literacy, even after controlling for education, technology and socio-demographic factors. This suggests that cultural and normative constraints continue to operate as a structural barrier to financial capability formation in this context. In Spain, by contrast, gender stereotypes are not significant in baseline regressions, yet gender-specific estimations show that their effect is concentrated among men. This asymmetric pattern indicates that social norms do not operate uniformly across groups. Rather, they may affect behaviour, motivation and learning incentives in gender-specific ways, remaining invisible in aggregate estimates. Recent behavioural models suggest that rigid gender norms can also constrain men by reinforcing overconfidence, discouraging learning, or penalising deviation from expected roles (Bordalo *et al.*, 2019). This heterogeneity helps reconcile the absence of a pooled stereotype effect in Spain with the persistence of a large gender gap.

Alongside gender-related mechanisms, education and technological exposure emerge as the most robust and systematic correlates of financial literacy across countries and genders. This confirms the central role of both formal human capital accumulation and digital exposure in shaping financial capabilities (Bannier *et al.*, 2019; Lusardi *et al.*, 2010; Van Nguyen *et al.*, 2022). Notably, the coefficient of academic background is systematically larger for women than for men, suggesting that formal education acts as a particularly strong equalising mechanism for female students. This finding is in line with human capital theory and with recent evidence showing that targeted educational interventions have larger marginal returns for groups that are initially more constrained by social or behavioural barriers (Boolaky *et al.*, 2021; Bucher-Koenen *et al.*, 2021). The strong and robust effect of technological exposure also supports the growing literature on the role of digitalisation and fintech in reshaping financial learning channels, especially among younger cohorts (Adnan *et al.*, 2023; Karaa & Kuğu, 2016; Kharel *et al.*, 2024). Technology thus appears not only as a complementary input to education, but also as a potential lever for reducing information asymmetries and access barriers.

A further contribution of this study lies on documenting compositional differences in financial knowledge across countries. While Spanish students display higher proficiency in traditional financial concepts such as inflation, interest rates and risk diversification (formal education), Ecuadorian women exhibit relatively higher knowledge in digital and alternative financial domains, including cryptocurrencies, blockchain and fintech (informal education). This pattern is consistent with research on financial inclusion in emerging economies, which shows that digital financial tools often substitute for traditional banking services in contexts characterised by lower institutional trust or limited access to formal finance (Chen *et al.*, 2023; Morsy, 2020). In such settings, fintech adoption is frequently necessity-driven rather than speculative, particularly among younger and more digitally native cohorts. In contrast, in mature financial systems like Spain, digital financial innovations tend to be adopted first by more specialised users, a group that remains predominantly male, reinforcing gender gaps in emerging financial domains.

Taken together, these findings underscore that financial literacy is a multidimensional and context-dependent form of human capital. Aggregate indices alone mask important differences in the structure of financial knowledge and the mechanisms through which inequalities emerge. From a policy perspective, the results suggest that uniform financial education strategies are unlikely to be effective. In advanced economies, interventions should explicitly address behavioural barriers, confidence gaps and gendered participation in complex financial domains. In emerging economies, by contrast, strengthening digital inclusion and leveraging fintech ecosystems may be particularly effective in accelerating financial capability formation, especially among women. From a research perspective, the large unexplained component of the gender gap highlights the need to integrate insights from behavioural economics, psychology and the STEM literature, including constructs such as self-efficacy, anxiety and stereotype threat, to better understand the mechanisms underlying persistent inequalities.

6. CONCLUSION

This study provides new comparative evidence on the level, structure and determinants of financial literacy among Generation Z (the first officially financially educated generation) in two markedly different institutional and economic contexts: Spain and Ecuador. By jointly analysing socio-educational characteristics, technological exposure, and sociocultural factors, and by combining multivariate regression analysis with Blinder–Oaxaca decomposition, the paper offers a comprehensive assessment of both individual-level correlates and structural components of financial literacy gaps.

Three main conclusions emerge. First, financial literacy among Generation Z remains structurally unequal by gender in both countries. The gender gap is not only statistically significant, but also largely unexplained by observable characteristics, especially in Spain, where almost ninety percent of the difference cannot be attributed to education, age, family background or technological access. This result provides strong evidence that gender disparities in financial literacy are not merely the by-product of unequal endowments, but reflect deeper and more persistent structural and behavioural mechanisms. In this sense, the findings reinforce the view that improving formal access to education, while necessary, is not sufficient to eliminate gender inequalities in financial capabilities.

Second, the paper shows that financial literacy is not a unidimensional construct. While Spain exhibits higher average levels of knowledge in traditional financial concepts, Ecuador—particularly Ecuadorian women—displays a relative advantage in digital and alternative financial domains such as cryptocurrencies, blockchain and fintech. This compositional difference reveals that cross-country comparisons based solely on aggregate indices can be misleading and that the structure of financial knowledge matters as much as its overall level. This insight constitutes one of the main conceptual contributions of the study.

Third, education and technological exposure emerge as the two most robust and systematic direct association of financial literacy across countries and genders. Academic background is the single strongest predictor in all models, with particularly large returns for women, confirming the central role of formal education as an equalising force. At the same time, technological exposure shows a strong and independent association with financial literacy in both countries, highlighting the growing importance of digital environments as a complementary channel for financial knowledge acquisition, especially among younger cohorts.

Taken together, these findings have important implications for both research and policy. From a scientific perspective, the results underscore the need to move beyond purely aggregate or gender-blind approaches to financial literacy and to adopt multidimensional and context-sensitive frameworks. From a policy perspective, they suggest that effective financial education strategies must be differentiated. In advanced economies, interventions should place greater emphasis on behavioural barriers, confidence gaps and participation in complex financial domains. In emerging economies, by contrast, strengthening digital inclusion and leveraging fintech ecosystems may be a particularly effective way to accelerate financial capability building, especially among young people and women. In both Spain and Ecuador, treating women's financial education as a core dimension of gender equality, rather than as a residual policy objective, is essential for fostering substantive economic autonomy among young women.

This study is not without limitations. The cross-sectional nature of the data prevents causal inference, and the analysis is restricted to two countries. Future research should extend this framework to a broader set of institutional contexts and explore dynamic trajectories of financial knowledge accumulation over the life cycle. Nevertheless, by providing the first systematic comparison of Generation Z financial literacy between Spain and Ecuador and by uncovering novel patterns in the digital domain, this paper contributes to a deeper understanding of how financial capabilities are formed in an increasingly complex and unequal economic environment.

In a context of rapid financial innovation and growing individual responsibility for economic decision-making, understanding not only how much people know about finance, but also what kind of financial knowledge they acquire and under which conditions, is likely to become a central issue for both scholars and policymakers. This study represents a step in that direction.

7. AUTHORSHIP

Jorge Luis Lopez-Lapo: Conceptualization; Methodology; Formal analysis and investigation; Writing - original draft preparation; Writing - review and editing. Esther Del Brio: Conceptualisation; Writing - original draft preparation; Writing - review and editing; Supervision.

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The Impact of ESG Practices on ROA, Financial Leverage, and ROE. A Comparative Analysis of the United States, the European Union, China, and Japan

El impacto de las prácticas ESG en el ROA, el apalancamiento financiero y el ROE. Un análisis comparativo de Estados Unidos, la Unión Europea, China y Japón

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ABSTRACT

The article provides a comprehensive understanding of how Environmental, Social, and Governance performance increase the return on assets and the companies' financial leverage, ultimately enhancing the return on equity, in the United States, the European Union, China and Japan. To achieve this understanding, the study also analyses the core components of the financial leverage: the leverage ratio and the cost of debt. The study analyses 13,321 observations of public companies from 2017 to 2021. To analyse it we use a multilevel model (mix multilevel model in Stata), incorporating into the specified regression models the inherent hierarchical structure of data.

The findings indicate that ESG investments are positively perceived by stakeholders, enhancing financial performance in all regions, though with notable differences. The analysis examines these distinct regions separately but also introduces the geographic zone as a moderating variable to evaluate comparatively how different regional contexts affects environmental performance on corporate financial results. An important conclusion is that the market rewards ESG is inverse proportion to the region's regulatory maturity. Internationally, however, this regulatory framework acts as a country-level or baseline standard. While the US experiences the strongest global impact of ESG on these financial variables, followed by the EU, the effects are more moderate for companies in China and Japan.

Understanding ESG's impact on the returns on assets and equity is crucial for investors, corporate leaders, and policymakers promoting sustainable growth. As global markets integrate sustainability, identifying ESG's financial benefits strengthens the case for its adoption worldwide.

Keywords: ESG; ROE; ROA; Financial Leverage.

RESUMEN

El artículo proporciona una comprensión integral de cómo el desempeño ambiental, social y de gobernanza (ESG) aumenta la rentabilidad de los activos y el apalancamiento financiero de las empresas, mejorando la rentabilidad del capital en Estados Unidos, la Unión Europea, China y Japón. Para lograr este objetivo, se analizan los componentes clave del apalancamiento financiero: la ratio de apalancamiento y el coste de deuda. El estudio analiza 13.321 observaciones de empresas cotizadas entre 2017 y 2021 utilizando un modelo multinivel mixto en Stata, incorporando la estructura jerárquica de los datos.

Los hallazgos indican que las inversiones ESG son percibidas positivamente por los grupos de interés, lo que mejora el rendimiento financiero en todas las regiones, aunque con diferencias notables. El análisis introduce la zona geográfica como variable moderadora para evaluar de forma comparativa cómo los diferentes contextos regionales afectan al impacto del rendimiento ambiental en los resultados corporativos. Una conclusión importante es que el mercado recompensa los criterios ESG en proporción inversa a la madurez regulatoria de la región. Sin embargo, a nivel internacional, este marco regulatorio actúa como un estándar básico. Si bien EE. UU. experimenta el mayor impacto global de ESG en estas variables, seguido de la UE, los efectos son más moderados en China y Japón.

Comprender este impacto es crucial para inversores, líderes corporativos y responsables políticos que promueven el crecimiento sostenible, reforzando los argumentos a favor de su adopción mundial.

Palabras clave: ESG; ROE; ROA; Apalancamiento financiero.

1. INTRODUCTION

Environmental, Social, and Governance (ESG) practices have emerged as pivotal determinants of corporate strategy and financial performance in recent years. Investors and stakeholders increasingly demand transparency and accountability, expecting that sustainable business practices contribute not only to societal well-being but also to long-term profitability. Consequently, ESG integration has become a strategic imperative for firms seeking to optimize financial outcomes.

Despite extensive research on the financial implications of ESG behavior, a comprehensive comparative analysis across the four major economic regions, namely, the United States (US), the European Union (EU), Japan, and China, remains underexplored. This study addresses this gap by examining how ESG practices influence Return on Equity (ROE). Specifically, the article decomposes this impact by analyzing ESG's effect on: (1) Return on Assets (ROA), (2) the financial leverage effect (comprising the cost of debt and the leverage ratio) and, finally, (3) the resulting total ROE.

The findings demonstrate that while the relationship between ESG behavior and financial performance is globally positive, its impact varies significantly across regions. The US experiences the most pronounced effect, followed by the EU, while the impact is more moderate in China and Japan. Furthermore, the analysis reveals that higher average ESG scores within a geographic area correlate with greater financial impact. Therefore, ESG indices enhance corporate transparency and stakeholder confidence, both of which are vital for sustained financial performance.

The remainder of this work is structured as follows: Section 2 develops the theoretical framework and hypotheses; Section 3 details the research methodology; Section 4 presents the empirical results, providing a comprehensive understanding of how ESG increases ROA and financial leverage, ultimately enhancing ROE across varying economic contexts. Finally, Section 5 presents the discussion and Section 6 the conclusions and limitations.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

ESG encompasses the Environmental, Social, and Governance factors utilized to evaluate an organization's sustainability and societal impact. These determinants are increasingly pivotal for investors and stakeholders who seek to look beyond traditional financial metrics to assess long-term value and risk (United Nations Global Compact [UNGC] *et al.*, 2004; United Nations Principles for Responsible Investment [UNPRI], n.d.).

Environmental factors assess how an organization manages its impact on the natural world, specifically regarding climate change impact, resource utilization, waste management, pollution, and conservation. Social factors examine the management of relationships with employees, suppliers, customers, and the communities of operation; these include labor standards, human rights, product safety, data protection, and community engagement. Finally, Governance focuses on leadership structures, executive compensation, audits, internal controls, and shareholder rights, addressing the organization's management, ethical practices, and transparency.

ESG is a multidimensional construct rooted in various theoretical frameworks that explain the motivations for its adoption and its subsequent impact on corporate performance. Stakeholder Theory emphasizes that business strategies based on ESG principles are directly related to stakeholder well-being, suggesting that businesses must integrate the interests of all parties, including employees, customers, suppliers, communities, and the environment (Aguilera *et al.*, 2007; Freeman, 2010). Complementing this, Signaling Theory posits that companies utilize ESG reporting and initiatives as mechanisms to communicate their quality and commitment to sustainability. These signals mitigate information asymmetry, thereby helping firms attract investors and customers while increasing overall firm value (Flammer, 2013; Giannarakis, 2014).

From the perspective of Legitimacy Theory, firms endeavour to operate within societal norms and expectations to be perceived as legitimate, a process that enhances corporate reputation and fosters institutional trust (Suchman, 1995; Zhang *et al.*, 2020). With the increasing institutionalization of ESG, Institutional Theory explains how companies adopt these practices to conform to external pressures and meet the standardized expectations of regulators and global markets (Brammer *et al.*, 2012; DiMaggio *et al.*, 1983). Furthermore, Agency Theory posits that the integration of ESG factors can mitigate risks and better align the interests of managers with those of long-term shareholders, thereby reducing agency conflicts and contributing to sustainable financial performance (Gillan *et al.*, 2010; Harjoto *et al.*, 2015).

Collectively, these theoretical frameworks are interrelated and suggest that ESG integration serves as a strategic driver of financial architecture. Specifically, the reduction of risk and information asymmetry, as conceptualized by Signaling and Agency theories, is expected to lower the cost of debt. Concurrently, improved stakeholder relations and operational legitimacy, rooted in Stakeholder and Legitimacy theories, should enhance operational efficiency as reflected in the Return on Assets (ROA). Ultimately, the interaction between these operational gains and the optimization of the financial leverage effect determines the cumulative impact on Return on Equity (ROE), with the intensity of this relationship varying across distinct economic and institutional regions.

2.1. ESG and Financial Performance: An Integrated Perspective

Funded upon Stakeholder, Signaling, Legitimacy, Institutional, and Agency theories, an extensive body of empirical research has identified a positive correlation between ESG factors and financial performance. For instance, Friede *et al.* (2015) conducted a meta-analysis of over 2,000 studies, concluding that a significant positive relationship exists between ESG integration and corporate financial outcomes. Similarly, Eccles *et al.* (2014) demonstrated that firms with superior ESG performance consistently outperform their peers in long-term stock market returns. Furthermore, a comprehensive review of over 200 academic sources by Clark *et al.* (2015) revealed that approximately 80% of the literature confirms a positive association between corporate sustainability and financial metrics. Conversely, Krüger (2015) highlighted the risks of non-compliance, finding that negative ESG-related controversies exert a substantial adverse impact on both Return on Assets (ROA) and Return on Equity (ROE).

Nevertheless, the empirical evidence is not entirely uniform. Humphrey *et al.* (2012) analyzed a sample of Australian firms and found no conclusive evidence of ESG practices significantly impacting ROA or ROE. Similar non-significant results were reported by Galema *et al.* (2008) in their analysis of European companies. Furthermore, Hoepner *et al.* (2019) observed mixed outcomes in the United States, noting that while certain ESG dimensions bolstered financial performance, others remained statistically insignificant.

A high ESG combined score reflects a firm's robust performance across the environmental, social, and governance pillars. Consistent with prior research, ESG is viewed not merely as an ethical consideration but as a core component of strategic management and long-term value creation. This reinforces the principle that ESG factors are material to a company's financial success across multiple levels, directly impacting its strategic resilience and competitive positioning (Aguilera *et al.*, 2007; Eccles *et al.*, 2014; Friede *et al.*, 2015).

Although the prevailing literature suggests a positive ESG-performance nexus, the specific transmission mechanisms, particularly those operating through financial leverage, merit a more detailed investigation. The financial leverage effect captures the incremental return or loss generated for shareholders through debt financing. This is mathematically defined as the spread between ROA and the cost of debt, amplified by the leverage ratio. Under the premise that sustainability optimizes strategic management and value creation, we propose:

H1.1. ESG performance increases the return of assets (ROA)

Beyond operational efficiency (ROA), ESG performance influences how a firm finances its operations. Lassala *et al.* (2017) demonstrated that a positive ROA level is a necessary condition for leveraged companies to benefit financially from their sustainability profile. These criteria have become essential for investors and stakeholders who look beyond traditional financial metrics to assess long-term value and risk mitigation (United Nations Global Compact [UNGC], 2004). If ESG integration reduces a firm's risk profile, it should optimize its cost of capital. In fact, other lines of research have investigated how ESG affects the cost of debt, highlighting that firms with stronger ESG tend to experience reduced borrowing costs (Caragnano *et al.*, 2020; Ali *et al.*, 2023; Fandella *et al.*, 2023). To examine this mechanism, we propose the following sub-hypotheses:

H1.2. ESG performance increases financial leverage effect

H1.2.1. ESG performance decreases the cost of debt

H1.2.2. ESG performance increases companies' external debt capacity

In summary, the proposed hypotheses constitute a structured model that seeks to explain how ESG integration transcends being a mere reputational asset to become a fundamental driver of corporate profitability. By synthesizing Stakeholder and Signaling theories with the financial mechanics of the leverage effect, this study posits that ESG behavior acts on two fronts: first, by enhancing operational efficiency and asset productivity (ROA); and second, by optimizing the firm's financing conditions through reduced risk perception and lower cost of debt. The confluence of these factors, operational gains and a favorable financial spread, is expected to result in a superior Return on Equity (ROE) (Florez-Parra *et al.*, 2020). Thus, the last hypothesis is:

H1.3. ESG performance increases the return of equity (ROE)

2.2. The Moderating Role of Geographical Areas

The intensity of the relationships between ESG performance and financial profitability may be moderated by the specific institutional and economic contexts of the US, EU, Japan, and China. Consequently, market rewards and disclosure levels may vary significantly due to differing institutional settings (Eliwa *et al.*, 2021; Singhania *et al.*, 2024).

The European Union (EU) has implemented landmark initiatives such as the European Green Deal (European Commission, 2019) and the Sustainable Finance Disclosure Regulation (SFDR; European Union, 2019). These establish stringent requirements for companies to disclose ESG-related information, further bolstered by the Corporate Sustainability Reporting Directive (CSRD), effective as of January 2024 (European Commission, 2022). This comprehensive regulatory framework, which also includes the EU Taxonomy and the European Green Bond Standard (European Commission, 2023), has led to greater consistency and comparability in ESG scores across the region.

The United States (US) possesses a well-developed ESG ecosystem, featuring a wide range of data providers, rating agencies, and investors focused on sustainability factors. However, it lacks a unified federal ESG framework, resulting in a patchwork of state and industry-specific regulations. Nevertheless, many US companies voluntarily disclose ESG-related information and make public commitments, not due to legal mandates, but because investors and other stakeholders expect greater transparency and accountability (Malone *et al.*, 2023).

Research from both the US and the EU highlights a generally positive impact of ESG performance on financial outcomes. For instance, Pérez and Sevillano (2025) and Krüger (2015) found that companies with higher ESG scores tend to achieve improved ROE and ROA, driven by enhanced risk management and stronger stakeholder engagement. However, findings are not strictly uniform. Candio (2024), analysing the European healthcare sector, found no significant impact, while Hoepner *et al.* (2019) reported mixed results for US companies, suggesting that while some ESG factors positively influence ROA and ROE, others show no significant relationship.

In China, many studies focus on environmental issues driven by ambitious decarbonization goals and the implementation of a green credit policy since 2007 (Liu *et al.*, 2017). Notably, China emerged as a major issuer of green bonds in 2023 (Bloomberg, 2023). However, ESG progress in social and human rights dimensions remains comparatively weak and disparate across regions (United Nations Human Rights Office [UNHRO], 2022). The integration process is also hindered by inconsistent data and a lack of standardized metrics, with only 35% of firms consistently appearing in top-tier rankings (Zhu *et al.*, 2023). Nonetheless, Zhao *et al.* (2018) demonstrated that ESG scores positively influence ROA and ROE in listed power generation groups, and Chen *et al.* (2023) noted that this impact is particularly significant for large companies and high-risk industries.

Japan builds upon traditional cultural values of responsibility and community to drive ESG integration (Miyamoto & Nohara, 2023). In October 2020, Japan joined the EU in pledging to reach net-zero carbon emissions by 2050. However, in terms of social and governance metrics, Japanese companies have historically lagged behind their Western counterparts, particularly regarding diversity, board composition, and transparency (McKinsey Sustainability, 2021). Studies focused on Japanese firms reveal trends similar to other regions; Fujii *et al.* (2020) observed that firms adopting ESG practices report higher ROA and ROE due to operational efficiency and consumer trust, while Harada and Yamamoto (2021) found a significant positive relationship between ESG disclosure and profitability. Recently, the Financial Services Agency (FSA) implemented new rules in 2023, mandating sustainability disclosures in annual reports, aligned with the International Sustainability Standards Board (ISSB) standards (EY, 2023).

In summary, while there is a global trend toward ESG compliance, the transmission mechanisms to financial performance are dictated by regional institutional frameworks and business cultures (Friede, 2015). Hypothesis 2 addresses these geographical variances:

H2. The relationship between ESG performance and financial variables (ROA, Financial Leverage, Cost of Debt, Leverage Ratio, and ROE) is moderated by geographical area, reflecting the distinct institutional frameworks and market expectations.

3. RESEARCH METHODOLOGY

The dataset was extracted from the Refinitiv Eikon database, comprising publicly listed firms from the US, the EU, China, and Japan for the period 2017-2021. These regions were selected as the four most industrialized areas globally. To exclude small-sized enterprises, a minimum turnover of €40 million and a workforce of 250 employees were required. These criteria follow the thresholds defined by the EU Accounting Directive (Directive 2013/34/EU) for large undertakings. Applying these criteria serves a dual purpose: 1. It ensures that the firms have the institutional maturity required to provide financial and non-financial disclosures, thereby reducing the prevalence of missing data in the Refinitiv EIKON database. 2. It harmonizes the sample across jurisdictions, ensuring that the 'medium-to-large' firm category is economically equivalent across the four regions, which enhances the internal validity of the financial performance comparisons. The final sample comprises 4,275 firms, restricted to those with leverage ratios ranging from 0.5 to 3[1]. To minimize the impact of extreme outliers and potential data entry errors in the financial variables, all continuous dependent variables were winsorized at the 2nd and 98th percentiles. This procedure is standard in empirical corporate finance to prevent spurious results driven by extreme observations while preserving the underlying distribution of the data. By capping these outliers, we ensure that the estimated relationship between ESG performance and financial outcomes is robust and representative of the broader sample, leading to more conservative and reliable standard.

The model alternatively employs Return on Assets (*ROA*), financial leverage (*FinancialLeverage*), cost of debt (*CostofDebt*), leverage (*Lev*), and Return on Equity (*ROE*) as dependent variables. The primary independent variable is the ESG Combined Score (*ESGCombScore*), which is operationalized as a categorical variable with three levels: Level 0 serves as the control group, comprising firms not included in the ESG index; Level 1 includes companies within the index scoring between 0 and 50 (the minimum score of enterprises in ESG combined index is 0.66); and Level 2 consists of firms with scores exceeding 50 (the continuous score ranges from 0 to 100). Consistent with previous literature (Flórez-Parra *et al.*, 2020; Lassala *et al.*, 2017), we incorporate several control variables: the natural logarithm of full-time employees (*Employees*) as a proxy for firm size; the liquidity ratio (*LiquidityRatio*), representing a firm's ability to meet short-term obligations; the solvency ratio (*SolvencyRatio*) for long-term obligations; the cost of debt (*CostofDebt*) expressed as a percentage; and the leverage ratio (*LeverageRatio*).

The inclusion of Employees (Log) as a control variable addresses the potential size bias, accounting for the fact that larger corporations often possess greater resources for ESG implementation and disclosure. Furthermore, we include a set of financial control variables (*LiquidityRatio*, *SolvencyRatio*, *CostofDebt*, and *LeverageRatio*) to isolate the impact of the firm's financial risk and capital structure from its financial performance. This ensures that the observed relationship between ESG and financial outcomes is not confounded by the companies' underlying financial health or risk profile.

We employ a Linear Mixed-Effects (LME) model, also known as a multilevel model, to analyze the impact of ESG performance on corporate financial structures. This approach is superior to standard OLS regression because it accounts for the nested nature of the data where observations are grouped within firms, which are in turn grouped within sectors and geographic regions. By accounting for the variance caused by sectors, countries, and individual firm identities, we are forcing the Fixed Effects (the ESG scores) to prove their significance against a much tougher benchmark. To be able to verify a causal relationship (and not only a correlation) the independent variables have been lagged by one period. Table 1 shows the definition and characteristics of the variables included in the model:

$$ROA_{i,t}/FinancialLeverage_{i,t}/CostofDebt_{i,t}/Leverage_{i,t}/ROE_{i,t} \\ = \alpha+\beta_2 ESGCombScore_{i,t}-1+\beta_n Controls_{i,t-1}+\varepsilon_t+\varepsilon_z+\varepsilon_{zs}+\varepsilon_{zsi}+\varepsilon_r \qquad (1)$$

We first developed a global model encompassing all geographical regions, followed by four area-specific models that isolate each world region to compare the effects of ESG on financial performance. To address the inherent hierarchical structure of the data, where firms are nested within sectors and geographical areas (and within countries for the European subsample), we employ a multilevel mixed-effects model via the mixed command in Stata. This approach controls for unobserved heterogeneity caused by differences across groups, which might otherwise bias the estimates, and accounts for intra-group correlation. The model structure is illustrated in Figure 1.

[1] According to Altman's model, the leverage at which a company would be at risk is 1.6. If we take into account that according to our database the market value of equity is on average 1.9 times the value of book equity, we can assume leverage close to 3 as a risk threshold.

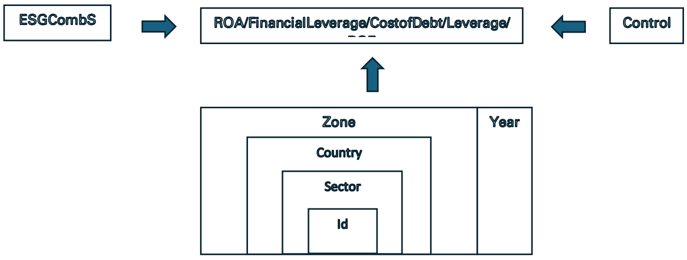

Figure 1
Diagram of the multilevel model
Source: Own elaboration.

In this framework, the model is decomposed into two parts. The random effects component separates the variation into within-group (individual) and between-group (cluster) levels. Consequently, the total error term is partitioned into five sources of volatility: ε_t, ε_z, ε_{zs}, ε_{zsi}, ε_r. For the global model: *Year (t)*, *Zone* or *Geographical area (Z)*, *Country* (only for UE) *(C)*, economic sector *(S)*, firm (*i*), and residual *(r)*. While firms are nested within Sectors and Geographical Zones, the Year (ε_t) is treated as a transversal factor. This specification is crucial as it allows the model to absorb time-specific shocks that affect the entire global market simultaneously. Consequently, latent macroeconomic variables such as global inflation, currency fluctuations, and international sectoral cycles are effectively controlled, ensuring that the coefficients for ESG performance represent the net impact on financial results, independent of the temporal economic climate.

The fixed-effects component of the model estimates the coefficients for the independent variables and controls for the specific observed characteristics that influence the outcome, as detailed in Table 1.

Table 1
Definitions and characteristics of the variables

DEPENDENT VARIABLES	
ROA	EBIT / Total Assets
FinancialLeverage	(*ROA – CostofDebt)* * (Total Liabilities/ Total Equity)
ROE	*ROA + FinancialLeverage*
INDEPENDENT VARIABLE	
ESGCombScore	Level variable: *Level 0 collects scores = 0 ;Level 1 collects scores > 0 and < = 50; Level 2 collects scores > 50.*
CONTINUOS CONTROL VARIABLES	
Employees	Natural logarithm of the total employees
LiquidityRatio	Total current assets / Total current liabilities
SolvencyRatio	Total assets / Total liabilities
CostofDebt	(Interest expense / Total liabilities) * 100
LeverageRatio	Total liabilities / Total equity

Source: Own elaboration.

4. EMPIRICAL RESULTS

Table 2 presents the descriptive statistics for the continuous variables. The results indicate that the mean *ROA* is 6%, while the average cost of debt stands at 3.53%. Furthermore, the mean *FinancialLeverage* is approximately 6%, and the *ESGCombScore* averages 34 points.

Table 2
Descriptives of continuous variables

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA (%)	13,321	6.03	10.14	–603.27	217.77
FinancialLeverage (%)	13,321	6.05	13.75	–672.08	298.54
ROE (%)	13,321	12.08	23.23	–1275.36	516.31
ESGCombScore$_{t-1}$	13,321	33.59	27.96	0.00	94.77
Employees$_{t-1}$ *(ln)*	13,221	8.39	1.54	5.52	14.65
LiquidityRatio$_{t-1}$	13,321	1.75	1.15	0.02	30.39
SolvencyRatio$_{t-1}$	13,321	1.87	0.41	1.33	3.00
CostofDebt$_{t-1}$ *(%)*	13,321	3.53	3.38	0.00	26.62
LeverageRatio$_{t-1}$	13,321	1.43	0.65	0.50	3.00

Source: Own elaboration.

Regarding the ESG variable, we opted for a level-based approach instead of a continuous one. This choice is driven by the need to include a control group consisting of firms without an ESG score. Table 3 summarizes the distribution of firms across ESG levels by geographical region. In the US, only 7.98% of the sampled listed companies do not participate in any sustainability ranking (Level 0). In contrast, non-participation rates are significantly higher in other regions: 47.73% in the EU, followed by 55.41% in China and 55.97% in Japan. Among participating firms, 62.32% of American companies are classified as Level 1 (a score equal to or less than 50 points), while 29.7% reach Level 2 (more than 50 points). Notable differences emerge when comparing these figures to the EU, where 21.57% and 30.7% of firms achieve Level 1 and 2, respectively. In the Asian markets, sustainability performance appears more polarized; only 19.54% of Chinese firms reach Level 2, whereas this figure increases to 25.87% for Japanese companies. The figure for China clearly indicates a small number of companies participating in international indices but, in addition, most companies are in level 1, meaning, on average, certain non-compliance with international standards, as indicated in the previous framework.

Table 3
Descriptive firms in each ESG Combined Score level by Country

ESGCombScore Level	US	%	EU	%	CHINA	%	JAPAN	%	Total
ESGCombScore 0	328,000	7.98	2,728	47.73	655,000	55.41	1,294	55.97	5,005
ESGCombScore 1	2,562	62.32	1,233	21.57	296,000	25.04	420,000	18.17	4,511
ESGCombScore 2	1,221	29.70	1,755	30.70	231,000	19.54	598,000	25.87	3,805
Total	4,111	100	5,716	100	1,182	100	2,312	100	13,321

Source: Own elaboration.

Table 4 shows the average ESG combined Score by geographical area and sector. The US has the best ranking with an average score of 41.89 points, followed by the EU, Japan and China with 33.34, 24.24 and 24.21 respectively.

Table 4
Descriptive statistics for the ESG Combined Score mean by Country

Sector/Zone	US	EU	CHINA	JAPAN	Mean Sector
Healthcare	43.10	45.20	34.89	35.04	42.62
Technology	41.24	32.12	32.93	33.79	35.80
Consumer Non-Cyclicals	41.81	28.61	33.78	26.45	31.34
Industrials	41.52	31.37	23.29	20.79	31.49
Utilities	50.55	40.73	30.78	26.57	41.59
Consumer Cyclicals	39.70	28.83	22.40	21.60	29.91
Basic Materials	45.45	37.85	13.37	23.55	34.20
Energy	38.84	42.37	21.21	23.05	37.38
Real Estate	49.76	42.80	18.79	22.79	31.11
Academic & Education	32.19	32.97	17.03	69.01	27.13
Mean by Country	41.89	33.34	24.21	24.24	

Source: Own elaboration.

The correlation matrix reveals a strong correlation among the performance metrics, namely *ROA*, *FinancialLeverage*, and *ROE*; consequently, these variables will be analyzed in separate models. As hypothesized, the *ESGCombScore* exhibits a positive correlation with all three profitability ratios. Furthermore, firm size is positively associated with these financial indicators, whereas the cost of debt demonstrates a significant negative correlation with them.

We also observe the strong correlation between the solvency and leverage ratio; thus, we will avoid introducing them in the same equation to avoid multicollinearity. Nevertheless, the correlations between the rest of independent variables are mostly weak and all VIF values are below 4, indicating that our sample does not suffer from multicollinearity problems.

Table 5
Correlation matrix

	1	2	3	4	5	6	7	8	9
1- ROA	1								
2- FinancialLeverage	0.9028	1							
3- ROE	0.9684	0.9815	1						
4- ESGCombScore $_{t-1}$	0.1003	0.1200	0.1142	1					
5- Employees $_{t-1}$	0.0813	0.1449	0.1202	0.5299	1				
6- LiquidityRatio $_{t-1}$	−0.0180	−0.0930	−0.0620	−0.0020	−0.159	1			
7- SolvencyRatio $_{t-1}$	0.0253	−0.1360	−0.0680	−0.0790	−0.142	0.2996	1		
8- CostofDebt $_{t-1}$	−0.0690	−0.1550	−0.121	0.0429	−0.116	0.0764	−0.110	1	
9- LeverageRatio $_{t-1}$	−0.0240	0.0590	0.0236	0.0137	0.056	−0.1130	−0.414	0.1088	1

Source: Own elaboration.

Table 6 presents the results of Equation (1) concerning ROA. The findings indicate that the Global model shows increase in ROA of 0.73% when ESGCombScore moves from level 0 to level 1, and 1.49% for level 2. US outperforms other regions in terms of ESG engagement. Specifically, Level 1 and Level 2 of the combined ESG ranking correspond to ROA improvements of 2.45% and 3.39%, respectively. In contrast, the EU shows more modest increases of approximately 1% (Level 1) and 1.78% (Level 2). For China and Japan, Level 1 improvements reach around 2% and 1%, while Level 2 gains are lower at 1.13% and 0.83%. These results confirm Hypothesis 1.1 for US and EU, while only partially for China and Japan, revealing significant regional divergences as suggested in Hypothesis 2.

Regarding Random Effects, the σ values show how much of the unexplained variance is located at each specific level of the data structure: σ1 (Year) is relatively low, suggesting that the "year" itself doesn't cause massive swings in the results compared to other factors. σ2 (Zone or Country) does not exist for the US, China, and Japan, because they are treated as single-country entities in those columns. However, for the EU (1.545), it shows significant differences between member states. σ3 (Zone or Country/Sector) is highly significant in the Global and the US models. This means that the industry which a company belongs to (e.g., Tech vs. Energy) heavily influences the outcome. σ4 (Zone or Country/Sector/id) is the most significant component in almost every column (e.g., 10.34 in the US). This indicates "firm-level heterogeneity", meaning there are unique characteristics of individual companies not captured by other control variables that strongly impact the results.

Table 6
The impact of ESG Combined score on ROA. Multilevel model

	GLOBAL	US	EU	CHINA	JAPAN
Fixed effects					
ESGCombScore 1 $_{t-1}$	0.73000***	2.45600***	1.00200**	1.986000***	0.93800***
	(0.265)	(0.584)	(0.455)	(0.663)	(0.269)
ESGCombScore 2 $_{t-1}$	1.48700***	3.39100***	1.78500***	1.131000*	0.83700***
	(0.316)	(0.669)	(0.518)	(0.645)	(0.308)
Control variables					
Employees $_{t-1}$	0.58800***	1.78000***	0.10100	0.263000	−0.23000*
	(0.097)	(0.181)	(0.153)	(0.268)	(0.12)
LiquidityRatio $_{t-1}$	−0.28400***	−0.43200***	0.40700**	−0.506000**	0.54400***
	(0.0908)	(0.111)	(0.188)	(0.209)	(0.131)
CostofDebt $_{t-1}$	−0.25400***	0.11600	−0.60500***	−0.360000*	−0.52500**
	(0.0705)	(0.0866)	(0.141)	(0.198)	(0.247)
LeverageRatio $_{t-1}$	0.00212	0.00789	0.00164	0.000531	−0.00623
	(0.00908)	(0.0483)	(0.0117)	(0.0536)	(0.047)
Constant	0.86600	−11.96000***	5.21600***	4.210000*	6.41800***
	(0.953)	(1.825)	(1.363)	(2.449)	(1.138)
Random effects					
σ1 (Year)	0.65100	0.85300	0.70800	0.442000	0.64400
σ2 (Zone or Country)	0.24600	—	1.54500	—	0.00000
σ3 (Zone or Country/Sector)	1.79100***	2.56500***	1.51400	1.340000	0.50300
σ4 (Zone or Country/Sector/Id)	7.51600***	10.34000***	6.67900***	6.278000***	2.78700***
σ5 (Residual)	7.19900***	5.25400***	9.67000***	4.297000***	2.07300***
N	13321	4111	5716	1182	2312
R^2_{GLMM} Conditional	0.55	0.82	0.35	0.7	0.67
ICC	0.53	0.8	0.34	0.69	0.66
LR test vs. linear model Prob> X2	0	0	0	0	0
Tier (Zone-Country/Sector/Id)	4/40/4275	–/10/1417	27/182/1842	–/10/379	–/10/637

Note: Standard errors are shown in parenthesis below the parameters. ***, **, and * are below the 1%, 5% and 10% statistical significance thresholds, respectively.

Source: Own elaboration.

Table 7 shows the spread over the return on assets, *FinancialLeverage* (Equation (1)), which firms achieve through borrowing. To mitigate endogeneity concerns, controls for *CostofDebt* and *Leverage* were excluded, given their accounting identity with the financial leverage variable. This specification allows for the inclusion of the *SolvencyRatio* in this second model, an addition that was previously omitted due to its strong correlation with the leverage ratio.

When the average cost of debt is lower than the return on assets (*ROA* > *CostofDebt*), shareholders earn an additional return through the leverage effect. The result in the Global model shows a positively effect in the leverage effect when ESGCombScore increases (0.745 for level 1 and 1.73 for level 2). As in the previous model, US exhibits the most substantial impact of ESG engagement on this spread among the developed regions, with an average increase of 5.63% for Level 2 of the ESGCombScore. This is followed by the EU at 2.1% and Japan with an increase of approximately 0.76% for the same level. In contrast, for China, the combined ESG score is only significant at Level 1, showing a 1.9% increase.

These findings provide support for Hypothesis 1.2 for the Global model, US and EU, but at the same time, the results in Table 7 continue to demonstrate significant heterogeneity in ESG coefficients across regions (where the impact of ESG on the *FinancialLeverage* is not significant for levels 2 in China and does not exceed the previous level for Japan), as proposed in Hypothesis 2.

Similarly to the ROA results, the global model for *FinancialLeverage* is highly influenced by clustering at the Zone or Country/Sector/Id, σ4 level. However, the Country/Sector cluster, σ3 level, is only significant within the US subsample, whereas the Zone or Country cluster, σ2, loses significance in both the European and global models. This may be attributed to common trends and shared regulatory frameworks, such as those within the Eurozone.

Table 7
The impact of ESG Combined score on *FinancialLeverage*. Multilevel model

	GLOBAL	US	EU	CHINA	JAPAN
Fixed effects					
ESGCombScore 1 $_{t-1}$	0.745**	4.579***	1.073*	1.9100**	0.906**
	(0.353)	(0.891)	(0.568)	(0.824)	(0.41)
ESGCombScore 2 $_{t-1}$	1.735***	5.635***	2.107***	1.359	0.760*
	(0.421)	(1.023)	(0.65)	(0.923)	(0.469)
Control variables					
Employees $_{t-1}$	1.195***	2.759***	0.448**	0.498	−0.291
	(0.132)	(0.265)	(0.195)	(0.321)	(0.182)
LiquidityRatio $_{t-1}$	−0.506***	−0.627***	0.262	−1.0420***	0.612***
	(0.126)	(0.172)	(0.254)	(0.36)	(0.222)
SolvencyRatio $_{t-1}$	−0.988***	−0.505***	−2.537***	0.599	−2.983***
	(0.167)	(0.192)	(0.455)	(0.426)	(0.333)
Constant	−2.548*	−20.910***	6.990***	−0.0991	13.130***
	(1.389)	(2.658)	(1.911)	(2.877)	(1.823)
Random effects					
σ1 (Year)	0.924	1.107	1.073	0.587	1.029
σ2 (Zon or Country)	0.795	—	1.551	—	—
σ3 (Zon or Country /Sector)	2.482***	3.490***	1.66	1.023	1.115
σ4 (Zon or Country /Sector/Id)	10.402***	14.354***	8.855***	7.471***	4.011***
σ5 (Residual)	9.365***	8.373***	11.894***	5.523***	3.327***
N	13321	4111	5716	1182	2312
R^2_{GLMM} Conditional	0.58	0.78	0.39	0.66	0.64
ICC	0.56	0.75	0.37	0.65	0.62
LR test vs. linear model Prob> X2	0	0	0	0	0
Tier (Zone-Country/Sector/Id)	4/40/4275	–/10/1417	27/182/1842	–/10/379	–/10/637

Note: Standard errors are shown in parenthesis below the parameters. ***, **, and * are below the 1%, 5% and 10% statistical significance thresholds, respectively.

Source: Own elaboration.

Table 8 delves into the factors driving the financial leverage effect, calculated as (ROA - Ki) *Leverage Ratio. Specifically, it examines the impact of the sustainability score on both the cost of debt and the leverage ratio. The empirical results indicate a robust and statistically significant negative relationship between ESG performance and the Cost of Debt. Lenders are incentivized to offer reduced interest rates to companies with superior ESG performance. The fixed effects for the ESG Combined Score (levels 1 and 2) demonstrate that higher sustainability ratings consistently lead to a reduction in financing costs across almost all jurisdictions. Lenders are incentivized to offer reduced interest rates to companies with superior ESG performance. This effect is particularly pronounced in the US and EU markets, where the coefficients for *ESGCombScore* Level 2 (−0.64 and −0.45, respectively) suggest that credit markets actively price in ESG-related risk mitigation, rewarding firms with superior non-financial performance through lower risk premiums.

Regarding capital structure, the impact of ESG indicators on *Leverage* exhibits notable regional heterogeneity, as captured by the multilevel framework. While the fixed effects for the EU show a marginal positive correlation (0.02), the results for China indicate a significant negative influence (−0.07), highlighting how institutional contexts shape corporate financing decisions differently.

In summary, the empirical evidence suggests a regional asymmetry in the efficiency of capital markets. In the US and the EU, a clear transmission mechanism exists where sustainability (ESG) is priced into the cost of debt, indicating an advanced stage of financial resource allocation that rewards non-financial risk mitigation. While the US shows the strongest sensitivity in pricing (Hypothesis 1.2.1), the EU demonstrates a unique balance where sustainable firms enjoy both lower costs and stable access to leverage (Hypothesis 1.2.2). In contrast, markets in China and Japan show a lack of statistical significance for ESG in debt pricing, suggesting a more rigid allocation system, therefore, their financial systems have yet to fully align capital allocation with sustainability performance.

Table 8

The impact of ESG Combined score on Cost of Debt and Leverage. Multilevel model

	COST OF DEBT					LEVERAGE RATIO				
	GLOBAL	**US**	**EU**	**CHINA**	**JAPAN**	**GLOBAL**	**US**	**EU**	**CHINA**	**JAPAN**
Fixed effects										
ESGCombScore 1 $_{t-1}$	−0.1310*	−0.4530**	−0.2130**	−0.0711	−0.0326	0.01240	−0.02940	0.0214*	−0.07580**	−0.01990
	(0.0732)	(0.212)	(0.104)	(0.203)	(0.106)	(0.00913)	(0.025)	(0.0122)	(0.0329)	(0.0242)
ESGCombScore 2 $_{t-1}$	−0.3340***	−0.6470***	−0.4510***	−0.1470	−0.1930	0.01500	−0.02160	0.0196	−0.07990**	−0.00033
	(0.0884)	(0.244)	(0.127)	(0.229)	(0.123)	(0.0111)	(0.0286)	(0.0151)	(0.0365)	(0.0282)
Control variables										
Employees $_{t-1}$	−0.1770***	−0.4780***	−0.0334	−0.0229	0.0994*	0.01510***	0.02060***	0.0191***	−0.03980***	0.01270
	(0.0307)	(0.059)	(0.0452)	(0.0812)	(0.0579)	(0.00431)	(0.00765)	(0.00579)	(0.0153)	(0.0133)
LiquidityRatio $_{t-1}$	0.0218	−0.0561	0.2260***	−0.2340***	0.0562	−0.00081	0.00879*	0.0126**	−0.00382	0.00567
	(0.0265)	(0.0407)	(0.052)	(0.0886)	(0.0559)	(0.00338)	(0.0048)	(0.0063)	(0.0142)	(0.013)
SolvencyRatio $_{t-1}$	0.1480***	0.1160**	−0.0153	0.2980***	0.2710***	−0.08130***	−0.04670***	−0.2120***	−0.09460***	−0.31300***
	(0.0339)	(0.047)	(0.0904)	(0.104)	(0.083)	(0.0042)	(0.00532)	(0.0109)	(0.0164)	(0.0192)
Constant	4.7230***	9.2140***	3.6850***	4.2340***	−0.2720	0.72500***	0.68100***	0.9270***	1.24400***	1.16000***
	(0.761)	(0.547)	(0.491)	(0.755)	(0.546)	(0.053)	(0.0861)	(0.0586)	(0.145)	(0.157)
Random effects										
σ1 (Year)	0.2890***	0.2620***	0.3550***	0.3270***	0.1050***	0.03000***	0.02200***	0.0490***	0	0.02600***
σ2 (Zon or Country)	1.3840	—	0.975	—	—	0	—	0.0500***	—	—
σ3 (Zon or Country/Sector)	0.3780***	0.3050*	0.4510*	0.4670**	0	0.20600***	0.16200***	0.1120***	0.15800***	0.29700***
σ4 (Zon or Country/Sector/Id)	2.6890***	3.0650***	2.5700***	1.8870***	1.6970***	0.40000***	0.42300***	0.3420***	0.39200***	0.36500***
σ5 (Residual)	1.7810***	2.1020***	1.9310***	1.3280***	0.6260***	0.21100***	0.22900***	0.2220***	0.19300***	0.14500***
N	13321	4111	5716	1182	2312	13321	4111	5716	1182	2312
R^2_{GLMM} Conditional	0.75	0.7	0.68	0.69	0.89	0.82	0.8	0.75	0.84	0.92
ICC	0.74	0.68	0.67	0.68	0.88	0.81	0.79	0.73	0.82	0.91
LR test vs. linear model Prob> X2	0	0	0	0	0	0	0	0	0	0
Tier (Zone-Country/Sec/Id)	4/40/4275	–/10/1417	27/182/1842	–/10/379	–/10/637	4/40/4275	–/10/1417	27/182/1842	–/10/379	–/10/637

Note: Standard errors are shown in parenthesis below the parameters. ***, **, and * are below the 1%, 5% and 10% statistical significance thresholds, respectively.

Source: Own elaboration.

The variability in the CostofDebt and LeverageRatio models is also strongly influenced by the clusters: Country/Sector and Country/Sector/Id. Nevertheless, Zone or Country is not significant for the *CostofDebt*, evidencing that financial harmonization is leading to a convergence in the price of money; however, it has not yet homogenized leverage ratios (*LeverageRatio*), neither in the Global mode nor in the European one.

Table 9 displays the outcomes of Equation (1) for ROE. The findings are consistent with the patterns previously identified. Consequently, the Global model shows increments in ROE when ESG increases (1.469% for level 1 and 3.246% for level 2). The US continues to exhibit the greatest impact of ESG scores on ROE, with increases of 7.01% for Level 1 and 8.98% for Level 2. This is followed by the EU and China, which show Level 1 gains of 2.09% and 3.97%, and Level 2 increases of 3.92% and 2.58%, respectively. In contrast, the impact of corporate ESG strategies on ROE is more modest in Japan. Thus, results consistently indicate a general trend of increases in ROE values when ESG increases, confirming Hypothesis 1.3 for the Global model, US and EU, finding only partial support for China and Japan, where coefficients for level 2 are lower than the previous level. This leads to significant heterogeneity in the impact of ESG across regions, consistent with previous models and Hypothesis 2, using regions as a hierarchical variable within a multilevel modeling framework.

Table 9
The impact of ESG Combined score on *ROE*. Multilevel model

	GLOBAL	US	EU	CHINA	JAPAN
Fixed effects					
ESGCombScore 1 $_{t-1}$	1.469**	7.018***	2.096**	3.970***	1.834***
	(0.602)	(1.42)	(1.004)	(1.418)	(0.653)
ESGCombScore 2 $_{t-1}$	3.246***	8.987***	3.924***	2.588*	1.577**
	(0.718)	(1.628)	(1.145)	(1.593)	(0.748)
Control variables					
Employees $_{t-1}$	1.794***	4.442***	0.584*	0.838	–0.514*
	(0.223)	(0.433)	(0.341)	(0.561)	(0.292)
LiquidityRatio $_{t-1}$	–0.753***	–1.024***	0.697	–1.906***	1.022***
	(0.214)	(0.273)	(0.446)	(0.619)	(0.353)
SolvencyRatio $_{t-1}$	–1.170***	–0.747**	–2.469***	1.230*	–2.390***
	(0.285)	(0.303)	(0.8)	(0.73)	(0.529)
Constant	–1.875	–31.34***	10.850***	1.983	18.330***
	(2.317)	(4.407)	(3.356)	(5.047)	(2.915)
Random effects					
σ1 (Year)	1.587	1.954*	1.800	1.066	1.665
σ2 (Zon or Country)	1.096	—	3.096**	—	—
σ3 (Zon or Country/Sector)	4.216***	6.050***	3.261***	2.044	1.547
σ4 (Zon or Country/Sector/Id)	17.357***	23.951***	15.105***	13.197***	6.580***
σ5 (Residual)	16.151***	13.053***	21.200***	9.346***	5.176***
N	13321	4111	5716	1182	2312
R^2_{GLMM} Conditional	0.57	0.8	0.37	0.68	0.65
ICC	0.55	0.78	0.35	0.67	0.64
LR test vs. linear model Prob> X2	0	0	0	0	0
Tier (Zone-Country/Sector/Id)	4/40/4275	–/10/1417	27/182/1842	–/10/379	-/10/637

Note: Standard errors are shown in parenthesis below the parameters. ***, **, and * are below the 1%, 5% and 10% statistical significance thresholds, respectively.

Source: Own elaboration.

Lastly, Table 10 presents the moderating role of the regional variable across the financial indicators discussed above. The analysis of the financial metrics in Table 10 reveals that ESG performance levels 1 and 2 in EE. UU. (the baseline) exert a substantial positive influence on profitability and leverage capacity. In line with previous studies, transitioning to the first level of ESG performance (ESGCombScore 1) yields an increase of 4.282% in ROA and 10.84% in ROE, while the second level further elevates these metrics to 6.586% and 16.17% respectively. However, the interaction coefficients for the European Union, China, and Japan indicate a significant moderating effect that attenuates these returns. The increment to ROA for firms in the European Union at level one is only 0.540% (calculated as the 4.282 base minus the 3.742 interaction), while in level 2 we can observe a moderate increment of 0.642% (6.586-5.914). These distances between EEUU and the rest of zones are more prominent in ROE, where the experimented increment for EU in level 1 is only 0.88% (10.84-9.96) and a modest 1.29% for level 2 (16.17-14.88). In this line, China achieves an increment of 3% in level 1 (10.84-7.84) but decreases to 2% in level 2 (16.17-14.17) and Japan shows no improvement in ROE as ESG levels increase. Nevertheless, it is important to consider the country effect, where the EU present the highest coefficient (+14.98) followed by Japan (+11.71) and China (+9.58), suggesting different structural circumstances. In this way, in the EU ESG is a legal obligation, since all companies comply, it no longer serves to generate excess returns; profitability is instead driven by the country effect.

Similarly, the robust expansion in financial leverage seen in the United States at level one (6.522%) is essentially neutralized in Japan, where the interaction term of −7.213 results in a marginal decrease of 0.691%, suggesting that regional market dynamics significantly constrain the capital expansion advantages associated with sustainability. Regarding debt obligations, the United States baseline experiences a pronounced decrease in the Cost of Debt, with level one achieving a reduction of 0.655% and level two reaching 0.974%. These risk mitigation benefits are considerably diluted or even reversed in other geographical contexts. In China, the net reduction in the cost of debt for level one is nearly negligible at 0.011%, while in Japan, the interaction coefficient of 0.902 is so high that it leads to a net increase in debt costs of 0.247%. Furthermore, the baseline reduction in the Leverage Ratio observed in the United States (0.0474 at level one) is countered by positive interaction terms in the European Union, resulting in a net increase of 0.0367 for level one and 0.0423 for level two. These disparities across all five financial indicators underscore that while the primary effect of ESG performance is globally significant, the magnitude and direction of its impact are heavily contingent upon the regional environment, with the United States consistently realizing the most favorable financial outcomes across both ESG levels analyzed. The preceding findings validate Hypothesis 2 by using regions as a moderating variable to assess the impact of ESG performance across the different geographic zones.

Table 10
Moderating role of the regional variable in financial performance metrics. Multilevel models

	ROA	Financial Leverage	Cost of Debt	Leverage Ratio	ROE
Fixed effects					
ESGSCombScore 1 $_{t-1}$	4.28200***	6.522***	−0.6550***	−0.047400**	10.84***
	(0.634)	(0.842)	(0.178)	(0.0229)	(1.436)
ESGSCombScore 2 $_{t-1}$	6.58600***	9.494***	−0.9740***	−0.052400**	16.17***
	(0.71)	(0.944)	(0.2)	(0.0256)	(1.609)
Control variables					
Employees $_{t-1}$	0.58800***	1.196***	−0.1850***	0.015300***	1.793***
	(0.098)	(0.133)	(0.0308)	(0.00434)	(0.224)
LiquidityRatio $_{t-1}$	−0.31700***	−0.564***	0.0259	0.000489	−0.853***
	(0.0909)	(0.126)	(0.0265)	(0.00338)	(0.214)
CostofDebt $_{t-1}$	−0.23600***				
	(0.0711)				
LeverageRatio $_{t-1}$	0.00341				
	(0.00909)				
SolvencyRatio $_{t-1}$		−0.932***	0.1390***	−0.082000***	−1.078***
		(0.167)	(0.0339)	(0.00421)	(0.285)
Zone EU	5.66000***	9.070***	−1.9250***	−0.109000***	14.980***
	(0.66)	(0.875)	(0.192)	(0.0257)	(1.489)
Zon China	4.09400***	5.376***	−1.2330***	−0.079500**	9.585***
	(0.846)	(1.135)	(0.257)	(0.0355)	(1.924)
Zon Japan	3.86300***	7.371***	−4.3560***	−0.183000***	11.710***
	(0.767)	(1.012)	(0.228)	(0.0313)	(1.716)
ESGSCombScore 1 $_{t-1}$**Zone EU*	−3.74200***	−6.191***	0.5410***	0.084100***	−9.966***
	(0.713)	(0.946)	(0.198)	(0.0251)	(1.614)
ESGSCombScore 1 $_{t-1}$**Zone China*	−2.74600**	−5.146***	0.6440**	−0.068400*	−7.846***
	(1.074)	(1.433)	(0.308)	(0.0399)	(2.44)
ESGSCombScore 1 $_{t-1}$**Zone Japan*	−4.25900***	−7.213***	0.9020***	0.036500	−11.510***
	(0.965)	(1.288)	(0.279)	(0.0366)	(2.191)
ESGSCombScore 2 $_{t-1}$**Zone EU*	−5.91400***	−8.888***	0.6340***	0.094700***	−14.880***
	(0.781)	(1.039)	(0.22)	(0.0282)	(1.771)
ESGSCombScore 2 $_{t-1}$**Zone China*	−5.67700***	−8.517***	0.9350***	−0.089700**	−14.170***
	(1.179)	(1.573)	(0.339)	(0.044)	(2.676)

	ROA	Financial Leverage	Cost of Debt	Leverage Ratio	ROE
*ESGSCombScore 2 $_{t-1}$*Zone Japan*	−6.92500***	−10.980***	1.2560***	0.062600	−18.030***
	(1.002)	(1.343)	(0.298)	(0.0397)	(2.278)
Constant	−3.21700***	−9.478***	6.7390***	0.832000***	−13.420***
	(1.184)	(1.536)	(0.37)	(0.0656)	(2.604)
Random effects					
σ1 (Year)	0.65800	0.920	0.2730***	0.030000***	1.589
σ3 (Sector/Id)	1.18500	1.679**	0.4720***	0.149000***	2.812***
σ4 (Id)	7.57600***	10.433***	2.6780***	0.405000***	17.444***
σ5 (Residual)	7.19900***	9.365***	1.7810***	0.211000***	16.151***
N	13321	13321	13321	13321	13321
R2GLMM Conditional	0.54	0.58	0.74	0.81	0.56
ICC	0.53	0.56	0.7	0.8	0.54
LR test vs. linear model Prob> X2	0	0	0	0	0
Tier (Sector/Id)	10/4275	10/4275	10/4275	10/4275	10/4275

Note: Standard errors are shown in parenthesis below the parameters. ***, **, and * are below the 1%, 5% and 10% statistical significance thresholds, respectively.

Source: Own elaboration.

In the aforementioned tables, the validity of this multilevel approach is confirmed by two key metrics: firstly, the p-value of the likelihood Ratio LR Test is 0.000 across all models indicating that the multilevel structure is statistically necessary and provides a significantly better fit than a simple linear model. Second, the high intraclass Correlation Coefficient (ICC) (ranging from 0.53 to 0.91) demonstrates that a substantial portion of the total variance in financial outcomes is explained by the grouping levels.

5. DISCUSSION

Overall, the empirical results substantiate Stakeholder Theory (Gao & Wan, 2023; Melo & Garrido-Morgado, 2012) and Signaling Theory (Flammer, 2013). They demonstrate that corporate ESG investments, alongside their disclosure through indices and formal reporting, are perceived favorably by key market participants, including customers, suppliers, and the general public. This positive reception facilitates the efficient execution of ESG strategies, which yield superior profitability compared to conventional, non-sustainable alternatives. Specifically, the findings reveal a global ROA improvement of 1.487% for companies within the Level 2 ESG combined index relative to the control group of non-indexed firms.

These perspectives are further supported by Legitimacy Theory (Suchman, 1995; Zhang *et al.*, 2020) and Agency Theory (Harjoto *et al.*, 2015). These frameworks suggest that ESG commitments bolster management credibility, thereby mitigating financial risk and reducing the cost of borrowing (Phan *et al.*, 2022). In this context, the results indicate a global enhancement in financial leverage of 1.735% for the Level 2 ESG combined index, which ultimately drives a 3.246% increment in ROE.

This study establishes a distinct positive correlation between regional average ESG scores and improvements in key performance indicators, specifically ROA, financial leverage, and ROE. However, the nexus between ESG behavior and financial performance remains multifaceted and exhibits significant regional variation. Drawing upon Institutional Theory (Aguilera *et al.*, 2007; Brammer *et al.*, 2012), these findings suggest that heterogeneous regulatory frameworks may result in divergent outcomes. Furthermore, cultural dimensions, market maturity, and prevailing economic or monetary policies act as pivotal determinants of these regional effects (Eliwa *et al.*, 2021).

U.S. firms achieve the highest scores in the ESG index and, consequently, present strong ESG performance, with a mean increase in ROA of 3.391%, while the EU achieves an increase of 1.785%. In contrast, China and Japan hold modest positions in the index, and the proportion of enterprises with ESG scores remains low compared to the US and the EU. Consequently, the impact of ESG on ROA is a modest 1.131% and 0.837%, respectively (table 6). Furthermore, the empirical findings reveal a significant regional gap in capital market efficiency regarding sustainability. While a robust transmission mechanism exists in the United States and the European Union, where ESG performance translates directly into a lower cost of debt, markets in China and Japan exhibit weaker ESG transmission power (table 8). This asymmetry suggests that, despite China's ambitious decarbonization goals, its implementation of a green credit policy since 2007 (Li *et al.*, 2022; Liu *et al.*, 2017), and the efforts of Japanese companies (Miyamoto & Nohara, 2023), Asian systems maintain more rigid capital allocation structures that have yet to fully integrate sustainability metrics into credit valuation.

Consequently, US firms attain the highest scores within the ESG index and exhibit robust performance in table 9, characterized by a mean ROE increase of 8.98% for enterprises scoring above 50 points in the Combined ESG Index (Level 2). The European Union follows this trend, reporting a more moderate average improvement of 3.92% at the same level. While both regions exert significant influence on sustainability markets, they operate under distinct institutional frameworks. This fact is notably observed across the interactions model presented in table 10. The US is the most efficient at converting sustainability efforts into ROA and ROE, probably because prioritizes corporate initiatives grounded in Stakeholder Theory (Freeman, 2010), whereas the EU has implemented stringent mandates such as the Corporate Sustainability Reporting Directive (European Commission, 2022) and the European Green Deal (European Commission, 2019). Therefore, the impact of sustainability on profitability is captured by the country level more than by sustainability firms' actions. Accordingly, the European model is more fundamentally rooted in Institutional Theory (González *et al.*, 2026).

In contrast, in Table 9, China demonstrates more attenuated ROE outcomes, with a 2.58% increase for Level 2. Japan exhibits average ESG scores comparable to those of China, resulting in a relative ROE impact of 1.577% at Level 2. Regarding China, results in Tables 9 and 10 show that the first level of ESG provides a higher increment in ROE than the second level. These results could be explained by transparency gaps in reporting requirements, complex institutional factors, and restricted access for international investors to domestic public markets (Zhu *et al.*, 2023). Nevertheless, concurrently, ESG practices in China are undergoing rapid evolution; notably, the three major domestic stock exchanges have issued official guidelines for sustainability reporting among listed companies (United Nations Environment Programme [UNEP], 2025). For its part, Japan is frequently perceived as lagging behind its European counterparts regarding ESG initiatives (EY, 2023); however, its burgeoning focus on corporate sustainability and transparency has recently bolstered key metrics. Therefore, future research could reveal improvements in this comparison.

An important conclusion regarding the interaction of table 10 is that the market rewards ESG in inverse proportion to the region's regulatory maturity. In the US, where ESG regulation is less stringent, the market provides higher premiums; conversely, in the highly regulated EU, the market no longer offers additional rewards, while China and Japan also present important limitations.

Regarding the random effects of the model, while ROA shows substantial variation across geographic areas, these disparities are attenuated in the financial leverage models. However, significant differences persist across sectors and within individual firm-level effects. The sector cluster proves especially persistent in the US, as capital structure strategies are more heavily shaped by sectoral norms and specialized pressure groups than by centralized national policies. In contrast, financial harmonization in the EU is leading to a convergence in the interest rate levels. Nevertheless, ROE in the EU maintains significant differences across both countries and sectors.

6. CONCLUSIONS AND LIMITATIONS

Despite the robustness of the multilevel structure employed (Zone/Sector/Id), this study faces certain limitations regarding the underlying institutional drivers. Specifically, the model does not explicitly control for varying degrees of state interventionism or the differing market orientations, such as bank-based versus market-based systems, across the geographical areas studied. Consequently, the observed cluster effects might be partially influenced by these unobserved institutional characteristics, which could explain why certain sectors or zones exhibit greater persistence than others.

This paper contributes to the growing discourse by analyzing the interplay between ESG performance and financial performance across the four leading economic regions, highlighting both convergent trends and regional disparities. While regions like the US, EU, and Asia follow different rules, they are all heading in the same direction: sustainability leads to better financial health. As global standards improve, the link between ESG and profit will only get stronger, making it a key strategy for any company that wants to thrive in the long run.

Future lines of research should delve deeper into the interplay between institutional frameworks and sustainable finance. It would be of great interest to incorporate macro-level indicators, such as state-ownership prevalence or indices of economic freedom, to determine the extent to which market orientation influences the effectiveness of ESG strategies. Furthermore, an analysis of the relative weight of specific sectors within national economies could clarify whether sectoral persistence is driven by industry-specific lobbying or by broader national economic policies. Other lines of research could also introduce variables that capture the stringency of public ESG policies by geographic area, to analyze their causal effect on firms' initiatives and their ultimate impact on corporate performance.

The geographic areas of this study are the most developed and influential regions in the world. Therefore, analyzing their future trends in ESG development advances is of central relevance. China and Japan are moving towards data standardization and comprehensive adoption of ESG practices, so future research could verify if ESG advances are internationally converging, as well as their subsequent impact on financial variables.

Understanding the role of ESG in enhancing ROA and ROE is essential not only for investors and corporate decision-makers but also for policymakers seeking to foster sustainable economic growth. As global markets increasingly embed sustainability principles into their core operations, identifying the financial advantages of ESG performance offers a compelling argument for its adoption across diverse geographic regions.

A significant methodological limitation of this study is the potential presence of endogeneity, specifically regarding reverse causality between ESG initiatives and financial performance. While the multilevel structure effectively accounts for hierarchical variance, it may not fully address the dynamic nature of corporate profitability. To address this concern, we have retarded one period the independent variables. Nevertheless, future research could employ the Generalized Method of Moments (GMM) estimator to mitigate these concerns. By utilizing a dynamic panel data approach with internal instruments, such as lagged values of the regressors, the GMM framework would better control for unobserved firm-level heterogeneity and simultaneity bias, thereby providing more robust evidence of the causal mechanisms at play.

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8. AUTHORSHIP

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Narcissism at the Helm: The Environmental Consequences of Grandiose and Vulnerable Narcissism of CEOS

Narcisismo al Timón: Las Consecuencias Medioambientales del Narcisismo Grandioso y Vulnerable de los CEOS

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ABSTRACT

Nowadays, nothing is more critical for business than dealing with environmental degradation. Drawing upon the Upper Echelon Theory, this study delves into the nuanced influence of CEO narcissism on corporate environmental performance. Unlike previous research that treats narcissism as a single construct, this work distinguishes between its two primary dimensions: grandiose and vulnerable narcissism. Based on a sample of 214 observations of Spanish firms over the period 2015-2020, the research findings reveal a divergent impact. On the one hand, the results show stronger corporate environmental performance when CEOs predominantly exhibit traits of grandiose narcissism, likely driven by a desire for visibility and social recognition. On the other hand, corporate environmental performance is significantly weaker when CEOs manifest traits of vulnerable narcissism, characterised by low extroversion. In addition, we analysed the moderating role of CEO duality in the above relationships. The results indicate that when the CEO also chairs the board of directors, the negative effects of vulnerable narcissism on environmental performance of firms are more pronounced. These findings provide valuable insights for boards of directors regarding the selection of a new CEO, the design of governance mechanisms and the strategic importance of CEOs psychological traits aimed at ensuring corporate environmental sustainability.

Keywords: CEO narcissism; Corporate governance; Corporate environmental performance; Environmental sustainability; Upper Echelon Theory.

RESUMEN

Hoy en día, nada es más importante para las empresas que hacer frente a la degradación medioambiental. Basándose en la *Upper Echelon Theory*, este estudio profundiza en la influencia matizada del narcisismo de los directores generales en el rendimiento medioambiental de las empresas. A diferencia de investigaciones anteriores que tratan el narcisismo como un constructo único, este trabajo distingue entre sus dos dimensiones principales: el narcisismo grandioso y el narcisismo vulnerable. Basándose en una muestra de 214 observaciones de empresas españolas durante el periodo 2015-2020, los resultados de la investigación revelan un impacto divergente. Por un lado, los resultados muestran un mayor rendimiento medioambiental de las empresas cuando los directores generales muestran predominantemente rasgos de narcisismo grandioso, probablemente impulsados por el deseo de visibilidad y reconocimiento social. Por otro lado, el rendimiento medioambiental de las empresas es significativamente menor cuando los directores generales manifiestan rasgos de narcisismo vulnerable, caracterizados por una baja extroversión. Además, analizamos el papel moderador de la dualidad del director general en las relaciones anteriores. Los resultados indican que cuando el director general también preside el consejo de administración, los efectos negativos del narcisismo vulnerable sobre el desempeño medioambiental de las empresas son más pronunciados. Estos hallazgos proporcionan información valiosa para los consejos de administración en lo que respecta a la selección de un nuevo director ejecutivo, el diseño de mecanismos de gobernanza y la importancia estratégica de los rasgos psicológicos de los directores destinados a garantizar la sostenibilidad medioambiental de las empresas.

Palabras clave: Narcisismo del CEO; Gobierno corporativo; Rendimiento medioambiental; Sostenibilidad medioambiental; Teoría Upper Echelon.

1. INTRODUCTION

Prior research on CEO's personality traits, mainly focused on Upper Echelon Theory (UET), has substantially advanced our understanding of how these traits affect CEO's behaviour (Buyl *et al.*, 2019) and the performance of the companies they head (Chatterjee & Hambrick, 2007; Lee *et al.*, 2023). Hambrick and Mason (1984) argued that psychological personality traits are much more relevant than demographic traits in determining executive behaviour and decision-making (Priem *et al.*, 1999). Among CEO psychological attributes, narcissism has recently garnered considerable attention, because it is the trait of the so-called "dark triad" most closely related to the CEO (Buyl *et al.*, 2025; Junge *et al.*, 2025). This attribute has generated contentious debate between its "bright and dark sides" and inconclusive results (Al-Shammari *et al.*, 2022; Khanchel *et al.*, 2024). Recent studies (Afshar Jahanshahi & Kalaycioglu; 2025; Choi & Phan, 2022) that delve deeper into this debate conclude that this trait, in itself, is neither unequivocally good nor bad, which justifies further research into the effect that a narcissistic CEO has on their company. Gaining this knowledge can be a very important step for companies to harness the useful potential of narcissistic CEOs and mitigate their harmful effects. However, much of these previous studies have focused primarily on the pathological and negative aspects of this personality trait, without considering that CEO narcissism can be associated with both benefits (bright side) and detriments (dark side) for the company (Choi & Phan, 2022; Cragun *et al.*, 2020; Rovelli *et al.*, 2023). Many CEOs have a narcissistic personality (Finkelstein *et al.*, 2009), which can be beneficial news for companies that need passion, the daring to break new ground and the drive to adopt new initiatives (Zhang *et al.*, 2017). In fact, narcissism may be considered a desirable trait favouring those who wish to reach the apex of most firms (Rovelli *et al.*, 2023). While the outcomes achieved by CEO narcissism in their firm have been analysed (Petrenko *et al.*, 2016); there has been little exploration of the factors that lead boards to hire this type of CEO. For all these reasons, the literature calls for future research could provide greater insight into the puzzle of which circumstances lead to the appointment and success of a narcissistic CEO (Cragun *et al.*, 2020).

To address this puzzle, we consider the two distinct dimensions of narcissism recognised in the literature: *grandiose narcissism* and *vulnerable narcissism* (Jauk & Kanske, 2021; Miller *et al.*, 2008, 2011) and the dual nature of environmental sustainability provides an ideal context for this analysis. In doing so, we shed more light on the debate between the bright and dark sides of narcissism, delving deeper into this CEO trait through the prism of its different dimensions (Choi & Phan, 2022).

Thus, on the one hand, each dimension of narcissism presents different nuances of the CEO's personality that may result in different behaviours and strategic decisions. Jauk and Kanske (2021) point out that both dimensions of CEO narcissism share a sense of self-importance and entitlement. However, while grandiose CEO narcissism has an inflated view of themselves and crave social recognition; vulnerable CEO narcissism is more withdrawn. In short, grandiose narcissism is characterised by agentic extraversion, while vulnerable narcissism is characterised by low extroversion. And the other hand, the literature has highlighted that achieving success in environmental sustainability is a matter that depends, to a large extent, on the strategic decisions adopted at the highest level of an organisation; that is, by its CEO (Herrmann & Nadkarni, 2014); and that, at present, decisions on environmental sustainability have an enormous social recognition and impact (Bansal & Roth, 2000).

Therefore, we believe that it is necessary to further delve into the relationship between the CEO's grandiose and vulnerable narcissism and the environmental sustainability. Firstly, because environmental sustainability offers narcissistic CEOs a great opportunity to enhance their image and reputation and gain recognition from others, questions especially important for grandiose narcissists; however, the results derived from environmental decisions can take a long time to be observed, so they may be less attractive to a vulnerable narcissistic CEO than other types of strategic decisions (Khanchel *et al.*, 2024). Second, previous research has focused on studying the impact of CEO narcissism on corporate social responsibility (Al-Shammari *et al.*, 2019, 2022) and not on its different dimensions such as environmental (Lassoued *et al.*, 2023). However, environmental decisions are heavily influenced by the CEO's preferences and priorities (Arena *et al.*, 2018). Given the degree of complexity underlying these decisions and their high impact on different stakeholders, largely depend on the CEO's personality or, more specifically, whether he or she is a grandiose or vulnerable narcissist. Thirdly, two dimensions of narcissism emerge when these leaders seek to reaffirm their sense of superiority, grandiose and vulnerable, that may affect environmental sustainability differently (Khanchel *et al.*, 2024). This distinction is key because while CEOs with grandiose narcissism push ambitious environmental initiatives to gain social recognition (Al-Shammari *et al.*, 2019), vulnerable narcissists may avoid sustainability risks (Khanchel *et al.*, 2024) for fear of social scrutiny, negatively affecting corporate environmental performance (CEP). Therefore, this distinction helps to better understand the behaviour and commitment of the narcissistic CEOs to their organisations, and to understand conflicting positions derived from previous work (Choi & Pan, 2022).

For these reasons, we argue that overlooking how both grandiose and vulnerable CEO narcissism influence environmental sustainability, limits our understanding of the true role of the CEO. Delving into these relationships allows us to shed some light on the circumstances that help explain the appointment of a narcissistic CEO (Cragun *et al.*, 2020) and his or her possibilities for success. Thus, if the attitudes of a grandiose and vulnerable narcissistic CEO towards environmental sustainability issues are different, their behaviours may also differ, so what the distinction between the two dimensions of narcissism can be relevant to CEP. In doing so, we enrich the previous literature by pointing out that the positive or negative impact of narcissistic CEOs on their companies depends on their level in each dimension (Afshar-Jahanshahi & Kalaycioglu, 2025; Choi & Phan, 2022).

For example, Steve Jobs and Tim Cook, both CEOs of Apple, have been described as highly narcissistic. However, on the one hand, Jobs' environmental responsibility stemmed from a bold vision for innovation and design, and his focus on long-term sustainable goals that often-involved public social scrutiny. He was known for his confidence and willingness to take centre stage, particularly in public settings; as well as for constantly seeking admiration and recognition for his accomplishments. His constant search for praise and social recognition leads him to seek environmental achievements that serve as mechanisms for his personal promotion (Cragun *et al.*, 2020). This is consistent with a grandiose narcissism. On the other hand, Cook tends to implement sustainable practices that ensure Apple meets environmental regulations and satisfies public expectations but avoids overly ambitious projects that could jeopardize the company's financial stability. He is also known to be introverted and highly values his privacy. Tim Cook is reserved and avoids the media spotlight. He does not seek attention in an obvious way, but he does seek validation through his leadership. Thus, the difference between Cook's salary and the average employee salary is huge. In 2022, Cook earned more than 1,177 times the average salary of an Apple worker. Very cautious and vigilant with information about himself, he tries to protect his status and power through mechanisms other than social recognition that defend his leadership, such as salary (Lee *et al.*, 2023). This is consistent with a vulnerable narcissist.

Taking the principles of UET (Hambrick & Mason, 1984), we examine whether grandiose and vulnerable narcissistic CEOs influences the environmental sustainability. Also, given that CEO managerial discretion can be affected by CEO duality (Finkelstein, Hambrick *et al.*, 2009; Krause *et al.*, 2014). In this sense, the dual position of CEO-chairperson of the board could affect the relationship between the CEO's vulnerable/grandiose narcissism and environmental sustainability. Indeed, the CEO's dual role may influence business strategies. As such, CEOs may (not) be motivated to invest in certain actions if they think they (do not) serve their interests (McWilliams *et al.*, 2006). Depending on how CEOs perceive that situation, the relationship between CEO narcissism and environmental sustainability will be affected.

In this research, we used a sample of Spanish companies listed on the Madrid Stock Exchange, composed of 214 company-year observations between 2015 and 2020, which enabled us to reach several contributions.

First, this study contributes to research in UET that examines the influence of CEOs' traits on the outcomes of their strategic decisions, specifically, on environmental sustainability (Aguilera *et al.*, 2021; Arena *et al.*, 2018). Our findings reveal that CEO narcissism plays an important role in determining CEP. By doing so, we extend the recent research on the effects of CEO narcissism (Khanchel *et al.*, 2024), as an attribute of managers' personality traits, on strategic decisions and activities within companies (Chatterjee & Hambrick, 2011). Second, our study enriches the literature analysing the two dimensions (Miller *et al.*, 2011; Reina *et al.*, 2014) of CEO narcissism: grandiose and vulnerable. CEO grandiose narcissism has been identified as having a positive impact on environmental sustainability; while CEO vulnerable narcissism has been identified as having a negative impact. Therefore, we extend research on the personality traits of CEOs by contributing to previous studies of whether the two dimensions of CEO narcissism act homogeneously (Jauk & Kanske, 2021). Thus, understanding these two dimensions of CEO narcissism, help to solve the puzzle on what determines the success of a narcissistic CEO and on what contexts lead boards to hire narcissistic CEOs. We also enrich the literature on the dichotomy of the bright and dark side of the narcissistic personality and its two dimensions: grandiose and vulnerable (Khanchel *et al.*, 2024). Third, this paper contributes to the literature by highlighting the moderating effect of CEO duality on the relationship between grandiose and vulnerable CEO narcissism and CEP. In our study, we suggest that there is a different impact depending on the dimensions of narcissism. Our findings showed that dual CEOs enhancing the negative relationship between CEO vulnerable narcissism and environmental sustainability. Fourth, our work contributes to the literature on the importance of individual-level factors that shape firm orientation towards environmentally responsible actions. Finally, the main body of research on CEO narcissism involves US samples (Buyl *et al.*, 2019; Chatterjee & Hambrick, 2007, 2011), complicating any generalisation of previous results. We respond to this research area to examine other regional contexts, such as the Spanish setting, where executives are explicitly obliged to take all stakeholders into account (Crossland & Hambrick, 2011), orienting our research towards environmentally related activities.

The rest of this paper is structured as follows. Firstly, the theoretical background for the work is presented and the hypotheses are set out. Subsequently, a discussion of these results and their theoretical and managerial implications are given. The study concludes by outlining limitations and providing suggestions for future research.

2. RESEARCH BACKGROUND

In the new global economy, one of the newest strategic initiatives facing companies is environmental sustainability (European Climate Law, 2021); so much so that both business associations (Business Rountable, 2019) and their leaders (World Economic Forum, 2024) have reaffirmed their commitment to the environmentally sustainable management of their activities. Environmental sustainability refers to the set of corporate behaviours and strategies that mitigate the impact of industry on the natural environment, which include the implementation of actions that reduce energy consumption and waste, using ecologically sustainable resources and employing environmental management systems (Aguilera *et al.*, 2021; Walls *et al.*, 2012). The most common corporate environmental sustainability outcomes described in the literature are: environmental strategy, which refers to the overall approach of a company to deal with the natural environment; environmental performance, which captures corporate environmental impacts; and environmental reporting/disclosures, which refers to the public provision of information on the environmental impact of companies and their initiatives within that field (Aguilera *et al.*, 2021). Our work is focused environmental performance of firms.

Achieving environmental sustainability objectives involves a high commitment from CEOs (Dahlmann & Brammer, 2011) who must adopt a set of generally highly complex decisions. According to UET the more complex a decision is, the greater the influence of CEO traits (Hambrick, 2007).

Previous studies have shown that some CEO demographic attributes (Wang *et al.*, 2016) can have significant impacts on environmental sustainability (Dahlmann & Brammer, 2011; Lewis *et al.*, 2014). Most of this research has used CEO demographic variables as a proxy for CEO psychological traits (Neely *et al.*, 2020), because of the difficulty of collecting information from the latter (Wang *et al.*, 2016). However, such measures must be considered imprecise (Priem *et al.*, 1999). Directly considering the psychological traits of a CEO is relevant, because CEOs express their psychological traits through their actions; and psychological traits directly influence CEO decision-making process (Finkelstein *et al.*, 2009; Petrenko *et al.*, 2016).

CEOs with an exaggerated perception of their self- importance (i.e. narcissist), are more likely to shape strategic decisions based on their preferences (Hambrick & Finkelstein, 1987). In this sense, CEO narcissism is one of the attributes that can affect the level of risk the CEO wants to take (Gerstner *et al.*, 2013) in each of their decisions, depending on their managerial discretion (Li & Tang, 2010). Hence, narcissistic CEOs may bet on risky and innovative initiatives (Zhang *et al.*, 2017) if they expect to receive the reward they seek for it. Previous work has analysed how a firm's inclination towards environmental issues can be explained by the preferences and priorities of the CEO's personal values and traits (Arena *et al.*, 2018; Petrenko *et al.*, 2016). However, the different nuances of CEO personality traits have received less attention (Buyl *et al.*, 2025). Hence, we have chosen to focus on grandiose and vulnerable narcissism and their relationship to CEP.

2.1. CEO grandiose/vulnerable narcissism and CEP

Narcissism has been described as a trait that comprehensively encompasses the personality of a CEO, i.e., it overlaps with other important traits, but it encompasses many more nuances of the CEO's personality than all other traits (Engelen *et al.*, 2013) The American Psychiatric Association (2013) defines narcissism as a pattern of behaviour, which can be associated with both grandiose self-assuredness and dominance, as well as a vulnerable attitude (Jauk & Kanske, 2021). Narcissistic individuals often exhibit a combination of self-importance and arrogance (Chatterjee & Hambrick, 2011; Lassoued & Khanchel, 2023; Petrenko *et al.*, 2016) and an intense desire for power (Chatterjee & Hambrick, 2007). They may also feel entitled to special treatment, have difficulty learning from their mistakes, and be unwilling to acknowledge their own shortcomings (Hogan & Kaiser, 2005).

The literature has highlighted two sides of CEO narcissism (Judge *et al.*, 2009). The bright side pertains to the ability to inspire other individuals, boosting the leadership and the adoption of fresh initiatives; the dark side entails instead a demand for constant recognition, lack of empathy and irrationality (Rovelli *et al.*, 2023), that leads these individuals to prevail in their vision in front of others. An important question is to delve into when they are adequate or not for the companies, they lead (Braun, 2017). These characteristics may vary in intensity and expression among individuals: narcissism may be a trait present, to a greater or lesser degree, in all individuals, with no fixed cut-off to identify high or low levels (Foster & Campbell, 2007).

Moreover, we cannot forget that narcissism is composed of cognitive and motivational perspectives (Campbell & Miller, 2011). From a cognitive perspective, narcissism involves a belief in one's superior qualities. Narcissists value themselves very positively on a number of elements such as intelligence and competence; and they are very confident about their abilities (Chatterjee & Hambrick, 2007). From a motivational perspective, their main goal is to reaffirm their sense of superiority. To this aim, the motivating factors of narcissistic CEOs focus on two types of extrinsic rewards: status and social recognition, and money (Cragun *et al.*, 2020). Two main dimensions of narcissism emerge from both the cognitive and motivational perspectives (Khanchel *et al.*, 2024): grandiose narcissism and vulnerable narcissism (Jauk & Kanske, 2021; Miller *et al.*, 2008, 2011). It is important to note that grandiose and vulnerable narcissism are not mutually exclusive, and individuals can display a combination of traits from both (Lee *et al.*, 2023), so that CEOs may not be entirely grandiose or vulnerable (Edershile & Wright, 2021).

Grandiose narcissism refers to an individual need for self-admiration (Campbell *et al.*, 2011). These people always want to be the centre of attention and are characterised by a great sense of self-importance perceiving themselves as exceptionally outstanding and innovative (Judge *et al.*, 2006). They exude superiority and an air of being special, unique, and powerful; a sense of entitlement (Campbell & Foster, 2007) based on a conviction that they deserve privileges or recognition and, perhaps, an unconfessed belief that they are in some way superior to others (Cragun *et al.*, 2020). Grandiose narcissism is often associated with social dominance, skilled in interpersonal relationship and an exaggerated need for power, leading to overt narcissism (Wink, 1991). **Vulnerable narcissism** is related to a chronic need to preserve one's own view of self-views (Dickinson & Pincus, 2003; Knights, 2014; Miller & Maples, 2012). Vulnerable narcissistic individuals are highly confident about their abilities, so they try to protect their status and power (Knights, 2014). In addition, they have poor interpersonal skills and avoid social exposure to defend their self-image (Krizan & Herlache, 2018). Thus, vulnerable narcissism is a covert narcissism, as they are hypersensitive, socially reticent individuals whose personal relationships, however, are marked by arrogance and an insistence on getting their own way (Wink, 1991).

Jauk and Kanske's (2021) review shows that these two dimensions have common cores of self-importance and entitlement. Now, while grandiose narcissists have inflated self-views, and crave affirming recognition by engaging in bold, attention-getting behaviours to achieve it; vulnerable narcissists are confident in their proposals and ideas but are withdrawn. In summary, grandiose narcissism is characterised by agentic extraversion, while vulnerable narcissism is characterised by low extroversion. And it is on this aspect, the search or flight from social recognition, that we base our research as it can mark the success of a CEO and help explain his or her appointment.

While narcissism can influence CEO success, its impact on firm performance is complex. The CEO's dimensions of grandiose and vulnerable narcissism may lead to different strategic decisions (Khanchel *et al.*, 2024). Therefore, y according to UET, differentiating between grandiose and vulnerable helps to identify specific behavioural patterns of CEOs narcissism (Jauk & Kanske, 2021) when faced with strategic decisions such as those related to environmental issues.

Environmental sustainability has a dual nature that encompasses both economic instrumentality and social desirability (McWilliams *et al.*, 2006). On the one hand, a good track record in environmental sustainability enhances a firm's attractiveness and increases stakeholder support, which can be beneficial to the firm's long-term performance (Freeman, 1984). On the other hand, environmental sustainability is socially desirable and managers who promote it are well regarded. By studying these economic and social aspects, we can unravel the operating mechanisms of the CEO's grandiose and vulnerable narcissism.

We consider that grandiose narcissism CEOs, thanks to their extraversion and the fact that they cannot stand to be ignored, may take an active role in seeking opportunities for self-promotion. Thus, to obtain their coveted praise and recognition, they will boost the CEP; as this tends to receive considerable positive media attention (Petrenko *et al.*, 2016) and increases the CEO's visibility concerning stakeholders (Chen *et al.*, 2021; Lassoued & Khanchel, 2023). Due to its characteristics, the main motivating factor for this dimension of CEO narcissism is the extrinsic reward of status and social recognition (Cragun *et al.*, 2020). CEOs can gain social desirability from their firms improved social image by promoting environmental sustainability (Tang *et al.*, 2018). Otherwise, achieving high level of environmental performance leads to greater support from stakeholders, greater attractiveness of the company and, therefore, better future results. Thus, grandiose narcissistic CEOs are willing to embrace the risks involved in pursuing environmental sustainability, despite the inherent complexities of such decisions (Gerstner *et al.*, 2013; Li & Tang, 2010).

Vulnerable narcissism CEOs characterised by being highly cautious and vigilant concerning information about themselves, try to protect their status and power through mechanisms other than social recognition. Therefore, they will not take actions that address social concerns. The vulnerable narcissism's motivating factors vulnerable are internal status recognition in their organisation and money (Cragun *et al.*, 2020). Furthermore, the withdrawal that characterises this type of individual (Lee *et al.*, 2023) leads them to underestimate the potential internal and external aids needed to make complex decisions, which may result in lower risk-taking. In sum, they may discourage CEP, due to their habitual interpersonal insensitivity (Bachrach *et al.*, 2022) and introversion. Similarly, vulnerable narcissism CEOs perceive significantly less need for stakeholder support (Godfrey, 2005), as they possess a chronic need to preserve their vision of self (Knights, 2014) and a high level of distrust of others (Miller & Maples, 2012). As Tang *et al.* (2018) demonstrated, by underestimating the amount of resources they need from stakeholders for the survival and development of their firms, vulnerable narcissism CEOs are less motivated to respond to stakeholder demands than they probably should be and, consequently, are less committed to environmental sustainability. Therefore (see Figure 1),

Hypothesis 1a: *The more a company's CEO mainly exhibits traits of grandiose narcissism, the stronger the CEP.*

Hypothesis 1b: *The more a company's CEO mainly exhibits traits of vulnerable narcissism, the weaker the CEP.*

2.2. The moderating effect of CEO duality

One of the most prominent characteristics of the narcissism CEOs is their unlimited hunger for power (Lee *et al.*, 2023). Therefore, it is pertinent to analyse how one of the variables related to CEO power (Tang *et al.*, 2018), CEO duality, may moderate the relationship between grandiose and vulnerable narcissism CEOs and CEP. Prior literature points to CEO-chairperson duality as an important mechanism involved in decreasing the environmental sustainability of firms (Aguilera *et al.*, 2021).

CEO duality, understood as the "practice of consolidating the positions of CEO and chairperson of the board into one person" (Finkelstein & D'Aveni, 1994; Krause *et al.*, 2014), provides the CEO with greater power to act by the simple fact of holding dual post. For narcissism CEOs, who have an intense need for power, it also provides them with greater managerial discretion (Wang *et al.*, 2019). This makes their leadership stronger and more decisive (Finkelstein *et al.*, 2009). Generally, research has shown that duality could be considered undesirable to environmental sustainability (Aguilera *et al.*, 2021) as the CEO is in a more powerful position and may prioritise personal interests over stakeholder demands (Khan *et al.*, 2013) but the literature has scarcely delved into the effects of a dual narcissistic CEO.

CEO duality can influence how narcissistic CEOs approach environmental initiatives (Lassoued & Khanchel, 2023). While it grants them autonomy, we argue that grandiose narcissistic CEOs, who already gain power, media attention, and social recognition from their dual role, might reduce their drive for risky, short-to-medium-term environmental projects (Aguilera *et al.*, 2021). Their primary interests in power and recognition may be sufficiently met through duality, lessening the motivation for additional environmental efforts (McWilliams *et al.*, 2006).

Conversely, when vulnerable narcissistic CEOs also chair the board, their confidence and power are reinforced, leading to decisions prioritizing short-term results (Kim *et al.*, 2009). Their withdrawal and introversion (O'Reilly *et al.*, 2018) mean the increased media attention from duality might even be overwhelming, further diverting them from visible environmental pursuits. Essentially, CEO motivation for environmental investment hinges on whether such practices align with their self-serving interests. Therefore (see Figure 1),

Hypothesis 2a: *The stronger effect of CEO grandiose narcissism on CEP is less observable with CEO duality.*

Hypothesis 2b: *The weaker effect of CEO vulnerable narcissism on CEP is more observable with CEO duality.*

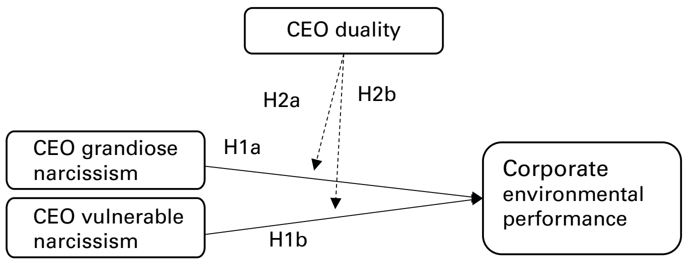

Figure 1
Proposed model
Source: Author's own elaboration.

3. METHODS

3.1. Sample and data sources

The sample procedure is as follows. First, we selected all publicly traded Spanish companies listed on the continuous market of the Madrid Stock Exchange. Spain's growing focus on sustainability, as evidenced by national policies and the EU's Green Deal, offers a valuable context for understanding how CEOs with different narcissistic traits might navigate environmental challenges in a European setting. A market that comprises large, diversified companies across different sectors, that can offer a wide range of companies for sampling. We built a panel dataset for the period 2015-2020. The study is based on 127 listed companies and 167 CEOs.

Second, we took information from CEOs from the annual corporate governance report published on the National Securities Market Commission website. We also hand-collected demographic and other necessary CEO information using Internet sources, including company websites, magazines, and newspaper stories, as well LinkedIn. Frequently, the first year of tenure is often a turbulent year with many changes. The CEO's adjustment process to new position may blur personality traits. Therefore, all CEOs who have held the position for one year or less were eliminated. In this stage, the study is based on 153 CEOs. We hand-collected data on narcissism by revising the sustainability annual reports of the companies as well as annual corporate governance reports. All CEOs for which there in no data about any of the CEO expression of narcissism indicators were eliminated. After this refinement, we arrived at a final sample of 46 Spanish-listed companies, and 54 CEOs with 214 CEO-year observations.

Third, data information on the environmental performance of each company was collected from CSRHub (https://www.csrhub.com). This data hub provided information split into four main categories: community, employees, environment, and governance. We used the environment category to test our hypotheses. Finally, financial information was obtained from Iberian Balance Sheet Analysis System (SABI). Table 1 provides the sample distribution by industry.

Table 1
Sample description by industry

	Freq.	**%**
Consumer goods	26	12.150%
Basic materials, industry, and construction	64	29.907%
Oil and energy	27	12.617%
Consumer services	44	20.561%
Financial services	30	14.019%
Real estate services	5	2.336%
Technology and telecommunications	14	6.542%
Transport and communications	4	1.869%

Source: Author's own elaboration.

3.2. Measures

A. Dependent variable: CEP

CEP was measured using the yearly median score from CSRHub's monthly environmental category, ranging from 0 to 100, with higher scores indicating better company ratings. We used a one-year lagged period for the dependent variable. This conservative lagged design helps to neutralize potential effects stemming from CEO succession events, providing a more robust test for our hypotheses.

B. Independent variables: CEO grandiose and vulnerable narcissism

CEOs of publicly traded companies are generally reluctant to participate in surveys that relate to aspects of their narcissistic personality. Moreover, in instances where they do choose to respond, there is a heightened likelihood of their responses being swayed by social desirability bias (Agnihotri & Bhattacharya, 2019; Chatterjee & Hambrick, 2007; García-Meca *et al.*, 2021). Given these limitations, and following previous studies (Cragun *et al.*, 2020), we used secondary sources to extract this information.

The literature on instruments for measuring CEO narcissism is relatively scarce (Zhu & Chen, 2015), especially in the case of vulnerable narcissism (Jauk & Kanske, 2021). Cragun *et al.* (2020) prompt that most previous studies have mainly used Chatterjee and Hambrick (2007) scale, itself based on Emmons' version of the Narcissistic Personality Inventory, but without delving into the two possible dimensions of narcissism. Although the two dimensions of narcissism has some overlap, evidence indicates that they evaluate distinct constructs (Hart *et al.*, 2017; Krizan & Herlache, 2018). In this research we suggested the possibility of measuring both dimensions of CEO narcissism, grandiose and vulnerable, with the Chatterjee and Hambrick (2007) scale. To do so, we propose to distinguish, based on the scale measures, those facets that characterise grandiose narcissism more in front of the vulnerable narcissism (Dickinson & Pincus, 2003).

Since narcissistic personality "is a relatively stable disposition over time and temporally precedes the measurement of firm performance" (Chatterjee & Hambrick, 2007, p. 362), we consider as a rule the initial year of the study (2015) to measure CEO narcissism. However, when 2015 was the CEO's first year in office or if there was a change of CEO during the study period, we take the next year with available information.

In line with Dickinson and Pincus (2003) proposal and following the methodology of previous work (Khanchel *et al.*, 2024), the steps involved in obtaining our measure are as follows. First, we use four measures for CEO narcissism (Chatterjee & Hambrick, 2007), used extensively in previous studies.

(1) **CEO photograph:** the prominence of a CEO photograph in the letter to stakeholders either the annual report or the sustainability report. We scored this indicator following Chatterjee and Hambrick (2007): four points if the photo was of the CEO alone and took up more than half a page; three points if the photo was of the CEO alone and took up less than half a page; two points if the CEO was photographed with one or more fellow executives; one point if there was no photograph of the CEO

(García-Meca *et al.*, 2021); and zero points when there is no CEO's letter.

(2) **CEO in press**: CEO prominence in the press releases of the organisation. "We calculated the number of times the CEO was mentioned by name in the press releases on each company's website and divided by the total number of words in all the company's press releases" (Chatterjee & Hambrick, 2007). We multiplied this CEO narcissism measure by 1,000 to be able to work with it more conveniently.

(3) **CEO I-ism:** the CEO's use of the first-person singular in the CEO letter either the annual report or the sustainability report. We counted the number of first-person singular pronouns (I, me, mine, my, and myself) that the CEO used, divided by the sum of those pronouns plus all first-person plural pronouns (we, us, our, and ourselves). Thus, our measure is the relative ratio of all first-person pronouns that were singular' (Chatterjee & Hambrick, 2007). As we were studying Spanish companies, we first translated any letters that had already been published in Spanish into English. Moreover, we scored zero when there was no CEO letter either the annual report or the sustainability report.

(4) **CEO relative cash pay:** CEO cash compensation divided by the average TMT salary. We calculated the average salary of TMT members and compared it with the salary of the CEO obtained from the annual corporate governance reports available from the Spanish Securities and Exchange Commission (CNMV).

According to our theoretical arguments, these two dimensions must be measured, in each case, through indicators that reflect the main motivation used to achieve the goal of feeling superior to others. In this sense, grandiose narcissism should be measured using indicators that reveal an overt and exaggerated search for social recognition; conversely, vulnerable narcissism should be assessed using more covert and less publicly perceptible indicators, but ones that contribute to reinforcing that feeling of self-esteem and superiority over others, such as monetary recognition. These measurement approaches reflect the different nature of each dimension of narcissism, capturing the exhibitionism of grandiose narcissism and the confidence and self-belief of vulnerable narcissism.

In second step, we conducted a correlation analysis (Table 2). This analysis showed that the correlation among CEO photograph, CEO press and CEO I-ism items are positives and significatively correlated ($p < 0.01$). In contrast, CEO relative cash pay correlates with CEO press negatively and significantly. Then, we standardized these four measures to build our indicator. In third step, we conduct a factor analysis (Agnihotri & Bhattacharya, 2019).

Table 2
Pearson correlation matrix

	Mean	S.D.	1	2	3	4
1. CEO photograph	2.580	1.297	1	0.242**	0.369**	0.165*
2. CEO in press	0.599	0.883		1	0.231**	−0.259**
3. CEO I-ism	0.102	0.111			1	0.099
4. CEO relative cash pay	2.882	2.173				1

* Correlation is significant to 0.05 (bilateral) and **correlation is significant to 0.01 (bilateral)

Source: Author's own elaboration.

The CEO photograph, CEO press and CEO I-ism loaded on a first factor, while the CEO relative cash pay loaded in a second factor, both with an eigenvalue greater than one. To assess the validity of the identified factors, the Kaiser-Meyer-Olkin (KMO) sample adequacy statistic was 0.516, exceeding the threshold of 0.5. In addition, Bartlett's test of sphericity yielded statistical significance at the 99% confidence level (Hair *et al.*, 2019).

Items that loaded on the first factor reflected the CEO's desire for recognition and vanity enhancement (García-Meca *et al.*, 2021), underscoring the perceived importance of their leadership (Zhu & Chen, 2015). In sum, they were indicators associated with the search for social dominance and reflecting the high degree of extroversion of the CEO, particular characteristics of grandiose narcissism CEOs (**Grandiose_N**) (Jauk & Kanske, 2021). The second factor was composed exclusively of the relative cash remuneration received by the CEO. It showed the search for recognition of a superior position in relation to others and their desire for power (Agnihotri & Bhattacharya, 2019); but always far from the social focus and in terms of monetary reward. This social withdrawal and introversion were characteristics of vulnerable narcissism CEOs (**Vulnerable_N**) (Jauk & Kanske, 2021). Finally, the two indices of narcissism were calculated (Grandiose-N y Vulnerable_N). For this, we computed the mean of the scores for each item.

C. Moderator variables: CEO duality

CEO duality (**Duality**) was indicated with a dichotomous variable that assumed a value of 1 when the CEO and the chairperson of the board were the same person and 0 if otherwise.

D. Control variables

We have integrated several corporate governance and firm-level controls, relying on insights from prior empirical research that has identified key variables recognised for their impact on environmental performance.

We controlled for corporate governance —CEO tenure (**CEOtenure**), CEO gender (**CEOgender**), board size (**Bsize**), board independence (**Bindependence**) and the ratio of women on board (**Bwomen**)— and organisational —firm size (**Fsize**), company financial performance (**ROA**) and company sector (**Sector**)—.

Past studies have shown that *CEO tenure* is inversely related to environmental performance (Khan *et al.*, 2020). We measure the *CEO tenure* the number of years since a CEO had been appointed and we then calculate its natural log. The CEO gender has showed positively related to green innovations (Galbreath, 2019). We measured *CEO gender* as a dichotomous variable that assumed a value of 1 when the CEO is a man and zero if she is a woman.

Previous literature has concluded that *board size* is positively related to CEP (Aguilera *et al.*, 2021; de Villiers *et al.*, 2011). We measured *board size* as the number of directors sitting on a board. Previous studies have shown positive relations between *board independence* and environmental performance (de Villiers *et al.*, 2011). We measured the independence of the board as the ratio of board members that are independent to the company to the total number of board members (Webb, 2004). The *percent-*

age of women on the board has also been positively related to the environmental performance of the company. We, therefore, controlled for the proportion of women on the board, measured as the number of women on the board divided by the total number of board members.

The control variables of the company were as follows: *firm size* (Díaz Chica *et al.*, 2019), measured as the natural log of all company employees, *company financial performance* using Return on Assets (ROA) and company sector measured as a categorical variable using the Madrid Stock Exchange classification.

A description of all the variables is presented in Table 3.

Table 3
Variables definition

Variables	Description
CEP	Yearly median of a monthly score which range from 0 to 100.
Grandiose_N	The factor composed of: CEO photograph, CEO in press and CEO I-ism.
Vulnerable_N	The factor composed of: CEO relative cash pay.
Duality	Dummy variable that equals 1 if the CEO is also the chairperson of the board and 0 otherwise.
CEOtenure	The natural logarithm of the number of years since a CEO had been appointed.
CEOgender	Dummy variable that equals 1 if the CEO is a man 0 if she is a woman.
Bsize	The number of directors sitting on a board.
Bindependence	The ratio of board members that are independent to the company to the total number of board members.
Bwomen	The number of women on the board divided by the total number of boards members
Fsize	The natural logarithm of all company employees.
ROA	Return on assets measured as the proportion of operating income before interest and taxes divided by the total assets.
Sector	Categorical variable using the Madrid Stock Exchange classification.

Source: Author's own elaboration.

3.3. Regression model and technique of analysis

Our research aims to seeks to furnish empirical evidence on two interconnected focal points. Firstly, it delves into the influence of CEO grandiose and vulnerable narcissism on CEP. To address the hypotheses 1a and 1b, we built Model 1, as follows (1):

$$CEP_{it} = \beta_0 + \beta_1 Grandiose_{Nit} + \beta_2 Vulnerable_{Nit} + \beta_3 CEOtenure_{it} + \beta_4 CEOgender_{it} + \beta_5 Bsize_{it} + \beta_6 Bindependence_{it} + \beta_7 Bwomen_{it} + \beta_8 Fsize_{it} + \beta_9 ROA_{it} + \beta_{10} Sector_{it} + \eta_i + \mu_{it} \quad (1)$$

Secondly, it explores the potential contingent nature of this impact in the context of CEO-chairperson duality. In addition, it should be highlighted that prior literature points to CEO-chairperson duality as important mechanisms involved in decreasing environmental sustainability of firms (Aguilera *et al.*, 2021). For this reason, our second objective is to assess the moderating effect that CEO-chairperson duality has on CEP. To test hypotheses 2a and 2b, we built Model 2, as follows (2):

$$CEP_{it} = \beta_0 + \beta_1 Grandiose\_N_{it} + \beta_2 Vulnerable\_N_{it} + \beta_3 Duality_{it} + \beta'_1 Grandiose\_N_{it} \times Duality_{it} + \beta'_2 Vulnerable\_N_{it} \times Duality_{it} + \beta_4 CEOtenure_{it} + \beta_5 CEOgender_{it} + \beta_6 Bsize_{it} + \beta_7 Bindependence_{it} + \beta_8 Bwomen_{it} + \beta_9 Fsize_{it} + \beta_{10} ROA_{it} + \beta_{11} Sector_{it} + \eta_i + \mu_{it} \quad (2)$$

This study employs the panel data regression model using the STATA 15.1 software. First, we run a power analysis for a multiple linear regression model which showed that the sample was sufficiently large, (estimated sample size = 151), statistical power is adequate (80%) and R2 test is significative (p = 0.050). Second, the Breusch and Pagan Lagrangian multiplier test and White test was run to check whether to use ordinary least square model or random effects model. The test showed significant result (p = 0.000) which proves that OLS is not an appropriate test given the heterogenous nature of the data set.

Third, the Hausman test was run to choose between fixed effects model and random effects model. The significant result (p = 0.005) showed that fixed effects model would provide a better estimation of results. Fourth, multicollinearity was checked using variance inflation factor (VIF) (Table 4) which confirmed that data does not have a multicollinearity problem as all the VIF values were within the acceptable limit of 10 (Kutner *et al.*, 2005). Fifth, the panel data was checked for heteroskedasticity, Wald test which should significant results (p = 0.000). Thus, the diagnostic tests have revealed that the data suffers from the problem of heteroskedasticity. It can be removed by clustering across the cross sections i.e. years in the fixed effects model. Lastly, there is no evidence of endogeneity due to the lack a correlation between explanatory variables and residuals.

Table 4
Descriptive statistics, Pearson correlation matrix and VIF

	N	Mean	S.D.	Min.	Max.	1	2	3	4	5	6	7	8	9	10
Panel A: Descriptive statistics and Pearson correlation matrix															
1. CEP	214	63.413	7.912	36.167	82.000	1									
2. Grandiose_N	214	0.000	1.000	–1.743	2.930	0.106	1								
3. Vulnerable_N	214	0.000	1.000	–2.074	3.308	–0.078	0.000	1							
4. CEOtenure	214	2.059	0.720	0.693	3.466	–0.134^{x}	0.211**	0.246**	1						
5. CEOgender	214	0.953	0.212	0.000	1.000	–0.036	–0.104	0.026	0.079	1					
6. Bsize	214	12.430	2.689	5.000	18.000	0.218**	0.107	0.110	–0.206**	–0.014	1				
7. Bindependence	214	0.480	0.151	0.150	0.850	0.131^{x}	–0.235**	–0.105	–0.053	–0.153*	–0.150*	1			
8. Bwomen	214	0.207	0.105	0.000	0.460	0.162*	–0.133^{x}	0.158*	0.088	–0.212**	0.019	0.175*	1		
9. Fsize	214	9.414	1.602	4.963	12.210	0.297**	0.149*	0.142*	–0.103	0.014	0.255**	0.264**	0.104	1	
10. ROA	214	5.744	10.388	–39.250	99.200	–0.149*	–0.038	0.078	0.115^{x}	0.104	–0.144*	0.003	–0.025	–0.134^{x}	1
Panel B: Multicollinearity Diagnostics using Variance Inflation Factor (VIF)															
VIF							1.30	1.19	1.29	1.37	1.24	1.34	1.15	1.37	1.06

*Panel A shows the descriptives statistics and the Pearson correlation values. Panel B shows the Variance Inflation Factor (VIF). **Correlation is significant to 0.01 (bilateral), * correlation is significant to 0.05 (bilateral) and ^{x} correlation is significant to 0.1 (bilateral).*

Source: Author's own elaboration.

4. RESULTS

The descriptive statistics are summarized in Table 4. Among the dependent variable, CEP present a mean of 63.413 and range from 36.167 to 82. This indicates that Spanish-listed companies have an acceptable (over 50-points score) CEP following CSRHub scale.

The mean of the natural logarithm of CEO tenure is 2 and more of the 95% of our CEOs are men. The average of board size is 12 members which ranges from 5 to 18, boards have a 48% of independent directors as average and a 20.662% of women directors. The mean of firm' ROA is 5.744 and of the natural logarithm of firm size is 9.414. Additionally, Table 1 indicates that all the variables present low correlation coefficients (<0.800).

We conducted a panel regressions analysis incorporating fixed- effects, as outlined in Table 5. The objective is to understand the behavioural patterns of CEOs concerning environmental performance in response to varying levels of grandiose or vulnerable narcissism.

Table 5
Results of the regression analysis models considering fixed-effects

Variables	Model 1	Model 2	Modelo 3	Model 4	Hypotheses status
Grandiose_N		1.015* (0.668)	0.614 (0.565)	1.109* (0.668)	H1a Supported
Vulnerable_N		−0.909* (0.535)	−1.485*** (0.560)	1.878** (0.861)	H1b Supported
Duality			3.567*** (1.198)	3.463*** (1.147)	
Grandiose_N*Duality				−1.015 (1.077)	H2a Not supported
Vulnerable_N*Duality				−5.753*** (1.164)	H2b Supported
CEOtenure	−0.881 (0.727)	−0.912 (0.773)	−1.303* (0.769)	−0.978 (0.733)	
CEOgender	0.942 (2.682)	2.229 (2.715)	2.644 (2.665)	4.126 (2.579)	
Bsize	0.416** (0.205)	0.423** (0.203)	0.371* (0.200)	0.654*** (0.200)	
Bindependence	3.818 (3.634)	4.756 (3.776)	4.477 (0.701)	4.343 (3.586)	
Bwomen	10.071** (4.970)	13.032*** (5.105)	10.241** (5.002)	6.987 (4.791)	
Fsize	1.030*** (0.346)	0.979*** (0.359)	0.901** (0.352)	1.166*** (0.346)	
ROA	−0.069 (0.049)	−0.061 (0.049)	−0.059 (0.048)	−0.085* (0.338)	
Sector effects	Yes	Yes	Yes	Yes	
Year effects	Yes	Yes	Yes	Yes	
Constant	75.701*** (5.328)	43.553*** (5.393)	44.416*** (5.293)	44.258*** (5.135)	

Standard errors in parentheses. *** p<0.01, ** p<0.05 and * p<0.1

Source: Author's own elaboration.

On the one hand, results provide support for the positive influence that **CEO grandiose narcissism** has on the firm's environmental performance (coef. 1.015, $p < 0.1$). In other words, the presence of grandiose narcissism CEOs results in high level of CEP of firms that they lead. On the other hand, results also provide support for the negative influence that **CEO vulnerable narcissism** has on the firm's environmental performance (coef. -0.909, $p < 0.1$). Thus, the presence of vulnerable narcissism CEOs results in a low level of CEP of firms that they lead. Supporting our hypotheses 1a and 1b.

Regarding Model 4, the aim is to study the moderating effect of CEO-chairperson duality in the above relationships. Concerning the impact of CEO grandiose narcissism on environmental performance of firms, the CEO-chairperson duality did not show a significative relationship. Otherwise, CEO duality strengthens the negative relationship between CEO vulnerable narcissism and CEP (coef. –5.753, $p < 0.01$). Thus, we found support for hypothesis 2b.

5. ROBUSTNESS ANALYSIS

We assess the robustness of our primary findings employing a regression analysis considering robust fixed effects and by using a random sample selection, approximately 75% of the sample, in total 161 cases. After carrying out the robustness (Table 6), we can state that the CEO grandiose narcissism has a positive impact on environmental performance of firms that he or she leads (1.015, $p < 0.01$) and CEO vulnerable narcissism a negative and significative one (–0.909, $p < 0.05$). In addition, the moderation role of CEO-chairperson duality in the relationship between CEO grandiose narcissism and CEP has not been proven. Lastly the relationship of the CEO vulnerable narcissism and the CEP is strengthened when the CEO also chairs the board (–5.753, $p < 0.01$).

Table 6
Results of the regression analysis models considering for the robustness tests

Variables	Model 1	Model 2	Model 5	Model 6
	Robust fixed-effects	**Robust fixed-effects**	**Random Sample 75%. Fixed-effects**	**Random Sample 75%. Fixed-effects**
Grandiose_N	1.015*** (0.612)	1.109*** (0.400)	1.080* (0.621)	0.931000 (0.736)
Vulnerable_N	–0.909** (0.401)	1.878*** (0.408)	–0.579 0.682	1.301422 (0.941)
Duality		3.463*** (1.040)		4.030000*** (1.377)
Grandiose_N*Duality		–1.015 (0.917)		–0.513000 (1.215)
Vulnerable_N*Duality		–5.753*** (0.902)		–5.606000*** (1.472)
CEOtenure	–0.912* (0.500)	–0.978** (0.404)	–0.419 (0.887)	–0.726000 (0.853)
CEOgender	2.229* (1.725)	4.126*** (1.469)	1.059 (3.035)	3.280000 (2.926)
Bsize	0.423*** (0.097)	0.654*** (0.140)	0.494** (0.237)	0.670000*** (0.235)
Bindependence	4.756*** (1.499)	4.343** (1.912)	6.099 (4.196)	4.927000 (4.051)
Bwomen	13.032*** (1.589)	6.987*** (0.897)	10.511* (5.812)	4.619000 (5.622)
Fsize	0.979*** (0.118)	1.120*** (0.346)	0.817** (0.401)	1.013500*** (0.383)
ROA	–0.061** (0.031)	–0.085*** (0.338)	–0.093* (0.051)	–0.096000** (0.048)
Sector effects	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
Constant	43.130*** (1.323)	38.64*** (1.305)	45.039*** (6.037)	40.572000*** (5.855)

Standard errors in parentheses. *** p<0.01, ** p<0.05 and * p<0.16. Discussion

Source: Author's own elaboration.

Nowadays, there is nothing more critical for business than dealing with the environmental degradation (Aguilera *et al.*, 2021). There are many economic and social implications (McWilliams *et al.*, 2006) that can be derived from high or low level of CEP. It presents a challenge for the company's management, especially for its CEO. The CEO's commitment to environmental initiatives depends largely on their beliefs and values, as well as on the personal return they can expect from such decisions. Thus, understanding the CEO's personality attributes and, more specifically, his/her narcissism, is important for the CEP. Therefore, this study investigates whether and to what extent dimensions of CEO narcissism influence CEP.

Traditionally, the literature has considered that the narcissistic personality of a CEO to be like a two-sided star (Rovelli *et al.*, 2023): the obverse side links this personality attribute with leadership, ability to create new competitive scenarios and taking risks in decisions (Maccoby, 2006); the reverse side, with arrogance (Al-Shammari *et al.*, 2019; Lassoued & Khanchel, 2023;

Petrenko *et al.*, 2016), feeling of superiority, an enormous craving for power (Chatterjee & Hambrick, 2007) avoiding collaboration and teamwork. So, narcissistic CEOs are considered passionate and charismatic people, but they often do not listen to advice, are emotionally isolated, lack empathy, and are distrustful (Knights, 2014; Maccoby, 2003). Considering that there are different levels of intensity of this personality attribute, and that its two sides can be combined in the same individual, *does a narcissism CEO help or hinder the environmental performance achieved by his or her company*?

To properly address this question, we distinguish between the grandiose and vulnerable dimensions of CEO narcissism (Dickinson & Pincus, 2003). These two dimensions, although share common aspects of both the bright and dark sides of narcissism at their root, show clear differences. These dissimilarities, in turn, lead to disparate behaviours (Jauk & Kanske, 2021) that affect the environmental performance of their companies. Specifically, the mechanisms used to achieve their goals through their motivations are different (extraversion versus introversion), and so are their decisions and the results that derive from them.

With insights from UET, we have been led to the conclusion that CEP could be significantly affected by both CEO grandiose and vulnerable narcissism. It is interesting to note that that grandiose narcissism is more present in those CEOs who seek to be always in a "storefront", as they show a great eagerness for social exhibitionism. Thus, social recognition is central to the reward they seek for their actions. In contrast, vulnerable narcissism is more present in more "discreet" CEOs, who shy away from social recognition and are more covert. In this case, the focus of the reward they seek for their actions is on monetary issues.

Consistent with the logic that grandiose narcissists crave attention, we concluded that grandiose narcissism CEOs promoted higher CEP. The grandiose narcissism CEO are involved in achieving CEP as a mechanism that helps them to achieve their personal goal: a constant need for admiration. The grandiose narcissistic CEOs are aware that an adequate environmental performance brings with it social recognition from different stakeholders as well as from the media and press, which greatly enriches their personal egos. For all these reasons, and despite the shadows that can accompany a narcissistic personality, the grandiose narcissism CEOs embrace the goal of achieving good environmental results. However, in the pursuit of this milestone, they may prioritise their personal interests over the interests of other stakeholders or society.

We extended the integration of UET by applying it to the environmental sustainability literature and showing that environmental performance can be an outcome that helps satisfy a personal need for attention and reinforces the self-image of a grandiose narcissistic CEOs (Petrenko *et al.*, 2016).

On the contrary, we conclude that the vulnerable form of narcissism, reflected through displays of refusal to be part of a social storefront, limits the environmental performance of companies. In this case, the CEOs' personal interests are not aligned with the potential rewards of high environmental performance. From the perspective of a vulnerable narcissism CEOs, the social implication of this type of company performance is not attractive.

The effects of CEO narcissism on environmental sustainability may differ across countries due to varying cultural values and institutional background, with individualistic cultures potentially fostering bold, recognition-driven initiatives, while collectivist cultures prioritise reputation management and regulatory compliance.

If narcissistic CEOs are also the chairperson of the board, their relevance is significantly increased (Chen *et al.*, 2021). This privileged position in the company does not diminish the grandiose narcissistic CEOs' drive for their company to achieve high level of environmental performance. On the contrary, the ambition of this type of individuals for social recognition and applause knows no bounds; and despite having other mechanisms to achieve recognition (the dual position), they continue to strive to show society good CEP that allows them to be identified as "superior" managers.

Conversely, when dual CEOs are characterised as vulnerable narcissism, they increase their rejection of pursuing CEP. The rise of their power enhances their rejection of the long-term economic implications of such strategic choices, as well as assertiveness in avoiding other visions put forward by different stakeholders (see Figure 2).

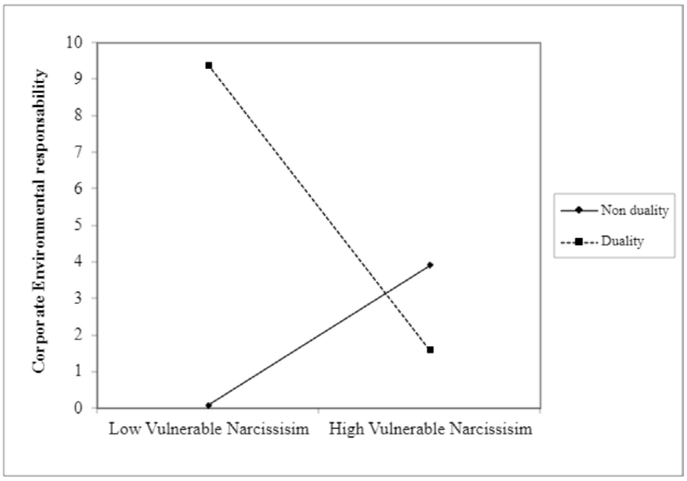

Figure 2
The moderating role of duality between CEO vulnerable narcissism and corporate environmental performance
Source: Author's own elaboration.

Our research also has implications for corporate governance and CEO appointments. First, the study reveals the predominant form of narcissism —grandiose or vulnerable— impacts on CEP. Companies committed to environmental sustainability, particularly in high-impact sectors, must carefully consider this personality trait in their leadership selection. Second, the findings highlight the critical moderating role of CEO-chairperson duality. This dual role can alter the relationship between both grandiose and vulnerable narcissistic CEOs and CEP, necessitating careful consideration during appointments. Finally, board directors should improve the monitoring and control over corporate decision-making when either grandiose or vulnerable narcissistic CEOs also chair the board. Along the same lines, a company should further improve corporate governance mechanisms, such as implementing decentralized decision-making processes when the CEO also chairs the board. These recommendations must be nuanced by the significant challenges involved in measuring CEO narcissism and by the presence of different cultural contexts.

7. LIMITATIONS AND FUTURE RESEARCH

This study acknowledges several limitations that pave the way for future research. First, despite the significant difficulty in data collection, expanding the sample size would be desirable to enhance the robustness of our findings. Second, while the use of unobtrusive behavioral measures to assess CEO personality is well-established in upper echelons research, we acknowledge potential concerns regarding construct validity. Our proxies capture the external manifestations of narcissism, which may not fully reflect the internal psychological complexity of the trait. Future research could benefit from employing a multi-method approach, combining secondary data with psychometric surveys to achieve convergent validity, particularly for the vulnerable dimension, which is inherently more covert and difficult to capture through public organisational data. Third, while narcissism is a stable CEO attribute, our observation period was not particularly long, so extending the timeframe would be beneficial. Finally, we used environmental data from CSRHub; future research could compare this with companies' direct environmental disclosures. In summary, research on CEO psychological traits and environmental performance is nascent, offering fertile ground for further exploration.

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Understanding Generation Z's Willingness to Pay for Sustainable Fashion: Personal and Corporate Drivers

Determinantes de la disposición a pagar por moda sostenible en la Generación Z: factores personales y empresariales

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ABSTRACT

The present study aims to explore the sustainable fashion purchasing behavior of Generation Z by identifying both personal and corporate factors that could enhance the intention to buy and pay a premium price for sustainable clothing. In addition, it explores the potential moderating role of fashion consciousness in the relationship between willingness to pay a premium price and purchase behavior. The research employs a survey-based approach followed by a PLS-SEM analysis to examine the key factors influencing sustainable fashion purchasing behavior. The results indicate that altruism, consumer knowledge, and corporate social responsibility drive the willingness to pay more for sustainable fashion, which, in turn, predicts purchase behavior among young consumers. These findings highlight the importance of both individual values and corporate practices in shaping consumer decisions in this context. This study aims to provide valuable insights into the psychological and corporate drivers of sustainable fashion adoption among Generation Z, contributing to the existing literature on sustainable consumption and consumer behavior. Furthermore these findings are expected to help boost sustainable fashion consumption by offering relevant practical implications for brands, enabling them to better align with consumer values and build stronger, more stable relationships with potential customers, while encouraging more responsible and conscious consumption patterns.

Keywords: Sustainable fashion; Fashion consciousness; Altruism; Consumer knowledge; Corporate social responsibility.

RESUMEN

Este estudio tiene como objetivo explorar el comportamiento de compra de moda sostenible de la Generación Z mediante la identificación de factores personales y corporativos que podrían potenciar la intención de compra y la disposición a pagar un precio superior por prendas sostenibles. Asimismo, analiza el posible papel moderador de la conciencia de moda en la relación entre la disposición a pagar un precio superior y el comportamiento de compra. La investigación emplea un enfoque basado en encuestas, seguido de un análisis PLS-SEM, para examinar factores clave que influyen en el comportamiento de compra de moda sostenible. Los resultados indican que el altruismo, el conocimiento del consumidor y la responsabilidad social corporativa impulsan la disposición a pagar más por la moda sostenible, que, a su vez, predice el comportamiento de compra entre los consumidores jóvenes. Estos hallazgos ponen de relieve la importancia tanto de los valores individuales como de las prácticas empresariales en la configuración de las decisiones de los consumidores. Este estudio aporta valiosas contribuciones sobre los factores psicológicos y corporativos que impulsan la adopción de la moda sostenible entre la Generación Z, contribuyendo a la literatura existente sobre consumo sostenible y comportamiento del consumidor. Asimismo, se espera que estos resultados contribuyan a impulsar el consumo de moda sostenible al ofrecer implicaciones prácticas relevantes para las marcas, permitiéndoles alinearse mejor con los valores de los consumidores y construir relaciones más sólidas y estables con sus clientes potenciales, al tiempo que fomentan patrones de consumo más responsables y conscientes.

Palabras clave: Moda sostenible; Conciencia de la moda; Altruismo; Conocimiento; Responsabilidad social corporativa.

1. INTRODUCTION

According to the United Nations, the textile industry is one of the most polluting industries worldwide. It is estimated to account for approximately 10% of global carbon emissions and nearly 20% of worldwide drinking water pollution. Despite these alarming figures, fashion consumption continues to grow, driven largely by fast fashion business models and sustained consumer demand (McKinsey, 2024). Global textile fiber production has grown exponentially since the early 2000s, while less than 1% of discarded clothing is recycled into new items (European Parliament, 2024). Given that most textile fibers are not biodegradable, it is estimated that nearly three-fifths of all fashion products ultimately end up in landfills (National Geographic, 2023).

In this context, sustainability is emerging as a central strategic challenge for the fashion industry. Increasingly strict environmental regulations and social pressure require brands to reduce greenhouse gas emissions, minimize waste, and improve labor conditions across their value chains (McKinsey, 2024). At the same time, consumers are becoming more aware of environmental and social issues and increasingly expect brands to behave responsibly (Brandão & Costa, 2021; Vehmas *et al.*, 2018). As a response, sustainable fashion, defined as fashion products and practices that integrate environmental and social sustainability principles providing a balanced approach to both fashion consumption and production (Goworek *et al.*, 2012), has been positioned as a potential solution to address issues such as pollution, resource depletion, unfair labor practices, and unethical production systems (Busalim *et al.*, 2022).

From a generational perspective, Generation Z represents a particularly relevant segment for the future of sustainable fashion (Dragolea *et al.*, 2023). This group is widely characterized by strong social and environmental awareness, a pronounced sensitivity to ethical issues, and a high level of engagement with sustainability-related causes (Carnegie, 2022; Vladimirova *et al.*, 2024). Previous research suggests that Generation Z consumers are more likely than older cohorts to express favorable attitudes towards sustainable consumption and to support brands that align with their values (Observatorio Cetelem, 2023). However, despite this apparent alignment between values and attitudes, actual sustainable purchasing behavior remains inconsistent. Indeed, a persistent attitude–behavior gap has been documented in the sustainable fashion literature (ElHaffar *et al.*, 2020; Park & Lin, 2020). While consumers frequently express positive attitudes towards sustainable clothing, these oftentimes do not translate into actual purchase decisions.

Prior studies have identified several barriers that help explain this discrepancy, including limited brand transparency, perceived lack of aesthetic appeal, and concerns regarding style and trendiness (Achabou *et al.*, 2020; Behre & Cauberghe, 2024). Another major challenge facing sustainable fashion is the perception that its prices are higher than those of conventional fashion. This perception, combined with young consumers' limited willingness to pay a price premium (Blas Riesgo *et al.*, 2023; Brandão & Costa, 2021), creates a negative trade-off that places sustainable fashion at a competitive disadvantage.

Existing research has not sufficiently clarified which individual and corporate-level factors drive consumers to be willing to pay a price premium for environmentally friendly fashion, nor how these factors ultimately translate into purchase behavior, particularly among Generation Z consumers. Moreover, prior studies tend to examine personal traits, corporate social responsibility, or brand-related variables in isolation, leaving a fragmented understanding of how these elements jointly shape consumers' willingness to pay and purchasing decisions in the context of sustainable fashion.

In response to this gap, this study aims to examine the individual and firm-level factors influencing Generation Z consumers' willingness to pay a premium for sustainable fashion and how this willingness translates into purchase behavior, moderated by fashion consciousness.

Based on this objective, this study addresses the following research questions:

RQ1. To what extent do individual factors (e.g., altruism and consumer knowledge) and firm-level factors (e.g., corporate social responsibility and brand reputation) influence Generation Z consumers' willingness to pay a premium for sustainable fashion products?

RQ2. Does willingness to pay a premium for sustainable fashion translate into purchase behavior among Generation Z consumers, and is this relationship moderated by fashion consciousness?

Altruism refers to a selfless concern for the welfare of others and has been shown to influence ethical and pro-social consumption decisions (Farzin *et al.*, 2023). Consumers with higher levels of altruism are more likely to consider the broader social and environmental consequences of their fashion purchases. Sustainability awareness, closely linked to consumer knowledge and familiarity with sustainability issues, also plays a crucial role in shaping sustainable consumption patterns. People who are aware of the fashion industry's environmental impact are more likely to adopt sustainable purchasing behaviors, including reducing overall consumption and supporting or purchasing environmentally friendly brands (McNeill & Moore, 2015).

Beyond individual traits, corporate-level perceptions play a critical role in sustainable fashion consumption. Corporate social responsibility can be defined as the deliberate allocation of corporate resources to promote social welfare and strengthen relationships with key stakeholders (Barnett, 2007). From a marketing perspective, CSR communication contributes to corporate differentiation, credibility, and competitive advantage (Porter & Kramer, 2006; Öbersender *et al.*, 2013). Similarly, brand reputation, meaning reflecting consumers' overall evaluations of a company's past and present actions (Fombrun *et al.*, 2000), has been shown to directly influence purchase intentions (Faircloth *et al.*, 2001). For sustainability-oriented consumers, the alignment between a brand's identity, reputation, and sustainability claims becomes especially critical.

Finally, this study also examines the moderating role of fashion consciousness in the relationship between willingness to pay and sustainable fashion purchase behavior. Sustainable fashion is still frequently perceived as less trendy, less stylish, and more limited in design options compared to conventional fashion offerings (Behre & Cauberghe, 2024). Understanding whether fashion consciousness strengthens or weakens the translation of willingness to pay into actual purchase behavior among Generation Z consumers therefore represents an important and underexplored research question.

Overall, this study contributes to the sustainable fashion literature by offering an integrated framework that combines individual values and corporate perceptions to explain both willingness to pay and purchase behavior among Generation Z consumers, with a specific focus on the Spanish context. By clarifying these relationships, the findings aim to provide actionable insights for fashion brands seeking to promote sustainable consumption while remaining economically viable.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Consumers increasingly express concern for sustainability and responsible consumption; however, this concern frequently fails to translate into actual purchasing behavior, particularly in the fashion domain (Gálvez-Sanchez *et al.*, 2024; McNeill & Moore, 2015).

In the literature, sustainable fashion refers to the variety of ways by which a fashion item could be perceived to be more sustainable because it is related to environmental, social, slow fashion, reuse, recycling, upcycling and cruelty-free production practices (Mukendi *et al.*, 2020; Park & Lin, 2020). Building on previous research, the present study explores the role of altruism, consumer knowledge, brand reputation and corporate social responsibility as factors that might shed further light on what has been called the "ethical purchasing gap" (Nicholls & Lee, 2006)

2.1. Altruism

Prior research has identified several personal factors, such as perceived risk, environmental concern, subjective norms, and perceived consumer effectiveness (i.e., the extent to which consumers believe their individual actions can positively impact the environment), as predictors of purchase intention in the sustainable fashion context (Park & Lin, 2020). This study focuses on altruism based on the idea that purchasing sustainable fashion can be considered an altruistic behavior, as it produces future-oriented benefits that contribute to the well-being of society as a whole (Reimers *et al.*, 2017).

Altruistic behavior "is influenced by the intensity of moral (personal) obligation which an individual feels to take specific helping actions" (Schwartz, 1977, p. 227) and it involves benefiting others without expecting something in return (Buil *et al.*, 2024). Altruism is one of the most significant qualities of Generation Z (Dabija *et al.*, 2019), which includes those born between 1996 and 2011 (Lanier, 2017). Also, for Generation Z, altruism is higher than in other generational groups (Lee *et al.*, 2022).

This quality is related to self-actualisation, which leads individuals to develop their full potential and achieve the idea of the ideal self (Palomo-Domínguez *et al.*, 2023). Moreover, the altruistic value is one of the most relevant psychographic variables to explain consumers' pro-environmental attitudes, as people with altruistic qualities are often more aware and concerned about environmental issues (Aydin, 2025; Wang *et al.*, 2020). Although it has not been extensively researched, altruism has been shown to boost positive attitudes and purchase intentions toward sustainable fashion, especially when compared with the well-established construct of environmental concerns (Farzin *et al.*, 2023).

Therefore, it is expected that altruism can have a positive impact on the willingness to pay a premium price for sustainable fashion garments. Consequently, it is proposed:

H_1: Altruism is positively related to willingness to pay a higher price

2.2. Consumer knowledge

Consumer knowledge is related to familiarity, understood in terms of previous consumption experiences, and product knowledge, which refers to information about a product stored in memory (Philippe & Ngobo, 1999).

Consumer knowledge is a key factor behind the frequent mismatch between what individuals say they value and what they actually purchase (Chang & Watchravesringkan, 2018). Research indicates that many consumers have only a partial understanding of sustainable fashion, both regarding which sustainable options are available and how fashion choices affect environmental and social outcomes (Busalim *et al.*, 2022). Kong *et al.* (2016) found that consumer knowledge plays an important role in forming attitudes toward sustainable fashion products. It has been shown that increased awareness of sustainability issues has an impact on purchasing decisions for products such as food, technology and fashion (Han *et al.*, 2024; Maichum *et al.*, 2016). Greater consumer knowledge in this domain attenuates the attitude-intention-purchase behavior gap. The more information and education the consumer receives about sustainability in fashion, the more it will influence their actual behavior and intention to buy sustainable products (Blazquez *et al.*, 2020). This not only leads them to be more willing to buy this type of garment, but also favors the intention to pay a higher price (El-Deeb *et al.*, 2023), as consumers motivated by pro-environmental attitudes are more likely to pay more for environmentally friendly goods (Ojea & Loureiro, 2007; Lusk *et al.*, 2007).

Therefore, it is proposed:

H_2: Consumer knowledge of sustainable fashion is positively related to willingness to pay a higher price

2.3. Corporate Social Responsibility (CSR)

CSR is defined as "the voluntary allocation of corporate resources to enhance social well-being, serving as a mechanism to foster positive relationships with key stakeholders" (Barnett, 2007, p. 801). CSR allows firms to take responsibility for the economic, social, and environmental consequences of their operations by adopting initiatives such as environmental management systems (Farmaki, 2022). This not only promotes more responsible practices but can also lead to long-term competitive advantage (Margolis *et al.*, 2009) and to a positive effect on the financial results of organizations (Thorisdottir & Johannsdottir, 2020).

CSR initiatives are often embedded within a company's strategic intent, serving to differentiate the firm, enhance reputational capital, and secure stakeholder support (Porter & Kramer, 2006). They should be aligned with the company's brand promise and supporting core values, which are at the heart of the corporate brand identity (Urde, 2013). CSR activities have a positive influence on consumers' perception of companies, which could favor their purchase intention, as they make consumers feel proud of the company's ability to carry out socially responsible activities (Narayanan & Singh, 2023). For example, in the context of organic products, the product type (organic) serves as a vehicle to develop a positive perception of CSR activities, which ultimately leads to a positive purchase intention (Jabeen *et al.*, 2023).

Consumers' perceptions of fast fashion brands' corporate social responsibility efforts influence both their purchase intentions and the perceived value of the brand (Mickelsson *et al.*, 2023). Previous literature has shown that consumers who have a positive perception of corporate social responsibility are willing to pay a higher price (Becchetti *et al.*, 2020; Narayanan & Singh, 2023). In the fashion industry specifically, Gálvez-Sánchez *et al.* (2024) demonstrate that CSR positively affects willingness to pay. In the same way, it is to be expected that consumers who perceive corporate social responsibility practices in a positive way will be willing to pay a premium price for sustainable fashion products.

Consequently, H_3 is proposed as follows:

H_3: Corporate social responsibility (CSR) is positively related to willingness to pay a higher price.

2.4. Brand reputation

While brand identity is always an expression of strategic intent, brand reputation is primarily externally rooted (Davies & Chun, 2003). Fombrun and van Riel (1997) define reputation as the associations that individuals make with a company's actions and past performance that provide insight into the company's ability to meet the needs of different stakeholders.

Developing brand reputation is not a quick or simple process, as it is built through solid communication campaigns as well as continuously exceeding customer expectations by offering high quality services or products (Moreno-Domínguez *et al.*, 2022; Veloutsou & Moutinho, 2009). Brand reputation conveys information about intrinsic and intangible characteristics such as quality, especially when there is no previous experience or other means of evaluating them (Wang *et al.*, 2021). Additionally, it facilitates the purchasing process by reducing the time spent searching for information (Maden *et al.*, 2012). It often influences customers' perception of value and trust, affecting their willingness to spend more (Yaghi, S. 2024).

For example, Ecoalf, a Spanish eco-fashion brand, is widely praised for its commitment to sustainability by using recycled materials and promoting circular fashion. On the other end, ultra-fast fashion brands such as Shein face harsh criticism due to a lack of transparency and environmental impact, among other factors. These contrasting approaches strongly shape and influence each brand's overall reputation and perceived credibility in the fashion industry.

Whereas sustainable clothing is often considered less attractive than conventional fashion (Achabou *et al.*, 2020), it is expected that the reputation of the brand can have a positive impact by favoring that consumers are willing to pay a higher price.

H_4: Brand reputation fashion is positively related to willingness to pay a higher price.

2.5. Willingness to pay a higher price

One of the main barriers that sustainable products generally encounter is that consumers perceive the price higher than conventional alternatives (Ayadi & Lapeyre, 2016). This perception often outweighs other potential benefits. In the fashion industry, where customers oftentimes make purchase decisions based on price and design, hence prioritizing fashion over sustainability, this is a particularly relevant question.

However, Generation Z consumers show a greater willingness to purchase sustainable clothing and are more likely to pay more for sustainable products or services than Generation X or Baby Boomers (Observatorio Cetelem, 2023). Fei *et al.* (2024) found that Generation Z consumers are willing to pay more if the company adopts responsible environmental behaviors. In fact, the idea that guides this research is that willingness to pay more might serve as a key indicator of consumer commitment to sustainable consumption practices.

Therefore, following studies that conclude that consumers who hold pro-environmental attitudes are willing to pay price premiums for eco-friendly products (Park & Lin, 2020), and that when consumers understand the value and long-term benefits of sustainable products, they are more likely to accept the price difference (Becchetti *et al.*, 2020; Haws *et al.*, 2014), we hypothesise that:

H_5: The willingness to pay a higher price fashion is positively related to sustainable fashion purchase behavior.

2.6. Fashion consciousness

Fashion consciousness refers to a person's degree of involvement with design, fashion of clothing and in one's appearance, which often includes the desire for up-to-date styles, frequent changes in one's wardrobe and pleasurable shopping experiences, influencing their decision-making (Nam *et al.*, 2007, p. 103). Consumers with a higher level of awareness perceive buying clothes as a pleasurable experience and tend to have several options to choose those garments that follow fashion trends that best reflect their perceived self-concept (Hassan & Harun, 2016; Zhang & Wang, 2023). Drawing on McNeill and Moore (2015), fashion consumers can be broadly distinguished according to the motivations that guide their clothing choices, ranging from hedonic self-oriented motives to concerns about social image and, ultimately, to more ethically driven considerations. In this sense, fashion consciousness is not a uniform construct, but rather encompasses different consumer orientations that vary in the extent to which style, status, or societal impact shape sustainable fashion decisions.

Despite the importance that consumers may give to environmental or social problems, when it comes to shopping, those who are more concerned about fashion prefer products that better express their style over other variables (Zhang & Wang, 2023). Oftentimes, sustainable fashion garments are perceived as less attractive, out of style and even of worse quality (Han *et al.*, 2017). Hence, and despite being willing to pay a higher price, if a person is highly interested in fashion, the intention to buy sustainable items could be compromised.

The moderating effect of fashion consciousness has been previously proven in the literature (Zhang & Wang, 2023). Even more so, in the context of sustainable fashion Mishra *et al.* (2021) showed that fashion consciousness moderates the relationship between psychological ownership and sustainable consumption behavior. Based on the abovementioned, the following hypothesis is proposed:

H_6: Fashion consciousness moderates the relationship between willingness to pay more and purchase behaviour

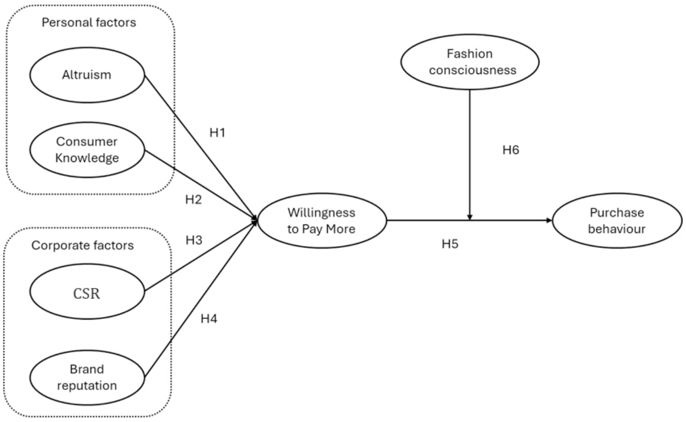

Figure 1
Proposed research model
Source: Own elaboration.

3. METHODOLOGY

Data was collected through an online questionnaire conducted in April and May of 2024 with a sample of 295 people. After eliminating responses that did not meet the control requirements, a total of 288 valid surveys remained. The data collection process followed the criteria suggested by Dörnyei (2007), such as proximity, availability, and willingness to participate in the study. Since this research focuses on a specific subgroup of the population, Gen Z individuals, convenience sampling was considered the most appropriate approach. This method was considered appropriate due to its effectiveness in obtaining a sample that allows for the generalization of results (Nicolau *et al.*, 2025; Tsiotsou, 2015). Nevertheless, given the non-probabilistic nature of the sample, the results cannot be generalized to the entire population, instead, they reflect the perceptions and behaviours of young consumers belonging to Gen Z.

Data collection was conducted through the distribution of an online questionnaire to a large group of students, ensuring both anonymity and confidentiality of the participants. Participants were given a brief definition of sustainable fashion in order to ensure their understanding of the topic. They were then asked to confirm if they understood the definition.

Partial least squares structural equation modelling (PLS-SEM 4.0) was used for the subsequent data analysis and confirmation of the proposed theoretical model. The PLS methodology over covariance-based SEM (CB-SEM) was selected for several reasons. First, it is particularly suitable for the analysis of smaller sample sizes. Moreover, it is especially appropriate for research that is prediction-oriented and focused on theory development, rather than for studies aimed towards theory confirmation. Finally, its ability to handle non-normal data distributions and to produce robust results further supports its appropriateness for the present study (Hair *et al.*, 2019).

Given that all data were collected using a single survey instrument, the potential presence of common method bias was assessed. To reduce any common variance problem and ensure the efficiency of the data, the Harman's single-factor test was performed. The results indicate that no single factor emerged, and the first factor accounted for 28.57% of the total variance, which is well below the 50% threshold commonly used to indicate serious common method bias (Podsakoff *et al.*, 2003). To assess sample size adequacy, we applied the inverse square root method for minimum sample size estimation in PLS-SEM (Kock & Hadaya, 2018). Although the inverse square root method suggests that detecting very small effects ($\beta = 0.091$) would require a larger sample, the final sample of 288 is consistent with the use of PLS-SEM. This technique is particularly suitable for studies with relatively small samples due to its variance-based estimation approach and prediction-oriented nature (Hair *et al.*, 2019). Therefore, the model is expected to provide reliable estimates for medium-to-large effects, while results associated with very small effects should be interpreted with caution.

The constructs were measured on a 7-position Likert scale. More specifically, to study the personal factors that affect sustainable fashion buying behaviour, altruism was measured using 7 items originally proposed by Wei and Jung (2017), while consumer knowledge of sustainable fashion was assessed through 6 items adapted from Ho *et al.* (2020) and Preuit (2016). Purchase behaviour was measured using 4 items derived from Lee (2008) and Schlegelmilch *et al.* (1996).

To evaluate the corporate-related factors, corporate social responsibility was measured using 4 items, and brand reputation was assessed through 2 items, both based on the work of Flores Hernández *et al.* (2020). Furthermore, willingness to pay more was measured using 3 items adapted from Khan *et al.* (2024). For the moderating variable, fashion consciousness, the items used in the survey were extracted from Gould and Stern (1989) and Johnstone, and Lindh, (2022). Subsequently, a dummy variable was created to differentiate between two groups of consumers: those with high fashion consciousness and those with low fashion consciousness.

All constructs in the model were specified as reflective (Mode A), as their indicators are considered manifestations of the underlying latent variables rather than formative components.

4. RESULTS

Out of the 288 valid answers, 95% were ranked between the ages of 19 and 22 and almost equal in terms of gender (50,1% male and 49,9% female). Among the respondents, 44% have purchased sustainable fashion at least once, whereas 56% have never made such a purchase.

4.1. Measurement Model Assessment

Before assessing the structural relationships, the measurement model was evaluated to ensure the reliability and validity of the constructs. For the evaluation of the measurement model, the modelling of partial least squares structural equations (PLS-SEM) was used using SmartPLS 4.0.

Most of the outer loadings exceed the recommended threshold of .7 (see Appendix). For those items that did not reach the minimum acceptable value, an additional analysis was conducted to determine whether they should be retained in or removed from the model. One item, related to brand reputation (REP2), was removed because its value was less than .4 and its exclusion significantly improved both Average Variance Extracted (AVE) and composite reliability (Hair *et al.*, 2017; Hensler *et al.*, 2009). The remaining two-item scale showed satisfactory reliability and convergent validity, consistent with prior research using parsimonious global reputation measures (Sarstedt *et al.*, 2013). For the remaining constructs, all initial items were retained.

The results of the measurement model were favorable (see table 1), since the reliability indicators (Cronbach's alpha and Composite Reliability) of all constructs, except brand reputation, exceeded reference thresholds of 0.80 for composite reliability and .70 for Cronbach's alpha (Nunnally, 1979). Brand reputation has a value of .68, very close to the cut-off point of 0.7. Likewise, reliability values between 0.60 and 0.70 are considered acceptable (Hair *et al.*, 2019).

Table 1
Reliability and Validity of the Scales

	Cronbach's α	CR	AVE
ALT	.88	.921	.576
CK	.87	.897	.606
PB	.81	.843	.639
CSR	.89	.887	.748
REP	.68	.712	.753
WPM	.90	.898	.827

Note: CR = Composite reliability; AVE = average variance extracted. ALT= altruism, CK= Consumer knowledge, PB= Purchase behavior, CSR= Corporate Social Responsibility, REP= reputation, WPM= willingness to pay more

Source: Own elaboration.

Convergent validity was assessed using the average variance extracted (AVE). Following Fornell and Larcker (1981), a value above .50 indicates that a construct explains more than 50% of the variance of its indicators (Hair *et al.*, 2017). In this study, AVE values ranged from .58 to .83, thus supporting the convergent validity of all constructs.

Discriminant validity was assessed using two complementary approaches: the Fornell and Larcker (1981) criterion and the Heterotrait–Monotrait ratio (HTMT) proposed by Henseler *et al.* (2015).

According to the Fornell and Larcker (1981) criterion, the square root of the average variance extracted (AVE) of each construct should be greater than its correlations with other constructs. As shown in Table 2, the AVE values on the diagonal are consistently higher than the corresponding inter-construct correlations, supporting discriminant validity.

Additionally, discriminant validity was assessed using the HTMT ratio. Following Henseler *et al.* (2015), values below the recommended threshold of .90 indicate adequate discriminant validity. As shown in Table 2, all HTMT values are below this threshold.

Taken together, both tests confirm the discriminant validity of the constructs in the model.

Table 2
Discriminant validity Fornell-Larcker criteria

	ALT	CK	PB	CSR	REP	WPM
ALT	**.759**					
CK	.191	**.778**				
PB	.214	.613	**.799**			
CSR	.343	.192	.148	**.865**		
REP	.147	.090	.115	.313	**.868**	
WPM	.346	.447	.703	.259	.144	**.909**

Note: The AVE is included on the main diagonal and the inter-construct correlations to the square are shown in each column below the main diagonal. ALT= altruism, CK= Consumer knowledge, PB= Purchase behavior, CSR= Corporate Social Responsibility, REP= reputation, WPM= willingness to pay more.

Source: Own elaboration.

4.2. Structural Model Assessment

After establishing the adequacy of the measurement model, the structural model was evaluated. The significance of the path coefficients was assessed using a bootstrapping procedure with 5,000 iterations. The fundamental criteria for evaluating the structural model are the coefficient of significance, the level of the r^2 values, the f2 effect size, the predictive relevance Q2.

Table 3 reports the explanatory power (R^2 adjusted) and predictive relevance (Q^2) of the endogenous constructs. In marketing research, R^2 values of .75, .50, and .25 for endogenous constructs are typically described as substantial, moderate, and weak, respectively (Hair *et al.*, 2011; Henseler *et al.*, 2009). In this study, the R^2 adjusted values for willingness to pay more (.280) and purchase behaviour (.507) indicate weak and moderate explanatory power, respectively.

Predictive relevance was assessed using the Stone-Geisser Q^2 value. According to Henseler *et al.* (2009), Q^2 values greater than zero indicate that the model has predictive relevance for a given endogenous construct. The Q^2 values obtained for willingness to pay more (.266) and purchase behaviour (.297) are both above zero, suggesting that the model exhibits adequate predictive relevance for both constructs.

Lastly, the f2 effect is analyzed and values of .02, .15, and .35 indicate an exogenous construct's small, medium, or large effect, respectively (Cohen, 1988). Table 4 also reports the effect sizes (f^2) of the structural relationships. According to the results, the effects of consumer knowledge on willingness to pay more (.191) and willingness to pay more on purchase behaviour (.564) are large. While the rest of the effects, altruism on willingness to pay more (.065), CSR on willingness to pay more (.010) and brand reputation on willingness to pay more (.003), have a small size, with values below .02. Therefore, it can be concluded that consumer knowledge is the variable that has the greatest impact on willingness to pay more.

Table 3
Explanatory and predictive power of the structural model

Endogenous construct	R^2 adjusted	Q^2
Willingness to pay more	.280	.266
Purchase behaviour	.507	.297

Source: Own elaboration.

Table 4
Effect size (f^2) of structural relationships

Structural relationship	f^2	Effect size
Consumer knowledge → Willingness to pay more	.191	Medium
Willingness to pay more → Purchase behaviour	.564	Large
Altruism → Willingness to pay more	.065	Small
CSR → Willingness to pay more	.010	Small
Brand reputation → Willingness to pay more	.003	Small

Note: Effect size (f^2) thresholds follow Cohen, 1988 .02 (small), .15 (medium), and .35 (large).

Source: Own elaboration.

The results of the final model confirm four of the six hypotheses proposed (see figure 2). Both personal factors, altruism and consumer knowledge, have a positive and direct influence on the predisposition to pay a higher price (β = .235, p < .001) and (β = .381, p < .001) respectively, hence confirming H_1 and H_2. As for corporate factors, only CSR positively influences the predisposition to pay a higher price (β = .091, p < .05), confirming H_3. However, the results indicate that brand reputation does not influence the predisposition to pay a higher price, which leads to the rejection of H_4.

The lack of a significant effect of brand reputation on willingness to pay more suggests that, in the context of sustainable fashion and among Gen Z consumers, a favorable reputation is not sufficient for consumers to associate a brand with sustainable values or to justify a price premium for sustainable fashion lines. While brand reputation reflects a general evaluation of a company, it may not necessarily convey information about specific sustainability practices. In contrast, corporate social responsibility initiatives represent more tangible and value-aligned signals, which may be more significant for younger consumers who are particularly sensitive to ethical and environmental issues (Vladimirova *et al.*, 2024). This finding highlights the importance for brands to actively communicate and explain their concrete sustainability actions, particularly to differentiate sustainable fashion offerings from fast fashion alternatives.

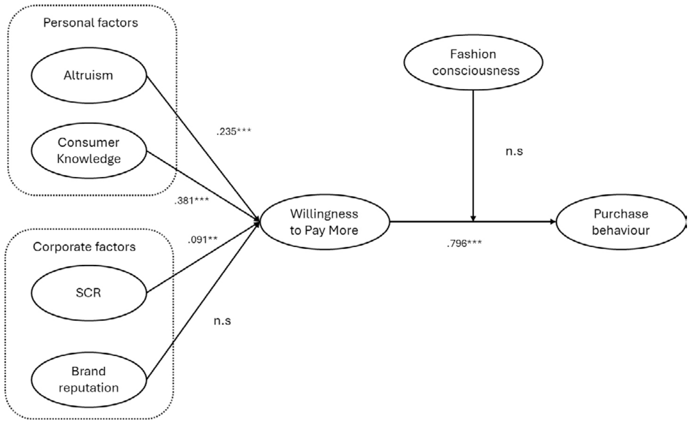

Figure 2
Results of the structural model.

Note: Reported values represent standardized path coefficients (β). *** p < 0.001; ** p < 0.05; * p < 0.1; n.s. = not significant. Significance levels were obtained using bootstrapping.

Source: Own elaboration.

Finally, the predisposition to pay a higher price influences sustainable purchasing behavior (β =.796, p <.001), confirming H_5, while the moderation of fashion consciousness is not significant, so H_6 is rejected. Therefore, the absence of a moderating effect of fashion consciousness suggests that, once consumers are willing to pay a premium for sustainable fashion, this willingness translates into actual purchase behavior regardless of their level of fashion involvement. This finding indicates that, among Generation Z consumers, ethical and sustainability related commitments may prevail over aesthetic considerations or fashion trends at the final stage of the purchase decision-making process. Therefore, although sustainable fashion has often been associated with aesthetic or design limitations (Achabou *et al.*, 2020; Behre & Cauberghe, 2024), the results suggest that such considerations do not necessarily act as a barrier to purchase among Generation Z consumers, even among those with higher levels of fashion involvement.

5. CONCLUSIONS AND IMPLICATIONS

The present study successfully addresses a gap in the literature by identifying and exploring new personal and corporate factors that could favor the willingness to pay more for sustainable fashion. The impact of two personal (altruism and consumer knowledge) and two corporate (CSR and brand reputation) variables on the predisposition to pay a higher price has been examined, as well as whether this willingness ultimately translates into actual purchasing behavior. Additionally, this study incorporates fashion consciousness as a moderating variable to provide a more nuanced and differentiated understanding of the proposed relationships.

The results reveal that both personal factors, altruism and consumer knowledge, positively and significantly predict the willingness to pay a higher price for sustainable fashion items. This indicates that consumers who possess a strong sense of social justice and responsibility are more inclined to invest in sustainable fashion, even when this entails a price premium. In line with previous research (Busalim *et al.*, 2022; Rahman *et al.*, 2023), the findings of this study also suggest that as consumers become better informed about sustainable fashion, their knowledge can help align their attitudes with their purchasing intentions.

On the corporate side, CSR is the only variable that emerged as a significant direct antecedent of willingness to pay a higher price. This suggests that consumers are more likely to financially support fashion brands that demonstrate a genuine and credible commitment to sustainable and ethical practices. Although brand reputation showed a positive effect, it was not statistically significant, indicating that a favorable brand image alone is insufficient to motivate consumers to pay more for sustainable fashion products.

Furthermore, willingness to pay a higher price was found to directly, positively, and significantly predict sustainable fashion purchase behavior. This implies that consumers who express a readiness to pay more for sustainable products are not merely stating their values in abstract terms but are effectively translating this disposition into concrete purchasing decisions.

Prior research has shown that fashion consciousness can moderate, within the sustainable fashion context, the relationship between motivation, opportunity, and ability, and purchase intention (Hasbullah *et al.*, 2022). Additionally, the findings of Riesgo *et al.* (2023) indicate that sustainable fashion consumers tend to be less price-sensitive and more willing to spend higher amounts compared to average consumers when purchasing and researching fashion brands and products. However, to the best of the authors' knowledge, the moderating role of fashion consciousness in the relationships proposed in the present study has not been empirically tested to date.

Interestingly, fashion consciousness did not moderate the relationship between willingness to pay and purchase behavior. This finding suggests that the transition from willingness to pay to actual purchasing is driven more by intrinsic values and ethical motivations than by external information or cognitive considerations about sustainable fashion.

From a theoretical standpoint, this study advances the literature on sustainable fashion consumption by moving beyond the predominant focus on general pro-environmental attitudes to examine the joint role of specific personal and corporate factors in shaping willingness to pay and subsequent behavior. While prior research has largely treated willingness to pay as an attitudinal outcome, our findings position it as a meaningful behavioral precursor that strengthens the attitudinal–behavioral link in this domain. Moreover, by incorporating fashion consciousness as a moderating variable, the study offers a more nuanced understanding of how identity-related motivations interact with ethical and knowledge-based drivers of sustainable consumption. The existing literature suggests that individuals with altruistic values are more inclined to purchase sustainable fashion products (Farzin *et al.*, 2023). Building on this perspective, the present study shows that altruism not only has a positive effect on purchase intention but also increases consumers' willingness to pay a price premium, which in turn reinforces purchase intention. This finding is particularly relevant given that sustainable fashion products are typically priced higher than fast fashion alternatives. These results are in line with previous research, including Henninger *et al.* (2016) and Pires *et al.* (2024). Overall, the results highlight altruism and CSR as particularly salient predictors of willingness to pay, while demonstrating the more limited role of brand reputation in this context, thereby refining existing theoretical models of ethical consumption among Generation Z.

With regard to managerial implications, the findings underscore the importance for fashion brands of designing interventions that strengthen altruistic orientations. This can be achieved by prioritizing transparent messages that signal an authentic commitment to responsible practices, thereby enhancing trust, loyalty, and relational ties with ethically oriented consumers. Retailers, in turn, can play a central role in generating consumer knowledge by curating and clearly signposting sustainable alternatives in both online and in physical stores. Additionally, retailer-led circular initiatives, such as repair, resale, or rental programs, can reinforce consumer knowledge and reduce the friction associated with sustainable purchasing.

For policymakers, the results point to the need for public education efforts that enhance understanding of fashion's environmental and social impacts, alongside policy support for circular infrastructure, including collection, sorting, recycling, and repair ecosystems, to facilitate broader adoption of sustainable consumption practices.

To operationalize these recommendations, brands should adopt clear and verifiable sustainability practices, such as providing transparent supply-chain information supported by third-party certifications, publishing comparable impact metrics, and communicating concrete progress toward environmental and social goals rather than relying on broad claims. Brands should also design communication campaigns that explicitly highlight the societal benefits of responsible consumption to reinforce altruistic motivations among Generation Z. Retailers, in turn, should facilitate sustainable choices by implementing clearer sustainability labeling online and in-store, creating dedicated sections for sustainable collections, and actively promoting repair, resale, and rental services as mainstream purchasing options rather than niche alternatives.

6. LIMITATIONS AND FUTURE RESEARCH

Despite the insights gained from this study, there are several limitations that must be acknowledged. In the first place, this study relies on convenience sampling approach, which constitutes a methodological limitation. Although this method is appropriate for research focused on a specific target group, it limits the generalizability of the findings beyond the studied population.

Secondly, the present research primarily examines two personal and two corporate variables. While these factors have shown to provide important insights, there are other variables that could influence consumers' willingness to pay for sustainable fashion, such as psychological traits, social influences, and economic conditions. Future research should consider a broader variety of factors to create a more comprehensive model of consumer behavior in sustainable fashion.

In the third place, the study is based exclusively on closed-ended survey questions. While this approach allows for statistical testing and model estimation, it does not capture more nuanced consumer perceptions or explanations that could have emerged through open-ended questions or qualitative methods. Future research could therefore adopt mixed-method, to gain deeper insights into consumers' motivations and reasoning.

Lastly, given that most existing studies pertain to a single country (Busalim *et al.*, 2022), it should be interesting to expand this research and to include international contexts. This undertaking can enhance the understanding of how cultural differences influence consumer perceptions of sustainability in fashion. Comparative studies across countries could reveal unique patterns and preferences, informing global brand strategies in a fast-paced fashion industry.

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9. AUTHORSHIP

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APPENDIX

Table A.1
Outer loadings of the measurement model

Construct	Item		Outer loading
Altruism	ALT 1	Social justice, correcting injustice, care for the weak	0.610
	ALT 2	Preventing pollution, conserving natural resources	0.862
	ALT 3	Equality, equal opportunity for all	0.623
	ALT 4	Unity with nature, fitting into nature	0.794
	ALT 5	A world of peace, free of war and conflict	0.600
	ALT 6	Respecting the earth, harmony with other species	0.860
	ALT 7	Protecting the environment, preserving nature	0.894
Consumer Knowledge	CK 1	I am quite familiar with the concept of sustainable fashion.	0.795
	CK 2	I often see sustainable fashion items in shopping venues (e.g., department stores, specialty shops, shopping malls).	0.548
	CK 3	I have purchased quite a few sustainable fashion items.	0.836
	CK 4	I have tried on quite a few sustainable fashion items, even if I did not end up buying them	0.793
	CK 5	I know quite a lot about sustainable fashion.	0.893
	CK 6	I have read many articles or news stories about sustainable fashion, or I have learned quite a lot about it.	0.761
Purchase Behavior	PB 1	I choose to buy exclusively sustainable clothing.	0.713
	PB 2	I buy sustainable clothing instead of conventional clothing if the quality is comparable	0.765
	PB 3	I buy sustainable clothing even if it is more expensive than conventional clothing.	0.897
	PB 4	When I buy clothing, I pay attention to whether it is sustainable.	0.810
Corporate Social Responsibility	CSR 1	is socially responsible.	0.875
	CSR 2	is committed to improving the well-being of society.	0.904
	CSR 3	is respectful of the environment.	0.877
	CSR 4	has human resource practices that go beyond the legal minimum.	0.800
Brand Reputation	BR 1	has a good reputation.	0.905
	BR 3	is respected.	0.829
Willingness to Pay More	WTP 1	I am willing to pay more for sustainable clothing than for cheaper, non-sustainable options.	0.920
	WTP 2	I would like to continue buying sustainable clothing, even if conventional brands reduce their prices.	0.909
	WTP 3	Given the benefits I receive from buying sustainable fashion, I would be willing to pay a higher price.	0.898

Source: Own elaboration.

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Mediterranean Diet and Happiness in Generation Z: Implications for Well-Being Management

Dieta Mediterránea y Felicidad en la Generación Z: Implicaciones para la Gestión del Bienestar

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ABSTRACT

This study investigates how adherence to the Mediterranean diet, hedonic and eudaimonic well-being, and physical activity jointly influence self-perceived happiness among Generation Z consumers. Using survey data collected from young adults in Andalusia, Spain, and applying fuzzy-set qualitative comparative analysis, the research uncovers three distinct and sufficient configurations associated with high levels of happiness. The first pathway highlights the combination of physical activity with strong eudaimonic well-being, indicating that purposeful engagement and active lifestyles form a robust pathway to flourishing. The second pathway links Mediterranean diet adherence, physical activity, and hedonic well-being, suggesting that balanced eating, movement, and positive affect can work together to enhance subjective happiness. The third configuration shows that diet adherence, when paired with both hedonic pleasure and eudaimonic meaning, can foster happiness even in the absence of high physical activity. Importantly, no single factor emerged as a necessary condition, reinforcing the idea that happiness among Generation Z arises from multiple, equally valid lifestyle and psychological combinations. By integrating nutrition, positive psychology, and lifestyle behaviour within a configurational model, this study contributes to a more holistic understanding of youth happiness and offers implications for well-being management, practical insights for public health initiatives and policy strategies aimed at promoting well-being in younger populations.

Keywords: Mediterranean diet; Hedonic well-being; Eudaimonic well-being; Physical activity; Happiness; Generation Z.

RESUMEN

Este estudio examina cómo la adherencia a la dieta mediterránea, el bienestar hedónico y eudaimónico y la práctica de ejercicio físico influyen conjuntamente en la felicidad autopercibida de la Generación Z. Basado en una encuesta realizada a jóvenes adultos en Andalucía y utilizando análisis comparativo cualitativo con conjuntos difusos, el estudio identifica configuraciones que explican niveles elevados de felicidad. La primera combina ejercicio físico con bienestar eudaimónico, mostrando que un estilo de vida activo unido a un sentido claro de desarrollo personal constituye una vía sólida hacia el bienestar. La segunda integra adherencia a la dieta mediterránea, actividad física y bienestar hedónico, indicando que una alimentación equilibrada junto con movimiento regular y emociones positivas pueden favorecer la felicidad subjetiva. La tercera muestra que seguir la dieta mediterránea, cuando se combina con placer hedónico y propósito eudaimónico, también puede generar felicidad incluso sin altos niveles de ejercicio. Ningún factor individual aparece como condición necesaria, lo que confirma que la felicidad en la Generación Z surge de diferentes combinaciones de hábitos y recursos psicológicos. Al integrar nutrición, psicología positiva y comportamientos saludables en un modelo configuracional, este trabajo ofrece una visión más completa del bienestar juvenil y aporta orientaciones para la gestión del bienestar, el diseño de intervenciones y políticas centradas en promover estilos de vida que apoyen la salud, el equilibrio emocional y la felicidad de los jóvenes. Este enfoque aporta claridad adicional para comprender mejor sus necesidades actuales y orientar acciones efectivas en contextos educativos diversos.

Palabras clave: Dieta mediterránea; Bienestar hedónico; Bienestar eudaimónico; Ejercicio físico; Felicidad; Generación Z.

1. INTRODUCTION

Promoting physical and psychological well-being in younger generations has become a central concern in contemporary public health and social policy, particularly considering the growing prevalence of mental health challenges and unhealthy lifestyle behaviours. Recent evidence shows that Generation Z reports higher levels of anxiety, stress, and emotional vulnerability compared to previous cohorts, while also exhibiting increasingly sedentary lifestyles and suboptimal dietary patterns (Saini *et al.*, 2026; World Health Organization, 2025). In parallel, adherence to the Mediterranean diet, traditionally associated with both physical and psychological health benefits, has been declining among younger populations, raising concerns about long-term well-being outcomes (Tomás-Gallego *et al.*, 2025). These trends highlight the urgency of understanding how lifestyle behaviours and psychological orientations jointly shape happiness in this generation.

Against this backdrop, Generation Z, typically defined as individuals born between the mid-1990s and early 2010s (Bermúdez *et al.*, 2021), represents a particularly relevant cohort for examining the formation of subjective well-being. This generation has grown up in a context characterised by digital hyperconnectivity, economic uncertainty, and increased awareness of mental health issues, all of which may influence how happiness is constructed and experienced. From a theoretical perspective, well-being research has traditionally distinguished between two complementary dimensions: hedonic well-being, associated with pleasure, positive affect, and life satisfaction, and eudaimonic well-being, linked to meaning, self-development, and optimal functioning (Ryan & Deci, 2001; Ryff, 2017). At the same time, lifestyle behaviours such as adherence to the Mediterranean diet and engagement in physical activity have been identified as key determinants of both physical and psychological health (Martínez-González *et al.*, 2017; Zhang *et al.*, 2025). However, existing research has largely examined these factors in isolation, overlooking the possibility that their combined effects may be critical in explaining happiness among younger populations. In this study, a clear conceptual distinction is established between well-being and happiness. Hedonic and eudaimonic well-being are treated as distinct antecedent dimensions of subjective experience. The former captures the pursuit of pleasure and enjoyment, while the latter reflects meaning, purpose, and self-realisation (Ryan & Deci, 2001; Ryff, 2017). Happiness, by contrast, is conceptualised as the global outcome that arises when these dimensions, together with lifestyle factors such as diet and physical activity, converge to shape young people's overall self-perception of flourishing. In line with Diener *et al.* (2018), we therefore regard well-being orientations as inputs that configure the conditions for happiness, rather than confusing happiness itself with its underlying components.

To explain the interaction between lifestyle factors and psychological orientations, this study adopts the Self-Determination Theory (SDT) as its theoretical framework. SDT posits that happiness emerges from the satisfaction of three basic psychological needs (autonomy, competence, and relatedness) whose satisfaction nurtures optimal functioning and subjective flourishing (Huta, & Ryan, 2010; Ryan & Deci, 2001). Within this framework, adherence to the Mediterranean Diet (MD) and engagement in physical activity (PA) are interpreted as need-supportive behaviours that facilitate the satisfaction of these core needs. Once these needs are fulfilled, individuals experience both hedonic well-being, reflected in pleasure and enjoyment, and eudaimonic well-being, reflected in meaning and personal growth. Happiness, in turn, represents the global evaluative outcome that emerges from these integrated processes. SDT therefore provides a coherent lens through which lifestyle behaviours, psychological orientations, and subjective happiness can be conceptually linked within a unified explanatory model.

Despite the growing body of research on well-being, two important limitations remain. First, most studies rely on linear and additive approaches that estimate the net effect of individual predictors, thereby overlooking the possibility that different combinations of conditions may lead to similar well-being outcomes. Second, there is limited empirical evidence focusing specifically on Generation Z that integrates lifestyle behaviours and psychological orientations within a unified framework. This gap is not only empirical but also theoretical, as it restricts our ability to understand happiness as a complex and configurational phenomenon. Addressing this limitation is essential to advance both well-being theory and its practical application in contexts such as public health, education, and youth policy.

Accordingly, this study proposes the following research questions:

RQ1: Are adherence to the Mediterranean Diet, physical activity, eudaimonic well-being, or hedonic well-being necessary conditions for happiness among Gen Z?

RQ2: What combinations of Mediterranean Diet, physical activity, eudaimonic well-being and hedonic well-being are sufficient to explain happiness among Gen Z?

To address these research questions, this study adopts a configurational approach based on survey data collected from Generation Z individuals in Andalusia, Spain, and analysed using fuzzy-set qualitative comparative analysis (fsQCA). This methodological approach allows capturing causal complexity, equifinality, and non-linear relationships between lifestyle behaviours and psychological orientations (Fiss, 2011). More specifically, the theoretical contribution of the study lies in showing that happiness among Generation Z is not explained by the isolated presence of Mediterranean diet adherence, physical activity, hedonic well-being, or eudaimonic well-being, but by the way these behavioural and psychological conditions are configured. This shifts the interpretation of happiness from an additive outcome to a configurational process in which lifestyle behaviours operate as need-supportive conditions whose relevance depends on their connection with hedonic enjoyment and eudaimonic meaning. In doing so, the study extends SDT by demonstrating that the satisfaction of psychological needs may be expressed through alternative lifestyle-based pathways rather than through a single dominant route. The introduction therefore closes by positioning the article around a precise theoretical claim: youth happiness is better understood as the outcome of alternative need-supportive configurations than as the direct result of any universal predictor.

2. LITERATURE REVIEW

2.1. Self-determination theory

Self-Determination Theory (SDT) provides a well-established framework for understanding human motivation and well-being through the satisfaction of three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2012; Ryan & Deci, 2000). When these needs are fulfilled, individuals experience higher levels of vitality, self-regulation, and psychological functioning, whereas their frustration is associated with diminished well-being and maladaptive outcomes (Vansteenkiste *et al.*, 2020).

Rather than conceptualising happiness as an isolated outcome, SDT interprets it as the result of underlying motivational processes driven by need satisfaction. In this sense, happiness reflects a global evaluative state emerging from the interaction between behavioural engagement and internal psychological orientations (Ryan & Deci, 2001). This perspective is particularly relevant for understanding how different lifestyle choices contribute to well-being.

Within this framework, lifestyle behaviours can be understood as need-supportive contexts that facilitate or hinder the satisfaction of basic psychological needs. Activities such as maintaining a healthy diet or engaging in regular physical activity may foster autonomy through self-regulated choices, competence through mastery and health-related efficacy, and relatedness through shared practices and social interaction (Ng *et al.*, 2012). These processes, in turn, give rise to two complementary dimensions of well-being: hedonic well-being, associated with pleasure and positive affect, and eudaimonic well-being, associated with meaning and personal growth (Huta & Ryan, 2010).

In the context of this study, SDT serves as an integrative framework linking lifestyle behaviours and psychological orientations to happiness. Adherence to the Mediterranean diet (MD) and physical activity (PA) are conceptualised as need-supportive behaviours, while hedonic (HED) and eudaimonic (EUD) well-being represent the psychological processes arising from need satisfaction. Happiness (HAP) is thus modelled as the global outcome emerging from these interactions. This conceptualisation allows positioning SDT not as a descriptive theory, but as a mechanism explaining how different combinations of behavioural and psychological conditions may lead to similar levels of subjective well-being.

2.2. Need-supportive behaviour

A. The mediterranean diet

The Mediterranean Diet (MD) represents a long-standing, plant-centered way of eating in which fruits, vegetables, legumes, nuts, whole grains, and extra-virgin olive oil play a central role. Fish and seafood appear regularly, while white meat, eggs, and fermented dairy products like yogurt and cheese are eaten in moderate amounts. Wine is included sparingly and only alongside meals. Overall, this dietary pattern places olive oil at the heart of its culinary practices and favours foods that are seasonal, lightly processed, and deeply embedded in local traditions (Hernáez & Estruch, 2019; Hu *et al.*, 2025; Martínez-González *et al.*, 2017). The MD is broadly acknowledged for its positive impact on health, its sustainable character, and its deep cultural roots (Carfora *et al.*, 2022). The Mediterranean diet has long been recognized for its protective effects against chronic diseases, particularly cardiovascular and metabolic conditions. More recently, attention has shifted toward its psychological and mental health benefits. Young people's adherence to the MD has been associated with lower depressive symptoms, reduced stress, and higher life satisfaction (Tomás-Gallego *et al.*, 2025). Scholars argue that the MD is not only a dietary pattern but also a cultural lifestyle that encompasses conviviality, physical activity, and social integration (Martínez-González *et al.*, 2017). These lifestyle elements may contribute to both hedonic well-being, by generating immediate pleasure and positive affect, and eudaimonic well-being, by supporting long-term goals and a sense of meaning. However, most studies examine these relationships in isolation, often relying on linear models that fail to capture the complex ways in which diet interacts with other lifestyle and psychological dimensions. This gap underscores the need for a more holistic understanding of how MD adherence integrates into broader pathways to happiness.

B. Physical activity

Physical activity (PA) is widely recognized as a determinant of both physical and psychological health. Beyond its preventive role against disease, exercise promotes positive affect, enhances self-esteem, and reduces symptoms of anxiety and depression. Recent evidence suggests that exercise also supports eudaimonic well-being by fostering feelings of competence, autonomy, and purpose (Zhang *et al.*, 2025).

Physical activity and leisure-time exercise are strongly linked to better health. Cohort studies and meta-analyses show a clear dose–response pattern: benefits appear even at low levels, grow with increased activity, peak at very high levels, and then level off, regardless of how the activity is accumulated (Andrade, 2023).

Within the Mediterranean lifestyle framework, exercise is not merely a functional activity but an embedded practice that complements diet and social interaction. For young people, engaging in regular exercise can contribute to both hedonic enjoyments, through immediate pleasure and stress relief, and eudaimonic growth, by cultivating long-term resilience and goal pursuit. These dual contributions position exercise as a critical component in pathways toward happiness. Young people involved in sports show stronger values than non-participants, with their engagement driven by both hedonic enjoyment and eudaimonic growth, linking sports to pleasure, achievement, and personal development (Daukilas *et al.*, 2017).

2.3. Psychological and motivational processes

A. Eudaimonic well-being

Eudaimonic well-being reflects the pursuit of meaning, purpose, and personal growth, emphasizing optimal functioning and self-realisation rather than mere pleasure (Huta & Ryan, 2010; Ryff, 2014). Within the Self-Determination Theory (SDT), it represents a higher-order manifestation of psychological need satisfaction, particularly autonomy and competence, which enable individuals to engage in self-congruent and value-driven actions (Ryan & Deci, 2024). Eudaimonia therefore encompasses processes of self-discovery, realization of potential, and engagement in meaningful life activities (Waterman *et al.*, 2008). Eudaimonic well-being constitutes an essential intangible resource for increasing people's purchase intention, as it provides lasting experiences that benefit individuals' life purpose and personal growth (Gutiérrez-Rodríguez *et al.*, 2024).

Empirical research consistently shows that eudaimonic orientations predict durable increases in well-being, resilience, and life satisfaction (Fave *et al.*, 2011; Steger *et al.*, 2008). Unlike hedonic pursuits, which provide transient pleasure, eudaimonic engagement contributes to a sustained sense of fulfilment and coherence in life (Huta & Waterman, 2014). Longitudinal studies further demonstrate that eudaimonic motives exert stronger and more stable effects on happiness among young adults than hedonic motives, as they foster internalized goals, purpose, and self-determined behaviour (Jia *et al.*, 2022).

Cross-cultural evidence also supports the universality of eudaimonic constructs. Large-scale studies across different societies indicate that meaning, growth, and self-realisation constitute central components of psychological well-being regardless of cultural context (Disabato *et al.*, 2016). Within the present model, eudaimonic well-being (EUD) is conceptualized as a psychological process reflecting the internalisation of need satisfaction and the realization of one's potential, acting as a key pathway through which lifestyle behaviours such as Mediterranean Diet adherence and physical activity contribute to happiness.

B. Hedonic Well-Being

Hedonic well-being refers to the experience of pleasure, enjoyment, and positive affect, capturing the emotional dimension of subjective well-being (Diener *et al.*, 2018). It is often operationalized through indicators such as life satisfaction, happiness, and the balance between positive and negative emotions (Kahneman *et al.*, 1999). From the SDT perspective, hedonic outcomes arise when basic psychological needs are satisfied, leading to feelings of vitality, contentment, and enjoyment of life (Ryan *et al.*, 2008).

Whereas eudaimonia is oriented toward long-term fulfilment and personal growth, hedonia concerns the immediate experience of happiness derived from pleasurable activities or satisfying circumstances. Empirical studies show that hedonic well-being is more strongly associated with affective states and short-term satisfaction, whereas eudaimonic well-being relates to cognitive evaluation and meaning-making processes (Fave *et al.*, 2011). Nevertheless, both components are positively correlated and jointly contribute to overall happiness (Disabato *et al.*, 2016; Ryan & Deci, 2001).

In the context of younger generations, hedonic well-being plays a particularly salient role in shaping emotional balance and perceived life quality. However, without the complementary influence of eudaimonic motives, hedonic pursuits may lead to instability or superficial satisfaction (Huta & Ryan, 2010). Thus, hedonic well-being (HED) in this study is conceptualized as a psychological process reflecting the affective and experiential dimension of need satisfaction, mediating the link between supportive behaviours (diet, physical activity) and the evaluative outcome of happiness.

2.4. Conceptual Model and Research Propositions

Taken together, the reviewed literature and the assumptions of Self-Determination Theory (SDT) suggest that happiness should not be understood as the linear result of isolated antecedents, but rather as the outcome of interacting behavioural and psychological conditions. SDT posits that well-being and flourishing emerge when individuals experience satisfaction of the basic psychological needs for autonomy, competence, and relatedness. In the present study, adherence to the Mediterranean diet (MD) and physical activity (PA) are conceptualised as need-supportive behaviours, whereas hedonic well-being (HED) and eudaimonic well-being (EUD) represent distinct psychological expressions of need satisfaction. Because these needs may be supported through different combinations of behaviours and internal experiences, high self-perceived happiness is theoretically expected to arise through more than one possible route.

This perspective also suggests that the role of individual conditions should not be assumed in advance. From an SDT standpoint, neither a specific behaviour nor a specific psychological orientation is necessarily expected to operate in the same way across all individuals. Some conditions may prove especially salient, and one or more may even display the characteristics of necessity, but this remains an empirical question. What is theoretically more consistent with the literature is the idea that happiness in Generation Z is likely to reflect causal complexity, in which different elements contribute in different ways depending on how they are combined.

In this context, adherence to the Mediterranean diet may contribute to happiness not only because of its nutritional value, but also because it reflects a broader lifestyle associated with balance, sociality, and everyday enjoyment. Physical activity may also play a relevant role, as previous research has linked it to vitality, self-regulation, competence, and positive affect. Likewise, hedonic well-being captures the pleasurable and affective dimension of experience, whereas eudaimonic well-being reflects meaning, personal growth, and self-realisation. Rather than assuming that each of these factors exerts an independent and additive effect, the present study adopts the view that their contribution to happiness is better understood configurationally.

Accordingly, the conceptual model assumes that high self-perceived happiness among Generation Z may emerge from the interplay of lifestyle behaviours and psychological orientations. This view is consistent with the core logic of configurational reasoning, which emphasises that outcomes may result from different combinations of conditions rather than from one dominant antecedent. It is also consistent with SDT, which implies that flourishing may be achieved through different need-supportive routes depending on how autonomy, competence, and relatedness are experienced and internalised.

On this basis, we advance the following research propositions:

RP1: One or more individual conditions may be necessary for high self-perceived happiness among Generation Z.

RP2: Alternative causal configurations of Mediterranean diet adherence, physical activity, hedonic well-being, and eudaimonic well-being are sufficient for high self-perceived happiness among Generation Z.

Together, these research propositions are represented in Figure 1, which illustrates the possible pathways through which lifestyle behaviours and psychological orientations may lead to high self-perceived happiness among Generation Z.

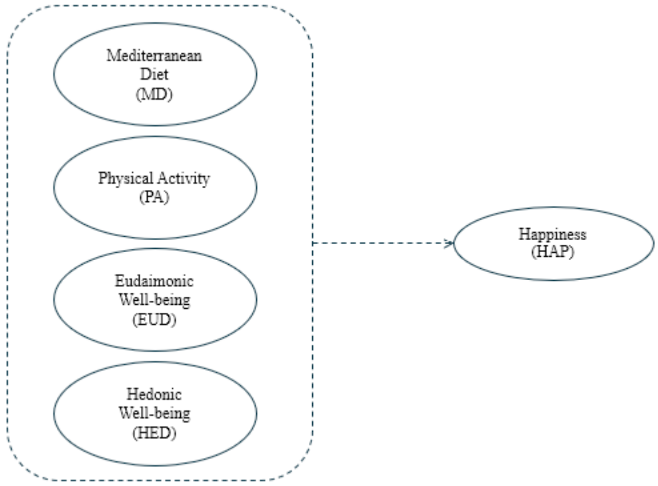

Figure 1
Conceptual model and configurational pathways to happiness
Source: Own elaboration.

To ensure conceptual clarity, Table 1 summarises the definitions of the constructs included in the model and explicitly specifies their role as antecedents or outcome variables.

Table 1
Constructs, definitions, roles and sources

Construct	Definition	Role in the model	Source
Mediterranean Diet (MD)	Degree of adherence to a dietary pattern characterised by plant-based foods, olive oil, and balanced nutrition	Antecedent (behavioural)	Schröder *et al.* (2011)
Physical Activity (PA)	Frequency and intensity of regular physical exercise	Antecedent (behavioural)	Martínez-González *et al.* (2005)
Hedonic Well-Being (HED)	Experience of pleasure, enjoyment, and positive affect	Antecedent (psychological)	Huta & Ryan (2010)
Eudaimonic Well-Being (EUD)	Sense of meaning, purpose, and personal growth	Antecedent (psychological)	Huta & Ryan (2010)
Happiness (HAP)	Global evaluative perception of life satisfaction and overall well-being	Outcome	Diener *et al.* (2018)

Source: Own elaboration.

3. METHODOLOGY

3.1. Configurational Approaches to Well-Being Research

Traditional quantitative studies often adopt additive and symmetric models to explain well-being outcomes, testing isolated effects of diet, exercise, or psychological constructs. Such approaches risk oversimplification by ignoring causal complexity and the possibility that different individuals achieve happiness through distinct pathways. This approach reinforces the idea that the factors related to youth happiness should not be examined in isolation, but rather as interdependent elements within a broader system, as Cuesta-Valiño *et al.* (2024) point out.

Fuzzy-set qualitative comparative analysis (fsQCA) offers a methodological alternative that captures equifinality, the principle that multiple different configurations of conditions can produce the same outcome. Although fsQCA has been increasingly applied in consumer research and management studies, its use in the context of well-being and lifestyle is still limited. By allowing the identification of sufficient but not necessarily necessary conditions, fsQCA enables the exploration of how Mediterranean diet adherence, physical exercise, and hedonic and eudaimonic orientations combine to generate happiness. This configurational approach is particularly relevant for Generation Z, whose diversity in values, habits, and psychological orientations may lead to heterogeneous but equally valid routes to happiness.

3.2. Measurement and data collection

An online survey was conducted between May and July 2025 among Generation Z young adults residing in Andalusia, Spain, yielding 379 valid responses. Age plays a key role in marketing research, and generational patterns often differ markedly, making it essential for marketers to acknowledge these differences and adjust their research approaches accordingly (John *et al.*, 2024). Participants were recruited through online channels targeting Generation Z individuals, including university networks and social media platforms. Participation was voluntary, and no financial incentives were offered.

The questionnaire was developed based on previously validated scales to ensure content validity and comparability with prior research. As the original instruments were in English, a translation and back-translation procedure was applied. Specifically, the questionnaire was first translated into Spanish by a bilingual expert and subsequently back-translated into English by an independent translator. Discrepancies were discussed and resolved to ensure semantic equivalence.

Prior to the main data collection, a pilot test was conducted with a small group of respondents (n ≈ 30) to assess clarity, wording, and overall comprehension of the questionnaire. Minor adjustments were made based on participant feedback.

To mitigate common method bias, several procedural remedies were implemented. Anonymity and confidentiality were guaranteed to reduce evaluation apprehension, and items measuring different constructs were psychologically separated within the questionnaire. Clear instructions emphasised that there were no right or wrong answers. Given the self-reported nature of lifestyle variables, particular attention was paid to reducing social desirability bias.

The questionnaire included well-established and validated scales to capture the key constructs of the study. Adherence to the Mediterranean Diet (MD) was measured using a 14-item scale adapted from Schröder *et al.* (2011), reflecting both dietary frequency and alignment with traditional Mediterranean eating patterns. Physical Activity (PA) was assessed following the validated measure by Martínez-González *et al.* (2005), capturing both frequency and intensity of weekly activity. Eudaimonic (EUD) and Hedonic (HED) well-being were adapted from Huta and Ryan (2010), representing the two motivational orientations that underpin subjective well-being. Happiness (HAP) was measured through a single self-perceived indicator of life satisfaction, derived from the European Quality of Life Survey (EQLS, 2024) and validated for adolescent populations (Lukoševičiūtė, 2022).

Several procedures were implemented to ensure data quality. Responses were screened to identify incomplete questionnaires and inconsistent response patterns. Cases with excessive missing data or evident lack of engagement were excluded from the final sample.

Andalusia represents a particularly appropriate context for this study due to its strong cultural connection to the Mediterranean diet and its relevance as a setting where traditional dietary patterns coexist with contemporary lifestyle changes among younger populations. This makes it a suitable context for examining how lifestyle behaviours and psychological orientations interact to shape happiness in Generation Z.

4. RESULTS

4.1. Calibration

Each variable was calibrated into fuzzy-set membership scores ranging from 0 (full non-membership) to 1 (full membership), following both empirical percentiles and theoretical anchors from prior research. The fuzzy-set Qualitative Comparative Analysis (fsQCA) approach (Ragin, 2008) was employed to identify combinations of causal conditions leading to high levels of happiness. In the configurational model, adherence to the Mediterranean diet (MD), physical activity (PA), hedonic well-being (HED), and eudaimonic well-being (EUD) were treated as causal conditions, while happiness (HAP) was defined as the outcome. Following standard fsQCA procedures, the analysis involved: (1) testing necessary conditions, (2) constructing a truth table to derive sufficient configurations, and (3) interpreting the resulting causal pathways associated with elevated happiness among Generation Z respondents.

Prior to conducting the configurational analysis, all variables were calibrated into fuzzy sets following Ragin's (2008) direct method. Because the variables represented continuous behavioural or attitudinal measures rather than latent constructs, calibration was based on empirical percentiles rather than distributional assumptions. Full membership (0.95), crossover (0.50), and full non-membership (0.05) thresholds were anchored at the 90th, 50th, and 10th percentiles, respectively. This approach ensures that the calibration reflects the observed dispersion of responses within the sample while avoiding arbitrary cut-off points.

The 10-50-90 percentile anchors were selected to capture meaningful variation in adherence to the Mediterranean diet (MD), physical activity (PA), hedonic well-being (HED), and eudaimonic well-being (EUD) without assuming a normal distribution. This calibration method, widely applied in consumer and lifestyle research using fsQCA (e.g., Fiss, 2011; Pappas & Woodside, 2021), combines theoretical anchors with empirically derived percentiles to achieve a balanced representation of full and partial set memberships. After calibration, all variables were expressed as fuzzy-set scores ranging from 0 (full non-membership) to 1 (full membership), allowing for subsequent testing of necessary and sufficient conditions for high happiness (HAP). To assess the sensitivity of the results to calibration choices, an additional analysis was conducted using alternative anchor points (20th, 50th, and 80th percentiles). The results for the analysis of necessary conditions remained unchanged across both calibrations, as no single condition reached the conventional consistency threshold required to be considered necessary for high happiness. In the sufficiency analysis, the alternative specification produced some variation in the exact composition of the configurations. However, the PA ^ EUD pathway remained stable across both calibrations, and physical activity continued to appear as a recurrent element in the solutions. These findings suggest that, although some configurational details are sensitive to calibration thresholds, the main substantive interpretation remains consistent.

4.2. Analysis of necessary conditions

Following the calibration process, the fsQCA was used to assess whether any single condition was necessary for achieving high happiness (HAP). As shown in Table 2, none of the individual antecedents Mediterranean diet adherence (MD), physical activity (PA), hedonic well-being (HED), or eudaimonic well-being (EUD) reached the conventional consistency threshold (≥ 0.90) or coverage (≥ 0.50) typically required to be considered necessary (Schneider & Wagemann, 2010). Consistency values ranged between 0.597 and 0.745, while coverage values remained below 0.65 across all conditions.

These results indicate that high happiness among Generation Z is not driven by any single factor in isolation. Instead, it emerges from specific configurations of lifestyle practices, well-being orientations, and dietary adherence. This finding aligns with the configurational logic of fsQCA, suggesting that equifinal combinations of behavioural and psychological conditions jointly explain elevated levels of subjective happiness.

Table 2
Analysis of necessary conditions

Conditions	Consistency	Coverage
MD	0.646	0.621
~MD	0.612	0.588
PA	0.692	0.640
~PA	0.590	0.590
EUD	0.745	0.649
~EUD	0.538	0.576
HED	0.684	0.658
~HED	0.597	0.574
Outcome variable: HAP		

Note: MD = Mediterranean diet adherence; PA = physical activity; EUD = Eudaimonic well-being; HED = Hedonic well-being; HAP = Happiness.
Source: Own elaboration.

4.3. *Analysis of sufficient conditions*

After confirming the absence of necessary conditions, the analysis proceeded to identify sufficient configurations leading to high happiness (HAP). A truth table was generated considering all 16 possible combinations of the four causal conditions (MD, PA, HED, and EUD). To ensure analytical rigor and parsimony, a frequency threshold of three cases and a consistency cut-off of 0.7588 were applied, following best practices for medium-sized samples in fsQCA (Ragin, 2008; Fiss, 2011; Schneider & Wagemann, 2010). The intermediate solution revealed three sufficient configurations associated with high levels of happiness among Generation Z respondents. Table 3 presents the configurations, along with their respective coverage and consistency values. It should be noted that the consistency threshold used to simplify the truth table does not necessarily coincide with the consistency values of the minimized intermediate configurations. While a cut-off of 0.7588 was applied to retain empirically relevant truth table rows, the consistency values of the final pathways are slightly lower after logical minimization. In the present case, the three configurations show moderate consistency levels (0.736, 0.748, and 0.731), all close to the commonly used 0.75 benchmark. Although these values do not indicate highly consistent pathways, they can still be considered acceptable in applied fsQCA studies when combined with meaningful coverage and theoretical interpretability (e.g., Woodside, 2013). Accordingly, the configurations identified here should be interpreted as informative but moderate-strength pathways leading to high happiness.

The first configuration, PA ^ EUD, exhibited a raw coverage of 0.586 and a consistency of 0.736. This pathway indicates that a substantial share of cases achieved high levels of happiness by combining regular physical activity with strong eudaimonic well-being. The combination of an active lifestyle and a sense of purpose or meaning should therefore be interpreted as a theoretically meaningful but moderate-strength pathway to subjective happiness among young adults, rather than as a deterministic or universally valid route.

The second configuration, MD ^ PA ^ HED, yielded a raw coverage of 0.446 and a consistency of 0.748. This result suggests a possible synergistic role of diet, exercise, and pleasurable experiences in promoting happiness. Adherence to the Mediterranean diet appears to complement the pursuit of hedonic enjoyment, although this association should be understood as conditional on its combination with physical activity and positive affect rather than as an independent effect of diet alone.

The third configuration, MD ^ EUD ^ HED, achieved a raw coverage of 0.488 and a consistency of 0.731. This pathway indicates that dietary adherence may contribute to happiness even in the absence of high physical activity, provided that individuals also report both hedonic pleasure and eudaimonic meaning. In this case, the Mediterranean diet is better understood as one element within a broader psychological configuration, rather than as a self-sufficient driver of happiness.

It should also be noted that the unique coverage values of the configurations are relatively low, indicating a degree of empirical overlap between the identified pathways. This suggests that the configurations explain partly the same cases of high happiness rather than completely distinct subsets of observations. Such overlap is relatively common in fsQCA analyses when different combinations of conditions lead to similar empirical outcomes. Therefore, the identified pathways should be interpreted as partially overlapping routes rather than mutually exclusive explanatory patterns.

The overall solution achieved a coverage of 0.658 and a consistency of 0.700, indicating that the three configurations collectively explain a substantial proportion of the cases while maintaining acceptable internal consistency. These findings demonstrate the principle of equifinality, whereby multiple distinct combinations of lifestyle, diet, and well-being orientations can lead to high levels of happiness in Generation Z consumers.

Table 3
Sufficient configurations of conditions for HAP

Pathways	Raw coverage	Unique coverage	Consistency
PA ^EUD	0.586	0.155	0.736
MD ^ PA ^ HED	0.446	0.015	0.748
MD ^ EUD ^HED	0.488	0.057	0.731
Solution coverage: 0.658			
Solution consistency: 0.700			

Note: Note: MD = Mediterranean diet adherence; PA = physical activity; EUD = Eudaimonic well-being; HED = Hedonic well-being; HAP = Happiness.
Source: Own elaboration.

5. DISCUSSION AND CONCLUSIONS

5.1. Discussion

The findings refine, rather than simply confirm, existing explanations of youth happiness. They show that well-being among Generation Z emerges from the interplay of diet, exercise, and psychological orientation, rather than from isolated predictors. The PA ^ EUD configuration is particularly informative because it suggests that behavioural engagement may become happiness-relevant when it is connected with meaning, purpose, and personal growth. However, given the moderate consistency of this solution, it should not be interpreted as a universal core profile, but as a relevant pathway for a substantial subset of respondents. The MD-related configurations similarly suggest that Mediterranean diet adherence acts less as an independent predictor of happiness and more as a contextual lifestyle condition that gains explanatory value when combined with hedonic or eudaimonic orientations. This interpretation reinforces the theoretical premise of causal complexity and shows the value of fsQCA for identifying asymmetric and non-linear combinations that linear models may overlook (Fiss, 2011).

The findings also extend prior research on lifestyle behaviours and well-being by challenging the assumption that healthy behaviours exert stable and independent effects on happiness. Previous research has associated the Mediterranean diet with better emotional and mental well-being among young people (Tomás-Gallego *et al.*, 2025), while physical activity has been linked to psychological functioning and eudaimonic well-being (Zhang *et al.*, 2025). Our findings refine this literature by showing that neither MD nor PA appears as a necessary condition and that their relevance depends on the psychological conditions with which they are combined. This helps explain why previous empirical results may appear inconsistent: the same behaviour can be happiness-relevant in one configuration and less explanatory in another, depending on whether it is embedded in hedonic enjoyment, eudaimonic meaning, or both.

The results also sharpen the distinction between hedonic and eudaimonic well-being. Prior studies have argued that hedonic orientations are more closely connected with pleasure and short-term satisfaction, whereas eudaimonic orientations are linked to meaning, resilience, and long-term flourishing (Diener *et al.*, 2018; Huta & Waterman, 2014). The present findings extend this distinction by showing that these orientations do not operate as isolated psychological predictors. Instead, they acquire different explanatory roles depending on the lifestyle context. The MD ^ HED ^ EUD pathway suggests that pleasure and meaning may reinforce each other when embedded in a culturally grounded dietary pattern. Conversely, the PA ^ EUD pathway indicates that eudaimonic meaning can support happiness without the simultaneous presence of strong hedonic orientation. This refines previous literature by suggesting that hedonia and eudaimonia are not merely parallel dimensions of well-being, but configurational resources whose effects depend on their behavioural embedding.

Furthermore, the findings contribute to Self-Determination Theory (SDT) by specifying how need-supportive behaviours may be translated into happiness through different psychological configurations. SDT posits that autonomy, competence, and relatedness support hedonic and eudaimonic well-being (Ryan & Deci, 2024), but empirical applications often examine these mechanisms through direct or additive associations. The present configurational analysis suggests that SDT mechanisms are not activated uniformly. Healthy eating and physical activity appear to contribute to happiness only when they are connected with specific forms of enjoyment, meaning, or personal growth. In this sense, the study extends SDT by positioning culturally grounded lifestyle practices as need-supportive contexts that interact with psychological orientations, rather than as peripheral lifestyle variables.

Overall, the study contributes to the literature in three more precise ways. First, it reframes happiness among Generation Z as a configurational outcome, thereby challenging additive explanations based on universal predictors. Second, it refines the interpretation of hedonic and eudaimonic well-being by showing that their effects depend on the lifestyle conditions with which they are combined. Third, it extends SDT by demonstrating that need-supportive processes can be expressed through alternative behavioural-psychological constellations involving diet, physical activity, pleasure, and meaning.

Taken together, these insights situate the present study at the intersection of lifestyle medicine, motivational psychology, and consumer well-being. They underscore the importance of moving beyond universal prescriptions of healthy behaviour toward an understanding of how young individuals combine meaning, pleasure, and lifestyle choices to achieve flourishing. Importantly, the configurational findings illustrate why interventions based solely on promoting diet or exercise often yield inconsistent results: these elements contribute to well-being only when supported by the psychological orientations through which young people interpret and internalise their behaviours. These findings highlight the need for a more context-sensitive understanding of well-being, where lifestyle behaviours acquire meaning within broader psychological configurations rather than acting as universal drivers of happiness.

At the same time, the findings should be interpreted cautiously. The consistency values of the sufficient configurations are moderate and the unique coverage values indicate overlap between pathways. Therefore, the configurations should not be read as mutually exclusive profiles, deterministic recipes, or definitive causal sequences. Rather, they identify theoretically meaningful patterns under which high happiness is more likely to occur in the present sample. This caution is important for both theory and practice: the results support a configurational understanding of happiness, but they do not imply that any pathway can be generalised without further validation in other samples and cultural contexts.

5.2. Theoretical Implications

Theoretically, this study advances current knowledge by demonstrating that the determinants of youth happiness cannot be understood through additive or linear models alone. Instead, the findings support a shift toward a configurational logic that recognises equifinality and causal asymmetry as fundamental features of subjective well-being among Generation Z. By identifying multiple sufficient pathways to happiness, the study shows that well-being emerges from distinct combinations of lifestyle and psychological resources rather than from the isolated influence of any single factor.

This configurational evidence contributes directly to the refinement of Self-Determination Theory (SDT). SDT conceptualises need-supportive behaviours and psychological processes as complementary mechanisms that jointly enable flourishing. However, existing empirical research has typically examined these components separately or through linear associations, overlooking the possibility that they may operate synergistically and in non-linear ways. Our results extend SDT (Ryan & Deci, 2000) by showing that need-supportive behaviours, operationalised here as adherence to the Mediterranean diet and engagement in physical activity, do not exert uniform effects. Instead, their influence becomes meaningful only when paired with specific psychological processes such as hedonic or eudaimonic well-being considered in this research.

The study therefore clarifies the conditions under which SDT's pillars reinforce each other. First, the pathway combining physical activity with eudaimonic well-being illustrates that meaning-oriented psychological processes can amplify the motivational value of behavioural engagement. Second, the configurations involving the Mediterranean diet reveal that dietary adherence can function as a lifestyle-based need-supportive context capable of strengthening both hedonic and eudaimonic orientations. This insight broadens SDT beyond its traditional focus on social and interpersonal contexts by demonstrating that culturally grounded lifestyle patterns also contribute to need satisfaction and, ultimately, to happiness.

Moreover, the simultaneous inclusion of dietary habits, physical activity, and dual components of well-being addresses a conceptual gap in SDT-based research. Previous studies have tended to isolate hedonic and eudaimonic constructs or treat lifestyle variables as peripheral. By integrating these elements within a unified configurational model, the present study offers a more holistic representation of how young individuals negotiate autonomy, competence, and relatedness through both behavioural choices and psychological orientations. This multidimensional perspective enhances SDT's explanatory power and aligns the theory more closely with contemporary understandings of youth well-being, which emphasise diversity, plural pathways to flourishing, and the coexistence of pleasure and meaning.

The study contributes to the literature in three main ways. First, it demonstrates that SDT's mechanisms operate not additively but configurationally, supporting a shift toward a more dynamic understanding of well-being. Second, it shows that lifestyle behaviours such as diet and physical activity can be theoretically recognised as meaningful components of need-supportive environments. Third, it opens new avenues for theorising how young people construct happiness through complex, interactional patterns of behaviour and psychological experience.

In theoretical terms, the main novelty is therefore not the separate consideration of diet, physical activity, hedonia, and eudaimonia, but the demonstration that SDT-based explanations of happiness can be specified configurationally. This changes how the role of eudaimonic well-being is understood: it is not merely another antecedent of happiness, but a condition that can amplify the meaning of lifestyle behaviours when combined with physical activity or Mediterranean diet adherence. Likewise, hedonic well-being is not reduced to short-term pleasure, but becomes part of a broader constellation through which young people translate everyday lifestyle choices into perceived happiness.

5.3. Managerial Implications

The findings provide actionable guidance for organisations, educational institutions, and policymakers seeking to promote happiness and well-being among Generation Z. Because the results reveal multiple configurational pathways rather than a single determinant, interventions must be tailored to the distinct combinations of behavioural and psychological factors identified.

For organisations employing Generation Z, the evidence suggests that well-being initiatives should differentiate between employees whose happiness is driven by purposeful engagement and those who benefit from a combination of balanced nutrition, physical activity, and positive affect. Companies can operationalise this insight through concrete measures such as offering subsidised gym memberships, corporate agreements with fitness centres, rental schemes for bicycles or electric scooters, and access to workplace nutritionists who guide employees in adopting dietary patterns aligned with the Mediterranean diet. For employees who flourish through eudaimonic-oriented pathways, firms may benefit from creating development programmes that emphasise meaningful work, mentoring systems that reinforce autonomy and competence, or volunteering activities that strengthen purpose and social contribution. These initiatives align workplace resources with the motivational configurations observed in Generation Z, improving internalisation and engagement.

Educational institutions can also translate these findings into specific actions that reinforce both lifestyle habits and psychological skills. Schools and universities could incorporate Mediterranean diet focused cooking workshops, redesign cafeteria menus to include healthier meals consistent with traditional dietary patterns or develop campus-wide physical activity initiatives such as open-access exercise classes, running clubs, or structured sports challenges. To support hedonic and eudaimonic orientations simultaneously, institutions may introduce programmes on emotional well-being, mindfulness, and purpose development, or integrate reflective practices into curricula to strengthen students' sense of meaning. Given that different students follow different routes to happiness, institutions should offer modular or optional well-being tracks rather than one-size-fits-all programmes.

For policymakers, the configurational nature of youth happiness indicates the need for holistic public health strategies that integrate diet, movement, and psychological well-being. Policy actions could include designing public advertising campaigns that revitalise and promote the Mediterranean diet as part of cultural identity; funding community cooking initiatives in collaboration with local markets; or supporting the development of urban environments that facilitate physical activity, such as safe cycling lanes, accessible sports facilities, and walkable neighbourhoods. Psychological well-being could be reinforced through national programmes that train young people in emotional regulation, resilience, and purpose cultivation. Importantly, policies should recognise that these interventions are most effective when combined. For example, a campaign promoting Mediterranean dietary habits could be paired with subsidised community exercise programmes and youth-oriented workshops on meaning and wellbeing.

These implications advocate for multi-component, flexible interventions that reflect the diverse pathways through which Generation Z achieves happiness. By adopting evidence-based strategies tailored to distinct motivational and behavioural profiles, organisations, educational institutions, and policymakers can design more effective and context-sensitive well-being initiatives.

5.4. Limitations and Future Research

The study presents several limitations that should be acknowledged when interpreting the results. First, the cross-sectional design restricts the ability to capture causal dynamics or assess changes in the identified configurations over time. Second, the use of self-reported data may introduce potential biases, particularly in the measurement of lifestyle behaviours such as diet and physical activity, which can be affected by recall errors or social desirability, despite the procedural remedies applied.

The configurational analysis is also influenced by calibration choices which, even when theoretically and empirically grounded, may affect the resulting solutions. In addition, the study does not include cross-validation of the identified configurations using independent samples or alternative techniques, which may limit the robustness of the findings.

Finally, the focus on the Andalusian context, where the Mediterranean diet is culturally embedded, may shape the observed relationships and limit the external validity of the results in other geographical or cultural settings.

Future research could address these limitations by employing longitudinal designs to examine the stability of configurational pathways over time, incorporating objective measures of diet and physical activity, and conducting cross-validation analyses across different samples or contexts. Extending the analysis to non-Mediterranean settings and combining fsQCA with qualitative approaches may also provide deeper insights into how individuals interpret and integrate lifestyle behaviours and psychological orientations in their daily lives.

5.5. Conclusions

This research shows that, within Generation Z, self-perceived happiness is not determined by any single factor but by partially overlapping configurations that integrate dietary adherence, physical activity, and psychological well-being. The three identified pathways, physical activity with eudaimonic well-being, Mediterranean diet with physical activity and hedonic well-being, and Mediterranean diet with both hedonic and eudaimonic well-being, support the equifinal nature of happiness. However, the moderate consistency levels and the overlap between configurations require a cautious conclusion: these pathways should be understood as plausible and theoretically meaningful patterns rather than as definitive or universally generalisable profiles. The results nevertheless highlight the relevance of eudaimonic orientation, while showing that hedonic experience, diet, and exercise can also contribute to happiness when they are combined within broader need-supportive constellations. By adopting a configurational perspective, this study offers a more precise framework for understanding youth well-being and for designing flexible initiatives aimed at promoting health and happiness among younger generations.

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7. AUTHORSHIP

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What makes consumers happy? The role of FoMO, brand-person congruence and emotional marketing in a multi-gender model

¿Qué hace feliz al consumidor? El rol del FoMO, la congruencia marca-persona y el marketing emocional en un modelo multigénero

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ABSTRACT

This study investigates the impact of brand–person congruence (BPC) and the fear of missing out (FoMO) on consumer happiness, considering the mediating role of emotional marketing (EM) and gender-based structural differences. Drawing on self-congruence theory and the Differential Emotion Processing Theory, a relational model integrating identity, social and affective variables is proposed. A quantitative, cross-sectional design was employed to analyse data collected from 360 young consumers via an online, structured questionnaire. The model was estimated using covariance-based structural equation modelling (CB-SEM) and multigroup analysis (MGA-SEM). Results indicate that both BPC and FoMO significantly affect EM, which acts as a key mediator linking identity and social factors to consumer happiness. Gender differences were observed: among men, BPC directly influences happiness, whereas among women, FoMO exerts a direct impact. EM emerges as an emotional translator that transforms symbolic congruence and social tensions into subjective happiness. The findings contribute to the theoretical understanding of consumer happiness as a relational outcome shaped by identity-related and social dynamics and influenced by emotional mechanisms. From a managerial standpoint, the study offers practical insights for developing ethical, emotionally responsible, and happiness-oriented marketing strategies in digital consumption contexts.

Keywords: Consumer happiness; Emotional marketing; Brand–person congruence; FoMO; Gender differences.

RESUMEN

El propósito de este estudio es analizar cómo la congruencia marca-persona (CMP) y el miedo a perderse experiencias valiosas (FoMO) influyen en la felicidad del consumidor, considerando el papel mediador del marketing emocional (ME) y las diferencias estructurales por género. Con base en la teoría de la auto-congruencia y la teoría del procesamiento diferencial de emociones, se propone un modelo relacional que integra variables identitarias, sociales y afectivas. La investigación se desarrolló con enfoque cuantitativo y diseño transversal, aplicando un cuestionario estructurado a una muestra de 360 jóvenes consumidores. El modelo fue estimado mediante ecuaciones estructurales basadas en covarianzas (CB-SEM) y análisis multigrupo (MGA-SEM). Los resultados evidencian que la CMP y el FoMO influyen significativamente en el ME, y que este último actúa como mediador clave entre los factores identitarios y sociales y la felicidad del consumidor. Se observan diferencias de género: en los hombres, la CMP impacta directamente en la felicidad, mientras que en las mujeres el FoMO ejerce una influencia directa sobre ella. El ME emerge como un traductor emocional que convierte la congruencia simbólica y las tensiones sociales en felicidad subjetiva. Los hallazgos contribuyen a la comprensión teórica de la felicidad del consumidor como un resultado contextual de consumo, configurado por factores relacionales e influido por mecanismos emocionales. En el ámbito gerencial, ofrece pautas para desarrollar un marketing emocional ético y orientado a la felicidad en entornos digitales.

Palabras clave: Felicidad del consumidor; Marketing emocional; Congruencia marca-persona; FoMO, Diferencias de género.

1. INTRODUCTION

Amid contemporary social, technological, and economic disruptions, understanding the triggers of consumer happiness has become a priority for marketing research, driven by the behavioural sciences' shift towards mores human, experiential, and relational approaches (Agarwal & Khandelwal, 2024; Lima & Belk, 2022). In the digital era, consumption transcends its functional dimension to be conceived as a symbolic and emotional experience that contributes to the construction of identity, belonging, and life meaning (Liu & Zhao, 2024). Consequently, consumer happiness has emerged as a strategic concept, integrating hedonic, affective, and identity-related dimensions of behaviour, shifting the focus from transactional satisfaction towards a more holistic understanding of subjective wellbeing (Salazar-Altamirano *et al.*, 2025a; Gutiérrez-Rodríguez *et al.*, 2023).

Following this line of reasoning, data from the World Happiness Report (WHR, 2024) indicate that more than 70% of consumers associate their personal happiness with positive emotional experiences with brands, and 64% prioritise those that generate meaning or personal connection over those that merely satisfy functional needs. This phenomenon is particularly salient among younger consumers, who are deeply embedded in digital environments and exhibit higher levels of engagement with social media and emotionally driven consumption experiences, making them especially sensitive to identity construction, social comparison, and affective stimuli in consumption processes (Fumagalli *et al.*, 2021). This context highlights the importance of understanding how emotions, symbolic values, and personal identity intersect in shaping contemporary consumer happiness (Saikia & Bhattacharjee, 2024).

Under this premise, the literature has shown that consumption experiences consistent with an individual's identity have a positive and lasting effect on happiness, as they facilitate processes of self-expression and authenticity (Issock *et al.*, 2023). In this regard, brand–person congruence (BPC), understood as the perceived alignment between the consumer's self-concept and the brand's symbolic personality, is associated with higher levels of emotional attachment, satisfaction, and loyalty (Escalas & Bettman, 2003). This effect occurs because BPC reinforces the coherence between the "real self" and the "ideal self", acting as an identity validation mechanism that promotes psychological wellbeing derived from consumption (Spiga, 2025). In this direction, Sato *et al.* (2023) emphasise that brand identification predicts up to 37% of subjective happiness in experiential consumption contexts.

Nevertheless, this potential of consumption as a source of happiness coexists with tensions derived from digital hyperconnectivity. Within this ecosystem, the fear of missing out (FoMO) represents a psychosocial phenomenon that undermines consumer happiness (Tandon *et al.*, 2021). Conceived as the anxiety caused by the possibility of social exclusion or disconnection, FoMO has been linked to impulsivity, social comparison, and a reduction in the genuine enjoyment of consumption experiences (Littman-Ovadia & Russo-Netzer, 2024). The empirical corpus supporting this field shows that 58% of global social media users experience moderate or high levels of FoMO, and that this phenomenon accounts for approximately 31% of the variance in indicators of anxiety and digital fatigue (Hayran & Anik, 2021), confirming its relevance as a complex psychosocial variable.

In this scenario, emotional marketing (EM) emerges as a strategic resource capable of counteracting the affective tensions generated by FoMO and strengthening the consumer–brand emotional bond (Bin, 2023). This approach, centred on the orchestration of sensory, symbolic, and narrative experiences, seeks to mobilise positive emotions (such as empathy, inspiration, or pride) to create experiential value and authentic relationships (Zhang *et al.*, 2022). Consistent with this perspective, Thamilselvan and Rakeshyanand (2024) demonstrate that EM enhances affective brand connection, increases consumer happiness, and reinforces loyalty, consolidating its role as a key mechanism for promoting happiness in highly digitalised markets.

Together, these perspectives suggest that identity alignment and social pressure represent two complementary forces shaping contemporary consumption experiences. In digitally hyperconnected environments, where individuals constantly observe, compare and share consumption experiences, BPC reflects the identity-based dimension of consumption while FoMO captures the social pressures intensified by continuous social exposure. In this context, EM acts as the affective mechanism through which these forces can be translated into emotionally meaningful experiences that ultimately influence consumer happiness.

Furthermore, gender differences introduce an additional layer of complexity in understanding these dynamics. Empirical evidence suggests that men and women process emotional stimuli and social pressures associated with consumption differently: women tend to exhibit greater empathic responsiveness, while men are more oriented towards symbolic coherence and identity projection (Luo *et al.*, 2025). These divergences underscore the importance of a multigroup analysis that examines structural heterogeneity in the emotional pathways leading to consumer happiness (Satinover Nichols & Wehr Holt, 2023). By incorporating a comparative structural analysis, this study seeks to identify whether the relationships among brand-person congruence, FoMO, EM, and consumer happiness differ between men and women, thereby providing a more nuanced understanding of how emotional and psychosocial mechanisms operate across gender groups.

Despite prior advances, the literature still presents relevant gaps. Although the positive effect of BPC and the negative impact of FoMO on happiness have been demonstrated, few studies have integrated both phenomena simultaneously within a single explanatory model, considering their opposing influences on consumer happiness (Zogaj *et al.*, 2024). Moreover, the mediating role of EM remains incipient, and it has not yet been clarified how affective experiences can enhance the positive identity-based effects of congruence or mitigate the negative socioemotional impacts of FoMO (Michel *et al.*, 2022). Finally, research on gender heterogeneity remains limited, despite evidence of differences in consumption symbolism and emotional response (Tandon *et al.*, 2021).

Therefore, the objective of this study is to analyse how FoMO and BPC influence consumer happiness, considering the mediating effect of EM and structural gender differences. In doing so, the study explores whether identity alignment and socially driven pressures shape consumer happiness primarily through emotional mechanisms rather than through direct effects. It also examines whether these emotional pathways differ across gender groups within digitally mediated consumption environments. This focus is particularly relevant given that young consumers' digital engagement intensifies identity construction, social comparison, and emotionally driven consumption dynamics.

This study aims to contribute to the marketing literature from three complementary perspectives: (1) theoretical, by integrating psychosocial and affective variables traditionally studied separately; (2) empirical, through a multigroup model based on structural equation modelling; and (3) managerial, by offering guidelines for ethical, inclusive, and happiness-oriented EM. Thus, the study aims to contribute to both the theoretical understanding of consumer happiness and the development of an empirical framework valuable for brand management in an emotional and digital economy.

Finally, the remaining sections of this manuscript are organised as follows: Section 2 presents the literature review and conceptual model; Section 3 describes the methodology and analytical techniques; Section 4 reports the empirical results, including the multigroup analysis; Section 5 discusses the findings and their theoretical and practical implications; Section 6 outlines the study's limitations and future research lines; and finally, Section 7 presents the main conclusions.

2. LITERATURE REVIEW

This section develops the theoretical framework underpinning the proposed model, integrating the conceptual and empirical foundations of the variables included in the study. First, it addresses consumer happiness as the central construct, representing the manifestation of subjective wellbeing derived from consumption experiences (Cuesta-Valiño *et al.*, 2023). Subsequently, the antecedents and effects of BPC, FoMO, and EM are examined, establishing their theoretical and empirical interrelations. Finally, the study's theoretical contribution is reviewed, and its relevance and originality within the marketing and consumer behaviour literature are outlined, justifying its significance.

In this context, the proposed conceptual framework integrates identity-related, social, and emotional mechanisms to explain the formation of consumer happiness in digital consumption environments. On the one hand, BPC reflects the alignment between the consumer's self-concept and the symbolic identity of the brand, which fosters feelings of authenticity, identification, and psychological coherence. On the other hand, FoMO represents a socially driven psychological tension that emerges from the perception of being excluded from rewarding experiences shared by others in digital environments, aligning with its conceptualisation as a pervasive apprehension that others might be having rewarding experiences from which one is absent (Przybylski *et al.*, 2013).

Although these constructs originate from different psychological processes, one associated with identity affirmation and the other with social comparison, both generate emotional responses that shape how consumers experience brands and consumption activities. From this perspective, EM can be understood as a central affective mechanism through which these identity-based and socially driven dynamics shape consumer happiness in contemporary digital markets, as it seeks to generate emotional resonance and strengthen the psychological connection between consumers and brands (Bin, 2023).

2.1. Consumer happiness

The study of consumer happiness originates from the convergence of positive psychology and relational marketing, which, since the late twentieth century, has begun to shift the analytical focus from transactional satisfaction to the subjective wellbeing associated with consumption (Cuesta-Valiño *et al.*, 2025; Sirgy *et al.*, 2007). In general terms, consumer happiness is conceived as the extent to which consumption experiences contribute to both hedonic (pleasure, enjoyment) and eudaimonic (meaning, self-realisation) wellbeing (Cuesta-Valiño *et al.*, 2024a). This perspective recognises that consumption is not limited to the acquisition of goods or services but constitutes a symbolic practice that shapes personal identity and the perception of life purpose (Parvatiyar & Sheth, 2023).

Historically, consumer happiness has emerged as a response to the need to understand how emotional experiences derived from consumption can enhance psychological wellbeing (Salazar-Altamirano *et al.*, 2025b; Sato *et al.*, 2023). Early contributions by Richins (2013) and Nicolao *et al.* (2009) demonstrated that experiential purchases, rather than material ones, have a more lasting impact on happiness, as they strengthen social connection and the sense of belonging. More recently, the literature has expanded this line of inquiry, emphasising that consumer happiness is determined by emotional variables (pleasure, pride, gratitude), identity-related dimensions (authenticity, self-congruence), and relational factors (brand and community attachment) (Bhardwaj & Kalro, 2023). Recent research suggests that consumer happiness has reached a strategic centrality in brand management literature, as it represents an integrated indicator of emotional value and wellbeing (Ravina-Ripoll *et al.*, 2021).

From a marketing standpoint, consumer happiness represents the point of convergence between symbolic and emotional value (Dodds *et al.*, 2021). In this regard, Kalogeras and Mejri (2025) argue that positive experiences derived from brands directly influence personal wellbeing while strengthening loyalty, word of mouth, and brand advocacy, thereby creating a virtuous cycle between wellbeing and responsible consumption behaviour. Consequently, the study of consumer happiness seeks to transcend superficial approaches by addressing the inherent complexity of the affective and symbolic mechanisms linking individuals to brands. It thus constitutes the structural foundation that organises the interaction among the remaining variables within the model.

In this sense, consumer happiness cannot be understood solely as an individual psychological outcome but rather as the result of multiple symbolic, social, and emotional mechanisms operating within contemporary consumption environments. Identity alignment between consumers and brands, the social pressures derived from digitally mediated interactions, and the emotional experiences orchestrated by marketing strategies all shape how individuals derive wellbeing from consumption. Therefore, understanding consumer happiness requires examining how identity-based factors such as brand-person congruence, socially driven dynamics such as FoMO, and affective mechanisms such as EM interact to shape the emotional outcomes associated with consumption.

In recent years, the concept of happiness management has gained increasing attention as a complementary perspective for understanding how wellbeing can be strategically fostered through organizational and relational practices (Ravina-Ripoll *et al.*, 2021). In line with the evolution of the consumer happiness construct, recent studies suggest that both approaches share a common foundation centred on the role of emotions, value alignment, and human experiences in shaping wellbeing (Cuesta-Valiño *et al.*, 2023). From this perspective, consumer happiness can be understood as the manifestation of happiness management principles within consumption contexts, where brands act as agents capable of designing emotionally meaningful and ethically grounded experiences. Thus, integrating these perspectives provides a broader conceptual framework for analysing how identity-based, social, and affective mechanisms interact to influence subjective wellbeing in contemporary consumption environments.

2.2. Brand–Person Congruence (BPC)

The study of BPC has its origins in Sirgy's (1982) self-congruence theory, which proposes that consumers prefer brands whose perceived image aligns with their self-concept (Gutiérrez-Rodríguez *et al.*, 2017). Since then, this approach has evolved towards a multidimensional understanding that incorporates aspects such as personality, values, social roles, and personal aspirations, consolidating BPC as the core of symbolic consumption behaviour (Fens *et al.*, 2022). Recent research continues to highlight the relevance of self-congruence processes in shaping consumers' emotional and relational responses toward brands. For instance, Shimul and Phau (2023) show that brand self-congruence strengthens emotional attachment and brand advocacy, while Kumagai (2024) demonstrates that congruence between the consumer's self-concept and brand attributes significantly influences brand affect and evaluation mechanisms. These findings suggest that identity congruence not only shapes symbolic brand evaluations but also activates emotional processes that are central to consumers' interactions with brands.

The relationship between BPC and EM is based on the premise that the symbolic correspondence between the consumer's self and the brand's identity enhances affective activation during the consumption experience. When consumers perceive coherence between their personal values and those of the brand, positive emotions such as pride, inspiration, and empathy arise, thereby strengthening EM strategies (Aliarte *et al.*, 2024). In this regard, Rizkautami and Tuti (2025) empirically demonstrated that BPC significantly influences the effectiveness of emotional branding, as a manifestation of EM, by generating greater affective resonance and increasing consumers' predisposition towards advertising campaigns.

However, other studies question the universality of this relationship. Michel *et al.* (2022), for example, found that excessive congruence may reduce perceived emotional novelty and limit self-expansion, since consumers may perceive it as redundant or lacking symbolic stimulation. According to these authors, a certain degree of ideal incongruence, understood as a moderate aspirational gap between the brand and the authentic self, can evoke emotions of challenge and personal growth, enriching the impact of EM.

The evidence presented above suggests that BPC represents a relevant antecedent of EM, as the symbolic alignment between consumers and brands facilitates affective activation and strengthens emotionally driven brand interactions. Accordingly, the following research hypothesis is proposed:

H_1: Brand-person congruence positively influences emotional marketing.

Beyond its relational role, BPC may also influence subjective wellbeing and consumer happiness. From a psychological perspective, the correspondence between personal identity and brand symbolism generates feelings of authenticity, belonging, and internal coherence, all of which are central components of both hedonic and eudaimonic wellbeing (Sato *et al.*, 2023). In their study of experiential consumers, these authors found that brand identification mediated the relationship between experiential consumption and happiness, accounting for 42% of the variance in subjective wellbeing. Similarly, Rodrigues *et al.* (2023) showed that congruence between the consumer's image and that of the chef or restaurant, as a human brand, enhances hedonic and novelty-related emotions, which in turn lead to greater happiness. These results reinforce the notion that symbolic congruence serves as an emotional catalyst, transforming brand interaction into a source of personal happiness (Williams *et al.*, 2022).

Nevertheless, not all studies confirm this positive relationship. Attiq *et al.* (2022) found that functional and symbolic self-incongruence can elicit negative emotions, such as frustration or rejection, thereby reducing consumer happiness. This finding suggests that perceived incongruence, particularly when it contradicts deeply held identity values, erodes the affective bond with the brand and undermines the individual's emotional balance, leading to rejection or disengagement responses.

As a result, BPC emerges as a determinant of consumer happiness. Its presence can foster positive emotions, authenticity, and wellbeing, while its absence may lead to discomfort and a detachment from the brand. Accordingly, the following research hypothesis is proposed:

H_2: Brand–person congruence has a positive influence on consumer happiness.

2.3. Fear of Missing Out (FoMo)

FoMO has been established as a theoretical basis for understanding consumer behaviour in both digital and offline environments (Alfina *et al.*, 2023). This phenomenon, defined as the anxiety that arises from perceiving that others are enjoying rewarding experiences in one's absence, reflects a persistent need for connection and social validation (Reisenwitz & Fowler, 2023). Recent studies also emphasise that FoMO is associated with psychological mechanisms related to social comparison and the desire to remain continuously connected with others (Gupta & Sharma, 2021).

In consumption contexts, FoMO has been shown to influence consumer decision-making processes and increase the likelihood of engaging in experiences perceived as socially relevant or difficult to access. Specifically, FoMO can be triggered by social interactions or marketing stimuli that highlight the possibility of missing rewarding experiences, thereby motivating consumers to act in order to avoid regret or social exclusion (Good & Hyman, 2020). In the current ecosystem characterised by hyperconnectivity and consumption dynamics mediated by digital platforms, FoMO operates as a psychological force capable of influencing both interactions with brands and the emotional patterns associated with consumption, thereby reinforcing the need to advance its study (Habib & Almamy, 2025; Rangel-Lyne & Salazar-Altamirano, 2025).

In this context, the link between FoMO and EM is grounded in the strategic use of urgency, exclusivity and perceived scarcity as emotional triggers in brand communication. Pane *et al.* (2024) demonstrated that campaigns activating FoMO significantly increase emotional engagement and purchase intention by eliciting feelings of excitement and a sense of belonging within digital communities. These findings suggest that FoMO can serve as an effective accelerator, intensifying emotional responses towards brands and thereby enhancing their visibility and engagement.

However, such emotional activation can also have counterproductive effects. Hakim and Farid (2025) caution that FoMO-based strategies, such as flash sales or time-limited promotions, can generate anxiety, social pressure and post-purchase regret, thereby undermining consumer trust and long-term happiness. In this regard, FoMO represents a double-edged construct: while it may enhance the short-term effectiveness of EM, it simultaneously threatens the authenticity and emotional sustainability of the consumer–brand relationship. Accordingly, the following research hypothesis is proposed:

H_3: FoMO has a negative influence on emotional marketing.

Regarding consumer happiness, FoMO tends to produce ambivalent effects. From a positive perspective, Lee *et al.* (2021) found that exposure to influencer-related activities on social media, mediated by FoMO, can increase perceived happiness among some consumers by providing a sense of connection and social belonging. The authors note that, in specific contexts, FoMO acts as an interaction enhancer, reinforcing positive emotions derived from symbolic consumption.

Nevertheless, the predominant evidence points to adverse effects. Bartosiak *et al.* (2025), in a study involving more than 800 young adults, confirmed that FoMO is directly associated with lower levels of psychological, social and financial wellbeing, serving as a predictor of emotional fatigue and affective dissonance. These findings demonstrate that constant exposure to narratives of social comparison and perceived exclusion generates emotional imbalance, which diminishes consumer happiness.

Overall, recent literature suggests that although FoMO can momentarily induce positive emotions through social connection, its sustained effects tend to be unpleasant, eroding satisfaction and the happiness derived from consumption. From this, the following research hypothesis is formulated:

H_4: FoMO has a negative influence on consumer happiness.

2.4. Emotional Marketing (EM)

EM has gained widespread acceptance as a practical approach for fostering deep and meaningful connections between consumers and brands (He *et al.*, 2022). EM strategies seek to stimulate consumers' affective states by appealing to their feelings, aspirations and personal experiences, thereby strengthening the emotional bond between consumers and brands (Kim & Sullivan, 2019). Unlike approaches that focus solely on functional attributes, EM appeals to emotions, aspirations, and symbolic values, fostering enduring affective relationships (Thamilselvan & Rakeshyanand, 2024). In a context characterised by information overload and digital fatigue, understanding EM becomes crucial, as the ability of brands to connect emotionally with users has become a competitive differentiator that directly influences consumer experience, loyalty and happiness (Bruckberger *et al.*, 2023). EM operates by eliciting affective responses that shape consumers' perceptions, attitudes and behavioural intentions toward brands (Guo, 2024).

Empirical evidence indicates that EM strategies and consumption experiences with a positive emotional load are associated with higher levels of subjective happiness. Recent empirical studies also show that EM in digital environments significantly influences consumer behaviour by activating psychological mechanisms such as trust, attachment and emotional engagement (Bin, 2023). For instance, Sarmad and Ali (2022) demonstrated that emotional brand experiences, particularly those linked to sensory pleasure and positive affect, directly influence consumers' happiness orientation, mediating the relationship between brand experience and overall wellbeing. Similarly, Khandai *et al.* (2024) showed that brands capable of evoking emotions such as pride, moral satisfaction or purpose (for example, sustainable brands) generate "brand happiness," which in turn drives recommendation and advocacy behaviours.

However, not all effects of EM are uniformly positive. Tresna (2025) warns that the overuse of emotional stimuli, typical of EM, or appeals to scarcity and urgency, may lead to emotional fatigue or affective dissonance, thereby reducing perceived happiness. This author argues that emotional strategies must be balanced with authenticity and ethical integrity to prevent affective manipulation from producing adverse effects on consumer happiness.

Therefore, EM can act as an emotional catalyst capable of transforming symbolic experiences into subjective happiness, provided that the emotions induced are perceived as authentic and consistent with the consumer's personal values. Based on the evidence presented, the following research hypothesis is proposed:

H_5: Emotional marketing positively influences consumer happiness.

Moreover, EM may directly affect consumer happiness while simultaneously mediating the relationship between identity- or socially based variables and emotional wellbeing (Cuesta-Valiño *et al.*, 2024b).

First, regarding BPC, Rizkautami and Tuti (2025) demonstrated that emotional branding, as a product of EM, mediates the relationship between identity congruence and purchase intention by transforming symbolic correspondence into positive affective experiences that strengthen the consumer-brand connection. Similarly, Kumagai (2024) found that symbolic congruence between brand and consumer increases subjective happiness through emotional mechanisms of trust and symbolic appreciation. These findings support the mediating role of EM as the mechanism through which BPC translates into lasting happiness and satisfaction.

Second, in relation to FoMO, recent research suggests that emotions generated by digital marketing strategies can either mitigate or amplify the effects of this phenomenon on happiness. Azhari and Roosdhani (2025) found that social media marketing activities that appropriately manage emotional engagement and the sense of belonging can buffer the negative impact of FoMO on consumption decisions and perceived happiness. In contrast, Abas *et al.* (2025) caution that the excessive use of FoMO as an emotional activation tool can erode both happiness and brand trust, confirming the mediating and bidirectional role of EM in such psychological processes.

Consequently, EM emerges as a mediating variable that can translate symbolic congruence or social tension into either constructive or unpleasant emotions, thereby determining the level of consumer happiness. Considering the empirical foundations outlined above, the following research hypotheses are proposed:

H_6: Emotional marketing mediates the relationship between brand–person congruence and consumer happiness.

H_7: Emotional marketing mediates the relationship between FoMO and consumer happiness.

2.5. Gender Differences and Theoretical Contribution

Gender differences represent a key, though historically underexplored, area in understanding the emotional and symbolic processes that shape consumer behaviour (Truong, 2025). From the perspective of the Differential Emotion Processing Theory (Fischer & Manstead, 2016), men and women differ in the activation, expression, and regulation of emotions, resulting in distinct responses to brand stimuli, marketing strategies, and consumption experiences. This theory posits that women tend to experience and express emotions with greater intensity and empathy. In contrast, men tend to orient their affective responses towards self-definition and symbolic coherence, resulting in differentiated cognitive and emotional pathways (Fischer *et al.*, 2018).

Current academic production converges in supporting this approach. Empirical evidence from Truong (2025), which utilised a neuro-emotional analysis of consumers on e-commerce platforms, demonstrated significant differences between men and women in emotional valence, arousal, and dominance dimensions, confirming that affective experiences are processed differently by gender. Complementarily, Marsasi and Yuanita (2023) found that gender disparities affect the intensity of attachment to luxury brands and the relationship between hedonic motivations and emotional attachment, suggesting that identity- and emotion-based variables (such as BPC or EM) are not structurally equivalent across genders (Cuesta-Valiño *et al.*, 2024c).

Despite these advances, a systematic review of the literature conducted by the authors for this study, based on searches in Scopus, Web of Science and PubMed (as of October 2025), reveals the absence of studies that comprehensively analyse structural gender differences within a model integrating BPC, FoMO, EM and consumer happiness. The literature tends to address these phenomena in isolation, without exploring their interaction within a multigroup framework. This empirical gap justifies the relevance of the present study and reinforces its pioneering character in incorporating a multigender analysis within an affective model of consumer happiness.

From a theoretical standpoint, this study seeks to extend the Differential Emotion Processing Theory to the field of EM by proposing that differences in emotional intensity, direction and regulation between men and women may alter the psychological pathways linking identity-related (BPC), social (FoMO) and affective (EM) variables with consumer happiness. In doing so, it aims to identify an innovative explanatory framework that integrates perspectives from emotional psychology, self-congruence theory and experiential marketing into a relational multigroup model. Accordingly, the following research hypothesis is proposed:

H_8: There are significant differences between men and women in the relationships among brand-person congruence, FoMO, emotional marketing and consumer happiness.

Figure 1 presents the proposed theoretical model, derived from the empirical evidence outlined in the conceptual framework, as well as the hypothetical relationships guiding the development of this research.

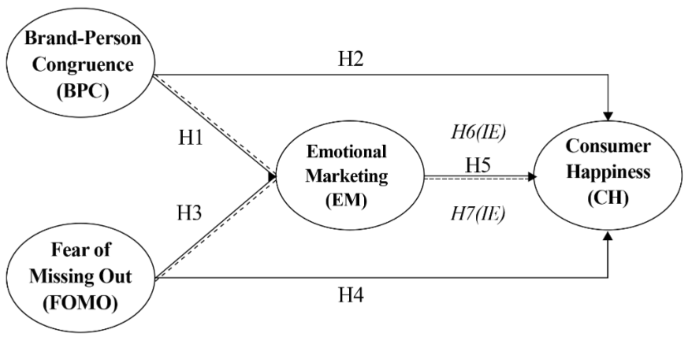

Figure 1
Proposed model
Source: Elaborated by the authors.

3. METHODOLOGY

3.1. Sample and Data Collection Procedure

The study employed a quantitative approach with a non-experimental, cross-sectional design, aiming to analyse the structural relationships among the proposed constructs using structural equation modelling (SEM). Data were collected through a structured digital questionnaire distributed to a non-probabilistic convenience sample of young consumers in Mexico, a context characterised by high levels of digital engagement and intensive social media use. Participation was voluntary, and anonymity and confidentiality were always ensured, in accordance with the ethical principles of social science research.

Regarding ethical compliance, the study was conducted in accordance with the principles of the Declaration of Helsinki (World Medical Association, 2013) and the ethical guidelines of the American Psychological Association. All participants were informed in advance about the general objectives of the research, the anonymous and confidential nature of their responses, and their right to withdraw at any time without consequences. Participation was entirely voluntary, and submitting the completed questionnaire was considered an expression of informed consent.

To assess potential non-response bias, early and late respondents were compared following the procedure proposed by Armstrong and Overton (1977). Independent sample t-tests revealed no statistically significant differences between the two groups ($p > 0.10$), suggesting that non-response bias is unlikely to affect the validity of the results.

The final sample consisted of 360 participants, which allowed for the estimation of the overall structural model and the performance of multigroup analyses using SEM (MGA-SEM). In terms of sociodemographic composition, 56.9% of participants identified as male and 43.1% as female. Participants' ages ranged from 18 to 25 years, with a mean of 20.0 years and a standard deviation of 1.02, indicating a predominantly young and relatively homogeneous population. This group is particularly relevant for the aims of this study, as young consumers tend to display higher emotional involvement in consumption processes and greater exposure to digital environments, key factors for analysing emotion-based, happiness-oriented and experiential consumption models (Bag *et al.*, 2021; Fumagalli *et al.*, 2021).

3.2. *Instruments*

The research employed a structured questionnaire composed of previously validated scales from the literature to measure the constructs of the proposed model (see Appendix Table A.1). BPC was assessed using an adaptation of the scale developed by Escalas and Bettman (2003), which examines the extent to which consumers perceive similarity and alignment between their personal identity and the identity of brands. An example item from this scale is: *"I identify with brands that share my way of thinking or my values."*

Similarly, FoMO was measured using the scale proposed by Hayran and Anik (2021), designed to capture the emotional discomfort and consumption motivation derived from the perception of social exclusion. A representative item from this scale is: *"It bothers me to see others enjoying products or experiences that I do not have."*

Consumer happiness was measured using the scale developed by Cuesta-Valiño *et al.* (2023), which evaluates wellbeing, emotional satisfaction, and positive emotions experienced during the purchasing process. An example item from this scale is: *"I feel that my purchases contribute to my overall happiness."*

Finally, EM was assessed through an adaptation of the scale proposed by Thomson, MacInnis and Park (2005), which captures the degree of emotional connection, attachment and affective enjoyment that consumers experience towards brands and consumption experiences. An illustrative item is: *"I feel an emotional connection with certain consumption experiences."* All variables were measured using a five-point Likert scale, where 1 corresponded to "strongly disagree" and 5 to "strongly agree."

3.3. *Data analysis technique*

Data analysis was conducted using Jamovi software (version 2.3.28), which was selected for its suitability in processing statistical information in quantitative studies and its compatibility with advanced analytical techniques. As an initial step, a preliminary statistical review of the variables included in the study was conducted, calculating descriptive indicators such as means, standard deviations, skewness, and kurtosis. This analysis enabled an examination of data behaviour and confirmed that their characteristics were suitable for the application of subsequent multivariate techniques (Tabachnick & Fidell, 2019).

To rule out potential bias resulting from standard method variance, Harman's single-factor test was applied, following the methodological recommendations of Podsakoff *et al.* (2003). The unrotated exploratory factor analysis revealed the existence of four factors with eigenvalues greater than 1, with the first factor accounting for 29.4% of the total variance, a value well below the 50% threshold typically considered indicative of risk. This result confirms that there is no substantial evidence of common method bias in the collected data. Complementary procedural measures were also adopted, including ensuring complete anonymity of responses, employing validated scales and formulating items neutrally, to mitigate potential shared variance effects.

Once statistical assumptions were verified, the proposed model was estimated using covariance-based structural equation modelling (CB-SEM), complemented by multigroup analysis (MGA-SEM) to assess potential structural differences between the groups under consideration. This procedure is particularly suitable for testing the stability of theoretical relationships and exploring differential effects across subsamples (Cheah *et al.*, 2020). The selection of CB-SEM was based on the theoretical robustness of the model and the adequacy of the sample size for this type of analysis (Hair *et al.*, 2010).

The overall model fit was assessed using several indices widely accepted in the literature, including the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA), following the criteria proposed by Hu and Bentler (1999), to ensure the consistency and reliability of the results obtained.

4. RESULTS

4.1. *Structural equation modelling*

To empirically test the proposed theoretical model and analyse the relationships among the study constructs, a covariance-based structural equation modelling (CB-SEM) approach was employed, estimated using Jamovi software (version 2.3.28). This procedure allowed for a simultaneous assessment of the overall model fit, construct validity and robustness of the hypothesised structural relationships.

A multigroup analysis (MGA-SEM) was also conducted, taking participant gender into account, to identify potential differences in the strength and significance of structural effects between groups. This approach facilitated the examination of both direct and indirect effects, as well as the verification of the theoretical model's stability, thereby offering a comprehensive understanding of the emotional and relational mechanisms underlying consumer happiness and purchasing behaviour.

4.1.1. Convergent and discriminant validity

The convergent validity of the measurement model was assessed using Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) indicators for the constructs BPC, FoMO, Consumer Happiness, and EM, considering both the total sample and the multigroup analysis by gender (see Table 1).

The results indicate high levels of internal consistency, with Cronbach's alpha values exceeding 0.88 in all cases, both for the full sample and for the female and male subgroups, well above the recommended threshold of 0.70 (Hair *et al.*, 2019). Consistently, CR values were greater than 0.88 across all constructs, confirming the robustness and stability of the measurement model. Likewise, AVE values surpassed the minimum criterion of 0.50 for all variables and groups analysed, indicating that each construct explains an adequate proportion of the variance of its indicators, thereby supporting the convergent validity of the model (Fornell & Larcker, 1981).

Table 1
Convergent and discriminant validity

		Cronbach's Alpha			Composite Reliability			AVE		
		Full sample	**Female**	**Male**	**Full sample**	**Female**	**Male**	**Full sample**	**Female**	**Male**
1	Brand-Person Congruence	0.931	0.935	0.927	0.929	0.934	0.927	0.620	0.635	0.608
2	Fear of Missing Out	0.911	0.922	0.900	0.911	0.923	0.902	0.719	0.746	0.695
3	Consumer Happiness	0.921	0.941	0.919	0.928	0.942	0.921	0.562	0.613	0.530
4	Emotional Marketing	0.882	0.884	0.880	0.881	0.880	0.882	0.553	0.545	0.552
		HTMT Criterion					**Fornell-Larcker Criterion**			
		1	**2**	**3**	**4**		**1**	**2**	**3**	**4**
1	Brand-Person Congruence	—					0.787			
2	Fear of Missing Out	0.432	—				0.414	**0.848**		
3	Consumer Happiness	0.554	0.536	—			0.651	0.532	**0.750**	
4	Emotional Marketing	0.599	0.507	0.832	—		0.696	0.501	0.844	**0.744**

Source: Own elaboration.

Discriminant validity was examined through the joint application of the Fornell–Larcker criterion and the HTMT (Heterotrait–Monotrait Ratio) criterion. According to the Fornell–Larcker approach, the square root of the AVE of each construct was compared with the inter-construct correlations. Although relatively high associations were observed between Consumer Happiness and EM, this finding is conceptually coherent, given the theoretical closeness between the two constructs in the context of emotional consumption.

Nevertheless, the HTMT analysis indicated that all values remained below the conservative threshold of 0.85, confirming an adequate level of distinction among the model variables (Henseler *et al.*, 2015). Taken together, these findings provide sufficient evidence of discriminant validity, indicating that the constructs analysed represent conceptually distinct dimensions that are appropriate for inclusion within the structural model.

4.1.2. Model fit indices

The fit of the structural model was evaluated using absolute, incremental and parsimony indices for both the total sample and the multigroup analysis (see Table 2). Regarding the absolute fit indicators, the CMIN statistic yielded values of 862 for the full sample and 1328 for the MGA model. In both cases, the associated p-value was less than 0.001, indicating a marginal fit. However, this result is typical in models estimated with moderate or large sample sizes, as the chi-square test is susceptible to sample size (Hair *et al.*, 2019).

In contrast, the SRMR and RMSEA indices exhibited values within the recommended ranges, remaining below 0.08 in both models, indicating an adequate correspondence between the observed and estimated matrices (Hu & Bentler, 1999).

Regarding the incremental fit indices, the values obtained for the CFI, IFI, and TLI exceeded the recommended minimum threshold of 0.90 for both the total sample and the multigroup analysis, indicating a satisfactory fit of the structural model (Hair *et al.*, 2019). Similarly, the parsimony indicators confirmed the robustness of the model, with CMIN/DF values below three and PGFI values above 0.50 in both cases, suggesting an appropriate balance between model fit and complexity (Mulaik *et al.*, 1989).

The results presented in Table 2, therefore, provide sufficient empirical evidence to conclude that the proposed model demonstrates an acceptable and stable overall fit, both for the general sample and for the MGA analysis.

Table 2
Measures of fit

Type of fit	Fit measure	Acceptance level	Full sample	MGA	Acceptability
Absolute or global	CMIN	CMIN = double of DF	862	1328	Marginal
	P value	> 0.05	< .001	< .001	Marginal
	SRMR	< 0.08	0.044	0.054	Acceptable
	RMSEA	< 0.08	0.067	0.075	Acceptable
Incremental	CFI	> 0.900	0.922	0.907	Acceptable
	IFI	> 0.900	0.923	0.908	Acceptable
	TLI	> 0.900	0.914	0.897	Acceptable
Parsimony	PGFI	> 0.500	0.729	0.708	Acceptable
	CMIN/DF	<3	2.520	1.94	Acceptable

Source: Own elaboration.

4.2. Multigroup Analysis (MGA)

To examine whether the relationships proposed in the structural model remain stable between men and women, a multigroup analysis was conducted using structural equation modelling (MGA-SEM). This procedure allowed the identification of potential differences in the strength and significance of the structural effects according to gender, thereby providing a more detailed understanding of the role played by sociodemographic characteristics in the emotional and happiness-related processes associated with consumption.

To ensure that the comparisons between groups were valid and not affected by measurement bias, the measurement invariance of the model was assessed prior to testing the structural paths. The results of this analysis are described below.

4.2.1. Measurement invariance analysis

Measurement invariance was assessed sequentially at the configural, metric, and scalar levels, comparing model fit across men and women (see Table 3). Firstly, the configural model exhibited acceptable fit indices (CFI = 0.907, RMSEA = 0.075, SRMR = 0.054), indicating that the basic factorial structure was equivalent across both groups.

Subsequently, the metric model maintained virtually identical CFI values (ΔCFI = 0) and only minimal variation in RMSEA (ΔRMSEA = 0.001), suggesting that the factor loadings can be considered equivalent between men and women. Finally, the scalar model showed minor changes in the fit indices (ΔCFI = 0.003; ΔRMSEA = 0), remaining within the recommended thresholds reported in the literature.

According to the criteria proposed by Chen (2007), variations in CFI below 0.01 and in RMSEA below 0.015 indicate that invariance is maintained. These results therefore confirm that the comparisons conducted in the multigroup analysis reflect genuine differences in structural relationships rather than artefacts arising from measurement issues.

Table 3
Fit indices for invariance models

Model	X^2	ΔX^2	CFI	ΔCFI	RMSEA	ΔRMSEA	SRMR	AIC	BIC
Configural	1328		0.907		0.075		0.054	24159.823	24761.073
Metric	1348	–20	0.907	0	0.074	0.001	0.057	24132.046	24741.829
Scalar	1397	–49	0.904	0.003	0.074	0	0.059	24132.931	24651.246

Source: Own elaboration.

4.2.2. Hypotheses testing

The results of the structural model and the multigroup analysis (MGA-SEM) are presented in Table 4, which reports both direct and indirect effects for the total sample and by gender. Regarding H_1, BPC exhibited a positive and highly significant effect on EM for the total sample as well as for both men and women. Although the coefficient was slightly higher among women, the difference between groups was minimal ($\Delta = -0.034$), indicating that this relationship remains stable regardless of gender.

For H_2, which examines the direct effect of BPC on consumer happiness, the hypothesis was supported only within the male group ($\beta = 0.202$, $p < 0.01$). In contrast, the effect did not reach statistical significance in the total sample or among women. This finding suggests a gender-specific pattern in the direct influence of symbolic congruence on consumer happiness.

With respect to H_3, the results indicate that FoMO exerts a positive and significant effect on EM in the total sample and across both gender groups. However, the magnitude of the effect was greater among men ($\beta = 0.318$, $p < 0.001$) than among women ($\beta = 0.183$, $p < 0.01$), with a moderate difference between groups ($\Delta = 0.135$). This result suggests that men are more sensitive to social stimuli when forming emotional bonds with brands.

In contrast, H_4 showed that the direct effect of FoMO on consumer happiness was significant only among women ($\beta = 0.181$, $p < 0.001$). In contrast, the effect was not statistically significant in the male group and the total sample. These finding highlights gender differences in how negative social emotions influence happiness associated with consumption.

Finally, H_5 confirmed a strong, positive and significant effect of EM on consumer happiness across the total sample and both groups, with the effect being more pronounced among women (β = 0.815, $p < 0.001$) than among men (β = 0.598, $p < 0.001$), representing a substantial difference between groups (Δ = −0.217).

Regarding the indirect effects, the results confirmed the mediating role of EM in the proposed relationships. Specifically, H_6 demonstrated that BPC indirectly influences consumer happiness through EM, with significant effects for both men and women, though with greater intensity among women (Δ = −0.150). Similarly, H_7 revealed that FoMO indirectly affects consumer happiness via EM in both groups, with a minor difference between men and women (Δ = 0.041).

Overall, these findings support the proposed theoretical model and underscore the relevance of EM as a central mediating mechanism linking identity-related and social factors to consumer happiness, while also evidencing gender-based differences in some of the structural relationships analysed.

Table 4
Hypothesis testing

Hypothesis	Variable					Full Sample	Female	Male	MGA Difference	Contrast
Direct effects										
H1	BPC	-->	EM			0.589***	0.597***	0.563***	−0.034	Validated (both groups)
H2	BPC	-->	CH			0.106	0.024	0.202**	0.178	Validated only in males
H3	FOMO	-->	EM			0.257***	0.183**	0.318***	0.135	Validated (both groups)
H4	FOMO	-->	CH			0.136**	0.181***	0.114	−0.067	Validated only in females
H5	EM	-->	CH			0.702***	0.815***	0.598***	−0.217	Validated (both groups)
Indirect effects										
H6	BPC	-->	EM	-->	CH	0.414***	0.486***	0.336***	−0.150	Validated (both groups)
H7	FOMO	-->	EM	-->	CH	0.181***	0.149**	0.190***	0.041	Validated (both groups)

Note: $p < 0.05$ (*), $p < 0.01$ (**), $p < 0.001$ (***).

Source: Own elaboration.

Figure 2 presents the structural model estimated for the total sample, illustrating the direct and indirect effects among BPC, FoMO, EM and consumer happiness. The relationships depicted confirm the central role of EM as a mediating variable through which identity-related and social factors influence happiness associated with consumption experiences. The model exhibits a coherent structure that is consistent with the proposed theoretical framework, highlighting the relevance of emotions as an explanatory mechanism in generating consumer happiness.

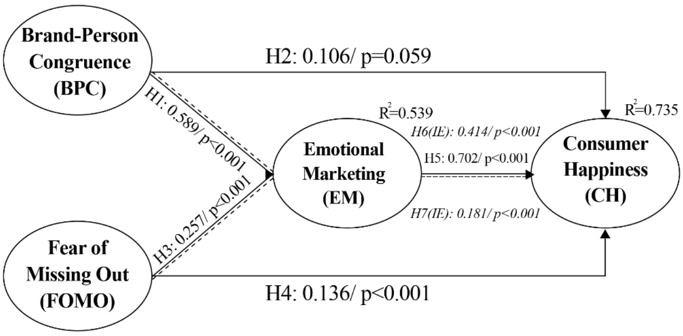

Figure 2
Structural model (Total sample)

Source: Own elaboration.

In terms of explanatory capacity, the R^2 values indicate that the model demonstrates strong predictive power. Specifically, consumer happiness reached an $R^2 = 0.735$, implying that 73.5% of its variance is explained by the variables included in the model, reflecting a high level of explanatory strength. EM showed an $R^2 = 0.539$, suggesting a moderate-to-high explanatory capacity. According to the criteria proposed by Chin (1998), R^2 values above 0.67 can be considered high, while those between 0.50 and 0.67 are regarded as moderate. These results reinforce the empirical robustness of the model and confirm the pivotal role of EM as the connecting mechanism linking BPC, FoMO and consumer happiness.

5. DISCUSSION

The findings provide robust evidence of the joint role of BPC, FoMO and EM in shaping consumer happiness.

The results indicate that brand-person congruence (BPC) exerts a positive and significant effect on emotional marketing (EM) in the total sample and across both gender groups. This finding supports self-congruence theory (Escalas & Bettman, 2003) and recent studies identifying symbolic coherence as a catalyst for affective resonance in consumption (Issock *et al.*, 2023; Spiga, 2025). When a brand reflects consumers' identities or personal values, emotional activation during consumption is facilitated regardless of gender.

Interestingly, the relationship between BPC and consumer happiness was observed only among men, suggesting that symbolic identification does not automatically translate into subjective wellbeing. This result aligns with studies indicating that identity congruence must be emotionally channelled to generate authentic happiness outcomes (Michel & Torelli, 2022). It also reinforces evidence showing that men tend to associate happiness more directly with identity coherence and symbolic self-projection (Fischer & Manstead, 2016; Luo *et al.*, 2025).

The findings also reveal that FoMO significantly increases EM in both groups, with stronger effects among men, confirming its role as an emotional accelerator driven by social comparison and digital pressures (Tandon *et al.*, 2021; Pane *et al.*, 2024). However, its direct effect on happiness is significant only among women. This pattern is consistent with studies linking women's emotional processing to greater empathic and relational responsiveness (Fischer *et al.*, 2018; Truong, 2025). Consequently, FoMO emerges as an ambivalent phenomenon that may simultaneously stimulate connection and emotional tension (Littman-Ovadia & Russo-Netzer, 2024; Bartosiak *et al.*, 2025).

The analysis further highlights the mediating role of EM. Its strong effect on consumer happiness indicates that emotions elicited by brands transform symbolic experiences into subjective fulfilment (Thamilselvan & Rakeshyanand, 2024; Zhang *et al.*, 2022). In this sense, both BPC and FoMO influence happiness primarily when channelled through EM, reinforcing its role as the affective mechanism linking identity-based and social stimuli with emotional outcomes (Ravina-Ripoll *et al.*, 2021; Michel & Torelli, 2022).

Overall, consumer happiness emerges as a relational phenomenon. It depends less on symbolic identification or social pressure alone and more on brands' capacity to transform these forces into authentic emotional experiences shaped by gender and digital context.

6. IMPLICATIONS

6.1. *Theoretical implications*

From an academic perspective, this study integrates identity-based, social and emotional variables into a single model, which have traditionally been examined separately. The findings extend the understanding of consumer happiness as a relational outcome shaped by identity-based, social, and emotional mechanisms, providing empirical support for Self-Congruence Theory (Sirgy, 1982) reinforcing its relevance in explaining identity-based mechanisms in consumer happiness.

Moreover, the gender-based structural differences provide empirical support for the Differential Emotion Processing Theory, indicating that emotional pathways to happiness are not homogeneous. The model presented here contributes to consolidating EM as a theoretical bridge between symbolic identity and consumer happiness, opening new lines of inquiry into the interaction between emotion, gender and symbolism in digital consumption contexts.

6.2. *Practical implications*

The findings provide clear strategic guidance for brand management. The evidence suggests that consumer happiness is primarily built through authentic emotional experiences rather than through isolated identity-based or social stimuli. Therefore, companies should design EM strategies grounded in empathy, symbolic coherence and experiential authenticity, prioritising sustained emotional connection over immediate persuasion.

Furthermore, the mediating role of EM demonstrates that BPC and FoMO contribute positively to consumer happiness only when managed ethically, avoiding narratives that intensify anxiety or social comparison. Brands should focus their efforts on creating narratives of balanced emotional belonging, where identity and digital connection enhance rather than distort the consumer's experience of happiness.

For example, instead of framing limited campaigns around pressure-driven messages that emphasise scarcity or exclusion, brands may promote participation through positive emotional cues such as shared experiences, community engagement, or symbolic identification with brand values. In practice, this may involve presenting limited offers as opportunities for collective enjoyment or meaningful interaction with the brand rather than as situations that consumers risk missing. Such approaches allow firms to activate emotional engagement and digital interaction while protecting consumer wellbeing and sustaining long-term brand relationships.

6.3. *Social implications*

At the societal level, the results underline the need to foster emotionally healthy consumption practices. While FoMO can enhance social connection, it may also lead to emotional distress if not correctly managed. Therefore, both brands and institutions should promote emotional and digital literacy that enables consumers to maintain more conscious, balanced and human relationships with brands.

Ethical EM can serve as a socially relevant tool for fostering both individual and collective happiness, mitigating the adverse effects of hyperconnectivity and social comparison.

7. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

This study presents several limitations that offer valuable opportunities for future research. Firstly, the use of a non-probabilistic and predominantly young sample limits the generalisability of the findings to other population segments. It is therefore recommended that the model be replicated across different age groups and cultural contexts.

Secondly, the cross-sectional and self-reported design prevents the establishment of definitive causal relationships and may be subject to social desirability bias or situational emotional states. Future research could incorporate longitudinal or experimental designs, as well as physiological or neuro-emotional measures, to further validate affective responses.

Moreover, although the multigroup analysis allowed for the observation of gender-based differences, other factors, such as culture, socioeconomic status, and digital literacy, may also influence the emotional pathways towards happiness. Including these variables in future models would enrich the understanding of the emotional mechanisms underlying consumption.

Finally, a promising line of inquiry lies in the development and validation of a Happy Brands Scale, designed to capture how consumers perceive, experience and attribute happiness to brands. Such an instrument would enable a more in-depth empirical assessment of consumer happiness and its relationship with emotional brand management, thereby contributing to the consolidation of this emerging research field.

8. CONCLUSION

This study examined how identity alignment with brands and socially driven pressures interact to shape consumer happiness in contemporary digitally mediated consumption environments. In an increasingly hyperconnected consumption environment, the findings confirm that consumer happiness is primarily generated through emotional and relational processes. EM acts as a transformative mechanism that converts BPC and FoMO into experiences of happiness, positioning emotions at the core of consumption decisions, in line with prior research on EM and consumer wellbeing (Thamilselvan & Rakeshyanand, 2024; Zhang *et al.*, 2022).

The findings further indicate that the influence of identity-based and social factors is neither direct nor uniform but must be channelled through authentic emotional experiences. BPC strengthens the affective bond with brands, while FoMO operates as an ambivalent stimulus whose impact depends on the context and the consumer's profile, consistent with previous studies on identity congruence and socially driven consumption dynamics (Escalas & Bettman, 2003; Tandon *et al.*, 2021). The observed gender differences invite a reconsideration of traditional consumer behaviour models from a perspective more attuned to emotional diversity.

Taken together, the findings highlight the need to guide brand management towards emotionally responsible and human-centred strategies capable of balancing social pressure with the genuine pursuit of consumer happiness. From a theoretical perspective, the study contributes to the consumer behaviour literature by integrating identity-based dynamics, socially driven pressures and EM mechanisms within a single explanatory framework of consumer happiness, extending recent theoretical discussions on happiness management and consumer wellbeing (Ravina-Ripoll *et al.*, 2021; Cuesta-Valiño *et al.*, 2023).

This study reaffirms that, even in digitalised economies, emotions, values and authenticity remain at the heart of the relationship between consumers and brands, consolidating EM as both a strategic and ethical pillar in fostering brand-related happiness.

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10. DECLARATION ON THE USE OF ARTIFICIAL INTELLIGENCE TOOLS

The authors declare that no generative artificial intelligence tools were used in the writing, analysis, or interpretation of the results of this study. Such tools were employed solely for the purpose of reviewing grammar and enhancing linguistic clarity in the English text. All conceptual content, empirical data, statistical analyses and conclusions are the exclusive work of the authors.

11. CONFLICT OF INTEREST DECLARATION

The authors declare that there are no conflicts of interest that could have influenced the results, interpretation, or publication of this study.

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APPENDIX

Table A.1
Constructs and indicators

Construct	Code	Indicator	Authors
Brand-Person Congruence	BPC1	I feel closer to brands that resemble me.	Adapted from Escalas & Bettman (2003).
	BPC2	I identify with brands that share my way of thinking or my values.	
	BPC3	When a brand represents me, I feel more comfortable buying it.	
	BPC4	I like when a brand reflects who I am or how I feel.	
	BPC5	I prefer brands that help me express my style or personality.	
	BPC6	Sometimes I feel certain brands understand me better than others.	
	BPC7	I connect more easily with brands that fit my personality.	
	BPC8	It is easier to trust brands that align with my way of seeing life.	
	BPC9	I am attracted to brands that make me feel "this is so me".	
Fear of Missing Out	FOMO1	I feel uncomfortable when I see others enjoying products or experiences that I do not have.	Adapted from Hayran & Anik (2021).
	FOMO2	I would like to purchase the same things I see others enjoying.	
	FOMO3	I feel frustrated if I cannot take part in experiences that other people share.	
	FOMO4	When I see promotions or product launches that others take advantage of and I do not, I feel excluded.	
	FOMO5	I feel tempted to acquire products simply because I see others doing so.	
	FOMO6	I find it difficult to ignore the things I am missing out on by not consuming what others do.	
	FOMO7	It bothers me to be left out of trends or fashionable experiences.	
	FOMO8	Sometimes, I consume certain products just to avoid feeling disconnected from others.	
Consumer Happiness	CH1	I feel satisfied with the purchasing decisions I make.	Adapted from Cuesta-Valiño *et al.* (2023).
	CH2	Shopping is a gratifying experience for me.	
	CH3	I feel that my purchases contribute to my overall happiness.	
	CH4	I believe what I buy enhances my quality of life.	
	CH5	I enjoy shopping for things I like.	
	CH6	I get excited when making certain purchases.	
	CH7	Shopping sometimes helps me relieve stress.	
	CH8	Buying what I desire helps me forget about my worries for a while.	
	CH9	Some shopping experiences completely absorb my attention.	
	CH10	When I'm shopping, time often flies.	
	CH11	Treating myself to certain purchases makes my effort feel worthwhile.	
	CH12	Buying things I value makes me feel fortunate.	
	CH13	Sometimes I feel that my purchases can also benefit others.	
	CH14	Being able to buy what I desire motivates me to keep striving.	
Emotional Marketing	EM1	I feel an emotional connection with certain consumption experiences.	Adapted from Thomson, MacInnis & Park (2005).
	EM2	Some brands or products make me feel a special connection.	
	EM3	At times, I feel emotionally involved with what I purchase.	
	EM4	Sometimes, I feel genuine passion for what I consume.	
	EM5	Certain products or experiences create a strong emotional attachment in me.	
	EM6	Consuming certain products makes me feel happy.	
	EM7	I feel emotional enjoyment when buying things I like.	
	EM8	Buying things that matter to me makes me feel secure.	
	EM9	I feel more confident when consuming products that emotionally move me.	

Source: Own elaboration.

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