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Artificial intelligence in political communication and citizens' perceptions of disinformation and democratic legitimacy in Ecuador

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ABSTRACT

This study analyzes citizens' perceptions of Artificial Intelligence (AI) in electoral campaigns in Ecuador, emphasizing the intersections between technology, ethics, and democratic legitimacy. The research adopts a quantitative, exploratory-descriptive approach based on a structured survey that identifies patterns of interpretation and attitudes toward the political use of AI. Results indicate that most respondents acknowledge the growing presence of AI in political communication but maintain an ambivalent stance toward its implications. While its potential for efficiency and personalization is valued, concerns persist regarding manipulation, disinformation, and data privacy. The perception of influence is stronger at the symbolic and discursive level than in actual voting behavior, suggesting that AI shapes imaginaries and emotional climates rather than electoral outcomes. Statistical analysis identifies three attitudinal profiles: a critical-regulatory group demanding ethical control, an ambivalent group oscillating between curiosity and uncertainty, and a disengaged minority characterized by low media literacy. The findings highlight the emergence of a politically conscious digital citizenry that perceives AI as both opportunity and risk. The study concludes that the legitimacy of AI in electoral contexts depends on the establishment of transparent ethical frameworks and the strengthening of digital literacy to ensure responsible and participatory democratic engagement in technologically mediated societies.

1. Introduction

Technological progress has driven significant transformations across various societal domains (Jeflea et al., 2022). A recent and prominent manifestation of this trend is Artificial Intelligence (AI), which has reshaped areas such as content creation (Franganillo, 2023; Romera-Fadón et al., 2024), journalistic practices (Túñez-López et al., 2018), fake news verification mechanisms (Cristófol & Moguer Terol, 2025; Vázquez-Herrero et al., 2019), personalized user engagement, process automation, and the design of electoral campaigns (Flores-Vivar et al., 2023).

The accelerated incorporation of Artificial Intelligence (AI) into political communication represents one of the most significant transformations of contemporary electoral processes. Scholarly research has extensively documented how AI-driven systems, such as algorithmic personalization, predictive analytics, automated content generation, and sentiment analysis, have reshaped campaign strategies, journalistic practices, and political information flows (Das & Malaviya, 2025; Flores-Vivar et al., 2023; Ramos Pollán, 2020; Russell & Norvig, 2021; Túñez-López et al., 2018). Within this framework, AI has been conceptualized both as a tool for optimizing political communication and as a mechanism capable of redefining the relationship between political actors and citizens (Boden, 2017; Duan et al., 2019; Franganillo, 2023).

However, a growing body of literature warns that the expansion of AI in electoral contexts cannot be understood solely through its functional or instrumental advantages. From a critical perspective, scholars have highlighted how algorithmic automation may exacerbate existing inequalities, intensify political polarization, and facilitate the large-scale dissemination of disinformation, particularly through deepfakes and synthetic audiovisual content (Barredo-Ibáñez et al., 2021; Vázquez-Herrero et al., 2019; Wardle & Derakhshan, 2018; Yan et al., 2025). These dynamics raise profound ethical, normative, and democratic concerns, especially in relation to transparency, privacy, manipulation, and the erosion of public deliberation (Jobin et al., 2020; Kane, 2019; Mainz et al., 2024; Rubio Núñez, 2025).

In this sense, recent debates on democratic legitimacy and resilience

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emphasize that the impact of AI on electoral processes cannot be assessed exclusively through measurable outcomes such as voter targeting or campaign efficiency. Rather, democratic stability increasingly depends on citizens' perceptions of fairness, trust, and symbolic integrity within technologically mediated political environments (Bennett & Livingston, 2018; Cerina & Rouméas, 2025, pp. 1–15; Guess et al., 2020). AI-mediated political communication thus emerges as a site of tension between technological rationalization and democratic trust, where innovation coexists with fears of manipulation, emotional engineering, and loss of human agency (Usharani, 2025; Vacarelu, 2023).

The Ecuadorian case illustrates these tensions with particular clarity. Over the last decade, electoral campaigns in Ecuador have progressively incorporated digital strategies, social media platforms, and data-driven communication tools, following regional trends in Latin America (Freidenberg, 2007; Hidalgo Chica & Cedeño Moreira, 2022). More recently, AI-based practices, including automated networks, audience segmentation algorithms, and the circulation of manipulated audiovisual content, have gained visibility, especially during the most recent national elections, where deepfakes and AI-generated misinformation played a prominent role in shaping public debate (Puyosa, 2017; Calderón, 2019; Andrade, 2025; Primicias, 2025; Swissinfo.ch, 2025).

However, despite the growing visibility of these practices in political and media discourse, there is still limited empirical evidence on how citizens themselves perceive the use of artificial intelligence in electoral campaigns and how these perceptions relate to democratic legitimacy, particularly in Global South contexts. These characteristics position Ecuador not merely as a descriptive case, but as a strategic context for examining the interaction between artificial intelligence, disinformation, and electoral integrity under conditions of institutional vulnerability. Beyond its empirical focus, this study contributes to the literature by addressing a significant regional and linguistic gap, as research on citizens' perceptions of artificial intelligence in electoral communication has been predominantly centered on Europe and North America, with limited attention to Latin American contexts such as Ecuador. The timeliness of this research is reinforced by the proximity of recent and forthcoming electoral processes in Ecuador, in which the communicative role of artificial intelligence has intensified, positioning the study as both empirically relevant and socially significant.

Despite the growing presence of these technologies and their documented risks, empirical research in Ecuador and comparable Global South contexts remains limited, particularly regarding citizens' perceptions and emotional responses to the use of AI in electoral campaigns (Barredo-Ibáñez et al., 2021; López-Ponce et al., 2024). Most existing studies prioritize institutional, strategic, or regulatory analyses, leaving a significant gap in understanding how ordinary citizens interpret AI-mediated political communication, how they evaluate its legitimacy, and whether they perceive it as influencing electoral outcomes or merely reshaping political imaginaries.

Addressing this gap is theoretically and socially relevant. Citizens' perceptions constitute a key dimension for assessing the democratic implications of emerging technologies, as attitudes toward AI reflect broader concerns about power, trust, and participation in contemporary political systems. By focusing on perceived usefulness, perceived risks, ethical and regulatory expectations, and emotional attitudes toward AI, this study situates the Ecuadorian experience within the broader international debate on artificial intelligence, disinformation, and democratic resilience. In doing so, it contributes to a more comprehensive understanding of how technologically mediated political communication is negotiated at the level of public perception, beyond its technical deployment or strategic intent.

2. Research background

Given its very nature, Artificial Intelligence (AI) lacks a single, universally accepted definition, having evolved over time through diverse approaches. Consequently, it can be conceptualized from a technological operational perspective (Russell & Norvig, 2021), grounded in machine learning principles (Esteva et al., 2021), or framed within paradigms that incorporate ethical dimensions (Jobin et al., 2020), among others. Despite this multiplicity of viewpoints, a broad consensus exists in describing AI as an interdisciplinary field dedicated to developing systems capable of performing tasks that require human intelligence and execution (Boden, 2017; Duan et al., 2019; Franganillo, 2023). These are systems designed to learn from data and improve their performance autonomously over time (Hanafizadeh & Marjaie, 2021). According to Ramos Pollán (2020), AI has transitioned from a futuristic concept to a practical tool adept at addressing complex problems within the social sciences. However, it is also crucial to recognize that its deployment can expose and even exacerbate underlying social inequalities related to class, gender, and race (Barredo-Ibañez et al., 2021).

Concerning the specific object of this research, López-Ponce et al. (2024) contend that the use of Artificial Intelligence in electoral campaigns is already an established reality, significantly influencing opinion formation, voter decision making, the quality of public debate, and ultimately, democratic health. To systematically analyze its impact, this research is structured around four theoretical dimensions, detailed in the following sections.

2.1. Usefulness of artificial intelligence

Electoral campaigns are routine processes in democratic societies where political parties compete to persuade citizens and secure elected office (Valdez Zepeda et al., 2024). In this pursuit, they employ a wide array of tactics and strategies, with one of the most recent innovations being the use of AI to optimize political communication (López Ponce, 2024; Rubio Nuñez, 2025). Its utility extends to analyzing large volumes of data to enable precise message segmentation and personalization (Barredo et al., 2021; Das & Malaviya, 2025), enhancing persuasive power (Safiullah & Parveen, 2022), predicting voter behavior (Gemenis, 2024), and saving time in citizen engagement processes (Túñez-López et al., 2018), all aimed at constructing stable electoral majorities (Adeleke, 2025).

Practical examples of AI in electoral contexts are numerous. They include the voter segmentation and message personalization on social media that increased communication effectiveness by 20% during Barack Obama's 2012 campaign (Issenberg, 2012), and the monitoring of social media sentiment through natural language processing in Emmanuel Macron's 2017 campaign (Gerbaudo, 2019). Other instances encompass the automated generation of campaign materials (Dader & Campos Domínguez, 2017) and the use of AI to draft speeches, as demonstrated by Member of Parliament Tom Giffard, who employed the technology to congratulate Wales on winning the Darts World Cup (Ecuavisa, 2023).

2.2. Perceived risks

Despite its documented benefits, the use of Artificial Intelligence in electoral campaigns has also prompted critical and cautionary perspectives. Some scholars argue that such practices can disrupt civic life, potentially replacing professional roles and eroding genuine human interaction (Kopalle et al., 2024). Others emphasize that fake news and disinformation, amplified by algorithmic virality, pose a significant threat to democratic processes (Usharani, 2025; Vázquez-Herrero et al., 2019). Furthermore, emerging phenomena like deepfakes—hyperrealistic videos fabricating actions or statements—present severe risks to electoral integrity and democratic stability (García, 2025).

From this critical standpoint, Sánchez-Holgado et al. (2020) stress that excessive automation leads to a dehumanization of communication, potentially disconnecting political leaders from their constituents. Additional concerns include algorithmic manipulation and the use of

bots (Safiullah & Parveen, 2022), the protection of the secret ballot (Mainz et al., 2024), and the exacerbation of political polarization (López-Ponce et al., 2024). Illustrative cases of these risks include AI generated content depicting the alleged arrest of Donald Trump (Devlin & Cheetham, 2023), a fake video of Argentine President Javier Milei expressing support for Bolivian candidate Jaime Dunn (Maier, 2025), and fabricated videos of global political leaders reconciling during Christmas (García, 2025). These examples underscore the pressing need to establish robust ethical and regulatory frameworks to guide the responsible use of AI in electoral contexts.

In highly polarized political environments, the risks associated with artificial intelligence in electoral campaigns acquire particular salience at the perceptual level. Political polarization intensifies affective alignments, distrust toward opposing actors, and the tendency to interpret political information through identity-based frames, thereby amplifying perceptions of manipulation, disinformation, and symbolic threat (Bennett & Livingston, 2018; López-Ponce et al., 2024). In such contexts, citizens' perceptions become a crucial analytical dimension, as AI-mediated political communication is not received in a neutral informational space but within polarized socio-political climates that shape how legitimacy, fairness, and democratic integrity are evaluated (Guess et al., 2020; Wardle & Derakhshan, 2018). Situating the analysis within this polarized context strengthens the relevance of focusing on citizens' perceptions rather than on the technical verification of campaign practices.

2.3. Ethical and regulatory stance

As previously indicated, Artificial Intelligence can be leveraged not only for data management and scenario prediction but also for opinion manipulation, creating false content, and spreading hate campaigns (Usharani, 2025). For this reason, it is imperative to establish clear ethical principles (Kane, 2019) alongside regulatory and legal frameworks that promote transparency, fairness, and the protection of electoral rights within democratic systems (Rubio Nuñez, 2025; Schipper, 2025).

In practice, several regulatory initiatives can be identified. The European Union's Artificial Intelligence Act classifies AI systems by risk level and prohibits their use for manipulating voter behavior in harmful ways (European Commission, 2021). Similarly, in the United States, states including California and Texas have enacted bans on the dissemination of deepfakes in the 60 days preceding an election (Sánchez-Muñoz, 2020). In Mexico, regulatory guidelines stipulate that using AI to impersonate a political candidate may constitute an electoral crime (Instituto Nacional Electoral de México, 2025). In some pioneering cases, AI has even been utilized to draft regulations itself, as occurred in Costa Rica (Sequeira, 2023).

2.4. Emotional attitudes toward AI

The application of Artificial Intelligence elicits a spectrum of affective responses from citizens, ranging from trust, curiosity, and motivation to discomfort and outright distrust. It can even induce emotional dissonance and psychological distress (Vacarelu, 2023), thereby shaping voter attitudes toward politics and electoral campaigns (Usharani, 2025) and triggering defensive emotional reactions (Amin, 2025).

Inappropriate or manipulative uses of AI can provoke significant public discomfort, as illustrated by the deepfake of mayoral candidate Paul Vallas that falsely showed him supporting police brutality, sparking shock and discontent before the candidate publicly denied the claim (De Mar 2023). Conversely, AI can also inspire curiosity and foster engagement, as demonstrated by "AI Steve," a fictitious candidate in the United Kingdom that answered voter questions and collected public feedback (Yang & Hamamdjian, 2024).

Turning to the present case study, electoral campaigns in Ecuador have evolved significantly over the decades. In the 1980s and 1990s, television served as the primary communication medium, reaching mass audiences (Burbano de Lara, 2003). From the 2000s onward, social media platforms—particularly Facebook and Twitter (now X)—became dominant channels for campaign communication, aligning with regional trends (Freidenberg, 2007). During the government of Rafael Correa Delgado (2007-2017), the strategic use of social networks blended state propaganda with proselytism, marking a turning point in message personalization, although, according to Hidalgo Chica and Cedeño Moreira (2022), most Ecuadorian campaigns remained heavily reliant on traditional strategies.

In recent years, Ecuador has begun to experiment with AI driven electoral strategies. Since 2017, political parties such as CREO and UNES have employed algorithms to analyze large datasets and identify voter behavior patterns (Lasso Cardona et al., 2022). That same year, automated botnets and human operated networks on X emerged to distort online political discourse (Puyosa, 2017). Subsequently, AI based tools were credited with significantly impacting audiences and contributing to Jorge Yunda's victory in Quito's 2019 mayoral election (Calderón, 2019), while Guillermo Lasso's campaign also utilized AI for audience segmentation and targeted messaging (Andrade, 2025).

In the most recent elections, AI became a central tool for disseminating fake news, particularly visual content involving manipulated broadcasts from international outlets like France24, RTVE, and Noticias Caracol (Rivera, 2025). The Ecuadorian media outlet Primicias (2025) further identified the sophisticated use of AI to alter candidate videos with remarkable realism, describing these operations as strategically successful (Swissinfo, 2025), a prominent example being a deepfake video of candidate Luisa González falsely claiming she would facilitate the return of former President Rafael Correa (Peñafiel Chuquián, 2025). Nevertheless, the use of AI in Ecuador remains incipient, with no specific regulatory framework governing its application in electoral contexts and a notable absence of academic studies documenting the emotional attitudes of the Ecuadorian public toward this phenomenon.

This study distinguishes analytically between the perceived influence of artificial intelligence on electoral campaigns as a communicative and discursive process, and citizens' self-perceived influence of artificial intelligence on their own voting decisions. While the former refers to generalized assessments of AI's impact on political communication and public debate, the latter captures individual perceptions of direct behavioral influence. This distinction is central to the analytical design and directly informs the interpretation of the empirical results. Building on the theoretical rationale outlined above, this study aims to examine citizens' perceptions of the use of artificial intelligence in electoral campaigns in Ecuador and to assess its implications for democratic legitimacy in a technologically mediated political context. Rather than approaching artificial intelligence exclusively from a technical or strategic perspective, the study focuses on how citizens interpret its presence, evaluate its risks and benefits, and perceive its influence on political communication and electoral behavior.

To operationalize these objectives, the analysis is structured around the following research questions:

RQ1. How do Ecuadorian citizens evaluate the use of artificial intelligence in electoral campaigns in terms of perceived usefulness, perceived risks, ethical and regulatory expectations, and emotional attitudes?
RQ2. What differentiated attitudinal patterns can be identified among citizens based on their perceptions of artificial intelligence in electoral political communication?
RQ3. How are these attitudinal patterns related to the perceived influence of artificial intelligence on electoral campaigns and to citizens' self-perceived influence on their voting decisions?

3. Methodology

The formulation of hypotheses in this study is embedded within an

exploratory analytical framework aimed at identifying and characterizing patterns of attitudes toward the use of artificial intelligence (AI) in electoral campaigns. Rather than testing causal relationships or predictive effects, the hypotheses serve as analytical guides to structure the examination of perceptual differentiation and descriptive associations among respondents, in coherence with the use of exploratory multivariate techniques.

The starting point of the analysis is the null hypothesis (H0), which assumes the absence of differentiated attitudinal structures. Specifically, H0 posits that there are no systematic differences in citizens' perceptions of the use of artificial intelligence in electoral campaigns or in the perceived influence of this technology. Under this assumption, attitudes toward artificial intelligence would be distributed homogeneously among respondents, without differentiated attitudinal patterns or consistent descriptive associations with sociodemographic or contextual variables. From this baseline, four alternative hypotheses are formulated to explore whether and how attitudinal differentiation emerges within the empirical data.

The first hypothesis (H1) proposes that citizens' perceptions of the use of artificial intelligence in electoral campaigns display differentiated attitudinal patterns. These patterns are examined combined evaluations of perceived utility, perceived risks, ethical considerations, and emotional attitudes toward the application of artificial intelligence in political communication.

Hypothesis 2. (H2) posits that the attitudinal patterns identified are distributed differently according to basic sociodemographic variables, particularly age and educational level. This assertion is supported by studies emphasizing the influence of digital socialization on openness to technological innovations.

The third hypothesis (H3) suggests that attitudinal patterns are associated with differences in respondents' digital information context, particularly in relation to the consumption of political information in digital environments.

Hypothesis 4. (H4) states that attitudinal patterns regarding the use of artificial intelligence are primarily related to perceptions of its influence on electoral campaigns in general. At the same time, the analysis explores whether equivalent differences are observed in respondents' self-perceived direct influence on their own voting decisions, indicating a potential distinction between perceived societal impact and perceived personal susceptibility.

In coherence with these hypotheses, the study adopts a quantitative approach with an explicitly exploratory-descriptive scope. The hypotheses are used to guide analytical exploration, classification, and the identification of meaningful attitudinal structures within the data. This methodological approach is particularly appropriate for examining an emerging phenomenon such as the incorporation of artificial intelligence into electoral campaigns, as it enables the systematic identification and descriptive characterization of attitudinal patterns grounded in the observed data.

3.1. Research design and analytical strategy

This study adopts an exploratory and descriptive research design aimed at identifying structured heterogeneity in attitudes toward the use of artificial intelligence in electoral campaigns. Rather than testing causal relationships or predictive models, the methodological strategy focuses on describing how perceptions, risks, ethical considerations, and emotional responses to AI are organized across the population under study. The analytical logic is therefore oriented toward the identification of attitudinal patterns, understood as consistent configurations of responses across multiple dimensions, rather than toward explanation or inference.

To achieve this objective, the study combines multivariate descriptive techniques suitable for categorical data with exploratory association tests. Multiple Correspondence Analysis (MCA) is employed to examine the underlying structure of relationships among attitudinal variables, while Hierarchical Clustering on Principal Components (HCPC) is used to derive a descriptive typology of individuals based on their response profiles. Clustering outputs are treated as technical results of the HCPC procedure, whereas the interpretation of these outputs is framed in terms of broader attitudinal patterns. Complementary chi-square association tests, supported known Monte Carlo simulations, are used solely for exploratory purposes to assess the distribution of selected variables across identified clusters. This integrated strategy allows for a coherent transition from theoretical framing to empirical description while remaining consistent with the non-inferential scope of the study.

3.2. Sampling and participants

The recruitment of participants (N = 206) was carried out through a non-probabilistic convenience sampling strategy using the Virtual Snowball Sampling technique mediated by the WhatsApp platform. This methodological choice is grounded in the high penetration of instant messaging services in Ecuador, where more than 90% of internet users rely on WhatsApp as a primary communication tool, according to national connectivity statistics (Revelo, 2025). By engaging participants within their everyday digital interaction environments, this approach enhances ecological validity and facilitates participation through peer-to-peer dissemination.

Although the sampling strategy does not ensure randomization in the strict probabilistic sense, the resulting study population exhibits a level of statistical robustness appropriate for an exploratory–descriptive design. For a confidence level of 95%, the achieved sample size corresponds to an estimated margin of error of 6.8%. The age distribution shows notable stability across the three principal generational cohorts: 18-24 years (27.7%), 25-34 years (25.7%), and 35-44 years (26.2%). This relatively even distribution enables a transgenerational reading of attitudes toward AI in political campaigns, reducing the risk of over-representation of a single age group.

In terms of educational attainment, 74.3% of respondents report having completed university or postgraduate studies. This characteristic is treated as an intentional and analytically justified bias, consistent with a purposive sampling logic. Given the cognitive and interpretative demands of the questionnaire, the study prioritized participants with high levels of functional literacy and cultural capital in order to ensure response consistency and analytical depth. This profile aligns with empirical research on digital stratification in urban Ecuador, which shows that higher educational levels are strongly associated with active participation in digital information environments (Pazmiño-Sarango et al., 2021).

Geographically, data collection was concentrated primarily in the metropolitan areas of Quito, Guayaquil, and Cuenca. This urban axis concentrates the country's political, economic, academic, and technological infrastructures and represents the core of Ecuador's digitally active population. From a theoretical standpoint, this focus is further supported by diffusion of innovations theory, which identifies urban centers as early adopters and key nodes in the dissemination of technological practices and perceptions (Rogers, 2003). Consequently, the sample is best understood as representative of Ecuador's digitally active, highly educated urban population, providing a substantively relevant empirical basis for the objectives of the study.

Data were collected between May and June 2025, following the second round of the Ecuadorian presidential elections, ensuring temporal proximity to the campaign context under analysis.

3.3. Survey instrument and variables

Data were collected through a structured survey instrument composed of ten questions comprising a total of twenty-seven variables. The questionnaire was designed ad hoc for this study, drawing on

established theoretical and empirical literature in political communication, artificial intelligence, and electoral processes (Table 1).

The survey integrates three functional groups of variables. First, sociodemographic variables provide contextual information on respondents and include age (AGE), sex (SEX), province of residence (PROV), educational level (EDU), and electoral participation (VE). Second, variables related to information consumption capture respondents' engagement with the digital information environment, including frequency of access to political news (FN), main source of information (MEDIA), and recognition of AI-generated content (REC). These variables refer explicitly to digital contexts of news exposure.

The core of the instrument consists of nineteen attitudinal variables organized into four theoretical dimensions and measured on five-point Likert scales. The first dimension, perceived usefulness of AI, is operationalized through variables assessing personalization (PERS), proximity (PROX), citizen understanding (COMP), and resource optimization (OPR). The second dimension, perceived risks, includes variables related to disinformation (DES), deepfakes (DEEP), emotional manipulation (EMA), transparency (TRA), privacy (PRI), moral judgment (JUD), and political polarization (POP). The third dimension, ethical and regulatory stance, encompasses variables addressing legal frameworks (LAW), content tagging (TAG), and ethical principles (ETH). The fourth dimension, emotional attitudes toward AI, captures affective responses such as distrust (DCF), perceived loss of human contact (LHC), and political interest or involvement (PIN).

Two additional variables function as dependent perceptual indicators. Perceived influence of AI on electoral campaigns (INF) captures assessments at the collective level, while self-perceived influence on voting decision (VDI) reflects individual-level attribution of impact.

Instrument validity was assessed through expert review by specialists in methodology and political communication, who evaluated the relevance and coherence of each item in relation to the study's objectives. Reliability was tested through a pilot study involving twenty participants, yielding Cronbach's alpha values above 0.7 across dimensions, indicating acceptable internal consistency.

3.4. Analytical procedures

All analyses were conducted using RStudio version 4.4.1. Given the categorical nature of the data and the exploratory objectives of the study, Multiple Correspondence Analysis (MCA) was employed as the primary technique to examine the latent structure of attitudinal variables.

The MCA revealed a highly dispersed factorial structure. The first two dimensions jointly accounted for only 17.61% of the total inertia, with Dimension 1 explaining 8.98% and Dimension 2 accounting for 8.63%. When considering the first four dimensions, cumulative explained variance reached 28.36%. The distribution of inertia across successive dimensions exhibited a gradual decline without a clear elbow in the scree plot, indicating the absence of dominant latent axes and the presence of a long-tailed structure. More than sixteen dimensions were required to exceed 50% of cumulative inertia, and over forty dimensions were necessary to approach 80% of explained variance. This pattern suggests that attitudes toward artificial intelligence in electoral campaigns are structured along multiple weakly differentiated dimensions rather than concentrated around a limited number of dominant factors. Consequently, low-dimensional projections were used exclusively for exploratory visualization purposes and were not interpreted as exhaustive representations of the phenomenon.

Following dimensionality reduction, Hierarchical Clustering on Principal Components (HCPC) was applied to the MCA coordinates. The procedure combined Ward's hierarchical method with a k-means consolidation phase. This process resulted in a three-cluster solution, comprising two major clusters of comparable size (Cluster 1: 47.1%; Cluster 2: 48.1%) and a smaller residual cluster (Cluster 3: 4.9%). This configuration reflects a balance between structural differentiation and analytical interpretability, avoiding excessive fragmentation while preserving meaningful heterogeneity. The spatial organization of individuals in the factorial plane supports the identification of three distinct poles of attitudinal positioning. Although one cluster contains a reduced number of cases, its inclusion contributes to capturing marginal yet substantively distinct attitudinal profiles. Accordingly, the clustering is interpreted as a descriptive typology of attitudinal patterns rather than as a definitive or predictive classification.

To explore associations between clusters, attitudinal variables, and the dependent perceptual indicators INF and VDI, chi-square tests complemented by Monte Carlo simulations were applied as exploratory association tests. The use of 10,000 random permutations ensured statistical stability under conditions of low expected frequencies and non-uniform distributions. To control the false discovery rate resulting from multiple comparisons, the Benjamini–Hochberg correction was applied. Cramér's V was calculated as a complementary measure to assess the strength of associations between categorical variables, without implying causal interpretation.

All participants were adults and were informed about the nature, objectives, and voluntary character of the study prior to participation. Informed consent was obtained through explicit acceptance within the digital survey form. Participation was anonymous, and no personally identifiable information was collected. Formal institutional ethical approval was not required for this study, as data collection was conducted in a private, non-interventional context, outside institutional or occupational settings, and involved no sensitive personal data.

4. Results

This section presents the empirical findings of the study following a strictly exploratory-descriptive logic. Results are organized in direct correspondence with the research questions and the hypotheses, and they are presented in four sequential blocks: descriptive context of the sample and variables (RQ1), exploratory attitudinal structuring through MCA (RQ2), identification of attitudinal patterns via HCPC (RQ2), and exploratory associations with perceived influence variables (RQ3). Throughout the section, clusters are used as the technical output of the HCPC procedure, while attitudinal patterns refer to the substantive interpretation of these clusters.

4.1. Descriptive overview of the sample, information environment, and perceived influence of AI (RQ1)

The sample is predominantly composed of young and middle-aged adults, with 81% of respondents aged between 18 and 44 years, and a limited representation of individuals over 55 years of age (7%). Gender distribution is balanced (52% men, 47% women). Most participants reside in the provinces of Pichincha (57%) and Azuay (32%), and the educational profile is medium to high, with university and postgraduate studies predominating (49%). Electoral participation is almost universal, with 95% of respondents reporting having voted in the 2025 national elections.

Regarding the digital information environment, respondents report relatively high levels of political news consumption: 32% accessed political news several times a day, 30% several times a week, and 19% weekly, while 10% reported no consumption. Information acquisition is overwhelmingly digital, with social media as the main source (74%), followed by online news outlets (16%), and a marginal role for traditional media (10%).

Exposure to AI-generated political content is also notable. Sixty-five percent of respondents reported recognizing AI-generated content during the campaign, while 16% did not recognize such content and 20% were unsure. This indicates a substantial degree of awareness of AI-mediated political communication within the sample.

In descriptive terms, perceptions of artificial intelligence in electoral campaigns reveal a predominance of concern-oriented evaluations.

Table 1
Operationalization of study variables, survey items, scales, and coding.

Variable	Construct/dimension	Survey item (literal wording)	Operational definition	Response scale and coding	Analytical role
AGE	Sociodemographic variables	1. Edad: 17-19 años; 20-22 años; 23-25 años; 26-29 años; 30 años o más	Respondent's self-reported age group at the time of the survey.	1 = 17-19; 2 = 20-22; 3 = 23-25; 4 = 26-29; 5 = 30+	Sociodemographic descriptive variable
SEX	Sociodemographic variables	2. Género: Mujer; Hombre; Otro; Prefiero no decirlo	Respondent's self-identified gender.	1 = Woman; 2 = Man; 3 = Other; 4 = Prefer not to say	Sociodemographic descriptive variable
Career	Sociodemographic/ educational background	3. Carrera universitaria: Opciones carreras UPS	Respondent's university degree program (institutional list).	Coded as factor according to the UPS program options selected	Sociodemographic descriptive variable
Semester	Sociodemographic/ educational background	4. Ciclo o semestre actual	Current semester/cycle reported by the respondent.	Recorded as entered (integer/label); coded accordingly for analysis	Sociodemographic descriptive variable
VE	Sociodemographic variables/electoral behavior	5. ¿Ha votado en las elecciones nacionales entre febrero y abril de 2025? Sí; No	Self-reported electoral participation in the national elections (Feb-Apr 2025).	1 = Yes; 0 = No	Sociodemographic descriptive variable
FN	Digital information context	6. ¿Con qué frecuencia accedió a noticias políticas durante la campaña electoral reciente? Nunca; Rara vez; A veces; Frecuentemente; Todos los días	Frequency of access to political news during the recent electoral campaign, as an indicator of the respondent's political information exposure within a digital information environment.	1 = Never; 2 = Rarely; 3 = Sometimes; 4 = Frequently; 5 = Daily	Contextual variable related to the digital information environment
MEDIA	Digital information context	7. Principal medio por el que se informó durante la campaña (marque uno): Redes sociales; Televisión; Medios digitales tradicionales (diarios digitales, portales informativos); Prensa; Radio	Main channel used to obtain campaign information (primary information source).	1 = Social media; 2 = Television; 3 = Traditional digital media; 4 = Press; 5 = Radio	Contextual variable related to the digital information environment
REC	Digital information context	8. ¿Reconoció contenidos políticos generados con IA (como imágenes, videos o bots)? Sí; No; No estoy seguro/a	Self-reported recognition of AI-generated political content during the campaign (awareness/recognition indicator).	1 = Yes; 0 = No; 2 = Not sure	Contextual variable related to the digital information environment
PERS	Perceived usefulness of AI	Gracias a la IA, las campañas están más personalizadas a los intereses de los votantes.	Perceived contribution of AI to campaign personalization aligned with voters' interests.	1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree	Attitudinal core variable (MCA/HCPC input)
PROX	Perceived usefulness of AI	El uso de IA permitió a los candidatos acercarse más a la ciudadanía.	Perceived improvement in candidate-citizen proximity attributable to AI use in campaigns.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
COMP	Perceived usefulness of AI	La IA permite una mejor comprensión del sentir ciudadano.	Perceived enhancement of understanding public sentiment enabled by AI.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
OPR	Perceived usefulness of AI	El uso de IA optimiza recursos financieros y humanos en campañas.	Perceived optimization of financial and human resources in campaigns due to AI.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
DES	Perceived risks of AI	Me preocupa la desinformación que puede generar la IA en campañas políticas.	Concern about AI-generated disinformation in electoral campaigns.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
DEEP	Perceived risks of AI	El uso de deepfakes compromete la veracidad del discurso político.	Perceived threat to political discourse veracity arising from deepfakes.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
EMA	Perceived risks of AI	Las campañas basadas en IA pueden manipular emocionalmente a los votantes.	Perceived risk of emotional manipulation of voters through AI-based campaigning.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
TRA	Perceived risks of AI	El uso de IA en campañas pone en riesgo la transparencia electoral.	Perceived risk to electoral transparency associated with AI use.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
PRI	Perceived risks of AI	La IA vulnera la privacidad del votante al inferir sus preferencias políticas.	Perceived privacy risk from AI inference of political preferences.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
JUD	Perceived risks of AI	Me preocupa que la IA pueda reemplazar el juicio crítico del electorado.	Concern that AI may undermine or replace voters' critical judgment.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
POP	Perceived risks of AI	Las estrategias basadas en IA aumentan la polarización política.	Perceived risk that AI-based strategies intensify political polarization.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
LAW	Ethical and regulatory stance	Debería haber leyes específicas que regulen el uso de IA en campañas electorales.	Support for legally regulating AI use in electoral campaigns.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
TAG	Ethical and regulatory stance	Las plataformas digitales deberían etiquetar contenidos generados por IA.	Support for labeling AI-generated content on digital platforms.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
ETH	Ethical and regulatory stance	La IA debe ser usada con límites éticos en la política.	Support for ethical limits and constraints on AI use in politics.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
COMF	Emotional attitudes toward AI	Me siento cómodo/a con el uso de IA en campañas políticas.	Affective acceptance/comfort regarding the use of AI in political campaigns.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
DCF	Emotional attitudes toward AI	Me genera desconfianza el uso de herramientas de IA por parte de candidatos/as.	Affective distrust toward candidates' use of AI tools.	1-5 as above	Attitudinal core variable (MCA/HCPC input)

(*continued on next page*)

Table 1 (*continued*)

Variable	Construct/dimension	Survey item (literal wording)	Operational definition	Response scale and coding	Analytical role
LHC	Emotional attitudes toward AI	Considero que la IA podría reemplazar el contacto humano en política.	Perceived loss of human contact in politics associated with AI.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
PIN	Emotional attitudes toward AI	El uso de IA me motiva a informarme más sobre los candidatos.	Self-reported motivational effect of AI use on political information-seeking about candidates.	1-5 as above	Attitudinal core variable (MCA/HCPC input)
INF	Perceptual outcome variables	10. ¿Cuánto cree que influyó la IA en la campaña electoral de 2025? Nada; Poco; Neutral; Mucho; Totalmente	Perceived general influence of AI on the 2025 electoral campaign (societal/campaign-level perceived impact).	1 = None; 2 = Little; 3 = Neutral; 4 = A lot; 5 = Totally	Perceptual outcome variable (impact perception)
VDI	Perceptual outcome variables	11. ¿Cree que su decisión de voto fue influenciada por contenido generado por IA? Sí; No; No estoy seguro/a	Self-perceived direct influence of AI-generated content on one's own voting decision (individual-level perceived impact).	1 = Yes; 0 = No; 2 = Not sure	Perceptual outcome variable (impact perception)

Note. The survey instrument was designed ad hoc following an exploratory factorial logic grounded in four theoretical dimensions widely discussed in the literature on artificial intelligence and political communication.
Perceived usefulness of AI (items 9–13) draws on studies highlighting the role of AI in campaign optimization, micro-segmentation, efficiency, and persuasive communication (Das & Malaviya, 2025; López-Ponce et al., 2024; Rubio Núñez, 2025; Safiullah & Parveen, 2022).
Perceived risks (items 14–20) reflects concerns related to AI-driven disinformation, manipulation, transparency, privacy, psychological effects, and political polarization, as documented in recent empirical and normative research (López-Ponce et al., 2024; Mainz et al., 2024; Safiullah & Parveen, 2022; Usharani, 2025; Vacarelu, 2023; Yan et al., 2025).
Ethical and regulatory stance (items 21–23) is grounded in scholarship addressing the need for ethical principles, legal frameworks, and institutional safeguards in the use of AI in electoral contexts (Kane, 2019; Rubio Núñez, 2025; Schipper, 2025; Usharani, 2025).
Emotional attitudes toward AI (items 24–27) captures affective responses such as trust, discomfort, motivation, and distrust, based on literature on emotional dissonance, psychological impact, and defensive reactions to AI-mediated political communication (Amin, 2025; Usharani, 2025; Vacarelu, 2023).
The two perceptual outcome variables (items 28–29) assess perceived influence of AI on electoral campaigns and self-reported influence on voting decisions, allowing for exploratory analysis of attitudinal and sociodemographic associations.
Source: authors.

Perceived risks related to disinformation, deepfakes, emotional manipulation, lack of transparency, and privacy violations receive consistently high levels of agreement. Perceived benefits, such as personalization, efficiency, and resource optimization, are acknowledged but with lower intensity and consensus. Support for ethical and regulatory intervention is almost unanimous, with strong endorsement of legal frameworks, labeling mechanisms, and ethical limits for AI use in campaigns.

With respect to perceived influence, most respondents characterize the overall influence of AI on the electoral campaign as moderate (37%), with the remainder distributed across lower and higher categories. In contrast, self-perceived influence on individual voting decisions is markedly limited: 74% report no influence, 14% express uncertainty, and only 12% acknowledge some degree of influence. This descriptive divergence anticipates the analytical distinction between collective-level perceived influence (INF) and individual-level self-attributed influence (VDI), which is explored in subsequent sections.

4.2. *Exploratory attitudinal structuring through Multiple Correspondence Analysis (RQ2)*

To explore how attitudes toward AI in electoral campaigns are structured across multiple dimensions, Multiple Correspondence

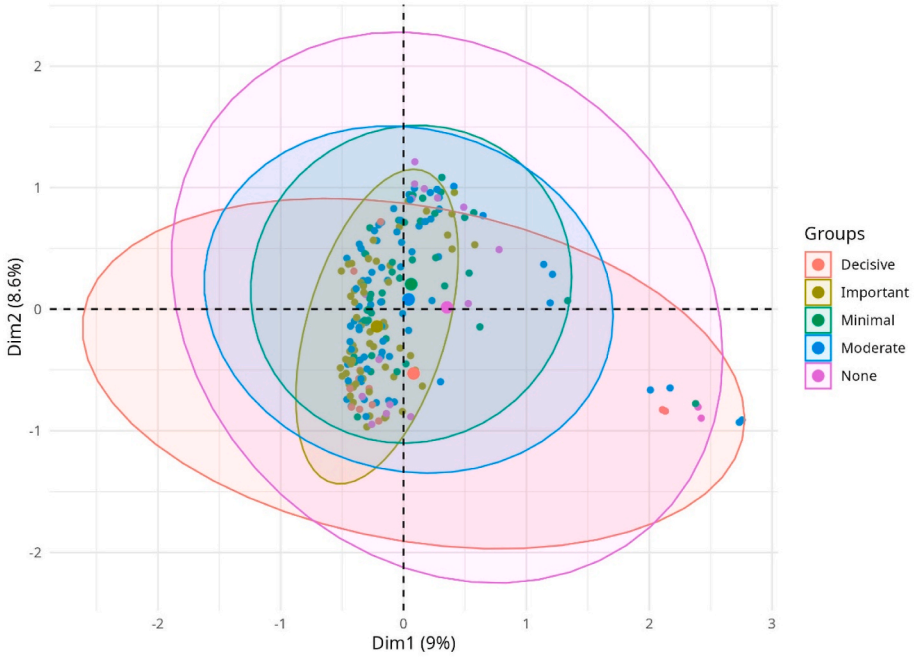

Fig. 1. Factorial representation of individuals according to perceived influence (INF).

Analysis (MCA) was applied to the set of attitudinal variables. Two complementary strategies were used, treating INF and VDI alternately as active and supplementary variables. Both strategies converge on the same substantive conclusion: attitudes toward AI are characterized by a highly dispersed and weakly structured factorial configuration.

As shown in Figs. 1 and 2, which display the factorial representation of individuals with INF and VDI treated as active variables respectively, the first two dimensions jointly explain only 17.61% of total inertia (Dimension 1: 8.98%; Dimension 2: 8.63%. See Supplementary Tables 1 and 2). When extending the solution to the first four dimensions, cumulative explained variance reaches 28.36%.

The scree plot (Fig. 3) shows a gradual and smooth decline in inertia, without a clear elbow point, indicating the absence of dominant latent dimensions. More than sixteen dimensions are required to exceed 50% of cumulative inertia, and over forty dimensions are needed to approach 80%.

The initial contribution of the dimensions (between 5% and 9%), followed by decreasing contributions (0.75%-2.5%), confirms the absence of a consistent factorial structure, suggesting that the observed variability results from the interaction of different perceptual, normative, and contextual components, as detailed in Supplementary Table 3.

This long-tailed distribution of inertia indicates that attitudes toward AI in electoral campaigns are not organized around a small number of strong latent axes, but rather along multiple weakly differentiated dimensions. Consequently, the two-dimensional MCA representations are interpreted exclusively as exploratory visualization tools that allow the identification of general tendencies and relational proximities among modalities, rather than as exhaustive or reductive representations of the attitudinal space.

To facilitate interpretation, Fig. 4 presents the biplot of the twenty modalities with the highest contributions to the factorial space (see Supplementary Table 4). This projection reveals three attitudinal poles that structure the perceptual landscape. The first pole concentrates high values related to ethical regulation, legal frameworks, transparency, privacy concerns, and political polarization, reflecting a critically oriented and normatively demanding position. The second pole corresponds to intermediate and ambivalent positions, particularly around moderate concern for disinformation, occupying a central and relatively isolated position in the factorial space. The third pole aggregates the lowest values across regulatory, ethical, and risk-related variables, indicating disengagement or minimization of AI-related concerns.

These poles delineate a continuum of sensitivity toward AI in electoral campaigns, ranging from strong critical awareness and regulatory demand to low engagement and perceived irrelevance. Importantly, they do not constitute latent factors in a strict statistical sense, but rather exploratory reference points that inform the subsequent clustering analysis.

Figs. 5 and 6 show MCA projections that provide complementary visual evidence of the dispersed factorial structure identified in the primary representations.

These figures reproduce the same pattern of gradual variance distribution across dimensions and confirm the absence of dominant latent axes, reinforcing the interpretation of low-dimensional planes as exploratory visualization tools rather than exhaustive representations of the attitudinal space.

4.3. *Identification of attitudinal patterns through HCPC clustering (RQ2)*

Building on the exploratory structure identified through MCA, Hierarchical Clustering on Principal Components (HCPC) was applied to derive a descriptive typology of respondents based on their response profiles. The HCPC procedure yielded a three-cluster solution, represented in Fig. 5. These clusters correspond to the technical output of the clustering algorithm and form the basis for the interpretation of three attitudinal patterns.

Cluster 1, comprising 47.1% of respondents, is characterized primarily by middle-aged individuals with postgraduate education, high frequency of political news consumption, and clear recognition of AI-generated content. Attitudinally, this cluster combines low evaluations of personalization, proximity, and citizen understanding with relatively positive evaluations of resource optimization. Substantively, this configuration corresponds to a critical-instrumental attitudinal pattern, in which AI is viewed as operationally efficient but socially and democratically problematic.

Cluster 2, representing 48.1% of the sample, consists mainly of young adults aged 18-24, with moderate levels of political news consumption and uncertainty regarding the identification of AI-generated content. Their responses tend to cluster around intermediate values

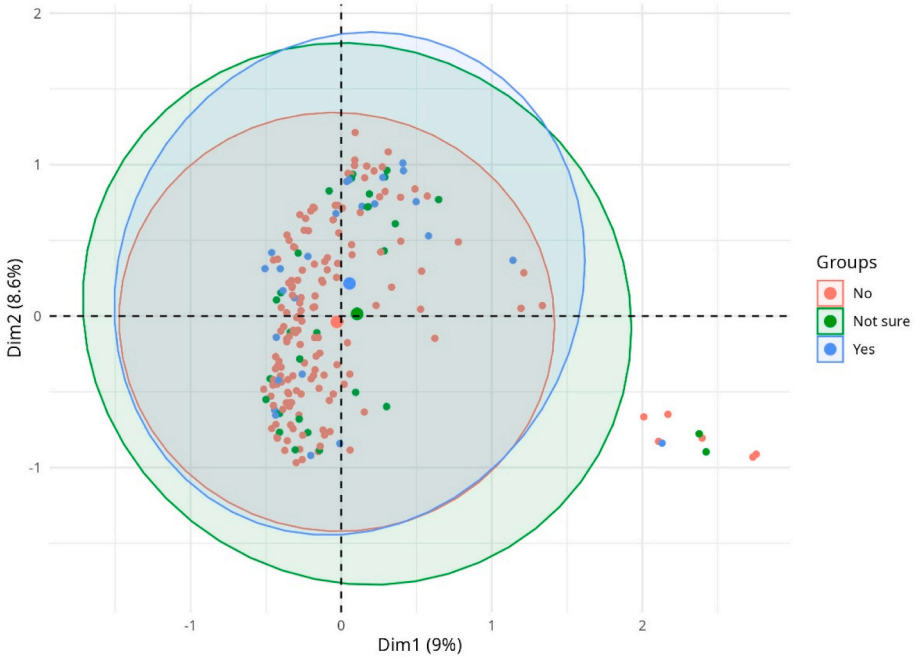

Fig. 2. Factorial representation of individuals according to declared voting influence (VDI).

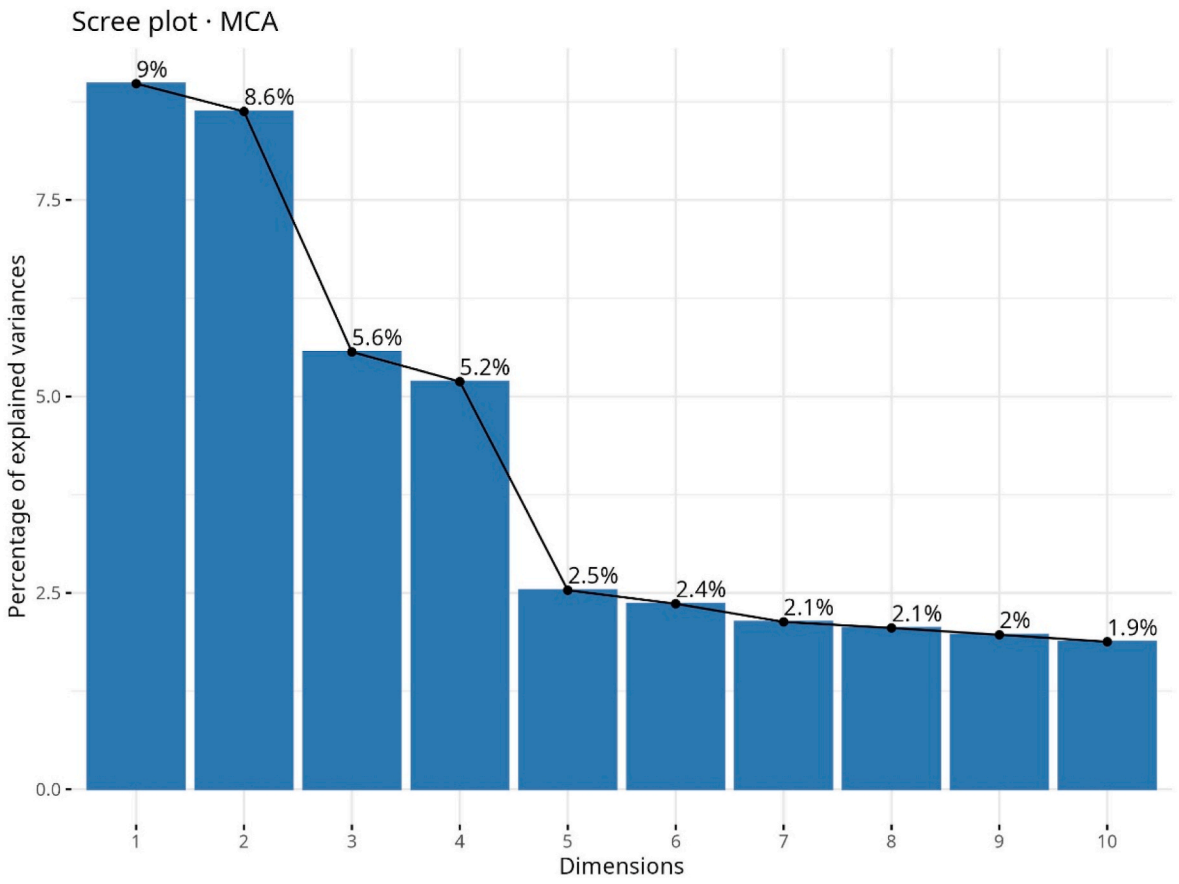

Fig. 3. Scree plot of the MCA dimensions.

across both benefit and risk dimensions, reflecting an ambivalent attitudinal pattern marked by neither strong endorsement nor strong rejection of AI in campaigns.

Cluster 3, accounting for 4.9% of respondents, is composed primarily of individuals with low political exposure, minimal news consumption, and limited engagement with AI-related content. This cluster displays consistently low scores across all attitudinal dimensions, corresponding to a disengaged attitudinal pattern characterized by generalized indifference or denial of AI's relevance in electoral communication.

Although numerically small, the third cluster captures a substantively distinct profile that contributes to the overall heterogeneity of the attitudinal space. Accordingly, the three clusters are interpreted as descriptive attitudinal patterns rather than as predictive or exhaustive classifications.

4.4. Exploratory associations with perceived influence variables (RQ3)

The final analytical step examines exploratory associations between attitudinal patterns, contextual variables, and the two perceptual outcome variables: perceived influence of AI on electoral campaigns (INF) and self-perceived influence on voting decisions (VDI). Forty bivariate associations were tested using chi-square statistics with Monte Carlo simulations and Benjamini-Hochberg correction.

The results reveal a markedly asymmetric pattern. INF exhibits a structured network of associations, with ten variables remaining significant after correction. The strongest association is observed with frequency of political news consumption (FN; Cramér's $V = 0.222$), followed by recognition of AI-generated content (REC; $V = 0.177$). Additional associations involve perceived proximity (PROX), personalization (PERS), and several ethical and normative variables, including legal regulation (LAW), transparency (TRA), privacy (PRI), political polarization (POP), moral judgment (JUD), and content labeling (TAG). These associations, although small to moderate in effect size, indicate that perceived influence at the campaign level is embedded in a broader framework of media exposure and normative evaluation.

In contrast, VDI displays a highly limited associative structure. After correction, only two variables remain significantly associated with self-perceived voting influence: concern about disinformation (DES) and perceived impact of deepfakes (DEEP). No significant associations are observed between VDI and attitudinal patterns, media exposure, or ethical evaluations.

This divergence constitutes a central descriptive finding of the study. While perceived influence of AI on electoral campaigns is systematically structured by attitudinal and contextual factors, self-perceived influence on individual voting decisions remains weakly structured and largely independent of these dimensions. This pattern highlights a clear empirical distinction between societal-level perceptions of AI's impact and individual-level attribution of behavioral influence.

5. Discussion

This study set out to provide an exploratory-descriptive account of how Ecuadorian citizens perceive the use of artificial intelligence (AI) in electoral campaigns, and how these perceptions organize into differentiated attitudinal patterns that can be described through multivariate classification. Consistent with the revised research questions and hypotheses, the discussion focuses on the substantive content of perceptions across the four attitudinal dimensions, the descriptive configuration of patterns identified in the data, and how these patterns relate to respondents' sociodemographic and digital information context, as well as to the two perceptual outcome variables (INF and VDI). Throughout, the findings are interpreted as indicative of

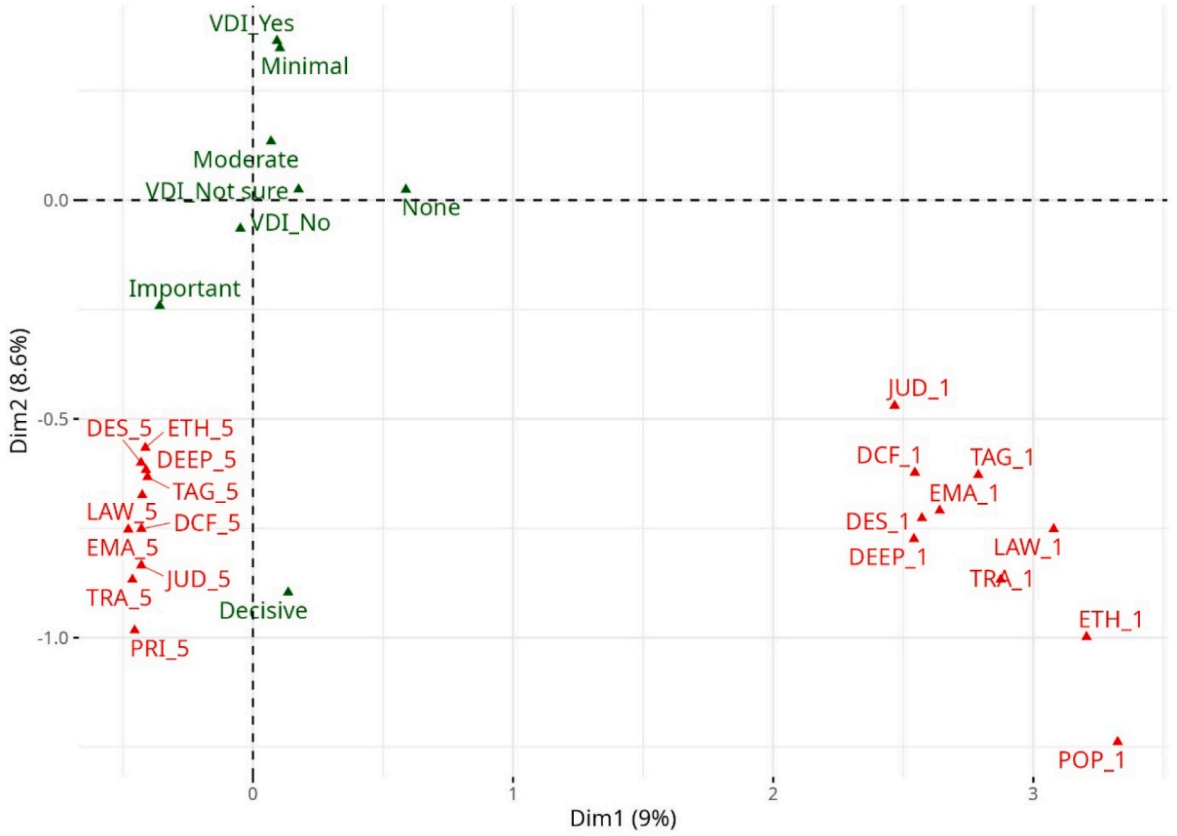

Fig. 4. Biplot of the 20 best-represented modalities in the MCA factorial space.

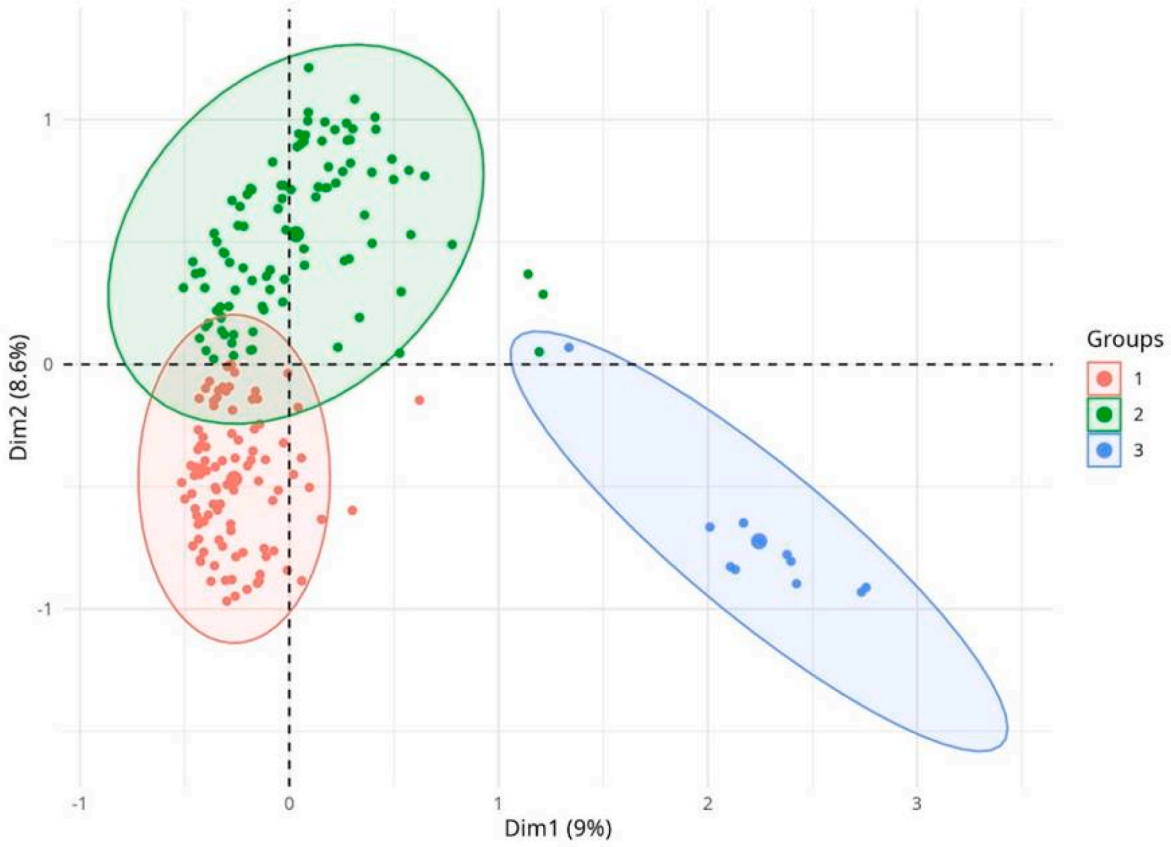

Fig. 5. Multiple correspondence analysis on hierarchically clustered individuals.

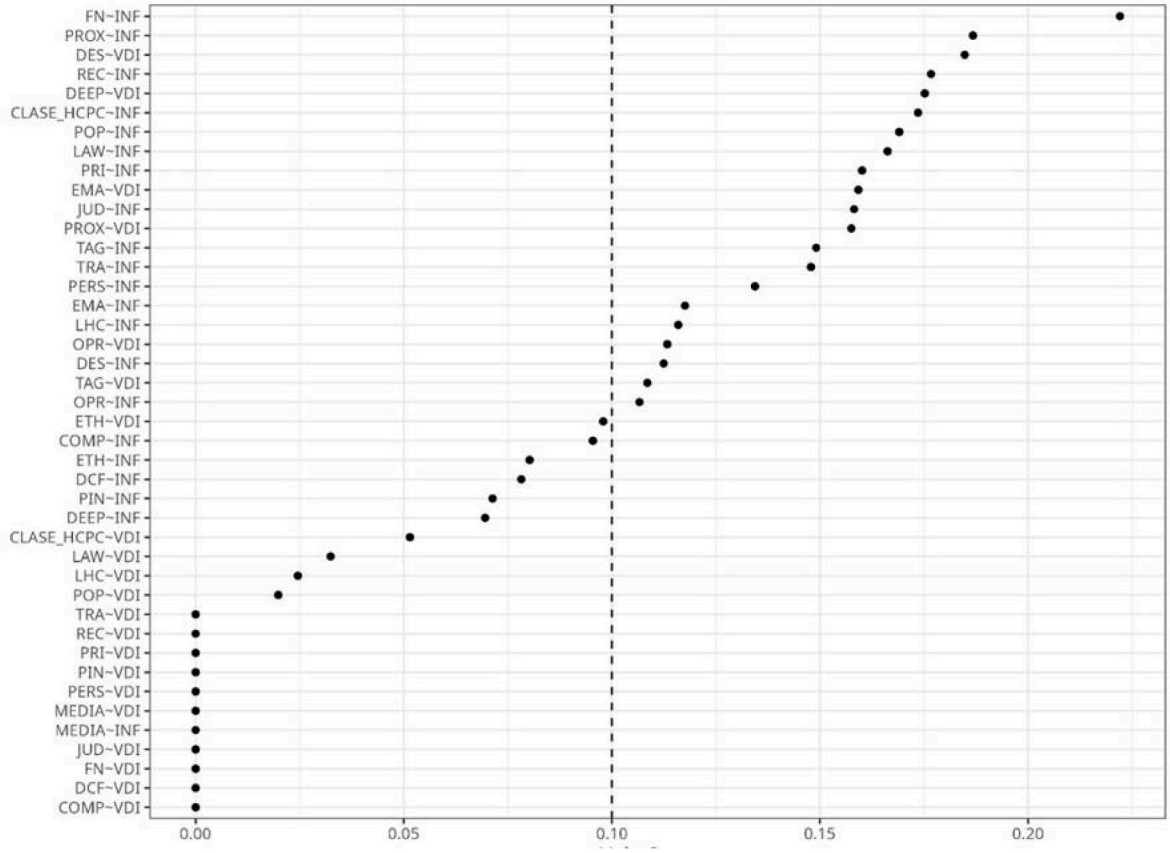

Fig. 6. Effect size of bivariate associations with perceived influence of AI in political campaigns (INF) and declared voting influence (VDI).

structured heterogeneity within the observed sample, rather than as generalizable estimates for the Ecuadorian population.

Beyond its empirical findings, the study contributes at a contextual level by examining citizens' perceptions of artificial intelligence in electoral campaigning within the Ecuadorian case. This focus extends a body of research that has been predominantly shaped by evidence from Europe and North America, offering context-sensitive insights from a Latin American democracy and highlighting the relevance of incorporating Global South perspectives into comparative discussions on AI, political communication, and democratic legitimacy.

The results suggest that age and educational level, together with indicators of respondents' informational engagement and recognition of AI-generated content, contribute to the descriptive characterization of the observed patterns. The evidence instead points to a more circumscribed interpretation, indicating that attitudinal patterns are unevenly distributed across these contextual features within the sample.

5.1. Perceptions of AI in electoral campaigns and the structure of attitudinal differentiation

In line with the study's first objective and research question, the results indicate that AI is widely recognized as present in electoral campaigning, yet this recognition is framed predominantly through concerns rather than through a benefits-oriented narrative. Across the attitudinal items, the most salient modalities in the factorial space concentrate around perceived risks (e.g., disinformation, deepfakes, manipulation, privacy-related concerns), alongside a strong normative orientation toward regulation, labeling, and ethical safeguards. Perceived usefulness remains present but does not dominate the overall structure of responses to the same extent as risk and normative concerns. This configuration supports the interpretation that perceptions of AI in campaigns are not simply "positive" or "negative," but rather organized around a gradient that juxtaposes minimization of risks with heightened concern and regulatory demand.

At the same time, the Multiple Correspondence Analysis (MCA) produced a dispersed factorial structure, with relatively low inertia captured by the first two dimensions. This statistical profile is consistent with an attitudinal domain that is multi-component and only weakly reducible to a small set of dominant latent axes. Accordingly, the bidimensional representations reported in the results are most appropriately read as exploratory visualizations that highlight salient oppositions and modality groupings, rather than as exhaustive summaries of the phenomenon. This interpretation is important for contextualizing the subsequent classification: the study does not claim a small number of strong underlying factors but instead describes how multiple attitudinal components co-occur and differentiate respondents.

5.2. From "clusters" as a technical output to "attitudinal patterns" as an interpretive construct

The Hierarchical Clustering on Principal Components (HCPC) yielded a three-cluster solution. In methodological terms, these groups correspond to clusters, understood as the technical output of the HCPC applied to the MCA coordinates. From a substantive perspective, however, they are interpreted as attitudinal patterns, that is, coherent configurations of responses spanning perceived usefulness, perceived risks, ethical and regulatory stances, and emotional orientations toward the use of AI in political communication.

The three-cluster partition suggests that the sample is not homogeneous with respect to AI-related attitudes. Two large clusters account for the vast majority of cases, while a smaller residual cluster captures a marginal but distinct profile. Importantly, these clusters should not be treated as fixed types beyond the present data; rather, they function as a descriptive typology that helps make visible how combinations of

attitudes are structured within the sample.

When examined through the descriptive variables, the clusters show recognizable contextual profiles. One pattern is characterized by respondents whose attitudinal configuration combines strong concern and normative demand with selective recognition of operational usefulness; another pattern reflects more moderate or less sharply defined evaluations across multiple items; and the smallest pattern aligns with consistently minimal responses and lower informational engagement. These differences help clarify why a profile-based approach adds value: it does not merely report aggregated frequencies, but shows how attitudes cohere into patterned configurations.

5.3. Divergence between perceived campaign influence (INF) and self-perceived voting influence (VDI)

A central contribution of the results lies in the systematic contrast between the two perceptual outcome variables. The association between cluster membership and perceived influence of AI on campaigns (INF) is statistically significant, indicating that campaign-level influence perceptions are meaningfully aligned with the broader attitudinal structures captured by the multivariate space. By contrast, the relationship with self-perceived influence on voting decision (VDI) is not statistically supported. This divergence should be treated as a substantive descriptive finding, as perceptions of AI's relevance and impact appear to be more consistently articulated at the collective or campaign level than at the level of self-reported behavioral influence.

This pattern cautions against conflating perceived societal impact with self-attributed susceptibility or behavioral change. Within the limits of self-report measures and a cross-sectional design, the evidence supports an interpretation in which respondents can recognize and evaluate AI-related risks and regulatory needs as salient features of electoral campaigning, while not reporting a parallel effect on their own vote choice. The study therefore contributes a nuanced descriptive distinction between collective-level influence narratives and individual-level self-assessments.

5.4. Methodological contributions, scope and limitations

The study's primary strength lies in its methodological architecture: the combined use of MCA and HCPC allows the analysis to move beyond aggregated opinion metrics and to describe multidimensional attitudinal configurations. This is particularly valuable in an emerging domain such as AI in electoral communication, where attitudes plausibly involve simultaneous evaluations of usefulness, risks, normative demands, and emotional orientations. The inclusion of ethical-regulatory and emotional dimensions alongside risk and usefulness further strengthens the analytical contribution by capturing evaluative domains often treated separately in more narrowly scoped instruments.

At the same time, several limitations delimit the scope of inference. First, the sampling strategy is non-probabilistic and concentrated in major urban nodes, which constrains representativeness and requires that findings be interpreted as indicative of the digitally active population reached through the study's recruitment channel. Second, the data are self-reported and therefore potentially subject to response biases, including social desirability and heterogeneous understanding of what "AI in campaigns" entails. Third, the cross-sectional design does not permit any temporal interpretation of attitudinal change, nor does it support causal claims about drivers of perceptions. Finally, the Ecuadorian context is analytically valuable for understanding how AI is perceived in a specific electoral setting, but it also limits direct comparability to other national contexts without additional evidence.

6. Conclusions

This study provides an exploratory-descriptive account of how citizens in Ecuador perceive the use of artificial intelligence (AI) in electoral campaigns and how these perceptions organize into differentiated attitudinal patterns. Across the survey items, respondents broadly recognize AI-related practices in contemporary campaigning, while their evaluations are structured primarily around concerns about disinformation, deepfakes, manipulation, privacy, and transparency, alongside a clear normative orientation toward ethical and regulatory safeguards. Perceived usefulness, such as efficiency-related benefits, remains present but is less dominant than the risk-regulation axis that organizes much of the attitudinal space.

The multivariate results indicate that the observed responses are not homogeneous. The classification derived from HCPC, applied to MCA coordinates, yields three clusters that are interpreted substantively as attitudinal patterns: coherent configurations of positions across usefulness, perceived risks, ethical-regulatory stance, and emotional orientations toward AI in political communication. Two patterns account for most cases, while a smaller residual pattern captures a marginal, yet distinct configuration characterized by consistently minimal responses and lower informational engagement. These patterns provide a structured descriptive typology that complements aggregate frequencies by showing how attitudes co-occur in meaningful combinations within the sample.

A central descriptive distinction emerges from the comparison between the two perceptual outcome variables. Perceived influence of AI on campaigns (INF) is aligned with the broader attitudinal structures and shows a statistically significant association with cluster membership, whereas self-perceived influence on voting decisions (VDI) does not display the same pattern of association. In other words, perceptions of AI's relevance and impact appear more consistently articulated at the collective or campaign level than at the level of self-reported behavioral influence. Within the limits of self-report and cross-sectional measurement, this divergence supports a cautious interpretation in which respondents may recognize and evaluate AI-related risks and regulatory needs as salient features of electoral campaigning while not reporting a parallel influence on their own vote choice.

Taken together, the findings suggest that AI in electoral communication is perceived less as a purely technical innovation and more as a phenomenon that activates concerns about information integrity, ethical safeguards, and transparency in campaign practices. The study contributes by describing how these evaluations are multidimensional and patterned, rather than uniformly distributed, and by distinguishing between campaign-level influence perceptions and individual self-assessments of behavioral influence.

The scope of inference is delimited by several conditions. The sampling strategy is non-probabilistic and concentrated in major urban nodes, which constrains representativeness and requires interpreting the results as indicative of the digitally active population reached through the recruitment channel. The data are self-reported and may reflect response biases, including heterogeneous understanding of what AI in campaigns entails. The cross-sectional design does not permit temporal interpretation of attitudinal change or causal claims about drivers of perceptions.

Finally, the Ecuadorian context is analytically valuable for examining perceptions in a specific electoral setting, but direct comparability to other national contexts requires additional evidence. Future research can extend this descriptive mapping by broadening geographic and social coverage and by combining survey-based measurement with complementary approaches that deepen understanding of how citizens interpret AI-mediated political communication. Comparative work across electoral contexts would also help clarify which attitudinal configurations and perceived influence patterns are context-specific and which may recur across different informational ecosystems and regulatory environments.

CRediT authorship contribution statement

Andrea De-Santis: Methodology, Conceptualization, Validation,

Writing – review & editing. **Ángel Torres-Toukoumidis:** Investigation, Formal analysis, Conceptualization, Data curation, Methodology, Supervision, Writing – original draft, Writing – review & editing. **Ramiro Morejón-Vallejo:** Data curation, Methodology, Validation, Writing – review & editing.

Declaration of the use of AI assisted technologies

Artificial intelligence tools (ChatGPT) were used for language editing and grammar improvement. The authors take full responsibility for the scientific content, interpretation of results, and originality of the manuscript.

Data availability statement

The dataset generated and analyzed during the current study is available from the corresponding author upon reasonable request.

Ethical statement

This study was conducted with full respect for ethical standards applicable to research involving human participants. The project adhered to the ethical guidelines of the Universidad Politécnica Salesiana (Ecuador) and followed the principles outlined in the Declaration of Helsinki.

All participants were fully informed of the study's purpose and procedures. Participation was voluntary, and informed consent was obtained prior to data collection. No identifying or sensitive personal information was requested, ensuring complete anonymity and confidentiality.

The research involved no deception, manipulation, or risk to participants. Data were collected and processed exclusively for academic purposes and stored securely according to institutional data protection policies.

The authors reaffirm their commitment to integrity, transparency, and respect for all individuals who contributed to the research process.

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Declaration of competing interest

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

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ssaho.2026.102562.

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