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Measurement of the ethical organizational climate in higher education institutions

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ABSTRACT

Assessing the ethical climate in higher education institutions (HEIs) is essential, given their role in training future professionals and promoting social responsibility, academic integrity, and transparency. This study used a quantitative, cross-sectional approach to assess the ethical climate perceived by 150 students at a private university in Medellín, Colombia. Based on Victor and Cullen's six-dimensional model, and using exploratory factor analysis and Cramer's V statistic, significant associations were identified. In particular, positive relationships were found between rule-based and law/code-based ethical climates and perceptions of institutional efficiency. Likewise, a relationship was found between the dimensions of independence and care, such that students who act based on their own moral judgment appreciate supportive institutional environments. In addition, 65% of students value autonomy (independence), 43.2% prioritize compliance with legal norms (laws and codes), and 33.33% emphasize following strict rules (rules). These findings highlight the importance of both personal ethical values and external regulatory frameworks in the formation of ethical perceptions. Similarly, the results contribute practical guidance for HEIs managers to strengthen ethical leadership and institutional policies, promoting a more transparent and efficient academic environment. It is recommended that HEIs implement policies that strengthen ethical leadership and promote an organizational climate that favors ethical decisions and compliance with standards.

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1. INTRODUCTION

Organizational ethics have been identified as a significant factor in the establishment and maintenance of public trust, which is a critical component of successful business operations. Recent scandals have demonstrated how a suboptimal organizational climate can adversely impact employee morale and financial performance. The assessment and enhancement of the ethical climate within an organization are essential for fostering a culture of integrity and social responsibility [1]. Consequently, it is imperative for organizations to introspect and address the following questions: the present study seeks to ascertain the staff's perceptions regarding the ethical climate within their institution. Furthermore, it is imperative to examine the prevailing ethical climates in this environment.

The ethical climate within organizations exerts a significant influence on employee behavior, thereby establishing clear standards to differentiate ethical from unethical conduct [1]–[3]. The ethical climate has been shown to have a supportive role in employees' solving problems of an ethical nature and knowing how to act when faced with problems of a moral nature [4]. Dey *et al*. [5] posits that an ethical climate provides a framework for understanding appropriate behaviors within specific work environments. Therefore, it is imperative for workers to perceive an ethical climate within their organization. By doing so, they can identify problems related to behaviors, and consequently, devise possible solutions.

The ethical climate is frequently measured in work and business settings, yet there has been a paucity of research focusing on the university context [6]. Universities are institutions in which social change is cultivated; consequently, the interactions among the agents comprising these institutions give rise to the ethical climate, which can influence the ethical behavior of future professionals in training. The organization possesses the capacity to exert its influence on the ethical and moral behaviors exhibited by its employees [7]. In accordance with this line of thinking, the role of universities in society is significant because they are expected to be institutions capable of creating cultural and social values [8].

In this context, the assessment of ethical climate assumes particular significance. As demonstrated by Anzilago *et al*. [9], comprehending the ethical climate is instrumental in identifying pivotal organizational factors. Alagele *et al*. [10] underscore the existence of organizational conflicts within universities, emphasizing the need for mechanisms of self-evaluation at both the individual and institutional levels. These mechanisms are crucial for diagnosing unethical actions and behaviors, including conflicts of interest, abuse of power, plagiarism, favoritism, coercion, bribery, and embezzlement, among others [11].

Furthermore, assessing the ethical climate in public universities enables a comparison between the proposed ethical standards and the actual practices within these institutions [7], [12]. The evaluation of the ethical climate within academic institutions is of paramount importance, given their preeminent role within society. These institutions wield significant influence over the community through their intellectual output, values, and behaviors.

Another salient aspect of measuring the ethical climate in higher education institutions (HEIs) is that these institutions are responsible for educating future professionals who, in turn, become ethical citizens. A robust ethical environment has been demonstrated to nurture academic integrity, social responsibility, and transparency in university administration, as articulated by Alagele *et al*. [10]. Moreover, such measurement facilitates the identification of potential problems and provides valuable information for implementing strategies to improve the organizational culture of HEIs and their social impact.

A comprehensive assessment of ethical climate perceptions necessitates a measurement framework that considers the impact on the attitudes of academics, students, and administrative personnel towards their professional endeavors. The prevailing themes in the extant literature concerning ethical climate within organizational settings encompass psychological abuse, organizational commitment, ethical behavior, job satisfaction, and turnover [13], [14]. According to Pagliaro *et al*. [2], there is a paucity of empirical investigations that analyze the perception of the ethical climate among members of an organization as well as the moral and ethical setbacks that occur. Lee and Ha-Brookshire [15] argue that analyzing the ethical climate is essential, as it can have a positive impact on employees' attitudes and help to strengthen the three dimensions of sustainable performance within organizations: economic, social and environmental.

This analysis is valuable exercise, as it provides advanced information regarding potential ethical challenges and areas for improvement. These ethical aspects of organizations are instrumental in enabling leaders to make informed and proactive decisions that contribute to the cultivation of an ethical culture. This approach is instrumental in averting potential ethical transgressions and in the implementation of strategies and policies that promote ethical conduct. Furthermore, by proactively anticipating ethical dilemmas, organizations can develop targeted training programs and allocate sufficient resources to address areas of vulnerability. This approach can contribute to enhancing organizational integrity, trust, and reputation. Finally, the ability to predict the ethical climate contributes to effective ethics management, thereby promoting an organizational culture that is ethically sustainable over time.

Consequently, most studies have focused on the business sector and not on HEIs. In this regard, there is a clear lack of research in the current literature on how the ethical climate influences the training of future professionals within the field of higher education. A critical examination of the ethical climate within HEIs is imperative to understand its influence on students' decision-making and professional conduct. Therefore, the objective of this study is to analyze the types of ethical climate in a HEIs from the students' perspective, thereby contributing to knowledge in this under-explored area. This article begins with a review of the literature to identify the theories and frameworks that define the ethical climate and its relationship with academic organizations, such as HEIs, and to formulate hypotheses. Subsequently, the methodology, the validity of the instrument, and the hypothesis tests are presented. In conclusion, the results, their discussion, and the resulting conclusions are hereby presented.

2. LITERATURE REVIEW

2.1. Organizational ethical climate

The ethical climate is understood as the set of shared perceptions regarding behaviors considered appropriate and the ways in which ethical issues should be addressed [16]. For members of an organization, this concept is perceived as a reflection of ethical values, institutional behaviors, actions, and ethical policies that define the experience and culture within the organization [17]. Martin and Cullen [18] argue that the ethical climate is subjective in nature and depends on the perception and recognition of its functionality by members of an institution through ethical reasoning. Aldazabal *et al*. [19] argue that the field of research on the ethical climate involves the examination of organizational processes from an ethical perspective.

Ethical climate is a frequently studied phenomenon in various economic sectors. In recent years, studies conducted globally have centered on the analysis of universities and their organizational complexities through the lens of their ethical climate [2], [12]. The instrument employed to assess ethical climate has been adapted in accordance with the nature and requirements of studies involving universities. Aldazabal *et al*. [19] conducted a survey from the perspectives of moral philosophy and sociological theory using seven of the nine dimensions described by Victor and Cullen [20]: self-interest, friendship, personal morality, efficiency, rules, and procedures. The dimensions of social responsibility, laws, and professional codes were identified as a research agenda for Spanish universities [20].

To assess research integrity and ethical climate in two university foundations in the medical field in Croatia, Malički *et al*. [21] employed the questionnaire developed by Victor and Cullen, which included four scales: individual, team, organizational pressures, and organizational climate. Ekinci [1] examined the relationship between individuals' perceptions of the ethical climate and political environment within an educational institution in Turkey. The present study verified the influence between these two organizational variables. The survey was grounded in a questionnaire developed by Victor and Cullen [20], incorporating five of the nine original dimensions: law and code, caring, independence, instrumental, and efficiency. Additionally, he employed a political behavior questionnaire that addressed the dynamics of fickle performance and concessions, expressions of approval, coalitions, exchange of favors, and appeals. Further, Miandoab *et al*. [14] applied the questionnaire of Olson [22], which was designed for nurses and contains six factors: peers, (professional competence regarding patient care); patients (patient rights and expectations regarding their care); administrators (trust generated by superiors with regard to making decisions about patient care); hospital (organizational setting and physicians); and questions about trust between medical specialists and nurses. The present study was conducted in an educational hospital—Zahedan Medical Sciences Organization in Iran—to measure the impacts of ethical climate on job satisfaction. In the extant literature, scholars have endeavored to measure the relationship between ethical climate and the curricular attitude of students at Sari University of Medical Sciences in India. For this purpose, the Olson ethical questionnaire was used to analyze the perception of students' attitudes towards training programs [23].

Teresi *et al*. [24] compared the effects of two specific ethical climates, i.e., an ethical climate based on self-interest (individualistic) and an ethical climate based on friendship (collective), with respect to the reactions of employees within an organization. An ethical climate based on friendship fosters more positive attitudes and behavioral intentions among members of an organization, compared with an ethical climate centered on self-interest. In the Latin American context, there have been few advances in the literature associated with the measurement of the ethical climate in universities or HEIs because most relevant studies focus on commercial companies. Lopes *et al*. [25] conducted a study to analyze the perception of ethics in a group of students enrolled in an accounting science course at a private teaching institution in Brazil. The authors made a significant contribution to the field of accounting by exploring a relatively under-researched topic. Their work underscored the crucial role of ethical analysis within the academic context. In the future, students will undoubtedly encounter ethical challenges in various market and business settings.

Romi *et al*. [26] examined the manner in which organizational citizenship behavior, rooted in Islamic work ethics, can augment job satisfaction and organizational commitment among higher education lecturers in Indonesia. Their study underscores the positive impact of ethical frameworks on workplace attitudes, emphasizing the role of culturally rooted values in enhancing employee motivation and institutional loyalty. Moreover, the ethical climate has been examined as a component of the organizational climate in six universities in Bogotá. Norabuena-Figueroa *et al*. [27] employed a qualitative approach to investigate four dimensions of organizational climate: academic, socio affective, administrative, and ethical. These dimensions were examined through the perceptions of university students. This perception was influenced by both tangible factors, such as infrastructure and resources, and intangible factors, including values, interpersonal relationships, and situational factors. Bach *et al*. [28] investigated the factors that influence the adoption of management simulation games in HEIs from the perspective of educators. The researchers employed an integrated technology acceptance model and technology–organization–environment framework to analyze how technological, organizational, and environmental factors influence the uptake and effective use of

innovative educational tools in the academic sphere. In light of the findings, the objective of this study is to contribute to the extant literature on the ethical climate in HEIs in Latin America. This contribution is intended to address the existing knowledge gap in the academic context regarding ethical behaviors in universities.

2.2. Ethical climate in HEIs

Despite the delineation of the ethical climate concept, its behavioral underpinnings bear significant ramifications for corporate entities, as articulated by Qamar *et al*. [29]. The ethical climate within the main organizational management guidelines in HEIs is of such significance that it has become imperative to diagnose and evaluate the ethical climate as a customary practice. It is up to each institution to assess and manage matters according to its own needs and characteristics [30].

The design of self-focused and internal studies of the ethical climate in HEIs is essential and is underpinned by ethical leadership, which serves as the primary indicator of normative commitment [31]. This observation aligns with the proposal by Rothman [30] that deontological climate refers to the ethical climate that is predominant within HEIs in relation to all the actors that converge in these institutions. Nonetheless, even acknowledging the functional diversity of all constituents within HEIs, as posited by Viđak *et al*. [32] the ethical climate—that is, the shared social and work behaviors—appears to remain unaltered in these institutions, even though students and staff are included alongside teaching staff in the surveys.

Notwithstanding the distinction of transversality, it is imperative to identify administrative staff and teachers as pivotal and influential employees within HEIs. It is paramount to study and predict their ethical behavior and, based on the, manage such behavior for institutional benefit [30]. This perceived benefit in the distinction of critical participants is based on the sense that, in every HEIs, the ethical climate operates as an informal learning space where students' prosocial behavior is shaped by their moral sensitivity and influenced by mediating factors such as moral disengagement and reciprocity norms [33]. Implicitly, for these influential employees to be able to impart this type of learning, remarkable and ongoing leadership behavior is needed, as are clear rules and regulations in this regard.

This transformational leadership has different implications for HEIs: on the one hand, it promotes the exchange of knowledge, concomitant with its inherent purpose; on the other hand, it has a positive impact on the innovation of each institution, and in turn, its management becomes directly proportional to the level of organizational commitment [34]. Although ethical climate effectively contributes to organizational commitment in HEIs, conversely, null, or deficient management can lead to an unethical atmosphere, creating confusion, hindering professional development, and generating dis-trust around the entire network of actors who converge in these entities [29]. Once this context is established, whether directly or indirectly, there is a greater propensity towards ethical transgressions. This phenomenon constitutes one of the most persistent and significant problems in higher education [30].

In HEIs, it is recommended to adhere to the promotion of academic integrity, ethical culture, and, most notably, the resolution of conflicts in an ethical manner among faculty members, who are regarded as critical and influential actors within the network [29]. As indicated by Rothman [30], the vicarious learning practices guarantee a positive ethical climate. This is because they guarantee the satisfaction and commitment of academics, who are the core asset of any HEIs. These practices also help leaders of all educational institutions to predict ethical and unethical behavior. As illustrated in Table 1, a compendium of pivotal factors affecting the ethical climate in HEIs is presented, with an emphasis on the dimensions of these factors and their impact on organizational behavior, as delineated by Victor and Cullen [20].

As illustrated in Table 1, it is evident that: i) self-interest is derived from the integration of egoist moral judgment. The term "egoism" is defined as a psychological concept that prioritizes one's own needs at the expense of others. It can be understood as a pursuit of physical well-being, the attainment of pleasure, the acquisition of power, the experience of happiness, or the fulfillment of criteria that serve to advance one's own interests; ii) the pursuit of company profit is derived from the integration of egoist and local moral judgment (locus of analysis). The analysis of ethical decisions is influenced by the beliefs held by the members of a work team. The term "organizational benefits" refers to the study of individual decisions that reflect the best interests of the organization, as well as the strategic advantages it seeks to achieve. Ethical decisions are influenced by broader social or economic interests; iii) the concept of friendship is derived from the combination of benevolent moral judgment and individual locus of analysis. The basis of the concept under scrutiny is the consideration of the criterion of benevolence towards people, with a concomitant focus on the interests of friends, without consideration of the organization. Social responsibility is examined in the context of organizational collective. Social responsibility arises from the convergence of altruistic moral judgement and a cosmopolitan perspective in analysis. Ethical decisions are shaped by external factors that guide responsible behavior from a social perspective; and iv) personal morality is derived from the combination of moral judgment of principles and place of individual analysis. The principles in question are self-selected. The company's procedures are derived from the combination of principles of moral judgment and locus of local analysis. For instance, legal statutes and professional codes are derived from the

integration of moral principles, sound judgment, and a cosmopolitan analysis of the relevant context. The principles extend beyond the organizational framework and are subject to the governance of a legal system or professional organizations.

Figure 1 provides an integrated view of how each dimension of the model relates to observable behaviors in the university environment, facilitating understanding of student perceptions of the institutional ethical climate. In light of the aforementioned points, and notwithstanding the existence of prior studies that have examined the dimensions of ethical climate in various organizational settings, there remains a necessity for research that specifically analyzes its impact on university students. This is particularly salient in the context of understanding how these ethical dimensions influence decision-making processes within academic institutions, as these students are future professionals who will encounter ethical dilemmas in real-world settings. Therefore, the objective of this study is to address the aforementioned gap by conducting an analysis of the perception of the ethical climate among students and its implications for professional ethics in the sector in which they are employed. It is imperative to note that the sector in question can be as critical as the financial sector.

Table 1. Dimensions and types of ethical climate [20]

Dimensions		Locus of analysis		
		Individual	Local	Cosmopolitan
Ethical criterion	Egoism	Self-interest Instrumental	Company profit (earnings) Instrumental	Efficiency
	Benevolence	Friendship Be careful	Team interest Be careful	Social responsibility
	Principle	Personal morality Independence	Company rules and procedures Rules	Laws and professional codes Laws and codes

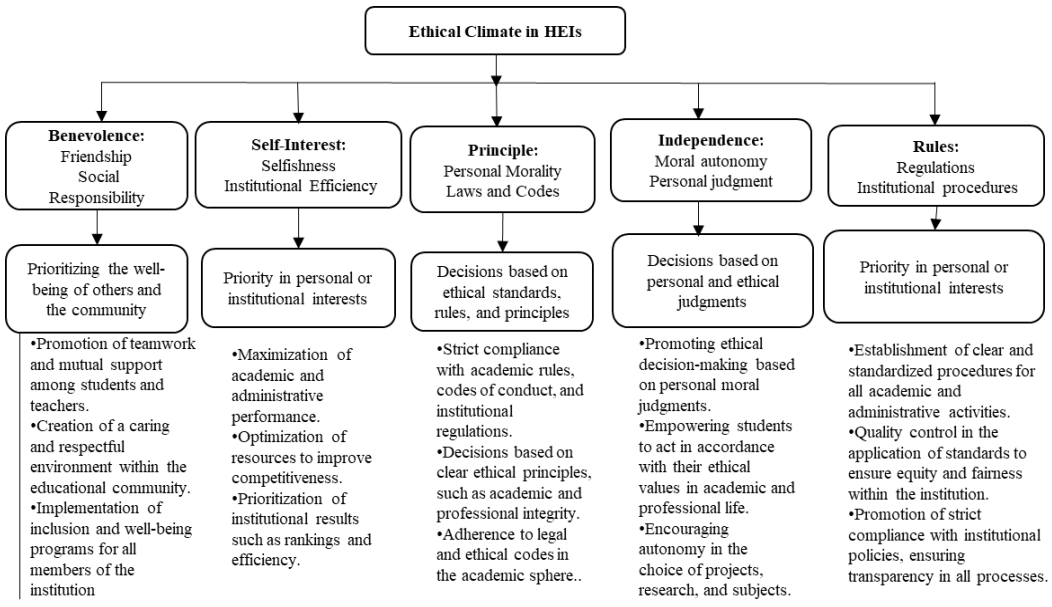

Figure 1. Conceptual map of the ethical climate in HEIs [20]

3. METHOD

The objective of this study was to ascertain the students' perception of the ethical climate. To that end, a quantitative approach and inferential statistics were employed. This methodological approach is deemed appropriate in this context, as it enables the analysis of the structure of the dimensions of the ethical climate based on specific characteristics of a representative sample. Furthermore, it facilitates the identification of relationships between variables without the need for manipulation [35]. The proposed methodological scope is correlational and explanatory. The present study utilizes a non-experimental design, characterized by the absence of manipulation of the study variables and cross-sectional data collection. This methodological approach enables the analysis of the perception of the ethical climate during a specific period.

3.1. Participants

In 2019, the population of the private university institution selected for this study was 1,491 active and enrolled students. The sample was obtained by implementing the simple random sampling technique, a probability sampling method. This method ensures that every member of the population has an equal chance of being selected for the sample. In this study, 50% heterogeneity was targeted. The latter ensures the representativeness of the sample and the same characteristics as the study population [36].

The following inclusion criteria were established for the present study. The criteria for participation in the study are: first, the participant must be an active student of the institution. Second, the participant must be in the last semester of the financial management program. Third, the participant must agree to participate in the study voluntarily.

The criteria for exclusion from the study are as: individuals who are employed as faculty or administrative staff are ineligible to participate. Individuals who have not completed the survey in its entirety are also ineligible to participate. The formula was employed to calculate the sample when the population was either known or finite as presented in (1).

$$n = \frac{N \times Z_{\alpha}^{2} \times P \times q}{d^{2} \times (N-1) + Z_{\alpha}^{2} \times P \times q} \quad (1)$$

The parameters employed in this study correspond to the population or universe of the study. The population size, denoted by N, is 1,491 students. The confidence level, denoted by Z, is set at 99%. The margin of error, denoted by p, is set at 10% (0.10). The probability of type I error, denoted by q, is set at 1–p (1–0.10=0.9). The precision, denoted by yd, is set at 5%. The sample obtained (150) constitutes 10% of the total population. The 10% margin of error was selected because it is a commonly accepted value in research of this type, where a balance between precision and feasibility is sought. This percentage indicates that the sample estimate could vary by 10% with respect to the total population. This is considered an acceptable error rate for this particular study, with a non-probabilistic sample and this population size [37].

The justification for selecting this margin of error is rooted in the objective of ensuring that the results are representative of the population under study without compromising the feasibility of the study. A smaller margin of error would necessitate a considerably larger sample, which could incur additional costs and time. Consequently, this particular value was selected to ensure a high degree of precision, thereby minimizing the cost and duration of the sampling process. Moreover, the 99% confidence level guarantees that the findings are highly likely to be an accurate representation of the population. This enhances the credibility of the study's conclusions.

A comparison of the sociodemographic characteristics revealed that the proportion of female respondents (56.2%) exceeded that of male respondents (43.8%) among the survey participants. The participants were further categorized into three age groups: 17 to 25 years (48.5% of the sample), 26 to 35 years (41.2%), and 36 to 47 years (10.3%). The institution's student population includes individuals over the age of 48, even though the institution itself is not comprised exclusively of students within this age range.

3.2. Data collection

The data was collected using a 26-question survey scored on a Likert scale. The questionnaire inquired about the respondents' level of agreement with statements about the ethical climate in the institution. The present study was conducted in a private HEIs in the city of Medellín during the second semester of the year 2023. The data collection phase transpired between August and October of the same year. The administration of the questionnaire was conducted in a self-administered manner, and student participation was voluntary and anonymous. The instrument was available for a period of four weeks, during which a total of 150 completed surveys were obtained. The surveys, upon completion, underwent a thorough review to ascertain the adequacy of the responses, which would subsequently be utilized in the analysis.

3.3. Instrument

The construction of the instrument for measuring ethical climate entailed the utilization of the six dimensions and 26 items of ethical climate proposed by Victor and Cullen [20]. The decision to utilize six of the nine dimensions of ethical climate proposed by Victor and Cullen [20] was made after a strategic evaluation of the dimensions that demonstrated the strongest alignment with the context of the study, namely, HEIs with a particular focus on private educational institutions. This choice is further substantiated by the literature reviewed within the theoretical framework, with the objective of ensuring the applicability and usefulness of the results in the context of the case study environment. All items were translated into Spanish from English, and the accuracy of the translation was confirmed. The responses were scored on a five-point scale, with indicating "mostly false", "completely false", "somewhat true", "mostly true", and "completely true". Subsequently, modifications were made based on the HEIs context, resulting in 26 items and six

constructs. The following factors must be considered: care, laws and codes, efficiency, rules, independence, and company, as demonstrated in Table 2.

Table 2. Dimensional distribution of the questionnaire [20]

Dimension	Item
Independence (IN)	In this company, people are mostly out for themselves
Efficiency (EF)	The major responsibility for people in this company is to consider efficiency first
IN	In this company, people are expected to follow theft own personal and moral beliefs
Company (CO)	People are expected to do anything to further the company's interests
Care (CU)	In this company, people look out for each other's good
CO	There is no room for one's own personal morals or ethics in this company
Rules (RU)	It is very important to follow strictly the company's rules and procedures here
CO	Work is considered sub-standard only when it hurts the company's interests
IN	Each person in this company decides for himself what is right and wrong
CU	In this company, people protect their own interest above other considerations
IN	The most important consideration in this company is each person's sense of right and wrong
CU	The most important concern is the good of all the people in the company
Laws and codes (LC)	The first consideration is whether a decision violates any law
LC	People are expected to comply with the law and professional standards over and above other considerations
RU	Everyone is expected to stick by company rules and procedures
CU	In this company, our major concern is always what is best for the other person
CO	People are concerned with the company's interests to the exclusion of all else
RU	Successful people in this company go by the book
EF	The most efficient way is always the right way, in this company
LC	In this company, people are expected to strictly follow legal or professional standards
CU	Our major consideration is what is best for everyone in the company
RU	In this company, people are guided by theft own personal ethics
RU	Successful people in this company strictly obey the company policies
LC	In this company, the law or ethical code of theft profession is the major consideration
EF	In this company, each person is expected, above all, to work efficiently
CU	It is expected that you will always do what is right for the customer and public

The inquiries were formulated around these constructs. According to Nejjari *et al*. [38], factors or constructs are defined as unobservable variables capable of influencing observed variables, identified through correlations between them. Factor analysis is a statistical technique used to estimate the multidimensionality of a factor and to select the items that most strongly correlate with the group of items that the construct intends to measure [39].

The dimensions and 26 items of this instrument developed by Victor and Cullen [20] have been widely used in the literature. Despite the passage of time and the evolution of HEIs, some studies [32], [40] have recently employed the dimensions proposed by Cullen. This is due to the continued relevance of ethical issues and conflicts, which underscores the necessity to examine the ethical perception of members of the university community, particularly students.

Furthermore, the six theoretical climates have been empirically validated in previous studies [13], [21]. In addition, the instrument's validity was ascertained through its evaluation by two experts in university education. One of these experts assisted in the translation of the instrument into Spanish, while the other verified the clarity and consistency of the statements in the questionnaire with the original dimensions.

Although no pilot test was conducted, a rigorous approach was taken to validate the instrument in terms of language and target population. The translation process was not limited to a literal translation, but also considered semantic and cultural equivalence. In addition to the joint work of the two experts, linguistic adjustments were made to ensure that the items were understandable to students and reflected the constructs of the original model. This expert judgment validation reduced potential ambiguities in the interpretation of the translated items and was complemented by subsequent statistical analyses (convergent and discriminant validity, and internal reliability) that support the quality of the instrument. In this way, the methodological risks associated with the absence of a pilot test were mitigated. Table 3 shows the step-by-step validation of the instrument.

3.4. Data analysis

The statistical software SPSS was utilized for the purpose of data processing and the execution of confirmatory factor analysis (CFA). These analyses are appropriate because they assess characteristic features of main social phenomena [41], assuming that all variables are correlated to some extent [42]. The validity of the questionnaire and its intended measurement were determined by analyzing the convergence and divergence of the processed data. Confirmatory analysis was employed to ascertain the strength of

correlation between the analyzed dimensions and hypotheses, with consideration of Cramer's V statistic. This statistic is used because it serves as a measure of association, allowing the assessment of the strength of the relationship between variables without depending on the number of categories being analyzed, such as the dimensions of ethical climate discussed in this study [43]. According to Natarajan *et al*. [43], the statistic ranges from 0 to 1, where values closer to 1 suggest a strong relationship between the variables, and values nearer to 0 indicate a lack of statistical significance.

Table 3. Steps for validating the instrument

Validation step	Expert profile	Reliability metric
Spanish translation	Expert in translation and linguistic adaptation	Conceptual and linguistic consistency
Linguistic adaptation		
Expert validation	Higher education specialist; content evaluation	Expert judgment (qualitative validation)
Review of clarity and consistency		
Linguistic adjustments	Experts familiar with the Colombian academic environment	Adjustments derived from preliminary analysis and internal consistency
Adaptation to the local context		
Internal consistency verification	Methodologists and statistics experts	Cronbach's alpha (internal reliability)
Validity assessment	Specialists in instrument	Validation. KMO, Bartlett, and factor analysis
Overall reliability of the instrument	Experts in statistical methods	Cronbach's alpha by dimension

4. RESULTS AND DISCUSSION

In the data collected from the application of the instrument, the primary objective of which was to identify the type of ethical climate perceived by undergraduate students at a university institution in Medellín. The objective of the survey was to identify the present-day characteristics of the institution, rather than its anticipated future conduct.

4.1. Convergent validity

The analysis commences with convergent validity, for which the correlations that exist with respect to how the constructs are associated with the questions that serve to measure them are evaluated. Bartlett's sphericity and the Kaiser–Meyer–Olkin (KMO) measure was applied to each of the constructs. Bartlett's sphericity is a statistical test that is used to detect the existence of correlations between variables. The KMO measure is a statistical technique that analyzes the comparison between the dimensions of the observed correlation coefficients and those of the partial correlation coefficients. For the analysis of each construct to proceed, both tests must yield a positive result; if a construct does not meet a parameter, it must be removed from the analysis.

As documented in the extant literature, there exist standardized values by which comparisons can be made to determine whether or not these constructs optimally meet these correlations. For Bartlett's sphericity, 0.05 is the critical value; therefore, to ensure acceptable results, the p value must be less than this value. With respect to the KMO measure, the magnitudes range from 0 to 1. KMO measures close to 0.9, 0.8, 0.7, 0.6, and less than 0.5 are considered marvelous, meritorious, middling, mediocre, and unacceptable, respectively. Consequently, for these measures to be acceptable, they must exceed 0.5 [44]. As demonstrated in Table 4, the findings indicate that all constructs meet the established standards. Consequently, the analysis was conducted using the entire set of constructs that were identified.

The following convergent validity analysis is applicable to the questions for each construct. The calculation of factorial loads is conducted for each construct employing the statistical software SPSS. According to Cheung *et al*. [45], the convergent validity analysis is a method of examining the level at which the measure of the items in a group are correlated. This is to say, it is an indicator of whether each question is truly appropriate to measure the associated construct. In order to confirm the validity and reliability of the questions associated with a construct, it is necessary that each question have a factorial load greater than 0.6. For a construct to be deemed reliable, the average value of the factorial loads must exceed 0.7. This refers to the extent to which the set of variables can accurately measure the construct using the relevant instrument. As illustrated in Table 5, the values were obtained through the utilization of the SPSS software.

As previously mentioned, certain factor loadings for the questions did not meet the established standard. Consequently, these questions were eliminated, and the average of each construct was recalibrated. A total of six questions were eliminated from the constructs care (CU), laws and codes (LC), efficiency (EF), independence (IN), and company (CO). As illustrated in Table 6, the constructs are accompanied by the final questions, loadings, and means.

Table 4. Results of Bartlett's sphericity test and KMO measurement

Construct	KMO	Bartlett	Criterion met
CU	0.697	0.000	Yes
LC	0.786	0.000	Yes
EF	0.574	0.002	Yes
RU	0.797	0.000	Yes
IN	0.618	0.000	Yes
CO	0.533	0.007	Yes

Table 5. Factorial loads of the constructs

Construct	Item	Factorial load	Average
CU	CU1	0.29	0.55
	CU2	0.48	
	CU3	0.44	
	CU4	0.57	
	CU5	0.77	
	CU6	0.60	
	CU7	0.70	
LC	LC1	0.385	0.66
	LC2	0.782	
	LC3	0.689	
	LC4	0.674	
	LC5	0.69	
	LC6	0.738	
EF	EF1	0.617	0.58
	EF2	0.326	
	EF3	0.743	
	EF4	0.644	
RU	RU1	0.704	0.72
	RU2	0.709	
	RU3	0.68	
	RU4	0.817	
	RU5	0.699	
IN	IN1	0.463	0.63
	IN2	0.772	
	IN3	0.671	
	IN4	0.624	
CO	CO1	0.249	0.553
	CO2	0.727	
	CO3	0.495	
	CO4	0.741	

Table 6. Final factorial loads

Construct	Item	Factorial load	Average
CU	CU2	0.48	0.63
	CU4	0.57	
	CU5	0.77	
	CU6	0.60	
	CU7	0.70	
LC	LC2	0.782	0.71
	LC3	0.689	
	LC4	0.674	
	LC5	0.69	
	LC6	0.738	
EF	EF1	0.617	0.67
	EF3	0.743	
	EF4	0.644	
RU	RU1	0.704	0.72
	RU2	0.709	
	RU3	0.68	
	RU4	0.817	
	RU5	0.699	
IN	IN2	0.772	0.69
	IN3	0.671	
	IN4	0.624	
CO	CO2	0.727	0.65
	CO3	0.495	
	CO4	0.741	

The mean values obtained for the overall sample are generally higher than the standard, with the exception of the CU, which has an average of 0.63. While the mean score of the subjects falls below the established standard, the questions that serve to evaluate this construct demonstrate a higher degree of success. Consequently, the construct and the questions that measure it in a way that meets the standards were retained because it is an important factor in the analysis of ethical climate, as it relates to the perception of care by employees within the institution regarding other members of the company and the organization itself. Therefore, it can be posited that this concept may vary among the demographic groups constituting the institution.

4.2. Discriminant validity

Discriminant validity, defined as a measure of how the constructs are independent of each other, was analyzed. The constructs were expected to demonstrate an absence of relationship or a weak relationship. The objective of this test is to ascertain whether a given construct accurately measures the intended construct and is not associated with other constructs. In essence, each construct should measure a distinct entity [46]. This validity indicates that each observable variable is loaded to a single factor, suggesting that it represents a distinct dimension. The discriminant validity of a value is directly proportional to its distance from 1. The validity analysis was conducted using SPSS. The estimates were generated using the variables that represent each construct and the construct as a whole. This was followed by a comparison between constructs, verifying that the measured values for each pair of factors do not include 1. An examination of the results obtained reveals them to be consistent with the data presented in Table 7. As seen, all values are below the permissible limits, indicating weak relationships between the constructs and what they measure, confirming discriminant validity.

Table 7. Measured values of discriminant validity

	CO	IN	RU	EF	LC	CU
CO	…					
IN	(0.216; 0.510)	…				
RU	(0.047; 0.369)	0.295; 0.578)	...			
EF	(0.106; 0.423)	(0.229; 0.526)	(0.425; 0.657)	...		
LC	(0.043; 0.354)	(0.223; 0.512)	(0.423; 0.694)	(0.433; 0.652)	...	
CU	(0.264; 0.538)	(0.295; 0.575)	(0.254; 0.533)	(0.181; 0.488)	(0.294; 0.552)	...

4.3. Reliability

Reliability is the precision with which a survey measures the dimensions [47]. It is the instrument's ability to obtain accurate and consistent results. Cronbach's alpha is a statistical method used to assess the reliability and internal consistency of a scale. It calculates the correlation values between the items of each construct to determine the scale's internal reliability [48]. Values that approximate 1 indicate greater internal consistency of the analyzed items. Generally, a value equal to or greater than 0.7 is considered acceptable [42], although some studies have considered that values as low as 0.6 are also acceptable [49], [50]. As illustrated in Table 8, the values were obtained through the utilization of the SPSS software.

The values obtained from this analysis are close to 1, suggesting a strong correlation between the items of each factor. This indicates that the constructs are reliable. Therefore, the instrument under consideration evaluates correlational variables that influence the perceptions of university students regarding the existence of an ethical climate in their institution.

Table 8. Cronbach's alpha values

Construct	Cronbach's alpha
CU	0.751
LC	0.840
EF	0.705
RU	0.834
IN	0.762
CO	0.695

4.4. Hypothesis testing

The hypothesized relationships were tested to evaluate the perception of university students regarding the type of ethical climate in an institution in the city of Medellín by calculating the degree of association (correlation coefficient) between two variables. To this end, Cramer's V, a statistical measure of

independence that is not contingent upon the number of categories examined, was employed. Table 9 presents Cramer's V values obtained using SPSS, illustrating a significantly high level of association for five of the hypotheses. One of the relationships that has been identified as having greater significance is that of an ethical climate of rules and an ethical climate of efficiency. Consequently, university students have positive perceptions about the laws, regulations, and policies of the institution, which, when put into practice, imply efficiency: passing classes and meeting their fundamental roles as students (0.425). An ethical climate, characterized by the presence of laws and professional codes, has been shown to positively influence the efficiency of students (0.409). This is attributed to the students' perception that the application of personal ethics and morality, cultivated outside the institutional framework, plays a pivotal role in the resolution of moral dilemmas.

The findings of this study indicate a positive correlation between an ethical climate of independence and an ethical climate of care. The results suggest that, for university students, the ability to sense an environment of care and to feel ethical well-being in their institution is contingent upon their degree of independence (β=0.346). However, the company variable (0.413) is associated with an ethical climate of care. Students also recognize that the care and diligence of moral problems within their institution requires the establishment of bodies and managers in charge of solving them and making decisions. A modest correlation is observed between the ethical climate of independence (0.302) and the ethical climate of efficiency, indicating that students do not perceive the achievement of institutional objectives as being among their responsibilities. These objectives may include issues associated with an increase in course offerings and academic programs or the advancement of the institution in rankings relative to other HEIs.

Table 9. Cramer's V values

	Hypotheses proposed	Cramer's V
H1	LC has a positive relationship with EF	0.409
H2	RU has a positive relationship with EF	0.425
H3	The CO has a positive relationship with EF	0.259
H4	IN has a positive relationship with EF	0.302
H5	The CO has a positive relationship with CU	0.342
H6	IN has a positive relationship with CU	0.346
H7	CU has a positive relationship with EF	0.266
H8	RU have a positive relationship with the CO	0.268

This study was based on six of the nine dimensions of ethical climate described by Victor and Cullen [20]. These dimensions have been widely used in the literature to measure organizational ethical climate. The study analyzed an HEIs from the perspective of university students' perceptions about the existence of several ethical climates. Notably, there is little research on the measurement of ethical climate in HEIs and universities [12], [51], this is particularly relevant in contexts where organizational dynamics require careful attention to ethical and institutional frameworks [10].

An ethical climate of efficiency in institutions is located at a social level, but an ethical climate of laws and professional codes corresponds to individuality; the benefit to the company is prioritized through the efficiency of its collaborators, i.e., better performance by members of an organization is regulated by the institutional principles or legal system that each one morally follows [52]. Thus, for the university context, students and academics recognize the importance of performing better in their roles (learning and teaching, among others), which improves if they behave in accordance with their own moral principles and judgements. Thus, the following hypothesis is proposed: there is a positive significant relationship between an ethical climate of laws and professional codes and the efficiency of HEIs (H1).

Ethics are the rules that statically affect the behavior of organizational citizens and their efficient performance [53]. Therefore, the members of an organization behave ethically, according to the regulations established by the institution, the primary responsibility of individuals is to prioritize the efficiency of successful performance within the university's social context. As such, the following hypothesis is proposed: the perception of an ethical climate of rules is positively related to the efficiency of HEIs (H2).

Al Halbusi *et al*. [7] detail a type of ethical company climate in which each organization has its moral character, for which students and academics in the organization identify and use it objectively. In this way, the community within an organization is expected to do something to promote the interests of the organization in terms of efficiency and achieving results, emphasizing cost-benefit and opportunity cost analyses. As such, the following hypothesis is proposed: an ethical climate in the company dimension is positively related to an ethical climate of efficiency in HEIs (H3).

In an ethical climate of independence, moral principles are self-selected by individuals and guided by personal ethics [13]. According to Namim [54], the ethical climate of efficiency is positively related to the

provision of support, intellectual stimulation, and the development of high-performance expectations. Thus, independence in an ethical climate is associated with providing a vision of self-interest and a model of independent ethical behavior in students that in turn promotes the institutional objectives of the organization. That is, students seeking to maximize their own performance seek to benefit the organization. Hence, the following hypothesis is formulated: an ethical climate of independence has a positive relationship with an ethical cli-mate of efficiency in HEIs (H4).

In the ethical climate of the company, there is no room for an individual's own personal morals or ethics in the organization, but if the organizational collective is recognized [20]. Armstrong and Francis [55] add that there is a legal obligation to care for the community in the institution, extending to the establishment of an ethical workplace environment. Thus, the academic members of HEIs recognize that the duties of care and diligence require that an institutional body watches over the interests of the company. As such, the following hypothesis is proposed: an ethical climate of the company is positively related to an ethical climate of care in HEIs (H5).

The existence of an ethical climate of independence is where the primary goal is for individuals to be genuine and rely on their own sense of right and wrong [13]. For organizations, their greatest concern is what is best for each individual and society, i.e., an ethical climate of care [56]. Therefore, in an HEIs in which an individual within or member of an organization has clarity of what is right or not, they will seek the best for themselves and for others, also known as a caring environment. As such, the following hypothesis is proposed: an ethical climate of independence has a positive effect on the ethical climate of care in HEIs (H6).

According to Woodbine [57], in an ethical climate of care, the main consideration in an organization is what is best for the community, and in an ethical climate of efficiency, the most efficient way of executing tasks is right for the organization. As such, it is expected that each student feels looked after and cared for in a university institution when making their own decisions [56], motivating them to seek the greatest benefit and profitability (efficiency) for the organization. Thus, the following hypothesis is proposed: an ethical climate of care is positively related to the ethical climate of efficiency in HEIs (H7).

In an ethical climate of rules, the members of an organization perceive structured rules and laws, which can influence the perception of justice when facing moral dilemmas [7]. For their part, with an ethical company climate, the members of an organization are expected to focus on promoting its interests [58]. Thus, successful students in the institution are those who strictly obey the policies and rules, without regard to moral or personal ethics, only defending the interests of their university institution. Hence, the following hypothesis is proposed: an ethical climate of rules has a positive effect on the ethical climate of the company in HEIs (H8).

The findings indicated a positive relationship between an ethical climate of rules (H2) and an ethical climate of laws and professional codes (H1) with an ethical climate of efficiency. According to study by Malički *et al*. [21], these two initial ethical climates are among the most common ethical climates in empirical studies of organizations. Cullen *et al.* [4] demonstrated that the ethical climate of laws and professional codes is characterized by members of an organization making ethical decisions based on personal conduct and promoting personal efficiency (greater benefit). Additionally, a universal morality exists, independent of distinctions between individuals or teams, in which individuals seek to contribute to society through their organizations [59]. An ethical climate of rules in this case indicates the influence of an external legal system on students to resolve their ethical and moral dilemmas. This finding aligns with the results of Efunniyi *et al*. [60] that posits that adherence to institutional regulations is a pivotal factor in attaining success (efficiency) and ethical conduct in a company.

The ethical climate of independence (H5) and the ethical climate of the company (H6) demonstrated a positive relationship with the ethical climate of care (H7). With respect to the company, university students participating in this research study expressed concerns regarding ethical considerations, including those pertaining to the well-being of others and society at large. These students reported a sense of care and support from their institution, which in turn serves as a motivating factor to achieve optimal benefits and financial profitability for the organization. This finding aligns with the observations by Goldman and Tabak [61], who noted that individuals tend to attribute decisions to a general concern for the well-being of others. With respect to an ethical climate of independence, university students indicate that determining right from wrong through the application of personal beliefs constitutes an integral aspect of their responsibility as students within the institution, rather than an additional imposition. In this regard, students aspire to achieve the optimal outcomes for themselves and for others, thereby fostering an environment characterized by compassion. These results align with Wang and Hsieh [62], who also identified a correlation between a climate of independence and the perceived reliability of an organization towards its employees. Consequently, enhancing organizational care is not only a reflection of the institution's responsibility but also necessitates individual actions. It is imperative that this type of behavior be supported by the establishment of an ethical climate that fosters collaboration among workers while taking into account the interests of HEIs.

The findings of this study suggest a positive relationship between an ethical climate of independence and an ethical climate of efficiency (H4). This suggests that students select their own moral principles and personal ethics, as their decisions are not determined externally and are aimed at maximizing their performance and benefits for the HEIs. These findings contradict the results reported by Monsef *et al*. [63] which indicate that organizational efficiency tends to decrease when decision-making occurs at the individual level or when individuals feel independent. Additionally, Simha and Cullen [13] assert that the most effective approach to activities is the correct approach.

The findings of the study suggest the absence of a positive correlation between an ethical climate within an organization and an ethical climate of efficiency. This finding is theoretically significant, as it suggests that for university students, the moral character of the institution does not influence their judgment and decision-making processes related to acting correctly in the academic context. Furthermore, it indicates that students do not prioritize the maximization of benefits for their institution.

The results of this study highlight the importance of a strong ethical climate in HEIs. This is consistent with prior research associating ethical leadership and organizational climate with employees' ethical conduct [64], [65]. The positive correlation found between an ethical climate characterized by clear rules and administrative efficiency emphasizes the relevance of well-defined regulatory frameworks to foster a transparent and accountable work environment. This finding is consistent with that of Abidin *et al.* [59], who emphasized the pivotal role of ethical values in fostering tolerant and responsible communities.

Furthermore, the impact of personal beliefs on decision-making and organizational efficiency underscores the necessity to incorporate training strategies focused on ethical awareness and moral leadership development within HEIs. Previous studies [66], [67] demonstrated that a robust organizational culture, one that integrates ethical values and commitment, has the capacity to positively mediate organizational citizenship behaviors and institutional performance. In a similar vein, Pradesa *et al.* [65] underscore that perceived organizational support amplifies proactive work behavior, thereby underscoring the significance of an ethical environment conducive to such conduct.

Effective management of the ethical climate has been demonstrated to contribute to administrative efficiency and the strategic prioritization of resources. This, in turn, aligns institutional practices with social and academic objectives. Efunniyi *et al*. [60] underscores the significance of transparency and accountability in enhancing corporate governance, principles that find application in the educational milieu as well. In accordance with this perspective, Halbusi *et al*. [64] have noted that an optimal alignment between the individual and the organization has been shown to positively influence the relationship between ethical leadership and ethical behavior. This finding is of the utmost importance, as it underscores the necessity for effective and ethical organizational management.

5. CONCLUSION

The ethical climate in HEIs is configured as a contextual construct that evolves within specific institutional environments. Evidence from undergraduate students in a university in Medellín shows that ethical principles are experienced as situated practices rather than abstract norms, highlighting the need for flexible frameworks that can adapt to each context. In this sense, ethical strategies acquire relevance when they respond to local dynamics and remain aligned with the broader educational mission.

From this perspective, the ethical climate not only reflects institutional values but also shapes key organizational processes such as working conditions and academic priorities. Its influence depends on how ethical principles are interpreted in everyday practices, a process in which leadership plays a central role. Strengthening ethical leadership competencies supports the consolidation of environments that promote ethical awareness, while external frameworks such as laws and professional codes provide structural guidance that is enacted within the organization.

These dynamics are expressed in the relationships among the dimensions analyzed, revealing the coexistence of complementary ethical orientations. A normative configuration linked to formal rules and efficiency converges with a relational orientation associated with autonomy and care. The connection between independence and efficiency integrates both perspectives, suggesting that autonomy contributes to organizational effectiveness and helps explain how ethical climates are structured within HEIs.

Notwithstanding the pioneering nature of this study in measuring the ethical climate in a university institution in Medellín, Colombia, there are certain limitations that must be considered. For instance, the results were obtained for a single university; therefore, it is not possible to make generalizations to other institutions, as the results may vary due to the unique characteristics of each university. A comparison of the results obtained in this study with the relevant theory has revealed the existence of a prevailing climate type within any given organization. Consequently, it can be concluded that no specific climate is an exact replica of another. In this sense, the measurement of ethical climate was explicitly based on the perceptions of

university students about the ethical environment in their current institution. That is to say, the questions were aimed at identifying the current ethical climate in their organization and not how it should be. A notable limitation of the study is the absence of a pilot test prior to the administration of 150 surveys. The omission of a pilot test might have resulted in the inclusion of ambiguous questions, potentially influenced by the Spanish translation, thereby compromising the quality of the collected data. Furthermore, the absence of preliminary feedback may lead to the exclusion of crucial elements, potentially compromising the precision of the responses collected during the 150 surveys.

Subsequent studies could measure the ethical climate in various educational institutions in Medellín, Colombia, and other countries to assess variations in ethical climate among different institutions and cultural contexts. Exploration of the perceptions of other actors within HEIs (e.g., faculty, administrative staff) could also be undertaken to obtain a comprehensive understanding of organizational ethical climate from diverse perspectives. To better understand the dynamics of ethical climate in educational institutions, it is crucial to conduct longitudinal studies that track the evolution of perceptions over time. Additionally, exploring the relationship between ethical climate and students' academic performance could serve as a novel and engaging research avenue.

Future research would benefit from incorporating theoretical frameworks that support the understanding of ethical climate as a dynamic phenomenon. Given that HEIs must be analyzed considering the constant interaction between their different actors, there is a need to broaden the focus beyond students, including the perspectives of faculty and administrators for a more complete triangulation of data. Similarly, the adoption of longitudinal studies would not only allow for the observation of changes in ethical perceptions over time but would also facilitate the identification of patterns of cultural transformation, in line with organizational development theory. This type of approach would strengthen the design of sustainable ethical management strategies by articulating empirical findings with more robust conceptual models. Furthermore, it is recognized that the results of this study cannot be generalized to all HEIs because they were based on a single university. Therefore, in future research, it would be useful to compare public and private institutions in terms of regional differences and analyze differences between disciplines, such as ethics training in engineering and ethics in the humanities.

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C : **C**onceptualization
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O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

INFORMED CONSENT

We have acquired informed consent from all participants involved in this study.

ETHICAL APPROVAL

The research involving human participants has been conducted in compliance with all applicable national regulations and institutional policies, following the principles of the Helsinki Declaration, and has received approval from the authors' institutional review board or an equivalent committee.

DATA AVAILABILITY

Data are available upon request to the corresponding author, [AV-A], upon reasonable request.

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