

THE INFLUENCE OF PRE-HISPANIC GASTRONOMIC UTENSILS ON THE AMBIENCE OF TRADITIONAL AND BAROQUE CUISINE RESTAURANTS IN PUEBLA

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Abstract-- This article analyzes the influence of pre-Hispanic gastronomic utensils on the ambiance of restaurants serving traditional and baroque cuisine from Puebla, highlighting their historical, aesthetic, and cultural value within Mexico's culinary heritage. In the face of global gastronomic homogenization, it highlights the importance of preserving elements of identity such as the metate, molcajete, comal, molinillo, comitalli, and clay pots, which, in addition to their culinary function, play a symbolic and decorative role.

The overall objective was to determine the influence of these utensils on the ambiance of traditional and baroque restaurants in Puebla. The hypothesis posited a direct and positive relationship between their presence and the perception of the ambiance, the diner's sensory experience, and the authenticity of the space.

The methodology took a quantitative approach and a descriptive correlational design. A survey was administered to diners at restaurants in the Historic Center of Puebla selected for convenience. The instrument was based on four variables: style, decoration, dish presentation, and gastronomic memory, each with four items evaluated using a five-point Likert scale. The reliability of the instrument was confirmed with a Cronbach's alpha greater than 0.80.

The results showed a high valuation of traditional utensils, with gastronomic memory and decoration standing out as the variables with the greatest positive impact. It was identified that these elements evoke cultural heritage and reinforce Puebla's culinary identity. Finally, the hypothesis is confirmed by demonstrating that pre-Hispanic utensils not only provide functionality, but also authenticity and a sense of belonging in the diner's experience.

Keywords-- Pre-Hispanic utensils, traditional Puebla cuisine, traditional restaurants in Puebla, perception of ambiance.

Abstract-- This article analyzes the influence of pre-Hispanic gastronomic utensils on the ambiance of traditional and Baroque cuisine restaurants in Puebla, highlighting their historical, aesthetic, and cultural value within Mexico's culinary heritage. In the face of global gastronomic homogenization, the importance of preserving identity-defining elements such as the metate, molcajete, comal, molinillo, comitalli, and clay pots is emphasized, as these utensils fulfill not only culinary functions but also symbolic and decorative roles.

The general objective was to determine the influence of these utensils on the ambience of traditional and Baroque restaurants in Puebla. The hypothesis proposed a direct and positive relationship between their presence and the perception of the environment, the diner's sensory experience, and the authenticity of the space.

The methodology followed a quantitative approach with a descriptive–correlational design. A survey was administered to diners in restaurants located in Puebla's Historic Center, selected through convenience sampling. The instrument was based on four variables: Style, Decoration, Dish Presentation, and Gastronomic Memory, each consisting of four items evaluated on a five-point Likert scale. The reliability of the instrument was confirmed with a Cronbach's Alpha above 0.80.

The results showed a high appreciation for traditional utensils, with Gastronomic Memory and Decoration standing out as the variables with the greatest positive impact. The findings indicate that these elements evoke cultural heritage and reinforce Puebla's culinary identity. Finally, the hypothesis is confirmed by demonstrating that pre-Hispanic utensils contribute not only to functionality but also to authenticity and a sense of belonging within the dining experience.

Keywords-- Pre-Hispanic utensils, traditional Puebla cuisine, traditional food restaurants in Puebla, perception of ambience.

INTRODUCTION

Puebla cuisine is recognized as one of Mexico's most representative culinary expressions due to its historical, symbolic, and sensory richness. In this context, pre-Hispanic cooking utensils such as the metate, molcajete, comal, comitalli, molinillo, and clay pots are fundamental elements not only in the preparation of traditional dishes, but also in the construction of the visual and environmental identity of restaurants that seek to preserve the region's culinary heritage. These instruments, made from materials such as volcanic stone, clay, or wood, have endured over time due to their functionality, artisanal aesthetics, and cultural value. In a context where globalization has led to the standardization of gastronomic offerings, the ambience in traditional restaurants takes on a strategic role in reinforcing the authenticity and cultural memory of the diner. The presence of pre-Hispanic utensils in populated gastronomic spaces not only embellishes or complements the decor, but also creates

symbolic connections with the indigenous and colonial roots of local cuisine, thus enriching the visitor's sensory and emotional experience.

Based on this premise, the present study aimed to determine the influence of pre-Hispanic gastronomic utensils on the ambiance of restaurants serving traditional and baroque cuisine in Puebla. To this end, a quantitative and correlational approach was applied to analyze diners' perceptions of the use of these utensils as part of four key dimensions of the setting: style, decoration, dish presentation, and gastronomic memory. The relevance of this study lies in understanding how the material elements of culinary heritage can influence contemporary gastronomic consumption dynamics, providing empirical evidence of their role in constructing authentic and culturally significant experiences.

Background

Pre-Hispanic gastronomic utensils

The first cooking utensils emerged from the tools used by hunters to obtain food and ensure their subsistence. These instruments, such as slingshots, spears, nets, sticks, and stones, were not only used to hunt animals and gather fruits, but also to process and prepare food. In addition, natural containers such as gourds and hollow pumpkins were used to store and transport liquids, which evolved over time thanks to the work of potters, who began to manufacture fired clay tableware (Lozano, 2018).

Later, in the context of pre-Hispanic Mesoamerica, culinary practices became more complex, as did the utensils used (García, 2006). To cook corn dough in the form of tortillas, pre-Hispanic peoples used the comal, and to keep them warm, they used the comitalli. Likewise, the molinillo, made of carved wood, was used to whip chocolate and other beverages (Long, 2010).

Among the oldest utensils are grinding instruments, such as the metate and molcajete, used to prepare flours and sauces (García, 2006). The grinder, for its part, remains indispensable for beating chocolate (Rodríguez, 2023), while the griddle remains a central piece in Mexican homes, used daily to cook tortillas, tlacoyos, and other delicacies made with dough (Aliseda, 2022).

From the above, it can be understood that pre-Hispanic kitchen utensils, such as instruments made from natural materials such as stone, clay, and wood, were used by Mesoamerican civilizations for food preparation (García, 2006).

Cabrero (2019) points out that these instruments were designed to facilitate fundamental processes such as grinding, crushing, cooking, and fermentation, while Armendáriz (2024) emphasizes that their artisanal production preserves ancestral knowledge and reflects the historical connection between communities and their environment, as it is based on the responsible use of resources such as volcanic rocks. In Mexico's culinary traditions, these indigenous communities continue to use these pre-Hispanic utensils, mainly:

Volcanic stone metates

This is a volcanic stone tool of Mesoamerican origin, which was created and widely used by the pre-Hispanic civilizations of the region. Its invention dates back more than 3,500 years and it is a rectangular stone with a slightly concave surface (Cabrero, 2019).

It is used together with the *metlapilli*, a volcanic stone roller with conical ends, used to grind grains and other ingredients on the metate (Cortés, 2014).

Metate

The *metate* is a volcanic stone utensil of Mesoamerican origin, dating back more than 3,500 years. It is a rectangular stone with a slightly concave surface (Cabrero, 2019). It was the main utensil in pre-Hispanic cuisine, used daily to grind cooked corn or *nixtamal*, essential in the preparation of tortillas and atoles (García, 2006).

Molcajetes

The *molcajete* originated in Mesoamerica and its name comes from the Nahuatl word *mollocali*, which means "concave stone for sauce." Its invention dates back approximately 8,000 years (Montemayor, 2021). It is used in a circular motion with the *tejolote*, which is the hand of the *molcajete*, to crush and grind ingredients (Rodríguez, 2013).

Comitalli

The *comitalli*, also known as a tamalera or vaporera, comes from the Nahuatl language and was made of clay, as this was the most common and accessible material in pre-Hispanic communities. Orozco (2001) explains that the *comitalli* is made up of several parts: the body (which contains the water and

holds the tamales), the handles or "ears," a grid that separates the tamales from the water to allow them to steam, and a lid to concentrate the heat.

Grinder

The molinillo is a wooden utensil in the shape of a cylindrical stick, wider at one end, measuring approximately 30 centimeters. At its thicker end, it usually has a carved ball and sometimes a decorative washer. It is used by turning it between the palms to beat and foam liquids such as chocolate, as well as to thicken drinks such as atoles (García, 2006).

Comales

The *comal*, whose name comes from the Nahuatl word *comalli*, dates back to pre-Hispanic times, when it was mainly made of unglazed clay and placed on three stones called *tenamaxtles* (El Siglo de Durango, 2020). According to Ricatto (2022), the traditional *comal* is a flat piece of fired clay approximately 30 centimeters in diameter, supported by stones that allow a fire to be lit directly underneath it.

Clay pots

This piece belongs to the Mexica culture, Aztec III style, and dates from the Late Postclassic period (1250–1521 AD) in the Valley of Mexico (Amparo Museum). It is made of clay modeled with orange slip. This type of piece was mainly used for food preparation, such as pots for cooking corn, beans, or preparing traditional beverages (Lozano, 2018).

Traditional Puebla cuisine

Mexican cuisine is renowned worldwide for the combination of flavors in its dishes and the history that accompanies them. Each recipe incorporates cultural elements that give it identity and unique value. It is famous for its complex preparations and distinctive, intensely spiced flavors, blending indigenous, European, and other cultural traditions (Laborde & Medina, 2015).

Its originality stems from the fusion of two great cultures: the indigenous Mesoamerican and Spanish cultures, making it an expression of creativity. It is worth noting that, in 2010, the United Nations Educational, Scientific and Cultural Organization (UNESCO) officially recognized Mexican cuisine as Intangible Cultural Heritage of Humanity. This recognition seeks to preserve and promote this living legacy throughout the world (UNESCO, 2010). According to the most recent ranking by

TasteAtlas (2024), the best cuisine in the world is Greek cuisine, followed by Italian cuisine, with Mexican cuisine in third place.

The cuisine of the city of Puebla is unique in the country because it is closely linked to the historical events that earned it the title of Four Times Heroic City.

In this regard, it is essential to understand that this cuisine during the Viceroyalty was, to a large extent, the result of cultural fusion, a product of the exchange between different cultures. It is recognized as one of the 100 best in the world in 2024, according to TasteAtlas (2024).

Mole poblano, chiles en nogada, chalupas, and mole de caderas have become emblems of Puebla cuisine, representing the fusion of pre-Hispanic and European ingredients (García & Ancona, 2022). This cuisine features dishes that originated in convents and in the kitchens of mestizo and creole households, as a result of the fusion between *Mexica* and European culinary traditions. This mixture gave rise to sweet, salty, and spicy flavors that established Puebla as a benchmark for Mexican cuisine (Ntx, 2011).

Each dish preserves ancestral practices that include the use of pre-Hispanic and colonial utensils such as the *molcajete*, the *metate*, clay pots, the *comal*, and the *molinillo*, which are still used in the preparation of some of the region's most representative dishes (MéxicoHistorico, 2022).

Below are some of these notable dishes, with a brief description and the use of pre-Hispanic cooking utensils:

Mole poblano

Its name comes from the Nahuatl word *chilmulli*, which means "prepared with chilies" or "chili sauce" (Mejía, 2020). Although mole has evolved, its traditional preparation preserves techniques and instruments of pre-Hispanic origin, especially the use of the *metate*, with which chilies, seeds, and cacao are ground to form the thick paste characteristic of this sauce. Likewise, the clay *comal* is used to toast the ingredients, intensifying their flavor before adding them to the stew.

Chiles en nogada

This baroque dish is traditionally prepared between July and September, when regional ingredients are at their peak. The classic recipe includes a filling of ground pork and beef, fruits such as apples, peaches, and acitrón, as well as spices such as cinnamon, cloves, and cumin (Mejía, 2020).

Today, chiles en nogada retain elements of pre-Hispanic cuisine, especially in the use of the metate to grind the seeds and dried fruits for the filling, and the comal, used to roast the poblano peppers, a technique inherited directly from indigenous cuisines.

Mole de caderas

It is an emblematic dish of the *Mixteca* region of Puebla and Oaxaca. Its main ingredients are goat hips and spine fed with salt, wild herbs, and water, which gives the meat an intense flavor and lean texture.

The mole is made with a red sauce prepared in a molcajete, which contains guajillo, costeño, and serrano chilies, tomatoes, garlic, onion, avocado leaves, cilantro, huaje seeds, or water beans, depending on the Puebla or Oaxaca variant (El Informador, 2015).

Atole xoco

Its name is a Spanish adaptation of the Nahuatl word *atolli*, which in turn is made up of two words: *atl*, meaning water, and *olli*, referring to its characteristic glutinous texture. Atole requires certain utensils to be made: a metate to grind the grain, a molinillo or *amaxocóatl* to mix all the ingredients, a pot to put it on the fire, and the starch present in the corn, activated by heat, which gives it the unique texture that gives *atolli* its name. (Cabrera, 2023).

Traditional Food Restaurants

Mexican cuisine is recognized worldwide as a living expression of identity, history, and tradition. Each dish represents centuries of cultural fusion, ancestral knowledge, and a deep connection to the land. Within this broad culinary landscape, traditional restaurants play an essential role, as they are the places where recipes passed down from generation to generation continue to thrive. The value of traditional restaurants lies in the fact that they nourish not only the body, but also the soul and national identity, preserving a way of life that combines hospitality, creativity, and respect for one's roots (Acevez, 2025).

The concept of restaurants in Mexico has ancient roots dating back to colonial inns and taverns, where travelers found home-cooked food and a family atmosphere, offering affordable daily menus prepared with local products and traditional recipes (Vázquez, 2024). As a result, traditional Mexican restaurants play a fundamental role in the preservation and dissemination of the national culinary heritage (Zurita, 2018). By incorporating pre-Hispanic utensils

in the preparation and presentation of their dishes, these establishments recreate ancestral techniques that reflect the richness and complexity of Mexico's indigenous cultures.

In this context, a traditional restaurant is one that has a kitchen serving typical dishes. An elaborate cuisine. Its decor is stylish with separate tables, and its staff wear uniforms in keeping with the type of restaurant, as described in the book *Restaurant Service* (González, 2013).

Beyond the food, traditional restaurants stand out for their welcoming and representative atmosphere. The décor often includes regional handicrafts, embroidered tablecloths, clay utensils, and traditional Mexican music. This combination creates a multisensory experience that transports diners to the country's roots. In many cases, the hospitality of the owners and cooks reinforces the feeling of being at home, turning the meal into an act of conviviality and affection (Beteta, 2023).

The service in these restaurants reflects Mexican hospitality, characterized by personalized attention and warm treatment. This aspect is also part of the cultural heritage, as it represents the way Mexicans conceive of food: as an act of sharing, celebrating, and strengthening family or community ties (Meléndez & Cañez, 2010).

Various restaurants specializing in regional Puebla cuisine stand out for preserving ancestral recipes passed down from generation to generation, prepared using traditional techniques and local products that reflect the agricultural and culinary richness of the region. Their atmosphere often recreates the essence of colonial houses in Puebla, with decorations that evoke the past and service that values hospitality as part of the dining experience (Hernandez & Martinez, 2020).

Perception of Ambience

The study of perception has its roots in 19th-century psychology and physiology. One of the first authors to address it systematically was Hermann von Helmholtz, who in his work *Handbuch der physiologischen Optik* proposed the theory of "unconscious inference," arguing that humans do not merely receive sensory stimuli but actively interpret them based on experience (Helmholtz, 1867). Later, Wilhelm Wundt consolidated experimental psychology as a scientific discipline through his work *Grundzüge der physiologischen Psychologie* and the founding of the first psychological laboratory in Leipzig, thus establishing the empirical study of perceptual processes (Wundt, 1874).

Together, these contributions established that perception is not a passive process of sensory reception, but rather an interpretive activity through which individuals construct meaning from environmental stimuli (Palmer, 2012).

Nessim (2017) defines perception as the process by which an individual selects, organizes, and interprets sensations to form a meaningful view of the world around them. It is important to note that this concept is also used in consumer behavior studies. Walters (1989) refers to it as a comprehensive activity through which an individual becomes aware of the environment and interprets it in a way that fits their frame of reference. According to Niosi (2021), this process of perception includes the selection, organization, and interpretation of sensory information that passes through our perceptual filters, is organized into existing structures, and is then interpreted based on previous experiences.

Likewise, perception is also required in the marketing context in consumer activities where sensation, color, texture, smell, and shape are not enough; rather, it is interpretation that gives meaning to the stimulus. Krishna (2012) points out that consumer perceptions directly influence their decisions. Currently, this term is also used in sensory marketing, as it is an element that consumers interpret and give meaning to the stimuli they receive through their senses—sight, hearing, smell, taste, and touch—and determine how the consumer experiences and values a brand, good, or service where perception is a strategic lever.

For Apresyan (2020), these types of environmental stimuli are integrated into the "servicescape" or service environment, influencing the emotional and behavioral responses of the diner. In marketing, carefully designing the setting, including visible utensils, allows the restaurant to position itself and differentiate itself, generating a favorable perception in the customer that can translate into greater satisfaction, loyalty, and propensity to recommend.

In the gastronomic context, perception dictates that it is not only what the diner sees or touches, such as a molcajete or metate, that matters, but how they interpret it: as traditional, authentic, high-quality, symbolic. In addition, service environments (such as the physical atmosphere of a restaurant) shape diners' perceptions of quality, authenticity, and value. This implies that the use of gastronomic utensils with symbolic significance, such as pre-Hispanic utensils, in a restaurant can be designed to activate specific perceptions: tradition, cultural identity, craftsmanship, authenticity.

DEVELOPMENT

Methodology

The study was developed using a quantitative approach with descriptive support for sociodemographic variables, because it not only describes the characteristics of the phenomenon, but also examines the influence and degree of relationship between the independent variables (pre-Hispanic gastronomic utensils) and the dependent variables (restaurant ambiance). Likewise, the study is considered non-experimental and cross-sectional, since the data were collected at a single point in time on September 14, 2025, without manipulation of variables, analyzing the perceptions of diners as presented in their natural context.

The objective was to determine the relationship between pre-Hispanic gastronomic utensils and the ambiance of traditional and baroque cuisine restaurants in Puebla. Survey and face-to-face interview research techniques were used, applying a questionnaire as a measurement tool. Subsequently, for the quantitative part, a statistical analysis was performed using Pearson's correlation coefficient, obtaining useful results for achieving the objective and testing the hypothesis.

The study population and sample consisted of diners at traditional Puebla and baroque restaurants located in the historic center of Puebla, which are characterized by their typical Puebla atmosphere and by preserving the aesthetics and symbolic elements of their cuisine.

The sample was selected using non-probability convenience sampling, consisting of customers and diners who agreed to respond to the questionnaire during their visit. The type of sampling was chosen for its accessibility and suitability to the study context. Questionnaires were administered in restaurants at different service times, lunch and dinner, ensuring representation of different age groups, genders, and occupations.

The list of restaurants that are representative of this type of food is as follows: Saborcito Corazón, Los Murales, El Comal, La Casa del Mendrugo, Casa Barroca, and Fonda de Santa Clara.

To calculate the sample size, criteria of 95% reliability and a 5% margin of error were used, which yielded a result of 384 diners.

The data collection instrument used was a questionnaire consisting primarily of seven sociodemographic questions: age, gender, origin, marital status, education, occupation, and accompaniment. This was followed by a 19-item Likert scale questionnaire, designed with five response options

(1 = Strongly disagree to 5 = Strongly agree), with the aim of understanding diners' perceptions, acceptance, and experience regarding the use of pre-Hispanic utensils in Mexican restaurants.

The questionnaire was organized into four theoretical dimensions, based on models of perception and gastronomic setting: 1) Style, Items 1 to 4, 2) Decoration, Items 5 to 8, 3) Display of the dish, Items 9 to 12, and 4) Gastronomic memory, Items 13 to 16

To generate the questionnaire, a search was conducted for two models: "Model of the degree of importance of atmospheric elements and service quality in relation to consumer satisfaction (Mendoza, 2020)," which explains the relationship between atmospheric elements and service quality as determining factors of consumer satisfaction in themed restaurants. The author integrates experiential marketing variables, based on the idea that the customer experience depends not only on the physical environment, but also on the service, cleanliness, and consistency between the theme and the service. The model seeks to determine the degree of importance of atmospheric elements and service quality on consumer satisfaction. It proposes that both factors are complementary: atmospheric elements capture the customer's initial attention, while service quality ensures their permanence and desire to return. The variables are: Lighting, Smell, Color, Crowd, Music, Noise, and Temperature.

And from the "TANGSERV atmospheric dimension model" (Segura, Alaña, & Samaniego, 2025), it analyzes the impact of atmospheric elements of service on diner satisfaction in restaurants in the city of Guayaquil. The model seeks to evaluate how factors in the physical and sensory environment of the restaurant (atmosphere) influence overall diner satisfaction. It aims to identify which atmospheric variables, such as lighting, smell, or music, have a significant impact on the perception of quality and well-being during the dining experience. The variables are: Music, Lighting, Decoration, and Service Quality.

The questionnaire was validated using Cronbach's alpha coefficient, obtaining a value of 0.78, which demonstrates the instrument's high internal consistency and reliability. It was also validated by three expert research professors, two in tourism and one in marketing from the tourism and administration faculties of the Benemérita Universidad Autónoma de Puebla.

The data were entered into Excel and used for the correlation of bivariate variables, the Pearson correlation coefficient (r) between the independent variable, use of pre-Hispanic utensils, and each of the dimensions of ambiance and decoration style.

DISCUSSION AND ANALYSIS OF RESULTS

The results obtained show positive correlations in all dimensions evaluated, with the presentation of the dish being the most influential, followed by decoration, gastronomic memory, and style. Overall, the findings confirm that pre-Hispanic utensils not only complement the functionality of the space, but also enrich the diner's experience, strengthen the restaurant's cultural identity, and contribute significantly to its authenticity and visual appeal. These results are shown in Table 1 below.

Table 1. *Interpretation of results.*

Objective and hypothesis	Result	Comments
General objective: To determine the influence of pre-Hispanic gastronomic utensils on the atmosphere of restaurants serving traditional and baroque cuisine from Puebla. General hypothesis: causal type. There is a direct and positive influence between pre-Hispanic culinary utensils and the ambiance of restaurants serving traditional and Baroque cuisine in Puebla.	Pearson's coefficient equal to 0.4568 Coefficient of determination equal to 0.2086	The influence of pre-Hispanic gastronomic utensils explains 20.8% of the variation in the ambiance of restaurants serving traditional and baroque cuisine in Puebla. The correlation between the variables is moderately positive and, therefore, the general hypothesis that the influence of pre-Hispanic gastronomic utensils has a direct and positive impact on the ambiance of restaurants serving traditional and baroque Puebla cuisine.
Objectives and hypotheses	Results	Comments
O1: demonstrate the relationship between style and how utensils influence it as a factor of ambiance in the		The setting factor explains 6.9% of the variation in Style. The correlation between the variables is

traditional and Baroque Poblana restaurants. H1: There is a direct and positive influence between gastronomic utensils and their relationship with Style as an ambientation factor in traditional and Baroque Poblana restaurants.	Pearson coefficient equal to 0.2628 Coefficient of determination equal to 0.0690	low positive, and therefore H1 is accepted, demonstrating a causal relationship in which the influence of pre-Hispanic gastronomic utensils has a direct and positive impact on the ambience of traditional and Baroque Poblana cuisine restaurants Baroque Poblana cuisine.
O2: To demonstrate the relationship between decoration and how utensils influence the atmosphere in restaurants serving traditional and Baroque cuisine from Puebla. H2: There is a direct and positive influence between gastronomic utensils and their relationship with decoration as a factor in the atmosphere of restaurants serving traditional and Baroque cuisine from Puebla.	Pearson's coefficient equal to 0.4803 Coefficient of determination equal to 0.2306	The ambience factor explains 23% of the variation in decoration. The correlation between the variables is moderately positive and, therefore, H2 is accepted, demonstrating a causal relationship in which the influence of pre-Hispanic gastronomic utensils has a direct and positive impact on the ambience of restaurants serving traditional and baroque Puebla cuisine.
O3: Analyze the relationship between the presentation of the dish and how utensils influence the atmosphere in restaurants serving traditional and Baroque Poblano cuisine. H3: It is proposed that gastronomic utensils have a significant and positive influence on the presentation of the dish, acting as a key factor in the ambience of	Pearson's coefficient equal to 0.7301 Coefficient of determination equal to 0.5330	The ambience factor explains 53.30% of the variation in dish display. The correlation between the variables is highly positive and, therefore, H3 is accepted, demonstrating a causal relationship in which the influence of pre-Hispanic gastronomic utensils has a direct and positive impact on the

traditional and Barroca Poblana restaurants.		the atmosphere of restaurants serving traditional and Baroque Poblana cuisine.
O4: Examine the connection between gastronomic memory and how utensils influence the atmosphere in traditional and Baroque Poblana restaurants. H4: Gastronomic utensils are considered to have a positive and direct influence on gastronomic memory, reinforcing their role as a factor in the atmosphere of traditional and Baroque Poblana restaurants. Baroque Poblana cuisine.	Pearson's coefficient equal to 0.3541 Coefficient of determination equal to 0.1253	The ambience factor explains 12.53% of the variation in gastronomic memory. The correlation between the variables is low positive and, therefore, H3 is accepted, demonstrating a causal relationship in which the influence of pre-Hispanic gastronomic utensils has a direct and positive effect on the ambience of traditional and Baroque Poblana cuisine restaurants.

Discussion

The results obtained and the methodology applied answer the research question about the influence of pre-Hispanic gastronomic utensils on the ambience of restaurants serving traditional and baroque cuisine in Puebla.

Evidence was found in favor of the General Hypothesis, which posits that there is a direct and positive influence between pre-Hispanic gastronomic utensils and the ambience of restaurants serving traditional and baroque cuisine from Puebla. It was also proven that this influence is causal in nature.

As a result of the study, the following assertions made in the literature review can be confirmed:

- From a theoretical perspective, pre-Hispanic utensils such as the metate, molcajete, and comal not only serve a practical function but also convey a visual aesthetic linked to cultural heritage. The results ($r = 0.2628$) confirm a moderate positive influence, validating that the decorative style of restaurants is enriched by incorporating these elements, achieving an atmosphere that combines functionality and symbolism.
- The theoretical framework suggests that decorating with traditional utensils reinforces the emotional connection with Mexican roots and promotes the perception of authenticity. The result ($r =$

0.4803) and a coefficient of determination of 23% support this relationship, showing that decoration influenced by pre-Hispanic utensils significantly improves the overall atmosphere of the dining space.

- c) Theoretically, the display of the dish represents a cultural act where utensils play a central role in the presentation and experience of the diner. The most robust empirical finding ($r = 0.7301$; $R^2 = 53.3\%$) shows a strong relationship, supporting the theory that these objects are not only cooking tools but also visual communication media that convey identity and tradition in the culinary experience.
- d) The theoretical framework emphasizes the permanence of utensils as a link to collective memory and the transmission of ancestral knowledge. The results ($r = 0.3541$; $R^2 = 12.53\%$) partially validate this approach, showing that the use of these instruments reinforces gastronomic memory, although their influence depends on contextual factors such as the type of restaurant and the intentionality of the interior design.

CONCLUSIONS

The study determined the influence of pre-Hispanic gastronomic utensils on the ambiance of restaurants serving traditional and baroque cuisine from Puebla. Using a quantitative descriptive-correlational approach and Pearson's coefficient, the general objective was confirmed and the hypothesis was empirically verified. The results showed a moderate positive correlation between the use of utensils and the ambiance ($r = 0.4568$), indicating that they explain 20.8% of the perceived variation. This shows that they are not only utilitarian or decorative objects, but cultural resources that shape the sensory, symbolic, and emotional experience, strengthening authenticity and gastronomic identity.

The specific objectives were also met:

- Style: positive correlation ($r = 0.2628$), reinforcing aesthetic coherence.
- Decoration: moderate correlation ($r = 0.4803$), creating culturally significant environments.
- Display of the dish: highest correlation ($r = 0.7301$), improving presentation and perception of authenticity.
- Gastronomic memory: positive relationship ($r = 0.3541$), activating symbolic associations and culinary traditions.

Overall, the results confirm that pre-Hispanic utensils are key to creating authentic environments in traditional restaurants in Puebla, as they strengthen culinary identity, enrich the diner's experience, and convey gastronomic heritage. They also provide quantitative evidence supporting their aesthetic, historical, and symbolic relevance.

Finally, the research contributes to gastronomic marketing and experience management by offering an empirical model that explains how the material elements of culinary heritage influence diners' perceptions, validating the hypothesis and opening up new lines of study on cultural identity, environmental design, and consumer behavior.

Limitations

Although the results confirm the hypothesis and meet the objectives, the study has methodological and contextual limitations. First, the sampling was non-probabilistic for convenience, which reduces the ability to generalize the findings to all diners at traditional and baroque restaurants in Puebla. While this technique made it easier to gather a large number of participants, the sample may not reflect the sociodemographic diversity of the target population.

Second, the research was conducted only in the Historic Center of Puebla. Although it is a gastronomic reference point, it does not include traditional restaurants in other urban or rural areas of the state, where the use of pre-Hispanic utensils may have different cultural meanings and affect the perception of the gastronomic environment differently.

Another limitation stems from the cross-sectional design, which collects data at a single point in time. This approach prevents analysis of changes in diners' perceptions over time, especially in light of new culinary trends, transformations in interior design, or generational variations in cultural consumption.

Furthermore, the study relied exclusively on quantitative techniques, which limits a deep understanding of the symbolic meanings that diners attach to pre-Hispanic utensils. Although statistical correlation shows the relationship between variables, it does not allow for a detailed exploration of subjective, emotional, or narrative interpretations linked to the dining experience.

Finally, the results depend on the self-perception and sincerity of the participants. This can lead to social desirability bias, especially on issues related to cultural identity, tradition, and culinary heritage, affecting the accuracy of some responses.

Recommendations

Based on the limitations identified, several recommendations are proposed to strengthen future research. First, it is suggested to use probabilistic or stratified sampling to include a broader and more diverse population, improving external validity and the possibility of generalizing the results to different diner profiles.

It is also relevant to expand the geographical scope of the study, incorporating traditional restaurants from other municipalities and regions of Puebla. This would allow for an analysis of how factors such as cultural context, rurality, or tourist activity influence the way in which pre-Hispanic utensils affect the atmosphere and customer experience.

It is also recommended to complement quantitative methods with qualitative techniques, such as interviews, focus groups, or ethnographic approaches, to explore symbolic, emotional, and sensory dimensions that structured questionnaires do not capture. This would enrich the understanding of how diners interpret traditional utensils within Puebla's gastronomic identity.

It would also be useful to conduct longitudinal or experimental studies to observe changes in diners' perceptions over time or under different physical environment configurations. For example, varying the presence, layout, or type of utensils would help identify which ones have the greatest impact on the customer experience.

Another recommendation is to integrate variables related to consumer behavior, such as intention to return, overall satisfaction, recommendation of the establishment, or emotional connection to the brand, to expand the explanatory model.

Finally, it is advisable for traditional restaurants to incorporate pre-Hispanic utensils strategically, not only as decoration, but as an active part of their gastronomic narrative, promoting more immersive, meaningful experiences that increase diner loyalty.

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