Exploring Basque Gastronomy Identity through Recipes and Consumers Interviews

KEYWORDS: Euskal Herria, qualitative consumer research, culinary traditions, sensory, diet

ABSTRACT

The present study investigated Basque gastronomic identity by combining recipe analysis with current consumer habits and perceptions. Methods included building a database of Basque recipes from two temporal periods (1970's and 2010/20) to track potential changes in the use of the 117 ingredients identified. This analysis was complemented by qualitative consumer research: structured telephone interviews with 111 local adult consumers, who recorded their weekly meals in October/November 2024. The data was analyzed to compare the theoretical definition and perception of Basque gastronomy identity (recipes database information and data reported by participants) with actual reported food/recipes consumption, using qualitative content analysis and statistical tests (recipes database: Mann-Whitney U test; interviews content: Chi-Square, Fisher Exact Test). Results from the archival recipe analysis (sourced from cookbooks and websites/blogs) showed that the use of certain ingredients varied over time; specifically lard significantly decreased, while others such as avocado, seaweed, *choricero* pepper, spices, or broth increased. Using this combined method (recipes analysis and consumer interviews) allowed a better understanding of Basque gastronomy identity, which was defined by local respondents using terms from five conceptual dimensions: sensory-descriptive, health-nutrition, environmental, sociocultural, and emotional. Consumer interviews revealed a strong association of Basque gastronomy with "savory flavor" and allowed identifying a significant gap between perceived tradition and current practice: while participants frequently cited traditional dishes, their actual weekly menus showed a higher-than-expected presence of modern convenience foods (e.g., vegetables cream), alongside a shift in "essential pantry ingredients" toward new categories and prepared foods.

IMPLICATIONS FOR GASTRONOMY

This study utilizes the case of Euskal Herria to understand the concept of gastronomic identity and explore its perception and potential evolution. By taking a combined methodology including recipes

data analysis and personal interviews with local consumers, the research contributes to examining both traditional gastronomy perception and contemporary habits, focusing on a specific, culturally rich location. Results demonstrated that gastronomic identity is not a static heritage but a negotiation between perceived tradition and current behaviors. While the recipe analysis and theoretical definitions of locals suggested a stable core of Basque flavors, a "perception-practice gap" was identified in the interviews, revealing critical shifts that could have direct implications for policy, heritage preservation, and destination branding. Traditional techniques frequently cited as "typical" were significantly underrepresented in actual weekly consumption; public policies should focus on promoting healthy recipes linked to tradition and local products that fit modern lifestyles (reducing preparation time without sacrificing cultural authenticity). Marketing strategies could use the perceptual categories identified during the present research (Sensory, Health, Environmental, Sociocultural, Emotional) to properly communicate about Basque gastronomy, because gastronomic identity is a crucial component of a culture and a destination branding. Finally, developing research methods to define and describe gastronomic identities, their singularities and differences, as well as consumer perceptions, is essential for determining how globalization affects the cultural heritage of different regions.

1. INTRODUCTION

Gastronomy, derived from the Greek *gastros* (stomach) and *gnomos* (knowledge/law) (Erbay and Ozer, 2024), is the art/science that describes local dishes, beverages, and food and drink preparation techniques, shaping cooking, eating and drinking habits of a region (Özkök, 2024; Rajan, 2023). Therefore, food is not only the sustenance of gastronomy, but also a reflection of culture, history, and society (Homobono, 2002; Kinouchi et al., 2008; Rajan, 2023). Despite their central role in cultural identity, gastronomies are constantly evolving due to globalization, worldwide expansion, urbanization, technological advancements, and new consumption trends such as health and environmental concerns, or the search for new flavors and textures, which may drive new ingredients or new culinary techniques exploration (Claval and Jourdain-Annequin, 2018; Davidova and Dudkina, 2024; Kuzu and Kosembay, 2023; Özkök, 2024; Yıkmış et al., 2024). In addition, current intercultural interactions impact gastronomies, increasing their richness and diversity (Yıkmış et al., 2024), and sometimes resulting in the development of fusion/international cuisines. Despite this general evolution, sometimes isolated cultures preserve their unique food preparation and eating habits, thus maintaining their cultural identity (Davidova and Dudkina, 2024). Consequently, a central challenge for research appears: distinguishing between authentic cultural preservation and the influence of external factors that drive the natural evolution of gastronomy, as well as developing proper methods to investigate gastronomies' transformations.

Gastronomy constitutes the brand of identity of the Basque Country, noted for its reputation in the culinary world, for its quality and excellence, and its recognition as an international culinary destination (Government of the Autonomous Community of the Basque Country, 2023; Muñiz-Martinez and Florek, 2021; Recuero-Virto and Arróspide, 2024a; Recuero-Virto and Arróspide, 2024b). Characterized by a special sense of food, the Basque Country treats gastronomy as a core sociocultural identity, making it the primary element of human interaction and the cornerstone of celebrations (Government of the Autonomous Community of the Basque Country, 2023; Muñiz-

Martinez and Florek, 2021; Rodríguez, 2019). The concept of "good eating" is a defining trait of Basque identity, evident in customs like the *hamaiketako,* featuring *pintxos* and *txakoli*, mountain excursions concluding with lunch at a farmhouse, popular festivals with fruit and vegetable markets and fairs, gastronomic contests centered around its products and dishes (e.g.: Idiazabal cheese, *marmitako*, *txangurro*, or Spanish omelet), or conceiving the culinary process as a social event (Martínez de Albeniz and Galarraga, 2022; Rodríguez, 2019). Basque cuisine is distinguished by a powerful traditional recipe list with popular dishes such as *alubias* (beans stew), *bacalao al pil-pil*, *chipirones en su tinta*, or sauces such as *vizcaína* (Government of the Autonomous Community of the Basque Country, 2023; Rodríguez, 2019).

Recipes may be used as an important source of information to study the authenticity of gastronomy. They are considered "cultural algorithms" and "cultural replicators" that allow for the reconstruction of social history and memories that transmit information on how to prepare and consume a dish (Borghini, 2015; Kinouchi et al., 2008; Sajadmanesh et al., 2017). Culinary traditions, recipes, and techniques are transmitted generationally, but the evolution of gastronomy often includes adaptations of the cultural food practices. Despite this, traditional dishes may continue to hold cultural significance even while being modernized (Rajan, 2023). Beyond recipes, gastronomy also fosters interpersonal connections based on common food experiences and meanings, serving as a focal point in social and cultural activities (Cabral et al., 2024; Muñiz-Martinez and Florek, 2021). Therefore, studying citizens' food and culinary habits could be useful to understand the evolution of a specific gastronomy. Food choices of individuals reflect their culture, traditions, and heritage. Consumption patterns are generally influenced by foods availability and the food diversity a person is exposed to while growing up, and consumer preferences (including not only what consumers choose to eat, but also their preferred method of preparation) influence the evolution of menus and culinary practices (Ondieki, 2025; Rajan, 2023). Therefore, food choices and habits are linked to the affirmation of an

individual's identity, as consumers use their preferences to identify with specific sociocultural groups (Homobono, 2002).

Gastronomy identity evolution has been previously investigated; for example, Siraj and Khan (2024) analyzed the evolution of culinary art from traditional techniques to modern cuisine using a qualitative methodology. These authors conducted a literature analysis, with reviews of historical and contemporary sources, including articles, books, and case studies, to understand how culinary practices have transformed over time. But most times gastronomy evolution research has been conducted using surveys, interviews and observational data (Rajan, 2023). Up to date, no research has been conducted considering mixed methods in which data from recipes from different times/periods are combined with current interviews with locals. The main objective of the present study was to explore gastronomic identity of Euskal Herria using two kinds of datasets: recipes collected from two different temporal periods (70's and 2010-20's), and results from personal interviews using a 3-days reminder questionnaire. The gastronomy of Euskal Herria was chosen as case study because of its adaptability to new environments rather than its disruptive creativity or innovation (Martínez de Albeniz and Galarraga, 2022).

2. MATERIAL AND METHODS

2.1. Case Study: Euskal Herria

Euskal Herria refers to the set of territories who speak Basque language in Northern Spain, comprising an area of 20,666 km2, and distributed across seven territories: *Bizkaia*, *Gipuzkoa*, *Araba*, *Nafarroa*, *Zuberoa*, *Behe Nafarroa,* and *Lapurdi* (Avazpour, 2012). Among these, *Bizkaia*, *Gipuzkoa*, and *Araba* are within the Basque Autonomous Community; *Nafarroa* is part of the Chartered Community of Navarre; and *Zuberoa*, *Behe Nafarroa*, and *Lapurdi* constitute the region known as Northern Basque Country located in France (Avazpour, 2012; Eusko Jaurlaritza-Gobierno Vasco. Departamento de Cultura, 2008). Euskal Herria was chosen as a case study for this research due to its shared cultural background, which could also be closely linked to the region's gastronomy.

2.2. Recipes database

A recipes database was built to study Basque gastronomy, the common ingredients used in their main meals (excluding deserts), and the potential variations in the use of different ingredients across a 40 years period (from 70's to 2010/20). The selection of the 1970s and 2010/20 as temporal snapshots was deliberate, as these periods represented two meaningful points in Basque gastronomy: the emergence of the "Nueva Cocina Vasca" (Martínez de Albeniz and Galarraga, 2022) and the current era in which ingredients availability, convenience, and digitalization could significantly modify culinary traditions. First, to identify "sources of information" commonly used in the search for traditional and modernized recipes, an informal consultation with chefs and consumers responsible for cooking at home was conducted. Cookbooks and webpages/blogs were the main responses for traditional and modernized recipes respectively. Therefore, two traditional cookbooks from the 70's (Castillo, 1973; Cepeda, 1979) and three current webs/blogs -Gourmandia Gastronomia, S.L (n.d.), with recipes by David de Jorge Eceizabarrena (n. d.); (EITB (n.d.)) with recipes by chefs Ander González and Gabriela Uriarte; and Eusko Jaurlaritza-Gobierno Vasco (2020)- were researched to select 40 recipes that were present in each period (same recipes in both periods), ensuring the analysis focused on the enduring staples of Basque gastronomic culture. The complete list of recipes can be found in Supplementary Materials ("recipe collection"). The built database included quantitative information on the ingredients of each recipe. The panel of chefs from the Culinary Innovation area of GOe Tech Center collaborated on the project through various discussions and consultations when the quantities of some ingredients were not indicated (e.g.: "q.s."); in addition, these data were also contrasted with the one reported by Aparicio and Perea (2015).

2.2.1. Data analysis for the recipes database

A total of 117 ingredients were identified in the recipes included in the database. Besides singular ingredients, categories of ingredients were also constructed (e.g.: legumes, meats, poultry, etc.) to allow a comprehensive analysis of the dataset. Prior to statistical testing, the data were checked for

normality and homoscedasticity using Shapiro-Wilk and Levene's tests, respectively. After proving that data did not follow a normal distribution, ingredients and categories from the two time periods (70's – 2010/20's) were analyzed using the Mann-Whitney U test to explore differences in the use of ingredients. Differences were considered significant when $p < 0.05$, unless otherwise indicated. All statistical analyses were conducted using XLSTAT (Version, 2023.3.0, Lumivero, New York, United States).

2.3. Personal interviews with Basque consumers

The protocol for the study was approved by the ethic committee of Mondragon University (IEB-20221115). All articles from the Declaration of Helsinki and the 2016/679 EU Regulation on the protection of natural persons regarding the processing of personal data and on the free movement of such data were met.

To complement the information related to traditional recipes and to deepen the understanding of the evolution of the Basque territory's gastronomic identity, the study recruited and interviewed consumers over 18 years of age who had been living in Euskal Herria for more than 10 years. Participants were recruited via the GOe Tech Center consumer database and through announcements on social networks. Prior to their participation in the study, participants were informed about the experimental procedure and their informed consent was obtained. Without disclosing specific information to avoid study biases, participants were asked to record their meals for a specific week in October and November 2024, through notes and/or photographs.

Once the data collection period had concluded, 30 min-individual phone interviews were scheduled and conducted in either Basque language or Spanish, as preferred by the participant. The interviews were used to gather information using a structured questionnaire on: 1) the recipes and foods that were part of their recorded weekly menu during three different days, one week-day (e.g.: Wednesday) and the two days of the weekend (Saturday and Sunday), 2) general eating and cooking related habits (e.g.: "Do you consider your diet being "the typical" of this region/area?", "What are the 5 essentials,

can't-live-without, ingredients in your pantry?"), 3) opinion/perception on the gastronomic identity of Euskal Herria (e.g.: "Which three words would you use to define Basque gastronomy?" "Which ingredients should a traditional dish from Basque cuisine contain?"). The aim was to collect data that allowed comparing the theoretical perception and definition of Basque gastronomy with actual consumer habits. The interview questionnaire can be found in Supplementary Material.

A total of 111 individuals (51.4% between 19 and 35 years old and 48.7% between 36 and 72 years old; 64.9% women, 34.1% men, 1% non-binary) participated in the study. The average length of residency in Euskal Herria was 39 years (SD = 15.9); the average frequency of cooking at home was 4.8 days per week (SD = 2.3). From the total, 91.9% of participants reported having no food restrictions/diet, while 8.1% indicated restrictions (e.g., hypertension, red meat restriction).

2.3.1. Data analysis for interviews content

The results from the interviews were compiled into an Excel file and concepts were classified and distilled considering Qualitative Content Analysis principles (Bohm and Sundqvist, 2025). A question to determine if the data collected on the habits of participants would reflect "their usual diet" was included in the questionnaire to discard those weekly records of participants who responded that "it was not representative"; only 3 weekly records could be discarded. While a single recorded week provides a snapshot of consumption habits, this approach was chosen to minimize participant fatigue and ensure detailed dietary entries.

Recipes and foods that were recorded by respondents as part of their weekly menu were categorized as traditional/non-traditional from the Basque/Euskal Herria gastronomy by 3 different experts (researchers in gastronomy/chefs) from the region, considering the recipes collected in the aforementioned database, as well as their own knowledge, following a consensus-based triangulation method. Any discrepancies in classification were discussed until a 100% agreement was reached, serving as a qualitative form of inter-rater reliability. Some terms from the questions on general habits and perception of Basque/Euskal Herria gastronomy were grouped (e.g.: synonyms) and those that

198 did not addressed the questions were not considered for analysis; the aim of this process was to
199 transform the data into precise terms and categories that allowed further analysis. Given the
200 categorical nature of the interview data, non-parametric statistical analyses were conducted, including
201 Chi-Square and Fisher's Exact Tests to evaluate frequency distributions. Differences were considered
202 significant when p-value < 0.05, unless otherwise indicated. Statistical analyses were performed using
203 XLSTAT (Version, 2024.4.1, Addinsoft, Denver, CO, USA).

204 **3. RESULTS**

205 **3.1. Recipe collection and database construction**

206 The Mann-Whitney U test results performed on the set of 80 recipes from Basque/Euskal Herria
207 gastronomic culture indicated that the predominant ingredients and flavors in current Basque cuisine
208 were similar to those from over four decades ago, encompassing a wider variety of ingredients.
209 Significant differences were identified in only 46 of the 117 ingredients ($p < 0.01$) used in the selected
210 recipes, but that belonging to 8 categories. The use of lard (*manteca*) significantly decreased (p-value
211 > 0.01), while ingredients such as avocado, seaweed, *choricero* pepper pulp/paste, *guindilla* (chili
212 pepper), wine, and broth significantly increased (p-value > 0.01). Besides these differences in single
213 ingredients, a significant increase ($p < 0.005$) was identified in the general categories of spices
214 (average of ingredient category per recipe from 5.4 to 6.3 g) and vegetables (average of ingredient
215 category per recipe from 448 to 608 g) across the two periods studied (Table 1).

216 **3.2. Personal interviews with participants from Euskal Herria**

217 3.2.1. Theoretical perception and definition of Basque Gastronomy

218 The questions regarding the description of Basque cuisine and its flavors revealed the participants'
219 perception of their own gastronomy. A total of 143 different terms were used by respondents to
220 "describe the gastronomy in Euskal Herria using 3 words"; these terms were grouped in two main
221 categories "recipes/products" and "non-food terms". The main recipes and products mentioned by
222 respondents indicated that the gastronomy of Euskal Herria was mainly associated with savory

223 preparations (e.g.: fish, beans, etc.); respondents mentioned some of the most traditional culinary
224 techniques and recipes of the region: *grilling*, *pilpil*, *ajoarriero*, grilled *txuleta -beef steak-*,
225 *marmitako*, or Tolosa beans. Within the non-food terms, the most frequently mentioned were
226 "delicious" (mention frequency = 46.8%), "varied" (28.8%), "healthy" (27.9%), "high quality"
227 (23.4%), "local/km0" (23%) and "abundant" (18.9%). Table 2 shows the non-food terms mentioned
228 by at least 10% of respondents. Five different conceptual categories were identified as used by locals
229 to describe Basque/Euskal Herria gastronomy: sensory-descriptive, including flavors, products and
230 recipes; health-nutrition, including those terms that described the interaction of the products and
231 recipes with their own person (e.g: filling, healthy); environmental, including terms that reflect
232 gastronomy's environmental or geographic footprint (e.g.: Km0, seasonal, natural); sociocultural
233 (e.g.: traditional, festive); and an emotional component (e.g.: care, passion).
234 Regarding the question about "the flavors of Basque gastronomy", different kinds of responses were
235 given by participants, some of them clearly mentioning flavors from a sensory science perspective
236 (e.g.: salty), while others providing names of whole recipes (e.g.: "*marmitako*"). Responses could be
237 grouped by products names (35%), recipes (29%), flavors (19%), culinary techniques (11%) and pre-
238 elaborations (7%). Considering the percentage of mention frequency for each of the terms, the most
239 typical flavor of gastronomy of Euskal Herria was "salty", and fish such as "monkfish", "cod",
240 "hake", "anchovies", "tuna", and "*kokotxas",* were the mostly cited products, together with "beans";
241 *Pilpil*, *marmitako* and "beans stew with *sacramentos* (traditional meat accompaniments)" were the
242 most cited recipes. Grilling and stewing the main culinary techniques, and "*refrito*" (garlic with dried
243 chili poached in olive oil) and "*sofrito*" the most cited pre-elaborations.
244 3.2.2. Actual habits of consumers from Euskal Herria and its relationship with the theoretical
245 description
246 Most consumers (69%) considered their diet to be typical and representative of the region. The
247 location of consumption of the recorded meals varied significantly depending on the day of the week

(Table 3); Fisher's Exact Test results showed significant differences (p-value < 0.0001) among locations, being the frequence of eating at a "relative's home" higher than expected on Sundays and lower than expected on Wednesdays, and eating at the "company/university dining hall" higher than expected on Wednesdays and lower than expected on Saturdays and Sundays. Finally, the frequency of eating at a "restaurant" or at a "Gastronomic society" was higher than expected on Saturdays. Significant differences by age group were also shown (p-value < 0.0001); eating at a "relative´s home" was significantly more frequent among the younger population, while eating "at home" was significantly higher among the older population group.

A comprehensive analysis of the meals described by participants was done, considering the aforementioned classification of ingredients, cooking techniques, and recipes as traditional/not traditional in Euskal Herria. Although approximately 68% of participants stated they usually cook traditional Basque/Euskal Herria gastronomy dishes, significant differences (p-value < 0.0001) were found between the traditional dishes mentioned by participants and their current meals (Figure 1). Food categories such as "Fish in sauce," "Beans," "Stewed leeks and potatoes," and "Grilled fish" were frequently mentioned as a typical dish, but less frequently consumed. On the contrary, "Baked Fish", "Baked chicken", "Pan-fried meat", "Meatballs", "Croquettes", and "Cream of vegetables" had a greater presence in the reported weekly menu than expected, considering consumers reporting they usually cook these traditional dishes. Significant differences (p-value < 0.05) were identified among consumption of food groups by day of the week (Wednesday, Saturday, Sunday). The Fisher's Exact Test showed that the consumption of "meats/poultry" was significantly lower than expected on Wednesdays, while consumption of "legumes" and "vegetables" was higher. Consumption of legumes was significantly lower than expected on Saturdays. Finally, traditional and non-traditional meals were similarly consumed independently of the day of the week, and no significant differences were identified on consumption of traditional/nontraditional meals between age groups.

A similar analysis was done to identify differences between those ingredients stated as typical from Basque gastronomy and those mentioned by respondents as "essential in their pantries". Vegetables were the ingredients typical from Euskal Herria mostly mentioned by participants, followed by fish, red meat, and legumes (Table 4). Significant differences were found between this traditional ingredients list and the essential ingredients in participants' pantries, being the frequency of mention of vegetables, red meat, fish, fruit, rice and cereals, bread, dairy, eggs, poultry, and canned fish different than expected, and highlighting the emergence of new ingredients (e.g., rye bread, corn bread, cooked ham), and even food categories (e.g., meat analogues), in participants' kitchens.

Finally, over 57% of participants indicated that the way traditional recipes are prepared has changed from a few years ago to the present. Table 5 shows some of the reasons provided by respondents grouped by categories. Customs/routine/habits, with ideas primarily linked to "lack of time", and technological advances/new appliances modifying traditional culinary techniques (e.g.: air fryer) were some of the main reasons provided by respondents, although other concepts not directly linked to gastronomy were also mentioned (e.g.: health).

4. DISCUSSION

The present study employed a mixed-method approach to explore the identity of Basque gastronomy and its flavors by combining historical recipe data with contemporary consumer perceptions and practices. This approach enabled the identification of some changes in Basque recipes, actual consumption patterns of locals, and their perception about Basque gastronomy. The study assessed the validity of using recipes from two different periods and the contribution from locals to better understand their potential role in gastronomic identity research. Main findings revealed: 1) the incorporation of novel ingredients (e.g., avocado and seaweed) into contemporary recipe versions, coupled with the growing prevalence of ingredient categories such as prepared broths and spices; 2) the definition of Basque gastronomy identity by locals included terms from five conceptual

297 categories, sensory-descriptive, health-nutrition, environmental, sociocultural, and emotional; 3) a
298 prevalence of non-traditional, convenience-oriented dishes in actual weekly menus reported by local
299 consumers; in addition, significant differences were found between the listed "traditional" ingredients
300 (vegetables, fish, red meat) and "essential" pantry items, with the emergence of new products like rye
301 bread, cooked ham, and meat analogues.

302 **4.1. The contribution of recipe data and consumer responses to exploring Basque gastronomic**
303 **identity**

304 Results of the analysis of recipes and their ingredients from two different periods showed some slight
305 differences in ingredients' use in Basque cuisine, which could be better understood after interviewing
306 locals about their habits. The reduction in the use of lard could be related to modern health concerns,
307 as well as substituting the traditional meat accompaniments (*sacramentos*) of legumes stews by
308 vegetables. The rise in the use of fish broth instead of preparing the broth at home could be associated
309 with the "lack of time" and "desire for simplicity in dish preparation" registered during the interviews
310 phase, but further studies could be developed to validate these interpretations, offering a clearer
311 perspective on why specific ingredients were substituted in traditional Basque cuisine.

312 The use of recipes from diverse sources to study gastronomy is not new; pervious research had
313 highlighted the importance of recipes to represent culinary traditions and popular culture (Borghini,
314 2015; Kinouchi et al., 2008; Muñoz-Benito et al., 2023). In addition, because cuisine is primarily
315 influenced by its ingredients, research on ingredients usage is also common, although research
316 connecting recipes, cuisine, and ingredient usage was, up to date, limited (Su et al., 2014). Results of
317 the first phase of the present research indicated that some ingredients and categories changed over
318 time, suggesting that traditional dishes, and therefore Basque gastronomy, have evolved over the past
319 40 years. These results seemed to be aligned with the central objective of the "New Basque Cuisine"
320 movement (Martínez de Albeniz and Galarraga, 2022; Muñiz-Martinez and Florek, 2021): to create
321 high-quality and innovative dishes while moving towards healthier and lighter meals, while

maintaining the roots of rural cooking and gastronomic societies, combining tradition with modernization.

Despite the differences identified in the analysis of the recipes database, results seemed to be insufficient to properly understand the main characteristics of Basque gastronomy and its potential evolution. Gastronomy encompasses not only ingredients, but also the "where, how, when and why" of their consumption (Kuzu and Kosembay, 2023; Yikimis et al., 2024). A complementary research phase was needed to understand if local population was regular consumers of regional recipes and ingredients, and to determine their understanding and engagement with the local gastronomy. Therefore, the interviews phase results helped to complete the quantitative data collected from recipes, confirming that a mixed method was necessary to study the gastronomic identity of the region and its evolution.

Interviews' results reveled that the definition of Basque gastronomy included food and non-food concepts, with a visible sensory dimension, as previously reported by other authors (Muñiz-Martinez and Florek, 2021; Recuero-Virto and Arrospide, 2024a). The variety of terms used to describe the local gastronomy, including even emotional ones, showed the complexity of the concept and profound meaning for respondents. Some key ingredients (fish, *txuleta -beef steak-*, beans, garlic, onion, leek, *kokotxas -cod jaws-*), culinary techniques (grill), and recipes (*bacalao al pilpil*, *marmitako, chipirones en su tinta*) that had been previously reported as "traditionally Basque" (Rodríguez, 2019), were clearly linked to the gastronomy of Euskal Herria by respondents. In addition, the explicit mention of *sofrito* suggested a potential inherent link with Mediterranean gastronomy (Boronat et al., 2023).

While 69% of respondents believed their diet was typical of the region and 67% of participants confirming that they usually cook traditional recipes, their reported weekly menus revealed discrepancies, showing a mix of both traditional and non-traditional dishes. ELIKA, the Basque Foundation for Agrifood Safety, indicated that the most consumed dishes in the Basque Country in

2019 were green salad, pizza, tomato salad, chicken breast, and lentils (ELIKA, 2019), confirming the regular consumption of non-traditional recipes and products also reported in literature (Davidova and Dudkina, 2024). Differences between the products reported as "Basque ingredients" and those included in the "essential ingredients" in respondents' pantries also illustrated this shift. While "Basque ingredients" corresponded to those listed within the definition of Basque/Euskal Herria gastronomy and flavor (e.g., onion, garlic, legumes, fish, olive oil) and those identified in the recipes database phase, the "essential ingredients" reported by respondents aligned with the items listed in ELIKA's report, such as salad ingredients, cereals, canned products, and poultry (ELIKA, 2019).

Results from the question on the main consumption venue of the different meals confirmed those reported by ELIKA (2019), being "home" the main location for respondents; "gastronomic societies" remained being relevant for Basque gastronomy identity (Hess, 2018; Muñiz-Martinez and Florek, 2021), as several respondents mentioned them as their weekend venue. In addition, sharing meals during weekend (e.g.: relatives' home, gastronomic societies) seemed to confirm the Basque context of festive commensality and gastronomy as collective act (Homobo, 2002; Grupo La Vasca, 2024).

In general, most respondents reported an evolution of Basque/Euskal Herria gastronomy, although providing different perspectives on this evolution. Lack of time and lack of skills seemed to the main drivers of this evolution, resulting in simplified recipes and occasional/sporadic consumption of traditional recipes, sometimes clearly linked to festivities or familiar moments (an "assignment" to specific senior family members). New tools used by participants, such as multi-purpose kitchen appliances and/or air fryers, also seemed to significantly modify the gastronomy identity as reported by respondents; Borghini (2015) reported that technologies alter procedures, and respondents seemed to agree. Özkök (2024), Rajan (2023), and Yikimis et al. (2024) also indicated that the evolution/development of technology has simplified food preparation, reducing cooking time, changing traditional ingredients and methodologies, and therefore modifying flavors of the regional foods. Finally, using ready-to-eat/cook ingredients (e.g.: canned chickpeas) was also mentioned by

participants, confirming ELIKA's reported growing trend in purchasing ready-made meals. Respondents indicated that innovation in the gastronomy of Euskal Herria was mostly driven by restaurants, probably linking their ideas to the New Basque Cuisine movement started in 1976 (Rodríguez, 2019; Martínez de Albeniz and Galarraga, 2022). Traditional and seasonal ingredients from local farmers (fish, meat, and vegetables) that had been previously linked to Basque gastronomy (Hess, 2018; Muñiz-Martinez and Florek, 2021; Rodríguez, 2019) were also mentioned by some respondents, but highlighting the decrease in its consumption and linking this decrease to current non-sustainable practices.

4.2. Theoretical contribution: methods for gastronomic identity research

The present study highlights the importance of considering consumers' perspectives in gastronomic identity, confirming previous research stating that food culture and gastronomy extend beyond sensory experiences to include social interactions (Borghini, 2015; Kuzu and Kosembay, 2023; Leschziner, 2006; Recuero-Virto and Arróspide, 2024b; Rodrigues et al., 2020; Özkök, 2024). Therefore, this research expands the existent literature by confirming gastronomic identity as a dynamic construct between inherited cultural perception and current dietary practices. Findings underscored key methodological recommendations for future gastronomic identity research, emphasizing the need to contrast local consumers' self-perception of their traditional gastronomy with behavioral evidence from detailed menu reporting. Questionnaires must be carefully reformed to ask for specific, indispensable ingredients for consumers, record their food choices -as well as context and justification for these choices-, and pre-define the products, recipes and techniques that could be considered local/traditional, or not. Furthermore, obtaining precise details about cooking habits, including "who cooks the traditional recipes at home" and details on how these recipes have been cooked, could be essential to improve the proposed approach.

4.3. Limitations and future directions

The present study has contributed examining both tradition and contemporary gastronomy over time

on an area with a strong culinary tradition -Euskal Herria-, as well as addressed the need to research in specific locations -including rural areas and smaller towns- as previously suggested by other authors (Rajan, 2023; Rodrigues et al., 2020; Yıkmış et al., 2024). Methodologically, the study reports the necessity of a multimodal approach; while recipe databases can offer a static representation of tradition in a specific period, qualitative consumer interviews help capturing potential shifts driven by contemporary socioeconomic constraints. Despite this, some important limitations were identified, including: the inherent heterogeneity and lack of standardization in traditional recipes, where variations between homes could be significant (Borghini, 2015; Government of the Autonomous Community of the Basque Country, 2023; Naumov, 2023) and the recognition that the collected number of recipes cannot fully capture the entire range of ingredients applications and recipes (Kinouchi et al., 2008).The present study considered 40 recipes from two key periods, tracking changes in their ingredients, but did not include desserts or recipes provided directly by consumers, which could bias or limit the extrapolation of the results. The database should be significantly expanded to explore the potential of recipes as a source of information for comparing Basque gastronomic identity with others or properly describing deeper structural or symbolic transformations. Analyzing data beyond ingredients, such as cooking techniques and utensils, could also help increase the understanding of its singularity. Although integrating automated digital data extraction would ease this task, the inclusion of direct consumer interviews remains critical data necessary to validate how identity is actually performed in the modern kitchen. Finally, the absence of current consumers responses from the 70's limits the temporary comparability of this complex cultural concept. The methodology presented in this study, along with the data provided by consumers, could be utilized to explore the evolution of Basque gastronomy in future research. Also, future studies should compare this dataset with others from different geographical settings to better understand how Basque gastronomic identity is different from others, integrates new influences, or maintains its unique traditional characteristics.

5. CONCLUSIONS

The present study demonstrated several variations in ingredient usage within the gastronomy of Euskal Herria; traditional dishes and practices were recognized by locals when defining Basque gastronomy, although current consumption of these recipes and its traditional ingredients seemed to be less frequent than expected. Lack of time and cooking skills, seeking simplicity, and the use of new technologies/cooking appliances by locals seem to be redefining current Basque gastronomy identity. Besides using recipes from popular sources, consumer interviews proved to be valuable for a deeper understanding of the current habits of local population and identifying a disconnection from traditional recipes, particularly regarding consumption frequency. Future research should investigate the relative importance of the five dimensions of gastronomic identity identified in the present study —sensory-descriptive, health-nutrition, environmental, sociocultural, and emotional— and explore their variation across diverse gastronomies and/or over time within a single culinary tradition.

ACKNOWLEDGEMENTS

The author, Olatz Urkiaga, has a predoctoral contract funded by the Basque Government (IKERTALENT scholarship program).

438 **Table 1.** Results of, of groups of ingredients quantities (g) of recipes from 70s *vs* recipes from 2010-

439 2020.

Ingredient group	1970's	2010-2020	p-value
Avocado	0.00	6.25	<0.0001
Lard	3.00	0.00	<0.0001
Guindilla (pickled *piparra* peppers)	0.00	1.50	<0.0001
Rockfish	0.00	10.0	<0.0001
Spices	5.38	6.37	0.016
Wine	19.1	70.0	0.002
Broth	27.8	230	0.008
Seaweed	0.00	3.75	<0.0001

440

441

442 **Table 2**. Main terms, including non-food products or recipes, mentioned by respondents to describe

443 Euskal Herria gastronomy.

Term	Mention frequency (%)
Delicious	47
Varied	29
Healthy	28
High quality	23
Local/km0	23
Abundant	19
Filling	14
Traditional	14
Stew	13
Simple	13
Product	12
Natural	11
Homemade	10

444

445 **Table 3**. Absolute frequency of mention of "place of meals consumption" by day of the week, and
446 by age range. Significantly different frequencies (Fisher's Exact Test, p-value < 0.05) are shown in
447 bold; p-values can be seen in tables in the Supplementary material.

448

	Wednesday	Saturday	Sunday	Age: 19-35	Age: 36-72
At home	59	69	74	**83**	**119**
Restaurant	**2**	**19**	17	25	13
Relative´s home	**4**	14	**18**	**29**	**7**
Company/University dining hall	**46**	**0**	**0**	27	19
Gastronomic Society	0	**6**	1	5	2
Countryside/mountains	0	3	1	2	2

449

450 **Table 4**. Absolute frequency of mention of ingredients "essential in my kitchen" and those identified
451 as "typical in the Basque/Euskal Herria gastronomy". Significantly different frequencies (Fisher's
452 Exact Test, p-value < 0.05) are shown in bold; p-values can be seen in tables in the Supplementary
453 material.

454

Categories	Basque/Euskal Herria Ingredients	Essential Ingredients
Vegetables	**233**	**278**
Fish	**65**	**25**
Red meat	**44**	**9**
Legumes	30	58
Olive oil	22	29
Dairy products	**10**	**71**
Cured meat	8	19
Eggs	**4**	**49**
Bread	**4**	**24**
Spices	4	6
Nuts	1	6
Poultry	**2**	**37**
Meat analogues	0	4
Fruits	**0**	**44**
Rice and cereals	**0**	**56**
Canned fish	**0**	**13**

455

456 **Table 5**. Consumer feedback on why traditional Basque/Euskal Herria gastronomy cuisine is
457 changing.

Category	Reason	Mention frequency
Routines/Habits	Reduction in preparation time	29
	Simplification of recipes	14
	Purchase of ready-to-eat/cook meals	3
Technological	Evolution of kitchen appliances and techniques	27
Gastronomic/culinary	Innovative Cuisine	11
	Changes in ingredients usage/combinations	8
	Increased use of spices	6
Cultural	New ingredients from other cultures	9
Health	Health	9
Lack of sustainability	Use of non-local/non-seasonal ingredients	3

458
459

460 **Figure Captions.**

461 Absolute frequency of mention of "meals considered from Euskal Herria" by consumers vs the ones
462 reported as "consumed during the study week" included in different categories. All categories were
463 significantly different (Fisher's Exact Test, p-value < 0.05); p-values can be seen in tables in the
464 Supplementary material.

465

REFERENCES

Aparicio, A., Perea, J.M. Appendix XII, 2015. Standard servings, food units, and other household units. In: Ortega, R.M., Requejo, A.M. (Eds.), Nutriguía. Manual de Nutrición Clínica, second ed. Editorial Medica Panamericana.

Avazpour, K. R., 2012. Error Analysis of Basque/Spanish Learners' Written Language: A Case Study.

Bohm, I., Sundqvist, J., 2025. Qualitative Content Analysis: a step-by-step guide for beginners to the method, theories, epistemology, ontology, and rigour. Qual. Rep. 30(9), 4236-4263. https://doi.org/10.46743/2160-3715/2025.7211

Borghini, A., 2015. What is a Recipe? J. Agric. Environ. Ethics 28, 719-738. https://doi.org/10.1007/s10806-015-9556-9

Boronat, Ò., Mora, M., Romeo-Arroyo, E., Vázquez-Araújo, L., 2023. Unraveling the Mediterranean cuisine. What ingredients drive the flavor of the gastronomies included in the Mediterranean diet? Int. J. Gastron. Food Sci. 34, 100802. https://doi.org/10.1016/j.ijgfs.2023.100802

Cabral, Ó., Orduna, P., Moreira, R., 2024. A participant observation methodology to analyse social functions, gender, class, and gastronomic practices in food-centric organizations: from the Gastronomic Societies in San Sebastián to the world. Int. J. Gastron. Food Sci. 35, 100845. https://doi.org/10.1016/j.ijgfs.2023.100845

Castillo, J., 1973. Manual de cocina Económica Vasca, fourth ed. Editorial Icharopena, Imprenta Ondarribi, Fuenterrabia (Guipúzcoa)

Cepeda, L., 1979. Los 100 Platos Universales de la Cocina Vasca, first ed. Editorial La Gran Enciclopedia Vasca, Bilbao

Claval, P., Jourdain-Annequin, C., 2018. The dynamics of Mediterranean food cultures in periods of globalization. Athens Journal of Mediterranean Studies 4 (3), 225-241. https://doi.org/10.30958/ajms.4-3-4

Davidova, E., Dudkina, O., 2024. Gastronomic culture as a factor of intercultural communication in

491 tourism. BIO Web of Conferences 113, 06028. https://doi.org/10.1051/bioconf/202411306028
492 EITB., n. d. ETB- A bocados. https://www.eitb.eus/es/television/programas/a-bocados/recetas/
493 ELIKA, 2019. Tendencias de consumo alimentario 2018: Datos significativos de Euskadi.
494 https://seguridadalimentaria.elika.eus/tendencias-de-consumlimentario-2018-datos-
495 significativos-de-euskadi/
496 Erbay, M., Özer, Ş., 2024. The effects of social media and tv programs on gastronomy tourism. In:
497 Erbay, M., Özkök, G.A. (Eds.), Culinary Crossroads: Gastronomy, Innovation, and the Tourist
498 Experience. Eğitim Yayınevi., Turkey, pp.104-118.
499 Eusko Jaurlaritza-Gobierno Vasco. Departamento de Cultura, 2008. IV Encuesta sociolingüística
500 2006. Eusko Jaurlaritzaren Argitalpen Zerbitzu Nagusia Servicio Central de Publicaciones del
501 Gobierno Vasco.
502 https://www.euskadi.eus/contenidos/informacion/ikerketa_soziolinguistikoak/es_def/adjuntos/I
503 V_incuesta_es.pdf
504 Eusko Jaurlaritza-Gobierno Vasco, 2020. Platos y pinchos típicos del País Vasco.
505 https://turismo.euskadi.eus/es/platos-y-pintxos-tipicos/
506 Gourmandia Gastronomia, S.L., n. d. Robin Food TV-David de Jorge.
507 https://www.robinfoodtv.com/es/inicio
508 Government of the Autonomous Community of the Basque Country. Department of Tourism,
509 Commerce and Consumption., May 2023. Gastronomy Basque Country -Gastronomy & Wine
510 tourism. Bell Comunicación.
511 https://tourism.euskadi.eus/contenidos/recurso_tecnico/aa30_folletos/en_def/folletos/2020/gastr
512 onomy-basque-country.pdf
513 Grupo La Vasca., 2024. La Cultura del compartir: Las sociedades gastronómicas vascas. Grupo La
514 Vasca. Retrieved from: https://grupolavasca.com/cultura-compartir-espiritu-de-las-sociedades-
515 gastronomicas-vascas/

516 Hess, A., 2018. Gastronomic Societies in the Basque Country. In: Glückle, J., Suddaby, R, Lenz, R.
517 (Eds.), Knowledge and Institutions, Knowledge and Space. Springer International
518 Publishing., Switzerland, pp. 91-109. https://doi.org/10.1007/978-3-319-75328-7_5
519 Homobono, J. I., 2002. Adaptando tradiciones y reconstituyendo identidades. La comensalidad
520 festiva en el ámbito pesquero vasco-cantábrico. In: Gracia Arnaiz, M. (Eds.), Somos lo que
521 comemos. Estudios de alimentación y cultura en España. Ariel., España, pp.179-208.
522 Kinouchi, O., Diez-Garcia, R. W., Holanda, A. J., Zambianchi, P., Roque, A. C., 2008. The non-
523 equilibrium nature of culinary evolution. New J. Phys. 10 (7), 073020.
524 https://doi.org/10.1088/1367-2630/10/7/073020
525 Kuzu, O.H., Kosembay, S.B., 2023. Molecular Gastronomy Education. In: Ateş, A. Çitak, Ö., Sunar,
526 H. (Eds.), Current Gastronomy Studies in Flavor. Cultures and Trends. Paradigma pakademi.,
527 pp. 147-160.
528 Leschziner, V., 2006. Epistemic foundations of cuisine: a socio-cognitive study of the configuration
529 of cuisine in historical perspective. Theor. Soc. 35 (4), 421-443. https://doi.org/10.1007/s11186-
530 006-9008-7
531 Martínez de Albeniz, I., Galarraga, A., 2022. Dilemas paradigmáticos y procesos de innovación en la
532 cultura gastronómica del País Vasco. European Public and Social Innovation Review 7 (2).
533 https://doi.org/10.31637/epsir-2022-203
534 Muñiz-Martinez, N., Florek, M., 2021. Food-based place branding as holistic place ecosystems: the
535 case of Basque Gastronomic Ecosystem. Place Branding and Public Diplomacy 19 (1), 155.
536 https://doi.org/10.1057/s41254-021-00222-6
537 Muñoz-Benito, R., Navajas-Romero, V., Hernández-Rojas, R. D., 2023. Traditional gastronomy in
538 Alto Guadalquivir: origin of contemporary recipes in cordovan cuisine. Int. J. Gastron. Food
539 Sci. 32, 100720. https://doi.org/10.1016/j.ijgfs.2023.100720
540 Naumov, K., 2023. The Employment of Standardized Recipes, an essential prerequisite for consistent

quality of the culinary product. In: ERAZ 2023/9-Knowledge-Based Sustainable Development-Conference proceedings. Udruženje ekonomista i menadžera Balkana., pp. 401-410. https://doi.org/10.31410/ERAZ.2023.401

Ondieki, E., 2025. Gastronomic Identity: a review of the environment, culture and economy effect on culinary tourism. African Journal of Tourism and Hospitality Management 4 (1), 30-36. https://doi.org/10.37284/ajthm.4.1.2675

Özkök, G. A., 2024. New trends in gastronomy: impact of global changes and innovative approaches. In: Erbay, M., Özkök, G.A. (Eds), Culinary Crossroads: Gastronomy, Innovation, and the Tourist Experience. Eğitim Yayınevi., Turkey, pp. 16-30.

Rajan, A., 2023. Gastronomic evolution: a review traditional and contemporany Food Culture. International Journal for Mutidimensional Research Perspectives 1 (2).

Recuero-Virto, N., Arróspide, C. V., 2024a. Culinary destination enchantment: the strategic interplay of local gastronomy in regional tourism development. Int. J. Gastron. Food Sci. 36, 100931. https://doi.org/10.1016/j.ijgfs.2024.100931

Recuero-Virto, N., Arróspide, C., 2024b. Food tourism to revitalize the Basque Country. Heliyon. 10 (9). https://doi.org/10.1016/j.heliyon.2024.e31279

Rodrigues, C., Skinner, H., Dennis, C., Melewar, T. C., 2020. Towards a theoretical framework on sensorial place brand identity. J. Place Manag. Dev. 13 (3), 273-295. https://doi.org/10.1108/JPMD-11-2018-0087

Rodríguez, J., 2019. El poder de la cocina vasca. El País Semanal. https://elpais.com/elpais/2014/07/09/eps/1404857157_140485.html

Sajadmanesh, S., Jafarzadeh, S., Ossia, S. A., Rabiee, H. R., Haddadi, H., Mejova, Y., Musolesi, M., De Cristofaro, E., Stringhini, G., 2017. Kissing cuisines: exploring worldwide culinary habits on the web. In: Proceedings of the 26th international conference on world wide web companion, pp. 1013-1021. http://dx.doi.org/10.1145/3041021.3055137

566 Siraj, S., Khan, M. S. ulH., 2024. The Evolution of Culinary arts: from traditional techniques to
567 modernist cuisine. Int. J. Commer. IT Soc. Sci. 3 (2). 3700–3705. Retrieved from
568 https://ijciss.org/index.php/ijciss/article/view/1339
569 Su, H., Lin, T. W., Li, C. T., Shan, M. K., Chang, J., 2014. Automatic recipe cuisine classification by
570 ingredients. In: Proceedings of the 2014 ACM international joint conference on pervasive and
571 ubiquitous computing: Adjunct Publication, pp. 565-570.
572 https://doi.org/10.1145/2638728.2641335
573 Yıkmış, S., Türkol, M., Abdi, G., Imre, M., Alkan, G., Aslan, S. T., Rabail, R., Aadil, R. M., 2024.
574 Culinary trends in future gastronomy: a review. J. Agric. Food Res. 18, 101363.
575 https://doi.org/10.1016/j.jafr.2024.101363