



**Qualitative Coding Approaches to Menu Analysis in
Gastronomy: A Proposed Framework for Michelin-Starred
Restaurants**

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Qualitative Coding Approaches to Menu Analysis in Gastronomy: A Proposed Framework for Michelin-Starred Restaurants

Purpose

The purpose of this study is to develop a multidimensional and systematic coding framework for the qualitative content analysis of Michelin-starred restaurant menus. Although menu analysis in gastronomy research has traditionally focused on quantitative indicators such as cost, profitability, and sales performance, there is a lack of standardized qualitative approaches capable of capturing menus' cultural, technical, creative, and sustainability-related dimensions.

Design/methodology/approach

The study adopts a qualitative research design based on document-based qualitative content analysis. A hybrid analytical strategy combining deductive and inductive coding was employed. Data consisted of Michelin-starred restaurant menus, Michelin Guide evaluation texts, and official restaurant documents. All materials were analysed using [MAXQDA qualitative data analysis software](#) to ensure systematic coding and analytical transparency.

Findings

The analysis resulted in the development of a reproducible coding framework comprising eight main categories: price indicators; locality and regionality; international culinary influences; culinary techniques and practices; creativity and innovation; classical gastronomic norms; sustainability and Michelin Green Star narratives; and presentation and menu design. The framework enables the systematic examination of menus as multilayered texts that communicate gastronomic value, cultural positioning, and symbolic meaning beyond economic performance.

Originality/value

This study contributes to gastronomy research by repositioning menu analysis from a predominantly technical and managerial tool to an autonomous field of qualitative and interpretive inquiry. The proposed coding framework offers a flexible and transferable methodological foundation for future empirical, comparative, and cross-cultural studies on fine-dining and Michelin-starred restaurants.

Keywords

Menu analysis; Qualitative content analysis; Coding framework; Michelin-starred restaurants

1. Introduction

Menus are increasingly understood not only as operational tools but also as strategically constructed texts through which restaurants communicate identity, quality promises, and value narratives. As such, the study of restaurant menus is important because menus function as key communicative interfaces between production, representation, and consumption in gastronomic contexts.

Despite this significance, menu analysis in gastronomy research has predominantly relied on quantitative and performance-oriented models (e.g., profitability, sales, and cost engineering), leaving the meaning-producing dimensions of menu texts under-theorized. Early restaurant management research, for example, positioned menus primarily as managerial tools for cost control, sales monitoring, profitability, and competitive advantage (Hayes & Huffman, 1985; Kwong, 2005; LeBruto et al., 1995; Pavesic, 1983). While these approaches provide valuable insights into economic performance, they offer limited capacity to capture menus as communicative and symbolic artefacts.

In response to these limitations, gastronomy research has increasingly incorporated qualitative approaches. Content analysis, in particular, has been applied across diverse domains from tracing gastronomic heritage in literary texts (Erşahin & Demirci, 2025), to analyzing national gastronomy strategies (Yarış et al., 2019), and to examining tourists' food experiences in multilayered ways (Ramírez-Gutiérrez et al., 2021). In restaurant-focused research, qualitative analyses of online reviews have revealed key experiential dimensions such as food quality, service, atmosphere, authenticity, and customer satisfaction (Ilbay, 2021; Toktassynova & Akbaba, 2017). These studies demonstrate the analytical potential of qualitative approaches in uncovering the experiential and representational aspects of gastronomy.

However, a standardized and reproducible qualitative framework specifically designed for menu analysis has yet to be fully developed. Existing research continues to be dominated by menu engineering, ABC analysis, and cost–profitability-based methods. While effective for evaluating menu performance, these approaches require further development to capture menus as cultural and technical artefacts—particularly in terms of how they encode gastronomic content, culinary techniques, cultural references, and sustainability themes (Ivanenko et al., 2022; Kwong, 2005; Yang et al., 2003).

Within this context, qualitative menu analysis offers distinct analytical advantages by enabling the systematic examination of menus as multidimensional communicative texts. It allows for the identification of cultural representation, technical expertise, creativity, sustainability

discourse, and narrative structure—dimensions that are particularly salient in high-end dining contexts.

The Michelin-starred restaurant context provides a particularly suitable setting for developing such a framework for three reasons. First, the Michelin Guide functions as a global authority that evaluates restaurants based on multidimensional criteria such as ingredient quality, technical mastery, creativity, and consistency. Accordingly, Michelin-starred menus can be approached as information-dense texts shaped by strong field-level expectations and evaluative logics (Pereira et al., 2024). Second, these restaurants are key sites of gastronomic innovation, where creative techniques and global–local culinary interactions are highly visible. Third, although Michelin has attracted growing scholarly attention, reproducible qualitative coding approaches tailored specifically to menu analysis require further development, indicating a clear methodological gap in the literature.

Accordingly, this study addresses three key questions: why restaurant menus constitute significant analytical objects in gastronomy research, how previous studies have approached menu analysis, and why qualitative menu analysis offers distinct analytical advantages.

In line with these questions, the present study develops a systematic, multilayered, and reproducible coding framework for the qualitative content analysis of Michelin-starred restaurant menus. The study aims to contribute methodologically to gastronomy research by enabling analyses that extend beyond economic performance and capture menus' cultural, technical, creative, and sustainability-related dimensions. The remainder of the paper is structured as follows: the next section reviews the relevant literature and positions menu texts within broader debates on gastronomy, value signaling, and qualitative methods; the methodology section details the sample, data sources, and coding procedures; the results section presents the coding outputs and emergent patterns; and the final section discusses implications, limitations, and avenues for future research.

2. Theoretical background

2.1. Menus as Analytical Objects in Gastronomy Research

Restaurant menus constitute central communicative artefacts within gastronomic systems, operating at the intersection of production, representation, and consumption. Beyond this operational function, they act as structured texts through which restaurants construct and communicate culinary identity, value propositions, and symbolic meanings (Pantelidis, 2010). From an analytical perspective, menus provide a unique entry point for examining how gastronomic value is encoded and transmitted. They simultaneously reflect technical practices (e.g., preparation methods and ingredient selection), cultural references (e.g., locality, tradition,

and authenticity), and strategic positioning (e.g., exclusivity, sustainability, and innovation). In this sense, menus function not merely as informational tools but as communicative tools that influence consumer perception and gastronomic experience (Ozdemir & Çalışkan, 2015).

Furthermore, menus occupy a critical role within broader food systems, particularly in relation to issues of transparency, dietary awareness, and sustainability communication. They contribute to how food environments are structured and understood, making them relevant not only for hospitality and gastronomy studies but also for research on nutrition communication, consumer behaviour, and cultural representation. Despite their central role, menus have often been treated primarily as functional tools in the literature, leading to a limited understanding of their broader cultural and symbolic significance. Therefore, examining menus as analytical and communicative artefacts is essential for addressing this gap.

2.2 Menu analysis and qualitative approaches in gastronomy research

Menu analysis has long been recognised as a central component of gastronomy research, particularly within restaurant management and consumer studies. Traditionally, this body of research has prioritised quantitative and performance-oriented indicators such as cost control, pricing strategies, and sales optimisation. However, the increasing visibility of restaurant experiences on digital platforms has expanded scholarly attention towards the symbolic and communicative role of menus in shaping consumer perceptions and dining experiences.

Empirical evidence from online review analyses demonstrates that menus play a decisive role in how restaurant experiences are evaluated. Pantelidis' (2010) content analysis of online restaurant reviews shows that, alongside food quality, service, atmosphere, and price, menu-related elements significantly influence consumers' overall assessments. These findings suggest that menus operate not merely as informational tools but as meaning-making devices through which expectations, values, and experiential cues are communicated.

In this context, qualitative research methods—particularly qualitative content analysis—have gained increasing relevance in menu-focused studies. Research on fine-dining restaurants indicates that menus function as symbolic spaces where notions of originality, creativity, and gastronomic identity are articulated (Ilbay, 2021). Similarly, studies on tourism and food experiences reveal that tourists frequently rely on menu-related narratives when interpreting and recounting their gastronomic encounters, positioning menus as key representational artefacts within experiential storytelling (Ramírez-Gutiérrez et al., 2021).

Beyond consumer perception, qualitative approaches have also been employed to examine the internal dynamics of menu creation. Qualitative studies focusing on chefs' decision-making processes highlight that menu engineering is influenced not only by economic considerations

but also by subjective and contextual factors such as seasonality, ingredient availability, target customer profiles, and kitchen capabilities (Mutlu et al., 2022). These findings challenge the sufficiency of performance-based menu models and underline the importance of addressing the qualitative dimensions embedded in culinary decision-making.

Qualitative content analysis has further been applied to the examination of menu design as a cultural and strategic practice. Studies combining textual and visual analysis show that menu layout, language, and structure are often implemented in an unsystematic manner, lacking a coherent strategic intent despite their communicative potential (Özdemir & Nebioğlu, 2018). In sustainability-oriented research, thematic qualitative analyses reveal how menu design is increasingly shaped by concerns related to locality, seasonality, and food waste reduction, reflecting broader shifts in gastronomic values and ethical positioning (Jones et al., 2025).

In addition, previous studies have specifically applied content and discourse analysis to examine menu language and gastronomic representations in Michelin-starred contexts. For example, Bertan and Alkaya (2017) conducted a content analysis of descriptors used by Michelin inspectors for two- and three-starred restaurants, identifying frequently emphasised terms such as “creative”, “modern”, “innovative”, and references to specific culinary traditions. Their findings also revealed regional variations in gastronomic discourse, with “modern” expressions more prominent in Northern European contexts and “classical” or “traditional” references more common in Southern European and Asian contexts.

Similarly, Noguer-Juncà et al. (2021) analysed Michelin Green Star restaurant menus using discourse analysis and highlighted the central role of local food narratives. Their findings demonstrated a close relationship between local and global ingredients, as well as between traditional and avant-garde culinary practices, reflecting the hybrid and dynamic nature of contemporary gastronomy.

While the existing literature highlights the multidimensional nature of menus, a critical synthesis of the literature reveals several key limitations. Existing studies often remain fragmented and context-specific, relying either on descriptive qualitative accounts or narrowly focused analytical dimensions, which limits comparability and theoretical integration across studies (Yang et al., 2003). Moreover, dominant approaches in menu analysis—particularly quantitative models and algorithmic methods—tend to prioritise performance metrics, pricing strategies, and consumer behaviour (Kwong, 2005; Hayes & Huffman, 1985), thereby overlooking the role of menus as meaning-producing texts that communicate cultural identity, symbolic value, and sustainability narratives.

In addition, although menus play a significant role in shaping food choices and consumer perceptions, their function within nutrition communication, menu labelling, and food environment research remains underexplored in gastronomy-focused studies (Açıkgöz et al., 2026; Sheikh & Khalid, 2026; Yu & Begho, 2026). This gap is particularly relevant in the context of increasing interest in transparency, dietary awareness, and public health-oriented food communication.

Addressing these limitations, the present study proposes a systematic and reproducible qualitative coding framework that captures the cultural, technical, symbolic, and sustainability-related dimensions embedded in menu texts. By doing so, the framework responds directly to the fragmented nature of existing approaches and provides an integrative methodological tool for analysing menus as complex communicative systems within both gastronomic and broader food system contexts.

2.3 The position of the Michelin Guide in global gastronomy

Throughout the twentieth century, the Michelin Guide has emerged as one of the most influential institutional actors shaping norms, standards, and hierarchies within global gastronomy. However, it should be noted that the Michelin Guide operates only in selected regions and does not encompass the entire global restaurant landscape. Historical analyses trace the Guide's transformation from a practical roadbook for motorists into a highly prestigious evaluative system whose ratings exert substantial symbolic and economic power within the restaurant field (Romanchuk et al., 2022). Its authority is commonly attributed to the anonymity of its inspectors, the consistency of its evaluation criteria, and the global standardisation of its assessment procedures.

Beyond its role as a rating instrument, sociological research positions the Michelin Guide as an active agent in the construction and diffusion of gastronomic norms. Studies highlight how Michelin's international expansion has contributed to the global circulation of specific technical, aesthetic, and organisational standards associated with haute cuisine (Bouty et al., 2013). Lane's (2011) analysis of the Guide's influence in the United Kingdom and Germany demonstrates how French culinary traditions have been reframed as transnational reference points, while more recent work documents a similar process in Asian gastronomic markets, particularly in Japan and China (Lane, 2025). In this sense, Michelin operates not only as an evaluator but also as a cultural intermediary that shapes what is recognised as culinary excellence on a global scale.

From a consumer perspective, Michelin stars carry strong symbolic meanings associated with quality, prestige, and credibility. Empirical research shows that inclusion in the Guide generates

199 immediate increases in visibility, reputation, and demand, reinforcing Michelin's position as
200 the most authoritative evaluation system in the global gastronomy industry (Chiang & Guo,
201 2021). As a result, Michelin-starred restaurants function within a highly institutionalised value
202 framework in which culinary decisions are closely aligned with recognised standards of
203 excellence.

204 Within this institutional context, menus assume a particularly significant role. The menus of
205 Michelin-starred restaurants are not merely operational documents but material and textual
206 expressions of the evaluative logic governing the field. They articulate technical mastery,
207 aesthetic preferences, cultural references, and sustainability narratives that resonate with
208 Michelin's normative criteria. Consequently, the qualitative analysis of Michelin menus offers
209 a critical analytical entry point for examining how gastronomic hierarchies are reproduced, how
210 technical and creative priorities are communicated, and how cultural meanings are stabilised
211 and circulated within elite dining contexts.

212 Despite the centrality of Michelin-starred restaurants in shaping contemporary gastronomy,
213 existing research has rarely addressed menus themselves as analytically dense texts situated at
214 the intersection of institutional evaluation, culinary practice, and symbolic value production.
215 This gap underscores the need for a systematic qualitative framework capable of capturing the
216 multilayered meanings embedded in Michelin-starred restaurant menus.

217 **2.4 Limitations of existing models in menu coding practices**

218 A substantial body of menu analysis research has been developed within quantitatively oriented
219 frameworks that function primarily as decision-support systems. These models typically rely
220 on performance-based indicators such as contribution margin, popularity, cost efficiency, and
221 sales volume. Recent methodological advances, including Time-Driven Menu Engineering
222 (TDME), have expanded this tradition by integrating activity-based costing and time
223 management into menu evaluation processes (Özgür Göde & Ekergil, 2025). While such
224 approaches offer robust tools for managerial decision-making, they remain largely confined to
225 economic and operational dimensions of menu performance.

226 Parallel to these developments, a growing strand of research within artificial intelligence and
227 machine learning has conceptualised menus as structured data sources to be mined and
228 processed algorithmically. Studies employing deep learning and natural language processing
229 techniques have focused on tasks such as matching menu items with large-scale food databases
230 (Salehian et al., 2017), extracting allergen information, and generating personalised dietary
231 recommendations (Brahimi, 2025). These approaches significantly enhance the efficiency and

scalability of menu-related data processing; however, they tend to treat menus as repositories of information rather than as meaning-producing texts.

Taken together, these two dominant research streams—quantitative decision models and algorithmic text-processing approaches—offer valuable yet partial perspectives on menu analysis. Both are limited in their capacity to capture the cultural, symbolic, and narrative dimensions embedded in menus, including the articulation of culinary techniques, references to gastronomic traditions, expressions of creativity, and sustainability-related discourses. This limitation becomes particularly evident in highly curated dining contexts, such as Michelin-starred restaurants, where menus are deliberately crafted to communicate complex layers of gastronomic value and identity.

Despite the increasing recognition of menus as communicative artefacts, the literature lacks a systematic and reproducible qualitative coding framework capable of addressing these multidimensional meanings. Existing approaches remain fragmented, context-specific, or methodologically incompatible with in-depth qualitative interpretation. Addressing this methodological gap, the present study proposes a qualitative menu coding framework designed to enable the systematic analysis of cultural, technical, creative, and symbolic dimensions of menus within elite gastronomic contexts.

3. Methodology

3.1 Research design and analytical approach

This study is situated within the qualitative research paradigm and adopts a document-based qualitative content analysis approach. Restaurant menus are conceptualised not merely as descriptive lists of food and beverage offerings but as structured textual artefacts through which multilayered meanings—such as gastronomic identity, technical expertise, cultural representation, sustainability discourse, and symbolic value—are constructed and communicated.

A hybrid qualitative content analysis design combining deductive and inductive approaches was employed. Previous methodological research demonstrates that a strict separation between deductive and inductive processes is rarely achievable in qualitative content analysis, as both logics typically operate simultaneously during data interpretation (Armat et al., 2018; Cho & Lee, 2014; Mayring, 2014). In line with this perspective, deductive coding was informed by existing gastronomy literature, menu analysis studies, and theoretical discussions surrounding the Michelin Guide, while inductive coding enabled the incorporation of themes emerging directly from the empirical material.

This hybrid design allows for a data-sensitive analytical process while maintaining theoretical coherence, thereby enhancing the explanatory capacity and analytical depth of the study (Proudfoot, 2023; Sandström et al., 2015).

To ensure methodological transparency, the research process was structured into four main analytical stages:

- (1) identification and preparation of textual data sources;
- (2) development of an initial deductive coding scheme;
- (3) iterative inductive coding and category refinement; and
- (4) analytical interpretation and framework consolidation.

3.2 Data sources and analytical context

The dataset comprises written and digital documents related to Michelin-starred restaurants.

Three primary types of data sources were included:

- (i) restaurants' à la carte and tasting menus;
- (ii) restaurant descriptions and evaluation texts published in the Michelin Guide; and
- (iii) official restaurant websites, including publicly available sustainability statements and conceptual narratives.

Accordingly, the study is framed as a qualitative analysis of restaurants' self-presented textual content, integrating menus with institutional and narrative representations.

The Michelin Guide is widely recognised not only as a restaurant rating system but also as an institutional actor that produces and disseminates normative standards within the global gastronomic field (Bouty et al., 2013; Lane, 2011). Consequently, the menus and accompanying descriptive texts of Michelin-starred restaurants were treated as analytically dense materials in which gastronomic practices, value hierarchies, and symbolic meanings are systematically codified.

Particular analytical attention was given to restaurants awarded the Michelin Green Star. Previous research indicates that Green Star establishments tend to articulate sustainability, locality, and ethical production practices more explicitly within both menu language and supporting narratives (Huang & Hall, 2023; Olivieri et al., 2025; Pinto & Yu, 2025). Including these restaurants therefore enabled a more nuanced examination of sustainability-related discourses embedded in menu texts.

Although additional materials were consulted for contextual understanding, enhancing contextual richness and strengthening the credibility of the analytical interpretations (Humble, 2009), the analysis was strictly limited to menu texts.

3.3 Data collection and preparation

Menu texts and accompanying documents were collected from publicly accessible sources, including restaurant websites and the official Michelin Guide platform. Both à la carte and tasting menus were retrieved in their most recent available versions at the time of data collection. When multiple menu formats were available for a single restaurant, all relevant versions were included to capture the full range of textual representations.

The dataset is primarily based on menu texts collected from Michelin-starred restaurants between July and October 2025. In total, menus from 302 one-star, 71 two-star, and 5 three-star restaurants were included in the analysis. Some of these restaurants also held Michelin Green Star distinctions, reflecting sustainability-oriented recognition within the dataset. Restaurants were selected based on the availability of publicly accessible and complete menu data within the Michelin Guide database. The focus on Michelin-starred and Michelin Green Star restaurants was intentional, as these establishments represent highly curated and institutionally recognised gastronomic contexts in which menu texts are expected to exhibit dense symbolic, technical, and sustainability-related meanings. The dataset was constructed to include all publicly accessible menu texts from the identified restaurants within the specified period, ensuring comprehensive coverage of the available material.

Data triangulation was systematically employed to enhance the depth and validity of the analysis. While the dataset is primarily based on menu texts, these were systematically cross-referenced with Michelin Guide descriptions and restaurants' sustainability statements. This approach enables the examination of the consistency between restaurants' self-presented narratives and externally articulated evaluative representations. While the sample is not intended to be statistically representative, it provides analytical generalizability across diverse Michelin-starred restaurant contexts.

All documents were collected in digital format. Where menu materials were available as PDF files or image-based documents, they were converted into editable text formats prior to analysis.

The raw texts were then pre-processed through the removal of HTML tags and the standardisation of formatting elements such as bullet points and list structures. This process involved careful manual verification to ensure textual accuracy and to preserve original menu terminology and descriptive expressions.

Following data cleaning, the texts were organised into structured groups according to restaurant characteristics, including star level (one-, two-, three-star and Green Star), geographical region (e.g., Europe, Asia), cuisine orientation (e.g., seasonal, farm-to-table, regional), and dietary categories (e.g., omnivore, vegetarian, vegan). These attributes were defined as categorical variables within the MAXQDA environment to support systematic analysis.

All texts were subsequently standardised and imported into the MAXQDA software environment for qualitative analysis. Each document was labelled according to its source type (menu, Michelin description, or website text) and assigned an anonymised restaurant identifier (e.g., R01, R02) to ensure analytical consistency and traceability throughout the coding process. This preparation stage ensured that all data were analytically comparable and ready for systematic qualitative content analysis.

3.4 Coding procedure and analytical framework development

The code development process followed an iterative and multi-stage analytical structure. In the initial stage, a preliminary deductive code list was developed based on gastronomy literature, menu analysis studies, Michelin Guide evaluation criteria, and sustainability-oriented approaches in gastronomy. These preliminary codes were organised around core thematic areas, including product origin, culinary techniques, sustainability narratives, locality, creativity, and menu language.

In the second stage, the coding system was inductively expanded and refined in response to new narratives, expressions, and thematic patterns that emerged during the in-depth analysis of menu texts. Throughout this process, code definitions were continuously reviewed and their conceptual boundaries refined in relation to both gastronomy theory and literature on cultural representation and sustainability. Prior research demonstrates that the combined use of deductive and inductive coding enhances analytical depth and produces more comprehensive outcomes in qualitative content analysis (Armat et al., 2018; Yuwono & Rachmawati, 2023).

All coding procedures were conducted using MAXQDA qualitative data analysis software. Codes were organised within a hierarchical structure by establishing explicit main code–subcode relationships. The use of computer-assisted qualitative data analysis software (CAQDAS) supported systematic documentation of coding decisions, facilitated iterative revisions, and enhanced the transparency of the analytical process (O’Kane et al., 2021).

To further strengthen analytical traceability, anonymous identifier codes (e.g., R01, R02) were assigned to the restaurants included in the dataset within the MAXQDA environment. These identifiers were created solely for analytical purposes and do not disclose the identities of the restaurants. The overall research design and analytical process followed in this study are summarised in Figure 1. This figure outlines the sequential stages of the qualitative content analysis, including data collection, code development, iterative coding procedures, and analytical interpretation. To illustrate the applicability of the coding framework and the transparency of the analytical process, a sample table presenting the anonymous identifiers is provided in Appendix 1.

The analytical framework developed in this study provides a holistic approach to examining the multilayered textual structure of Michelin-starred restaurant menus. The framework is grounded in the assumption that menus are not merely documents presenting gastronomic content but complex textual artefacts through which cultural meanings, technical competence, sustainability narratives, and symbolic value are simultaneously constructed.

Accordingly, the framework is structured around four interrelated analytical dimensions:

- (i) gastronomic and cultural representation;
- (ii) technical and practice-oriented knowledge;
- (iii) sustainability and ethical narratives; and
- (iv) narrative construction, symbolism, and status production.

These dimensions enable a systematic examination of how gastronomic value is articulated within menu texts, which elements are foregrounded, and how menus establish discursive coherence within the Michelin context. Given the Michelin Guide's role as a symbolic authority in global gastronomy, the association of menus with narratives of luxury, exclusivity, and distinction becomes analytically significant (Bouty et al., 2013; Fusté-Forné & Noguer-Juncà, 2024).

The analytical framework was operationalised through a hierarchical coding structure developed within the MAXQDA environment. Analytical interpretations were systematically documented through memos and code relationships, supporting both the traceability and reproducibility of the analytical process. *Figure 2* presents the structure of the analytical framework and illustrates the four interconnected analytical dimensions through which menu texts were examined: gastronomic and cultural representation, technical and practical knowledge, sustainability and ethical narratives, and narrative construction and symbolism.

3.5 Analytical rigor and trustworthiness

The rigor of the study was ensured through systematic and transparent coding of restaurant textual content, primarily based on menu texts and supported by associated narrative materials. Clear code definitions and consistent application across the dataset were maintained to support analytical reliability (Elo et al., 2014).

All coding decisions, refinements, and interpretive notes were documented using the memo and log functions of MAXQDA, establishing an audit trail that enhances transparency and allows for the evaluation of analytical consistency (Halpin, 2024).

To further strengthen reliability, a subset of the restaurant content was independently reviewed and cross-checked to ensure consistency in code application. This process enabled the identification and clarification of ambiguous coding boundaries. Any discrepancies were

resolved through iterative comparison, contributing to the overall consistency and reproducibility of the analytical framework.

3.6 Ethical considerations

This study relies exclusively on publicly available documents, including restaurant menus, official website content, and evaluation texts published by the Michelin Guide. It does not involve human participants, personal data, or any form of direct interaction with individuals. Therefore, formal ethical approval was not required for the conduct of this research.

4. Results

4.1 Structure of the proposed coding framework

Grounded in the assumption that Michelin-starred restaurant menus function not merely as documents listing gastronomic offerings but as multilayered texts through which economic value, cultural representation, technical expertise, sustainability discourse, and symbolic status are simultaneously produced, this study proposes a structured and reproducible coding framework. An overview of the eight main coding categories, along with their conceptual scope and analytical boundaries, is provided in Table 1. This understanding is consistent with previous scholarship positioning Michelin-starred restaurants as norm-producing actors within the global gastronomic field (Lane, 2011; Bouty et al., 2013).

The proposed framework was developed through a hybrid analytical logic integrating deductive and inductive approaches within qualitative content analysis. While the initial coding structure was informed by existing literature on menu analysis, gastronomy, and Michelin evaluation criteria, inductive refinement allowed the framework to remain sensitive to the contextual and discursive specificities of menu texts. This hybrid logic enables menu analysis to move beyond performance-oriented evaluations toward a more comprehensive interpretation of menus as meaning-producing texts.

The coding system is structured around eight main analytical categories. The first category focuses on price-related indicators, examining how price is communicated not only through explicit numerical information but also through implicit textual expressions such as tasting menus, chef's menus, or limited experiential formats. Prior research highlights the symbolic role of price and price omission in constructing exclusivity and perceived quality in fine-dining contexts (Hayes & Huffman, 1985; Kwong, 2005). Within the Michelin context, price therefore emerges as a textual marker of distinction rather than a purely economic variable (Lane, 2011). The second category addresses locality, regionality, and national product references, capturing explicit statements regarding the geographical origin of ingredients. This includes geographical indications, producer attributions, and regional descriptors. In Michelin and particularly Green

Star contexts, such references are closely associated with narratives of authenticity and sustainability (Huang & Hall, 2023). In order to preserve analytical rigor, this category was deliberately limited to explicit declarations of origin; implicit or assumed locality was excluded from coding.

The third category, international culinary influences, encompasses explicit references to foreign culinary cultures, techniques, or flavor profiles. Michelin-starred restaurants frequently operate as sites of cosmopolitan culinary exchange, where global and local repertoires intersect (Lane, 2011). Although closely related to creativity, international references were treated as a distinct analytical category to avoid conceptual overlap and to preserve analytical clarity.

The fourth category, techniques and practices, includes explicitly named cooking, preparation, or presentation techniques articulated within menu texts. Technical mastery constitutes a central criterion in Michelin evaluations and is often rendered visible through the explicit naming of techniques (Mayring, 2014). Only techniques directly stated in the menu were coded, and their national or international origins were documented separately in order to prevent inferential bias.

The fifth category focuses on creativity and innovation, capturing menu elements that reflect deliberate reinterpretations of classical forms or contemporary experimental approaches. While creativity is widely acknowledged as a defining attribute of Michelin-starred dining (Bouty et al., 2013), this category was applied conservatively; only instances in which innovation was explicitly articulated or clearly structured within the menu narrative were included.

The sixth category, classical gastronomy codes, encompasses explicit references to haute cuisine traditions, established recipes, and normative culinary structures. Given the historical role of the Michelin Guide in disseminating classical gastronomic standards, such references are analytically significant for understanding how menus align with, reproduce, or strategically invoke normative culinary frameworks (Lane, 2011).

The seventh category addresses sustainability and Michelin Green Star narratives, capturing explicit references to environmental, ethical, and social sustainability practices. In line with recent scholarship, sustainability was operationalized through concrete practices such as local sourcing, waste reduction, or whole-product utilization, rather than abstract or generic claims (Bonfanti et al., 2025; Pinto & Yu, 2025).

Finally, the eighth category examines presentation and menu design, focusing on menu language, narrative framing, and structural organization. Menu narratives play a central role in shaping consumer expectations and framing the gastronomic experience, particularly in high-end dining contexts (Pantelidis, 2010). Accordingly, this category prioritizes meaning production over purely formal design elements.

Taken together, the proposed coding framework constitutes a theoretically grounded and methodologically transparent analytical tool for examining Michelin-starred restaurant menus. Rather than offering a prescriptive evaluative model, the framework enables systematic exploration of how gastronomic value, cultural meaning, and symbolic distinction are articulated within menu texts. The conceptual structure of the analytical framework is illustrated in Figure 2, which presents the four interconnected analytical dimensions guiding the interpretation of menu texts. These dimensions form the conceptual foundation for the coding categories presented in Table 1, detailed code definitions and illustrative examples are provided in the supplementary materials to support analytical transparency and facilitate future empirical applications.

To further illustrate the empirical applicability of the proposed coding framework, selected coded menu expressions derived from the analyzed dataset are presented in Appendix 1. The dataset consists of menus collected from Michelin-starred restaurants (including one, two, and three-star establishments, some of which also hold Green Star distinctions) between July and October 2025. These examples demonstrate how the analytical categories were operationalized in the analysis of menu texts using MAXQDA. Across the dataset, consistent and recurring textual patterns were identified across different restaurant categories and menu formats. For instance, experiential menu formats such as tasting menus function as implicit price signals associated with exclusivity in fine-dining contexts (Hayes & Huffman, 1985; Kwong, 2005), while explicit references to regional ingredients reflect locality and terroir-based authenticity narratives (Huang & Hall, 2023). References to foreign culinary traditions, named preparation techniques, and innovative or classical gastronomic expressions further illustrate how menus communicate culinary expertise, creativity, and symbolic value within Michelin-starred dining (Lane, 2011; Bouty et al., 2013). Sustainability-oriented expressions and narrative menu formats similarly demonstrate how menus function as communicative tools conveying ethical and experiential dimensions of contemporary gastronomy (Pantelidis, 2010; Pinto & Yu, 2025).

5. Discussion

This study proposes a multidimensional and systematic coding framework for the qualitative content analysis of Michelin-starred restaurant menus. The discussion section evaluates the conceptual and methodological contributions of the proposed analytical approach and situates it within the broader gastronomy and menu analysis literature.

The findings establish a critical dialogue with existing research, which has predominantly conceptualized menu analysis around economic performance indicators, sales volume, and cost-based approaches. While menu engineering and pricing-oriented studies largely treat

menus as managerial tools (Hayes & Huffman, 1985; Kwong, 2005), the present study positions menus as cultural, symbolic, and discursive texts. In doing so, the proposed coding framework expands the analytical scope of menu research by rendering visible the textual dimensions through which gastronomic value is constructed and communicated. Previous research has also examined restaurant menus from consumer behavior and market signaling perspectives. For instance, studies have shown that Michelin star recognition can significantly influence menu pricing and perceived prestige in fine-dining markets (Craig et al., 2023). Similarly, research on menu labeling has explored how credence attributes such as “organic”, “local”, or “animal welfare friendly” influence consumer choice, often finding that such signals do not always translate directly into purchasing decisions (Schjøll & Alfnes, 2017). While these approaches provide important insights into economic and behavioral dimensions of menu communication, they tend to focus on market outcomes rather than the textual construction of gastronomic meaning. In contrast, the qualitative coding framework proposed in this study enables the systematic analysis of how cultural identity, culinary expertise, sustainability narratives, and symbolic value are articulated within menu language.

From a methodological perspective, the developed coding system offers a practical illustration of ongoing debates regarding the combined use of deductive and inductive approaches in qualitative content analysis. The literature consistently emphasizes that rigid separations between these approaches may limit analytical depth (Armat et al., 2018; Mayring, 2014). By integrating theoretically grounded a priori codes with data-driven emergent codes, this study enables menu texts to be analyzed in a manner that is both theoretically coherent and context-sensitive, thereby enhancing the explanatory potential of qualitative menu analysis.

Within the Michelin context, the proposed framework further positions menus as primary analytical materials through which gastronomic practices, technical preferences, and narrative strategies are systematically articulated. As an institutional evaluation system grounded in quality, technical mastery, and consistency (Lane, 2011; Bouty et al., 2013), the Michelin Guide renders menus particularly salient sites of meaning production. The inclusion of price-related indicators and presentation-oriented codes allows menus to be examined not only in terms of gastronomic content but also with regard to their structural and discursive coherence. Building on this perspective, the qualitative approach adopted in this study offers several advantages compared with conventional menu analysis methods such as menu engineering or consumer behaviour studies. While these approaches typically focus on pricing strategies or purchasing behaviour, qualitative menu analysis enables the examination of symbolic and cultural dimensions embedded in menu texts. At the same time, chefs navigate tensions between

sustainability ideals and supply chain constraints when sourcing local ingredients (Fusté-Forné & Noguer-Juncà, 2024). The proposed coding framework therefore provides a structured methodological tool to systematically capture these dimensions, which are often overlooked in quantitative menu analysis.

The incorporation of sustainability- and Michelin Green Star-related codes provides additional analytical leverage for examining discourses of ethical production and responsible consumption. While existing studies have largely approached sustainability narratives through promotional texts or online descriptions (Olivieri et al., 2025; Pinto & Yu, 2025), this study foregrounds menus as a primary unit of analysis through which sustainability is communicated at both practical and symbolic levels. In this respect, sustainability emerges not merely as a certification marker but as an integral component of gastronomic storytelling.

Finally, the framework is designed in alignment with the analytical affordances of CAQDAS. The hierarchical organization of codes, systematic memo-writing practices, and the maintenance of an audit trail contribute to analytical transparency and reproducibility (O’Kane et al., 2021; Kapiszewski & Karcher, 2021; O’Connor & Joffe, 2020). Accordingly, the proposed framework functions not only as a tool specific to the present study but also as an adaptable methodological model applicable across different national contexts, restaurant types, and comparative gastronomy research designs.

Overall, this study repositions menu analysis within gastronomy research from a secondary technical instrument to a distinct theoretical and methodological field of inquiry, offering a robust analytical foundation for future qualitative and comparative menu studies.

6. Conclusions and future research

This study proposes a multidimensional, systematic, and applicable coding framework for the qualitative content analysis of Michelin-starred restaurant menus. Grounded in the premise that menus function not merely as instruments conveying product and price information but as textual sites where gastronomic identity, technical knowledge, sustainability narratives, and symbolic meanings are jointly constructed, the proposed framework expands the analytical scope of existing approaches to menu analysis. In doing so, the study repositions menus from secondary technical artifacts to analytically interpretable texts within gastronomy research.

The findings presented in the Results section demonstrate that menu texts systematically encode multiple layers of meaning, including price signaling, locality, technical expertise, creativity, and sustainability narratives. These empirical patterns confirm that menus operate as structured communicative systems rather than purely functional or operational tools.

By linking these empirical observations to the proposed coding categories, the study provides evidence that the framework effectively captures the multidimensional construction of gastronomic value within menu texts.

A key contribution of the proposed framework lies in its provision of a standardizable and transparent analytical infrastructure for qualitative menu research. Existing studies in the literature frequently rely on heterogeneous coding logics and fragmented analytical dimensions, which limit comparability across studies. The hierarchical code structure developed in this study enables the combined use of deductive and inductive approaches, allowing menus to be analyzed systematically across different gastronomic contexts and national settings. This methodological consistency is particularly valuable for comparative research designs in gastronomy.

From an applied perspective, the framework offers practical value for multiple stakeholder groups. For chefs, it may function as a reflective tool to evaluate how menu language, technical emphases, and narrative strategies communicate culinary identity. For restaurant managers, it provides an analytical lens through which menus can be understood not only as operational instruments but also as strategic and communicative devices.

In practical terms, restaurants may apply the framework to systematically revise menu descriptions by emphasizing locally sourced ingredients, explicitly communicating preparation techniques, and incorporating sustainability-oriented narratives. Such adjustments can enhance menu transparency, strengthen perceived authenticity, and support more informed consumer decision-making, nutritional awareness, and public health-oriented food choices. From an academic standpoint, the framework contributes to the advancement of menu-based qualitative research by supporting more transparent, reproducible, and theoretically grounded analytical practices.

Beyond its practical contributions, the proposed framework also offers broader implications for research, education, and society. For researchers, it provides a structured and reproducible analytical tool that can support comparative studies across different gastronomic contexts, thereby contributing to the cumulative development of qualitative menu analysis. For educators, the framework may be incorporated into gastronomy and hospitality curricula to foster analytical thinking and critical interpretation of menu texts.

At a broader level, by revealing how menus communicate sustainability, locality, and cultural narratives, the framework contributes to a deeper understanding of how gastronomic communication can shape consumer awareness and influence public attitudes toward food

systems. These implications reinforce the relevance of qualitative menu analysis beyond theoretical inquiry and highlight its potential impact in both academic and applied contexts.

Despite these contributions, the study is subject to certain limitations. First, the framework is developed within the context of Michelin-starred restaurants, which represent highly curated and institutionally regulated gastronomic environments. While this focus enhances analytical depth, it may limit the immediate generalizability of the framework to other restaurant categories. Second, the analysis relies exclusively on documentary sources, and future studies may benefit from integrating menu analysis with complementary data such as interviews or observational methods.

From a methodological perspective, the proposed qualitative coding framework does not provide direct performance indicators related to sales, profitability, or consumer choice prediction, which are typically offered by quantitative menu analysis approaches such as menu engineering.

In addition, qualitative coding inherently involves interpretive judgement, which may introduce a degree of subjectivity despite efforts to ensure analytical transparency and consistency.

Furthermore, compared to computational and data-driven approaches, the framework prioritises depth and contextual interpretation over scalability and automation. Therefore, the proposed approach should be considered complementary to existing quantitative and algorithmic methods rather than a substitute, offering analytical depth where other approaches provide measurement and prediction.

Future research may apply and refine the proposed coding framework across different restaurant types, cultural contexts, and gastronomic systems. Comparative studies incorporating non-Michelin fine-dining restaurants, casual dining establishments, or alternative sustainability certification schemes could further test the adaptability and analytical robustness of the framework. In this respect, the proposed coding system offers a flexible methodological foundation for advancing qualitative and comparative research on menus within the gastronomy literature.

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Tables

Table 1. Proposed Coding Framework for Michelin-Starred Restaurant Menus

Main Code Category	Definition	Literature Basis (Conceptual / Methodological)	Generalized Menu Expression	Analytical Boundaries	Researcher's Note
1. Price-Related Indicators	Explicit or implicit representations of price within menu texts	Hayes & Huffman (1985); Kwong (2005); Lane (2011)	"Chef's tasting menu"	If no explicit price is stated, only implicitly suggestive expressions are coded	Price should be interpreted symbolically rather than purely economically
2. Locality / Regionality / National Product References	Explicit references to the local, regional, or national origins of ingredients	Huang & Hall (2023)	"Local Aegean olive oil"	Assumption-based locality is not coded	Product origin ≠ dish identity
3. International Culinary Influences	References to foreign culinary cultures, flavor profiles, or cooking traditions	Lane (2011)	"Japanese-inspired broth"	Cultural or technical context must be present; naming alone is insufficient	Should not be conflated with fusion cuisine
4. Techniques and Practices (National / Foreign)	Explicitly stated cooking, preparation, or presentation techniques in menu texts	Mayring (2014)	"Sous-vide beef"	Technique name must be explicitly stated	National vs. foreign origin is specified
5. Creativity and Innovation Codes	Experimental, contemporary, or original culinary approaches	Bouty et al. (2013)	"Deconstructed dessert"	Not every difference qualifies as creativity	Deliberate innovation is required
6. Classical Gastronomy Codes	References to haute cuisine traditions and classical gastronomic norms	Lane (2011)	"Classic beurre blanc"	Traditional does not equal classical	Normative structure must be evident
7. Sustainability and Green Star Codes	Narratives related to environmental, ethical, and social sustainability	Pinto & Yu (2025); Huang & Hall (2023)	"Root-to-stem cooking"	Abstract sustainability claims are excluded	Emphasis on tangible practices
8. Presentation and Menu Design Codes	Menu language, structure, narrative framing, and experiential construction	Pantelidis (2010)	"Chef's journey menu"	Formal design elements alone are insufficient	Meaning production is central

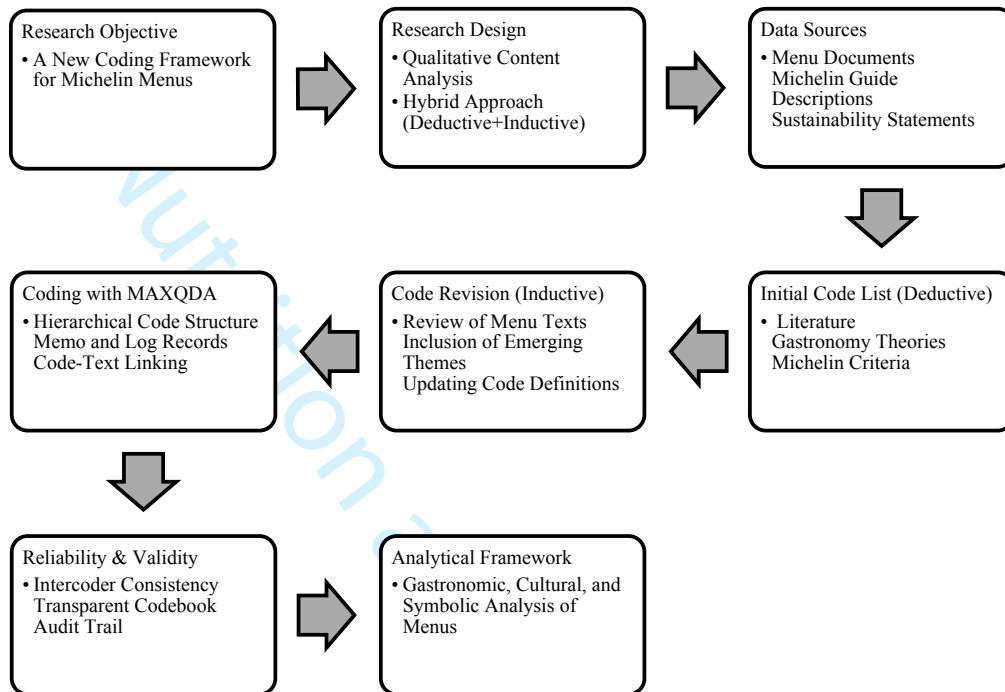
Source: Authors own work

Note: The table presents the coding framework developed for the qualitative analysis of Michelin-starred restaurant menus. Each coding category includes a conceptual definition, literature basis, generalized menu expressions, and analytical boundaries guiding the coding

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Figures

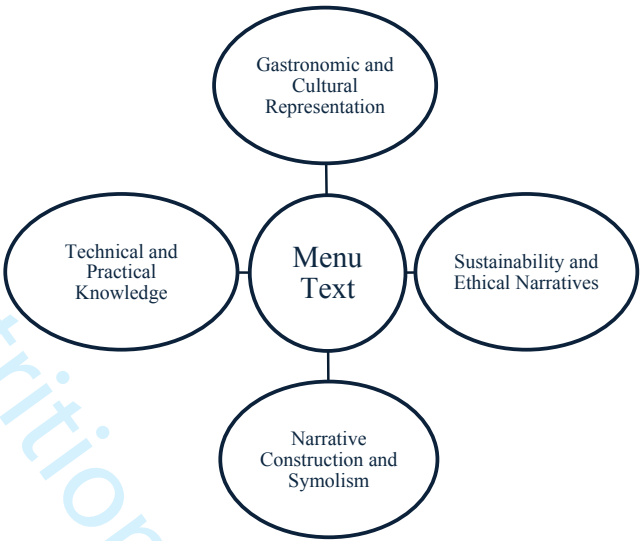
Figure 1. Research Design and Analytical Process



Source: Authors own work

Description: This figure illustrates the sequential stages of the qualitative content analysis conducted in the study. The process begins with the definition of the research objective and research design, followed by data collection from Michelin-starred restaurant documents. The analytical stages include the development of a deductive initial code list, inductive code refinement through iterative analysis, and coding procedures conducted using MAXQDA software. The final stages involve reliability validation and interpretive analysis of gastronomic, cultural, and symbolic dimensions embedded in menu texts.

Figure 2. Structure of the Analytical Framework



Source: Authors own work

Description: The figure illustrates the conceptual structure of the analytical framework developed for qualitative menu analysis. The framework positions menu texts at the center of analysis and organizes interpretation across four interconnected analytical dimensions: gastronomic and cultural representation, technical and practical knowledge, sustainability and ethical narratives, and narrative construction and symbolism.

Appendix

Appendix 1. Illustrative Application of the Coding Framework (Anonymized)

Main Code Category	Generalized Menu Expression	Anonymized Restaurant Code (MAXQDA)	Analytical Note
Price-Related Indicators	Chef's tasting menu	R01, R07	Implicit price signaling (Hayes & Huffman, 1985; Kwong, 2005)
Locality / Regionality	Local Aegean olive oil	R03, R12	Explicit product origin (Huang & Hall, 2023)
International Culinary Influences	Japanese-inspired broth	R05	Explicit cultural reference (Lane, 2011)
Techniques and Practices	Sous-vide beef	R02, R09	Technique explicitly stated (Mayring 2014)
Creativity and Innovation	Deconstructed dessert	R06	Deliberate reinterpretation (Bouty et al., 2013)
Classical Gastronomy	Classic beurre blanc	R04	Reference to classical norms (Lane, 2011)
Sustainability	Root-to-stem cooking	R08, R14	Concrete sustainability practice (Pinto & Yu, 2025; Huang & Hall, 2023)
Menu Design	Chef's journey menu	R01, R10	Experiential narrative (Pantelidis, 2010)

Source: Authors own work

This appendix provides an illustrative application of the proposed coding framework based on the analysis of Michelin-starred restaurant menus. The examples are derived from the dataset and are included to demonstrate how the coding categories were operationalized in practice.

The table demonstrates how selected coding categories were operationalized in practice within the MAXQDA environment, thereby enhancing methodological transparency. It is presented for illustrative purposes only and does not report frequency data, comparative analysis, or empirical results.

All restaurant identifiers are anonymized and were generated exclusively for analytical purposes. No information allowing the identification of individual restaurants is disclosed.