

ORIGINAL ARTICLE OPEN ACCESS

Sustainability at the Summit: Transforming Haute Cuisine With Circular Business Models

Alessandra Costa¹  | Antonio Crupi¹  | Vincenzo Corvello² | Tindara Abbate¹¹Department of Economics, University of Messina, Messina, Italy | ²Department of Engineering, University of Messina, Messina, Italy**Correspondence:** Alessandra Costa (alessandra.costa@unime.it)**Received:** 12 April 2024 | **Revised:** 24 April 2025 | **Accepted:** 30 May 2025**Funding:** This work was supported by PON “Research and Innovation 20214-2020”, FSE React-EU-Azione IV.6 “Contratti di ricerca su tematiche Green” DM 1062 del 10/08/2021. Project CUP: 45F21001740007.**Keywords:** circular business model | circular economy | creativity | Green Star | Michelin restaurant

ABSTRACT

The adoption of circular economy principles poses a vibrant challenge for firms by becoming a potential and sustainable way for them to keep pace with highly dynamic changes in a competitive environment. Although previous research has examined experiences and practices that firms adopt to facilitate their transition to a circular economy, existing studies fall short of describing the factors that firms could leverage for circular business model design and implementation. This issue is more relevant to creative industries, such as haute cuisine, which is strongly characterized by sustainability concerns and assumes a leading role in the food industry. To explore and identify those relevant factors, this research uses a multiple-case study approach, focusing on seven Michelin Green Star restaurants in Italy, which link culinary excellence with an increasing commitment to sustainability. The findings advance theoretical understanding of how creative industries can drive the transition to a circular economy by providing a novel framework grounded in three interrelated dimensions: green sustainable behavior, creativity, and terroir.

1 | Introduction

In recent years, the concept of a circular economy (CE) has gained prominence as a comprehensive approach to fostering a more resource-efficient and streamlined economic system. Unlike the traditional linear economy of take-make-waste, the CE system replaces the end-of-life approach with strategies focused on reducing, reusing, recycling, and recovering. A CE aims to minimize material and energy flows by deliberately slowing, narrowing, and eventually closing resource loops (Blomsma and Brennan 2017; Bocken et al. 2016). This shift to a CE requires the adoption of innovative business models and a fundamental reconfiguration of corporate strategies to enable the decoupling of value creation and resource consumption (Chauhan et al. 2022; Bocken et al. 2016). Thus, introducing circular business model innovation (CBMI) to profoundly alter the ways of doing business has become fundamental for

every firm that is willing to exceed mere value generation to gain a competitive advantage, further contributing to environmental and social sustainability (Bocken and Konietzko 2022; Lüdeke-Freund and Dembek 2017). The adoption of CBMI has been found to generate significant positive environmental and societal impacts (Lüdeke-Freund et al. 2019), while enhancing businesses' strategic positioning (Pieroni et al. 2019). However, implementing a circular business model can be complex as it demands widespread interdependent changes across a firm's processes, value chains, and stakeholder collaborations, encompassing diverse operating models (Foss and Saebi 2018; Kindström 2010). Understanding how firms innovate and embody CE principles in their business models is therefore critical for advancing theoretical and practical knowledge about contextual factors and the most essential drivers of value creation, transfer, and capture in a circular business model (Centobelli et al. 2020; Ranta et al. 2018). While prior studies

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have emphasized the CE's relevance in reshaping traditional production and consumption patterns (Foss and Saebi 2018; Lüdeke-Freund and Dembek 2017), much of the extant research has focused on manufacturing and industrial sectors (e.g., Pieroni et al. 2021; Urbinati et al. 2020). However, CE principles could not bypass creative industries, where innovation and sustainability intersect, contributing to economic growth and cultural development (Ratalewska 2024). Creative industries operate under different economic logics, often relying on more focused knowledge-based value creation and unconventional innovation cycles, which present unique challenges and opportunities for CE transition (Asif 2024). As a result, haute cuisine (HC) provides a theoretically relevant context to explore the adoption of CE principles.

Recognized by UNESCO as a creative industry in 2010, HC relies on creativity to innovate circular models (Madeira et al. 2022), crafting new dishes and redefining business management, with a leadership style that shapes stakeholders' relationships (Koch et al. 2018) and spurs innovation (Albors-Garrigós et al. 2018). Positioned at the intersection of high-value creation, creativity, and environmental sustainability (Stierand et al. 2014), HC provides an ideal context for studying CBMI in creative industries. Specifically, as a trendsetter in the food industry, HC plays a pivotal role in forming consumers' perceptions and establishing standards for culinary services (Surlmont and Johnson 2005). Despite representing a small fraction of the gastronomy sector, HC restaurants and chefs exert significant economic, social, and cultural influence due to their value-creation capability (Svejenova et al. 2015). Their market impact extends beyond mere fine dining as they continuously bring novelty to the market, stimulate innovation, and experiment with original culinary methods and practices (Albors-Garrigós et al. 2018; Lane and Lup 2015), thereby promoting sustainable processes across the entire food value chain.

Despite increasing efforts in the food sector to implement CE principles and the above-mentioned crucial role of HC in advancing sustainability, scant research has examined the entrepreneurial actions taken by chefs to integrate CE principles into their business models (Guldmann and Huulgaard 2020; Presenza et al. 2019). To address this gap, our study delves into the analysis of how premium and upscale restaurants advance the integration of CE principles at both strategic and operational business levels, aiming to mitigate the global circularity decline. Specifically, we focus on Michelin Green Star (GS) restaurants that have the potential to create a significant impact on the entire food industry (Pearson 2024; Richardson and Fernqvist 2024) through their unique value proposition (Huang et al. 2023). They not only embody social, cultural, and environmental values (Richardson and Fernqvist 2024) in their business models but also leverage the GS award as a concrete orientation tool for effectively guiding sustainability and circularity in the food industry (Mrusek et al. 2021). In this study, we address the following research question: *How do HC restaurants integrate CE principles into their environments to redefine their business models?* To investigate this topic, we employ a multiple-case study approach, focusing on seven Michelin GS restaurants in Italy.

Our data collection was based on semi-structured interviews with chefs of Michelin GS restaurants, complemented by

secondary data sources to ensure our findings' reliability and validity. Our study's results reveal that when engaged in the integration of CE principles in their business models, Michelin GS restaurants pay close attention to three dimensions: (1) green sustainable behavior as the evolutionary driver in luxury gastronomy, (2) creativity as a mediator of each culinary process and activity in GS restaurants, and (3) the terroir as a way of concretely anchoring CE principles and practices on the industry's local identity. By exploring how HC integrates CE principles within its boundaries, this study clearly contributes to a broader understanding of how these principles shape innovation processes, leadership styles, and stakeholder engagement strategies. Theoretically, our research advances CE and business model innovation literature by identifying interrelated key drivers enabling CBMI in HC. Furthermore, shifting the analytic lens from traditional customer-centric business models to resource-centered ones, our study opens new avenues for theorizing how the sector may drive systemic change toward a more circular-oriented food system.

2 | Theoretical Background

The CE has been recognized as a significant driver of sustainability (Geissdoerfer et al. 2017) by being a strategic pathway to revitalize the economy from a sustainable perspective (Bocken and Ritala 2022). By challenging conventional production and consumption patterns, CE principles shape new demand typologies and promote economic renewal through sustainable approaches (Bocken and Ritala 2022).

Accordingly, firms are gradually redefining their business strategies, reconceptualizing their value propositions, and crafting value chains for environmental conservation (Rashid et al. 2013; Schulte 2013). Specifically, to conform with CE principles, firms are driving the transition from a linear to a circular business model through organizational and management strategies (Awan and Sroufe 2022; Hofmann and Jaeger-Erben 2020) that prioritize waste minimization and resource optimization (Murray et al. 2017; Antikainen and Valkokari 2016). In this regard, the circular transition adopts a holistic approach that links social, economic, and environmental value creation, enabling firms to create, deliver, and capture value in ways that align with sustainable goals and multiple stakeholders' interests (Bocken and Ritala 2022; Ünal et al. 2019). Building on the widely accepted view that a business model represents how a firm operates by translating its strategies into actionable activities for value creation, delivery, and capture (Zott and Amit 2010; Osterwalder et al. 2005; Afuah and Tucci 2001), recent research has explored how firms willing to become circular either adapt their existing business models or develop entirely new ones.

In this respect, Bocken and Ritala (2022) analyzed firms' business models based on CE strategies of slowing, closing, and narrowing resource loops, which require companies to reconfigure intrafirm and interfirm structures and reorganize internal processes and activities (Moggi and Dameri 2021; Konietzko et al. 2020). From this perspective, circular business models aim to maximize the economic value of products, materials, and components to minimize environmental

externalities (Sinkovics et al. 2021; Manninen et al. 2018), while addressing associated constraints and the increasing societal demand for sustainable products, services, and processes (Krmela et al. 2022; Bocken et al. 2016). Expanding on this, Kanda et al. (2021) argue that firms are increasingly engaged in driving circular transition due to their propensity to innovate their business models through green value propositions while nurturing positive customer behaviors and relationships (Santa-Maria et al. 2022). Against this backdrop, some scholars have underlined the critical role of firms in reinventing their business models based on CE principles, which often entail the reconfiguration of organizational competencies and capabilities (Acquier et al. 2024). The transition to a circular business model is driven by multiple factors, encompassing legislative and regulatory incentives, growing social awareness, technological advancements (De Jesus and Mendonça 2018), and an increasing strategic orientation toward a long-term, sustainable competitive advantage (Rizos et al. 2016).

In this context, the food industry has emerged as a key sector driving concrete sustainable transformation, aligning its practices with the economic, social, and environmental goals set by the new circular economy action plan (CEAP) of the European Commission (2020). Therefore, the food industry has assumed a strategic role in driving the transition to a long-term, sustainable business model (De Bernardi et al. 2020). Notably, the adoption of innovative circular business models in the food industry has led to tangible positive outcomes, including enhanced economic efficiency, improved product safety, and resource regeneration (Santa-Maria et al. 2022). Despite these advantages, the implementation of circular business models in the food industry presents significant challenges and barriers, primarily related to the complexity of designing and managing circular processes. These processes often require additional financial resources, specialized technical expertise, and a redefined value network that fosters mutual benefits for both firms and consumers (Bocken et al. 2022).

This is particularly evident in the gastronomy sector, which plays a crucial role in advancing the transition to sustainable food systems (Rinaldi 2017). By integrating principles such as food sovereignty, food democracy, or circular gastronomy (Nyberg et al. 2022), the industry fosters more resilient and environmentally responsible food practices.

A compelling example is HC, where culinary innovations are continuously developed and sustainable practices are responsibly experimented on to reduce food waste in kitchens (Filimonau et al. 2019) and maximize economic value creation. In this context, the adoption of CE principles can be easily observed through concrete examples, spanning from careful selection of sustainable food and seasonal ingredients, as well as prioritization of energy and water efficiency, to implementation of waste management practices (Richardson and Fernqvist 2024). These examples underscore HC chefs' progressive efforts to assume strategic foresight, aiming to "support decision making, improve long-term planning, enable early warning, improve the innovation process, and improve the speed in reacting to environmental change" (Iden et al. 2017, 4).

3 | Data and Methodology

3.1 | Research Setting

Based on the theoretical background and identified gaps, we target Italian HC, as defined by the Michelin Guide, deemed as the most authoritative "taste maker" in the industry (Lane 2013). The guide assesses restaurant quality (Opazo 2012) based on five criteria: (1) product quality, (2) mastery of techniques and flavors, (3) harmony of flavors, (4) chef personality, and (5) consistency over time and across the menu. In 2020, the Michelin Guide introduced the GS to acknowledge restaurants for "being sustainable" (Ho 2021) by rewarding those cultivating sustainable producer relationships, minimizing waste, and reducing plastic and other non-recyclable materials from their value chains (Michelin Guide 2022), while nurturing consumers' green perceptions and behaviors (Nimri et al. 2021) and responding to communities' increasing commitment to environmental and social well-being (Messeni Petruzzelli and Savino 2014). Different reasons have led to the choice of this research setting. First, "emphasis on sustainability within the hospitality industry" (Jacobs and Klosse 2016, 33) and the ability of HC to anticipate future innovative and sustainable scenarios (Schwark et al. 2020; Messeni Petruzzelli and Savino 2015; Presenza et al. 2017). Second, HC is naturally inclined to adopt business models that intentionally promote long-term sustainability, ensuring their intrinsic alignment with sustainability goals (Presenza et al. 2019). Third, due to its prestige and cultural significance, HC is able to recreate a ripple effect across the food industry, thus redefining circular flows in supply-chain networks (Park et al. 2022) through CE-driven principles. Finally, our decision to focus on Italian HC stems from the unique gastronomic habits and cultures of our country (Leone 2020).

3.2 | Research Design

Given the exploratory nature of this study, we used a qualitative methodology as a research design strategy. It has been considered suitable for the purposes of this research for several reasons. First, it enables the exploration of a specific complex phenomenon, while providing robust supporting evidence (Yin 2018). Second, an exploratory study is suitable for addressing an emerging topic, where an existing theory may not fully explain the investigated phenomenon and its dynamics (Gummesson 2006).

We thus employed a multiple-case study as an appropriate approach to gain a more comprehensive understanding about the integration of CE principles into HC, also ensuring a close correspondence between theory and data (Glaser and Strauss 2017). The data were gathered through semi-structured interviews, supplemented with secondary sources. Semi-structured interviews with Michelin GS restaurants' chefs were chosen due to their ability to provide a retrospective account of the complex phenomenon under investigation (e.g., Mrusek et al. 2021; Messeni Petruzzelli and Savino 2014; Ottenbacher and Harrington 2007). To achieve our study's objectives, we adopted an open-ended research design, without imposing any prior

categorization that might constrain the scope of our analysis (Fontana and Frey 2000).

The informants were determined through a snowballing sampling approach, meaning that the researchers initially identified chefs to be interviewed based on the information available on the Michelin Guide website, focusing on the GS recipients located in Italy. At the time of the analysis (May 2023), 47 of the 463 who were globally awarded a GS were based in Italy.

We formally reached out twice to all eligible GS chefs by e-mail and by phone, presenting the focus of our analysis and inviting them to participate in our study. This activity enabled us to interview seven Michelin GS Italian chefs, thereby gaining a deep representation of the state of the art and addressing the research question. The interviews were supplemented with secondary data, not only to validate and cross-check the insights derived from the interviews, but also to enable us to better contextualize the study by increasing familiarity with both the research scope and the HC environment. The supplemental information was retrieved using the press archives of some specialized resources (Michelin Guide, [ReportGourmet.com](#), [FineDiningLovers.com](#), and [Foodclub.it](#)), restaurant websites, press articles, and videos featuring the chefs. This integration of secondary data was intended to address potential biases and strengthen the credibility of our qualitative research findings (Yin 2018; Flick 2004).

3.3 | Data Collection

The data were collected between May and June 2023, primarily in Italian, the native language of both the interviewers and the interviewees. After we excluded 36 non-responses and 4 rejections, our final sample consisted of 7 chefs who agreed to participate in our study. The complete list of our key informants, their Michelin star ratings, geographical locations, genders, and years of service are listed in Table 1.

In the final group of informants, 3 came from the Northeast, 1 from the Northwest, and 3 from Southern Italy. The participation of chefs working in restaurants across different geographical areas and having varying rankings ensured sample heterogeneity. Notably, some chefs represented regions with distinct cultural influences, such as South Tyrol, where the

interplay of Italian and Austrian traditions has led to a unique culinary fusion.

Out of the 7 interviews, 3 were conducted through Google Meet, while the remaining 4 were held by phone, with the latter choice driven by practical consideration. Given the demanding schedules of Michelin GS chefs, phone interviews effectively offer a flexible and efficient means of engagement, thus maximizing their willingness to participate while ensuring the reliability of the results (Block and Erskine 2012; Holt 2010). Specifically, in line with previous studies in the HC industry (Mrusek et al. 2021; Gill and Burrow 2018; Surlmont and Johnson 2005), this approach allowed the chefs to respond from their restaurants or other convenient locations, without being distracted from their daily activities or requiring extensive scheduling adjustments. Despite the inherent lack of visual cues in phone interviews, this study's semi-structured and open-ended nature represented its natural complementary fit (Cachia and Millward 2011), ensuring that the quality of the collected data remained consistent across both phone and face-to-face interviews. The methodological rigor was also upheld through transparent and ethical practices, including introducing and explaining the research scope and the study's goals and obtaining the interviewees' explicit consent for recording and transcription.

3.4 | Data Analysis

The analysis process included two sequential phases. In the first one, multiple online meetings allowed us to familiarize ourselves with the research contents to better refine the goals and the methodology to follow. In the second phase, the data were collected and structured through a coding scheme and recursive abstraction. We started with coding recurring expressions into rudimentary dimensions (first-order concepts). As researchers, we played a crucial role in recollecting the interviews and providing small pieces of evidence supporting further analysis. These first-order concepts were then reexamined through the lens of extant literature, leading to their reorganization into second-order conditions based on conceptual similarities. Finally, these conditions were consolidated into macro-dimensions, resulting in a visual data representation in the form of a data structure (Gioia et al. 2013). All concepts, themes, and dimensions are summarized in Figure 1.

TABLE 1 | Key information about informants' interviewees.

ID_Restaurant	Michelin rating	Location	Chef gender	Years of service
R1	1★	Campania	Male	6
R2	1★	Abruzzo	Male	36
R3	2★	Veneto	Male	7
R4	1★	Trentino-South Tyrol	Male	8
R5	2★	Trentino-South Tyrol	Male	16
R6	1★	Piedmont	Female	47
R7	1★	Sicily	Male	3

Note: The star symbol indicates the Michelin star(s) awarded to each restaurant, as per the official Michelin Guide.

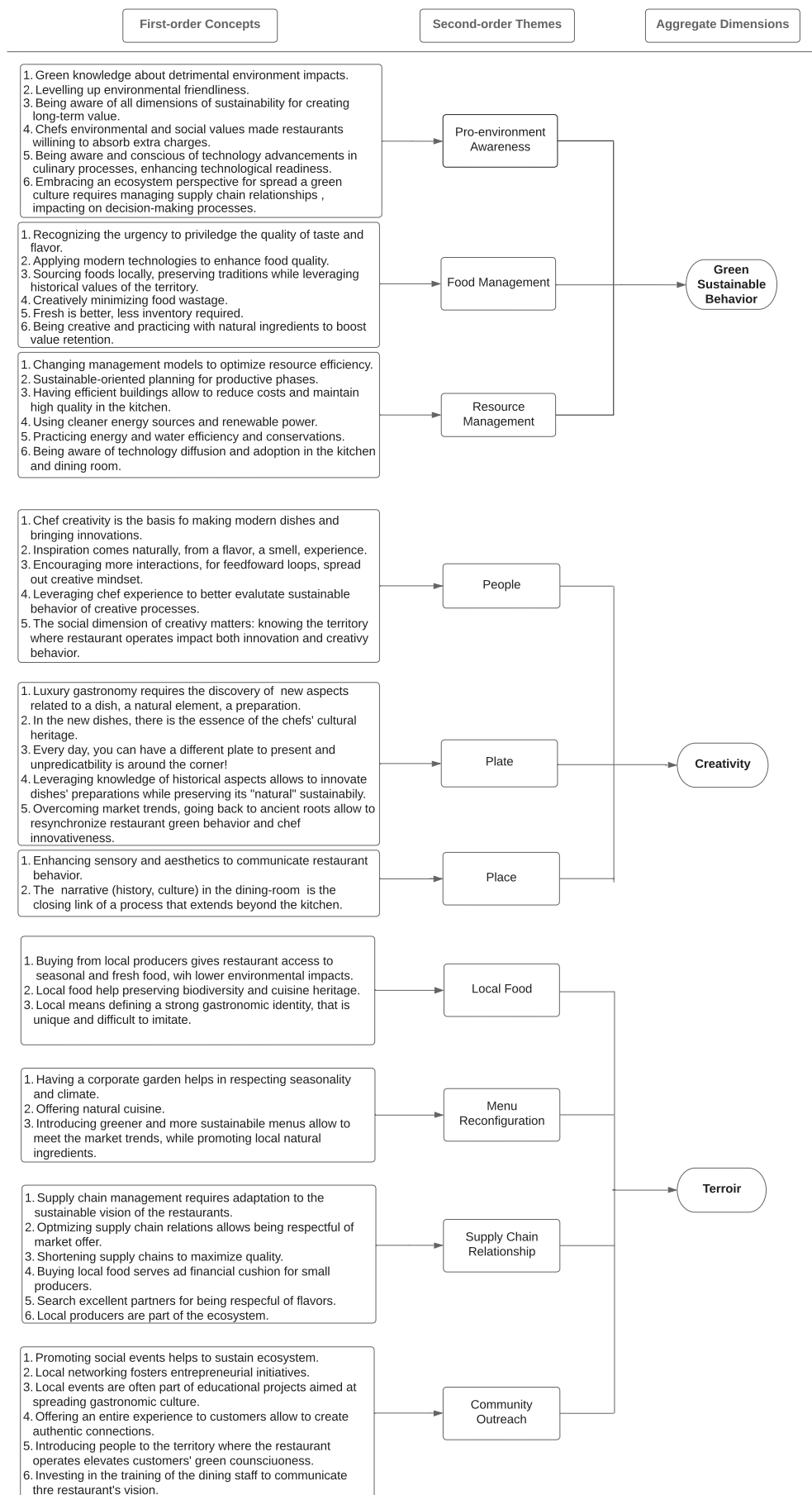


FIGURE 1 | Data structure.

4 | Findings

In this section, the findings are presented based on the three main dimensions—green sustainable behavior, creativity, and terroir—reflecting core circular business model principles of sustainability, as well as innovation.

4.1 | Green Sustainable Behavior for a Regenerative Culinary System

A notable mix of social and environmental values was observed among the interviewed chefs, reflecting their efforts to redefine business models in alignment with CE principles for a regenerative culinary system. In this respect, seeking to move beyond sustainability to foster practices that would restore the ecosystem while ensuring long-term advantage, R4 emphasized the need “to create an environment in which future generations can grow but also realize their full potential and achieve well-being [...]. Sustainability is not just about preserving available resources and reducing carbon emissions; it is also about embracing its social and human aspects. If quality is your restaurant’s hallmark, sustainability can’t be off the menu.” Similarly, R2 stressed the impossibility of decoupling restaurant operativity from sustainability since “it is an element of our operation philosophy,” as the surrounding natural beauty directly inspires a commitment to environmental preservation. The chefs’ green behaviors revealed their intensifying focus on food management and regenerative practices. R3 commented on the need to increasingly embody green practices into daily operativity through “a roadmap of smaller and short-term goals, affecting production, water recovery, and food waste minimization.” Accordingly, R4 shared his restaurant’s green agenda, accentuating the importance of regenerative operational strategies such as “reducing CO₂ emissions, rethinking and making resource management more efficient, and significantly supporting production cycles.” The principle of efficient food management was reinforced by R3’s emphasis on stockpiling by “keeping things as fresh as possible” and R4’s advocacy for using “products that travel minimal distances,” thus preserving their flavors and nutritional values. Beyond operational adjustments, some chefs underscored the strategic and collaborative nature of regeneration. R5 underscored the need for culinary regeneration—“no longer being a trendy concept but having to consider such unique product[s] that leverage the quality of taste and ethics.” R1 highlighted the social aspect of this shift, emphasizing the significance of engaging stakeholders and the need to “push [our] suppliers towards [the] same directions [as ours],” albeit with limitations due to external regulatory constraints. Similarly, R6 broadened this systemic view of green behavior, pointing out “collaborative and trustworthy relationships with producers and suppliers, transcending the scope of our individual operations. It is about sharing a nourishing value system that fuels not only our tables but also our businesses.” Technological innovation also emerged as a key enabler of green sustainable behavior, with R2, R4, and R5 underscoring investments in energy renovation and efficiency projects. R5 noted that “strategies in terms of circular planning [in a restaurant] are mostly strategies of technological use, from solar thermal systems to electric vehicle charging stations, respecting the unique characteristics of the place we call home.” Collectively, these efforts illustrate a progressive shift

toward a regenerative culinary system that undergoes a substantial change in chefs’ green sustainable behavior and integrates the CE principles of environmental conservation, ethical sourcing, and technological advancements.

4.2 | Creativity as a “Hidden” Triggering Factor of Innovation in Circular Business Models

All informants commented on the prominent role of creativity in their activities and projects, describing it as a core resource that shaped their culinary processes in alignment with circular business models. While R5 clearly emphasized the personal dimension of creativity, stating that “each dish is the expression of personal creativity” R6 noted the importance of personal traits in designing his culinary creative process, describing it as “a matter of personality, curiosity, and research [on] evolution and experimentation that changes over time,” fueling innovation in kitchens while embedding CE principles in every operational process.

R3 also elaborated on creativity as a dynamic process: “Immediately after becoming a chef, creativity is not a targeted process. There could be a lot of ideas, following current trends in gastronomy. Only later, creativity becomes more focused, as once [you] learn to concentrate on fewer things while executing them exceptionally well, as you started to know your environment [...]” This iterative nature of culinary creativity aligns with the application of CE principles and values in kitchens, where ideas are developed, tested, and improved over time to achieve sustainable outcomes at every level of each dish creation. Here, the chefs’ creativity plays a fundamental role since it is not about changing something in the final product but really “delving within oneself to explore [one’s] own experiences, family, and culinary dreams” (R1). R3 further stressed the importance of grounding creativity in the local context, emphasizing the value of “truly knowing your own territory with its unique flavors so that the inspiration comes naturally through tasting the ingredients themselves.” This approach ties the creative process to local resources, aligning with the CE principles of resource efficiency and regeneration. The willingness to hybridize new culinary techniques with ancient gastronomy traditions resonated in the words of R3, who underscored the significance of “knowing the history of those who came before us [...] Rejuvenating and enhancing historical practices, obviously more sustainable than those in use today, allow us to create new flavors,” thus enhancing sustainable value creation and delivery. Reinforcing this perspective, R5 pointed out the importance of “being immersed in the essence of the material.” The idea of a nonlinear path to innovation, with feedforward loops, is evident in R3’s observation that “everyone in this culinary industry is creative; thus, it is exhilarating to see team members initiate and implement their creative projects.” This viewpoint is consistent with the rationale of interorganizational collaboration and network creativity as enablers of the transition to the CE within the culinary ecosystem. Expanding on this argument, R2 emphasized the urgent need to nurture the creation of “a circular system, beginning right from the soil, encompassing both catering itself and the restaurant management, in a holistic manner.” This systemic perspective reframes creativity as a renewable human resource that drives collective innovation and collaboration, allowing stakeholders

to co-create solutions that advance sustainability goals. R4 summarized this concept well: “We can move toward a more sustainable society only if everyone works together: operators, staff, producers, and guests—it depends on all of us. Naturally, the finest restaurateurs have the privilege and responsibility to lead by example, proving that sustainability can truly thrive in the world of gastronomy.” To achieve this goal, chefs’ creativity must guide CE principles’ integration into the industry. This imperative is evident in R5’s statement that even if every cuisine is born from creativity, “the raw materials I select—how they are grown, treated, or raised—are the true foundation[s of] the creative process.” R6 reinforced this position, accentuating the final outcomes of his creativity: “Everything is used—nothing is wasted. This [shows] circular economy principles in action.” This focus on adapting to natural cycles embodies CE principles in every facet of creative culinary innovation, from the selection of local ingredients to waste reduction and resource regeneration.

4.3 | Intrinsic Dynamic Dimension of Circular Business Models in Michelin GS Restaurants: The Art of Terroir

All chefs described incorporating “terroir” in their cooking style and restaurant operations, aligning with the CE principles of leveraging local resources and fostering sustainable value creation. In this sense, R3 argued, “We predominantly utilize local ingredients, [which] helps us to define a gastronomic experience that is deeply rooted in our community and is difficult to replicate elsewhere.” Similarly, R6 highlighted the importance of building long-term trustworthy relationships with local suppliers, for example, through “pre-purchase agreements that act as financial stabilizer[s] for their production processes and their profitability.” These practices profile an embryonic type of farm-to-table model, emphasizing the application of the CE principles of fostering local supply chains and ensuring economic resilience through collaboration. In a similar vein, two chefs explained that they managed company gardens to better understand and respect seasonal cycles. R6 noted, “Everything that is planted is used in the restaurants and in the dishes [...]. At six-thirty, I go down to the garden, armed with some knowledge, as I have to plan and organize the garden to align with the dishes we offer.” This effectively exemplifies the application of the circular business model’s principle of regenerative production and consumption management to close the loop between farming and culinary output. While some chefs prioritize zero-kilometer sourcing, others adapt their strategies to better balance local sustainability with quality and product availability. R2 remarked, “Zero kilometer has always been the buzzword—but not for us. Our choice is to opt for suppliers of excellence,” highlighting a flexible implementation of CE principles in operative contexts. Similarly, R5 noted, “Even though the weekly local market remains, and that’s where I get most of my products, I have to account for the available quantity for my restaurant [...]. If I increased the quantity, it would transform everything, not being good for the environment.” These decisions account for the heterogeneous managerial approaches that are useful for successfully managing the transition to the CE. Most of the interviewees also acknowledged the importance of promoting their terroir, undergoing various forms of community-based activism.

R6 emphasized this point by suggesting an engagement in “local-based projects with young entrepreneurs. The only thing I can do is leveraging my over 40 years of experience in the restorative industry to bring prominence to the entrepreneurial businesses, as a mere educator and supporter of our terroir.” Similarly, R4 underscored his restaurant’s participation in “local community events, including courses for HGV, the Gastronomic Association of South Tyrol” to enrich the local culinary landscape. R3 drew attention to the media impact of Genesis, “an event that fuses human regeneration with gourmet gastronomy. With the goal of elevating people’s conscious experience of the mountain, nature, and the daily rhythms that it dictates, Genesis is an opportunity to introduce people to our territory in a unique way”. Sharing the same opinion, R1 noted the importance of off-site events with other chefs, also trying to “overcome the challenges we encounter from an associative perspective,” to elevate the communities’ connections to their natural and cultural heritage. Finally, the chefs acknowledged the role of education in advancing circular business models goals. As R5 remarked, “the training process for the staff in the dining room to helping them [in] understanding our local products” would add value to local-based storytelling. R4 and R2 echoed R5’s viewpoint, commenting on their efforts to create menus “respectful of the climate” and “dictated by the natural offering of each season, like our menu ‘Orto 6.23’—crafted exclusively with ingredients of this new month [June 2023],” respectively.

5 | Discussion

Our explorative study’s findings shed light on the three dimensions facilitating the CE transition in Michelin GS restaurants’ business models: green sustainable behavior, creativity, and terroir. Consistent with previous studies emphasizing HC’s role in driving the CE in the entire food industry (Huang et al. 2023; Schwark et al. 2020; Presenza et al. 2019), along with our multiple-case study approach, our research complements Bocken and Ritala’s (2022) framework by helping elucidate how these fine-dining restaurants strategically navigate resource and innovation strategies to achieve circular outcomes. Specifically, building on Bocken and Ritala’s categorization of circular business model archetypes, we further unpack narrowing, slowing, and closing resource loop strategies across three levels of operativity: product, process, and organization. Table 2 illustrates how our dimensions converge within Bocken and Ritala’s framework to achieve circular outcomes.

All interviews reveal that green sustainable behavior emerges as a core driver for embedding resource strategies in Michelin GS restaurants, emphasizing operational and resource efficiency (McAdams et al. 2019) and the need for systemic collaboration to transition to the implementation of CE principles. Specifically, through product-level innovation, restaurants design climate-respectful menus (Noguer-Juncà and Fusté-Forné 2024) that prioritize seasonal and local ingredients, thereby directly reducing resource consumption and energy inputs (narrowing loops). At the process level, chefs underline their efforts in promoting the adoption of energy-efficient technologies, water recovery systems, and circular practices to minimize their environmental footprint (closing loops) while ensuring resource longevity (slowing loops) and preserving high-quality cuisine (Geissdoerfer et al. 2018).

TABLE 2 | Key dimensions and practices of circular business models in Michelin Green Star restaurants.

Dimension of CBM	Innovation	Resources
Green Sustainable Behavior	<ul style="list-style-type: none"> • Product: ecofriendly menus with local and seasonal ingredients • Process: adoption of energy-efficient technologies • Context: engaging suppliers in aligned sustainability practices to enhance seasonal production cycles; network creativity 	<ul style="list-style-type: none"> • Narrowing: reducing energy and material inputs • Slowing: integrating short-term goals into daily operations • Closing: recycling and composting food waste
Creativity	<ul style="list-style-type: none"> • Product: creating unique dishes using upcycled and seasonal ingredients, thus enhancing sustainable creativity innovation • Process: reinterpreting traditional techniques to adapt them to more sustainable ways • Context: engaging in collaborative projects with both team members and stakeholders, creating supporting networks for circular innovations 	<ul style="list-style-type: none"> • Slowing: extending ingredient lifecycle by hybridizing ancient and new techniques • Closing: transforming surplus ingredients into new dishes to minimize resource losses
Terroir	<ul style="list-style-type: none"> • Product: highlighting local culture and flavor in menu, reflecting the uniqueness of the cultural heritage • Process: managing in-house gardens to align with seasonal agricultural cycles as an embryonic form of farm-to-table model • Context: community-based activism 	<ul style="list-style-type: none"> • Narrowing: strengthening local supply chains • Slowing: prioritizing seasonal sourcing for resource efficiency and social narratives • Closing: shortening supply chains

This perfectly aligns with the arguments made by Pearson (2024) and Filimonau et al. (2019)—that is, chefs' green sustainable behaviors drive innovation and experimental approaches to food waste management in kitchens. Additionally, our interviewed chefs reveal that they actively involve suppliers in sustainable practices and shared green behavior (context innovation).

Our findings also align with those of Parreira (2024) in terms of delineating a creativity model for circular HC, as chefs push the boundaries of both value creation and delivery processes. In all interviews, chef creativity emerges as a “hidden” trigger for innovation (Presenza and Petruzzelli 2019). At the product level, creativity encourages chefs to progressively increase their engagement in prioritizing food waste prevention by creating new dishes through more sustainable techniques and local ingredients (Albors-Garrigós et al. 2018), aligning with closing-loop strategies. According to the chefs, they iteratively refine their menus, reinterpreting ancient culinary techniques, blending them with contemporary sustainable strategies to extend ingredient lifecycles (slowing loops) and resulting in less food waste in restaurants. Moreover, all chefs highlight the importance of cultivating relationships with the various actors in the food ecosystem to nurture a shared set of values, deeply rooted in circularity (Parreira 2024), thus embracing even more robust social and environmental dimensions of CE dynamics.

Finally, our results point to the significance of terroir (Tresidder 2015) in grounding Michelin GS restaurants to anchor circular practices in the food industry by leveraging both the locality and the cultural heritage (Huang et al. 2023). At the product level, terroir inspires chefs to create dishes rooted in local flavors and culinary traditions (Taha and Abbas 2023) to fully embrace narrowing-loop strategies (Ryen et al. 2022). At the process level, terroir is reflected in the use of in-house gardens,

where chefs can adopt more green and organic farming as well as better align restaurant production with seasonal agricultural cycles (slowing loops). To align their business models with CE principles, Michelin GS restaurants are increasingly grounding their operativity in the concept of terroir, encompassing the emphasis on their sense of place, product quality differentiation, and branding the social narrative (Bertella 2023). Against this backdrop, at the context level, of particular importance is the engagement in community initiatives and educational programs aimed at preserving cultural and ecological heritage (Gössling and Hall 2021) while reinforcing local collaboration and shortening supply chains (closing loops).

Overall, our findings show how Michelin GS restaurants can operationalize CE principles in their business models through the symbiotic integration of green sustainable behavior, creativity, and terroir across both resource and innovation strategies.

This multidimensional approach not only highlights the transformative potential of HC as a driver of CE transition but also helps in delineating a replicable framework for advancing sustainability across the entire food industry. The resulting framework is summarized in Figure 2.

6 | Concluding Implications and Future Research Directions

By exploring how Michelin GS restaurants progressively integrate CE principles into their business models, our study contributes to the broader theoretical stream at the intersection of sustainability, luxury gastronomy, and business model innovation. Specifically, this paper expands prior research by delving into the analysis of the dimensions activating CBMIs, as well

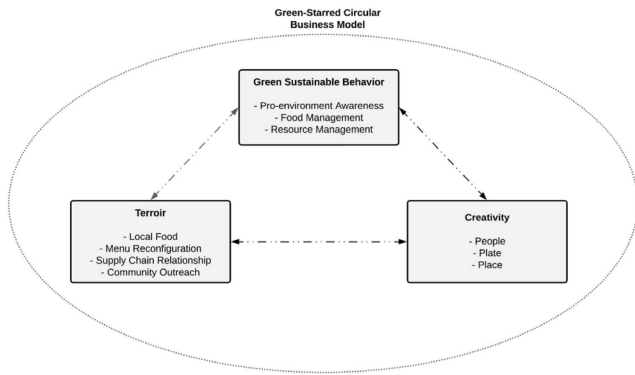


FIGURE 2 | Redefined framework.

as their interdependencies across business practices and strategies, in HC restaurants. We have conducted a multiple-case study of seven Michelin GS restaurants in Italy, combining semi-structured interviews with chefs and secondary data sources, to delineate a new conceptual model based on the three main dimensions—green sustainable behavior, creativity, and terroir—that forge a path to a more circular business model.

The first dimension—green sustainable behavior—emerges as the crucial principle behind the integration of CE principles into HC, influencing both the depth and the breadth of circular business operativity approaches. Our findings reveal that sustainability in Michelin GS restaurants transcends operational adjustments to include broader systemic transformations in supply-chain relationships, regenerative resource management, and the development of climate-conscious menus (Pearson 2024). Our findings highlight the fact that green sustainable behavior can coexist with and even complement exclusivity, reinforcing the idea that fine dining can effectively drive CE transition and innovation in business models (Kapferer and Michaut-Denizeau 2014). Moreover, the systemic collaboration observed among chefs and suppliers signals the evolution of an ecosystem approach that aims to achieve circularity in the entire food industry, with sustainability mandatorily embedded in products, processes, and the organizational culture (Evans et al. 2017).

The second dimension—creativity—plays a crucial role in integrating CE principles into HC. Our findings suggest that creativity acts as a “hidden” enabler of business model innovation, allowing chefs to experiment with culinary techniques, reinterpret traditions, and refine the circular use of ingredients. Indeed, creativity emerges as a dimension for ensuring GS restaurants’ environmental sustainability, while enhancing their commercial value, through brand differentiation and the realignment of multiple stakeholders’ interests (Brown et al. 2021). By revealing how creativity shapes both value creation and delivery within a CE framework, this study enriches the innovation management literature and focuses on the prominent role of creativity in spurring circularity in the food industry.

Finally, the third dimension—terroir—is observed as a catalyst for a broader systemic change toward circular practices in HC, establishing a deep connection with the local environment where the restaurants operate, effectively becoming stewards of their ecosystem. Our findings show that terroir serves as both an inspiration for circular culinary innovation

and a tool for promoting localized value networks. By prioritizing seasonal sourcing, strengthening local supply chains, and engaging in community-based initiatives, Michelin GS restaurants demonstrate how circular business models can be intertwined with place-based cultural and ecological heritage. Furthermore, our study sheds light on how terroir-driven strategies contribute to the implementation of streamlined food supply chains and farm-to-table models, which improve both environmental sustainability and socioeconomic resilience (Tresidder 2015).

Beyond these three core dimensions of the circular business model used in Michelin GS restaurants, this study provides new insights into the mechanisms through which creative businesses navigate the complexities of incorporating CE principles into their business models. Our findings illustrate the necessity of balancing environmental, social, and economic components while managing dynamic forces (i.e., quality and quantity of resources, timing of return of resources, etc.) and relationships. In this regard, this study offers a more in-depth conceptualization of the GS circular business models, where green sustainable behavior, creativity, and terroir are activated simultaneously and interdependently. Furthermore, our study enriches the innovation management literature by introducing a more structured framework for understanding CE integration into creative industries. Our proposed framework extends Bocken and Ritala’s (2022) framework, highlighting how Michelin GS restaurants implement narrowing, closing, and slowing resource loops across three levels: product, process, and organization. In doing so, this research contributes to the broader CE literature by introducing and empirically validating a novel framework that identifies and explains how fine dining serves as a testing ground for innovative CE strategies, influencing sustainable transitions across the entire food industry (Albors-Garrigós et al. 2018).

This research also provides valuable insights for managers, policymakers, and consumers in the HC sector, highlighting effective pathways for integrating CE principles into business model innovation. For managers and practitioners, our study presents a demonstrative case for considering green sustainable behavior, creativity, and terroir as important pillars of business strategy, significantly shaping value creation, delivery, and capture in the CE context. This research has multifaceted implications for managers. First, chefs are encouraged to adopt a holistic approach, anchoring sustainability at the core of the broader dimensions of green behavior. Implementing sustainable culinary practices, improving energy efficiency, and promoting collaborative relationships with suppliers can accelerate the transition to circularity. Second, managers are urged to leverage creativity, not just as a tool for culinary artistry, but as a strategic asset for sustainability-driven innovation. Experimenting with upcycling ingredients, rediscovering traditional cooking techniques, and designing menus inspired by CE principles can enhance both environmental and commercial outcomes, enabling restaurant managers to capitalize on strategic assets for a long-term competitive edge. Third, managers could embrace the concept of terroir to craft a distinctive value proposition, reinforcing authenticity and differentiation. Our findings also highlight the potential of terroir as a bridge between local traditions and global sustainability trends, enabling restaurants to create a broader impact on gastronomy and circularity (Huang et al. 2023).

For policymakers, this study emphasizes the strategic role of Michelin GS restaurants as sustainability pioneers in the food industry. Policies and incentives aimed at supporting circular business models in HC could have a significant positive effect across the sector. Regulatory frameworks should facilitate access to sustainable local ingredients, support regional supply-chain collaboration, and promote knowledge-sharing initiatives that empower restaurants to scale circular innovations. Additionally, structured programs promoting partnerships between HC establishments and educational institutions could improve workforce training in circular gastronomy, ensuring that future generations of chefs will be equipped with the skills necessary to drive systemic sustainability transitions.

For consumers, this research clearly shows the increasing role of customer choices in strengthening CE transitions in luxury dining. Although consumers are often excluded from the initial stages of culinary innovation, their preferences and purchasing behaviors have profound impacts on sustainability practices. By prioritizing restaurants that integrate CE principles, customers can actively contribute to the evolution of the circular gastronomy industry. Awareness campaigns and transparent sustainability communication can further empower consumers to make informed choices, promoting a cultural shift where circularity is embraced as a crucial component of luxury dining.

While our findings offer valuable insights into circular business models in HC, our study has some limitations that may open further research directions. We have employed a qualitative methodology by conducting a multiple-case study. Future lines of research could expand on our study by incorporating quantitative analyses to support the robustness and generalization of our findings, as well as providing a more comprehensive representation of the investigated sector. Future research could also consider different geographical areas to examine and compare contextual factors that might effectively shape the implementation of CE principles and practices in Michelin GS restaurants, emphasizing heterogeneous relationships among green sustainable behavior, creativity, and terroir. Further research could take into account other dimensions that could impact the transition to circular business models in the creative industry. Finally, longitudinal studies could provide useful insights into the long-term effects of activating these new levers of change on HC performances and circular outcomes.

Acknowledgments

Alessandra Costa acknowledges the PON “Research and Innovation 2021-2023”, FSE React-EU- Azione IV.6 “Contratti di ricerca su tematiche Green” DM 1062 del 10/08/2021. Project CUP: 45F21001740007. Open access publishing facilitated by Università degli Studi di Messina, as part of the Wiley - CRUI-CARE agreement.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Research data are not shared.

Peer Review

The peer review history for this article is available at <https://www.webofscience.com/api/gateway/wos/peer-review/10.1111/beer.12854>.

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