

Transformation of street-style fried rice into star-hotel cuisine: Innovations in processing, safety, sensory quality, and culinary tourism positioning

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Abstract - This study explores how humble street-style fried rice can be transformed into a premium star-hotel dish by integrating advances in food processing, quality control, and culinary tourism strategy. The aims are to enhance safety and shelf-life, standardize sensory quality, and reposition fried rice as a signature upscale offering. Methodologically, the paper synthesizes recent developments in prepared fried rice technologies, including novel thermal and non-thermal processing, freezing, and quality-monitoring tools, alongside case-based insights from tourism-driven dish upgrading and local rice innovations as culinary icons. Analysis focuses on microbial safety, starch retrogradation, texture, colour, and flavour stabilization, as well as menu standardization, presentation, and branding for tourist and hotel markets. The study concludes that combining advanced processing (e.g., physical field and static magnetic field freezing) with standardized recipes and tourism-oriented branding can elevate fried rice from roadside fare to a consistent, marketable star-hotel dish.

Keywords: fried rice; food processing innovation; quality and safety; culinary tourism; menu standardization

1. Introduction

Street-style fried rice is a popular, affordable staple across Asian cities and a key element of street food tourism. Yet, when industrially prepared, fried rice faces serious quality issues: high microbial risk, starch retrogradation leading to staling, vegetable water loss and discolouration, and oxidation of meat ingredients (Huang et al., 2023). Emerging processing and monitoring technologies—irradiation, high-voltage electric field, microwave, radio-frequency, ohmic heating, and advanced spectral imaging—are being developed to improve safety and consistency in prepared fried rice (Huang et al., 2023; Montero et al., 2020; Yu et al., 2017).

At the same time, gastronomy has become a major component of tourism experiences, where food is expected to deliver not only nourishment but authenticity, emotion, and memorable sensory pleasure (Okumus, 2020; Richards, 2021; Kumar, 2024). Star hotels increasingly use local or traditional foods as branded gastronomic assets, integrating nutrition, colour, shape, and plating to meet international expectations while preserving local identity (Marwanti et al., 2020).



Several trends create urgency for transforming roadside fried rice into a refined, hotel-ready product. First, rapid growth of the prepared food industry has expanded demand for safe, convenient fried rice that retains fresh-like quality over extended distribution chains (Huang et al., 2023; Montero et al., 2020). Traditional heat sterilization can damage flavour, colour, and texture, forcing hotels to choose between safety and sensory appeal (Huang et al., 2023; Montero et al., 2020; Yu et al., 2017).

Second, tourists and high-end diners increasingly seek authentic, localized culinary experiences as a key motive for destination choice and satisfaction (Okumus, 2020; Richards, 2021; Marwanti et al., 2020). Street foods and local rice-based products are underutilized as premium culinary icons, despite their potential to drive culinary tourism and local economic development (Marwanti et al., 2020; Praesri et al., 2022; Chatibura, 2021). Finally, heightened post-pandemic concern with hygiene and food safety, along with expectations for premium sensory quality in restaurant and hotel settings, demands standardized processing, branding, and service strategies that bridge informal street food and formal hospitality environments (Richards, 2021; Syahrial & Anjarsari, 2023; Rejeb et al., 2022).

Street-style fried rice: Fried rice prepared in informal or semi-formal food stalls, typically characterized by strong wok aroma, variable ingredient quality, and non-standardized recipes and hygiene practices (Huang et al., 2023; Lionel & Budi, 2024; Chatibura, 2021). Star-hotel cuisine: Dishes produced in certified hotels (e.g., three- to five-star) that conform to formal standards in safety, nutrition, presentation, and service, and often serve as branded or signature items (Richards, 2021; Rejeb et al., 2022). Prepared fried rice / convenience rice: Industrially processed, packaged fried or cooked rice products designed for chilled, frozen, or ambient distribution, requiring reheating before consumption (Montero et al., 2020; Montero et al., 2020; Yu et al., 2017). Sensory quality: Consumer-perceived attributes of appearance (colour, gloss), aroma, flavour, texture, and overall acceptability, critical to the success of fried and rice-based foods (Wang et al., 2023; Montero et al., 2020; Yu et al., 2017; Boué et al., 2021). Culinary tourism / food tourism: Travel motivated in whole or in part by interest in food experiences, including local dishes, authentic flavours, and gastronomic branding of destinations (Okumus, 2020; Marwanti et al., 2020; Praesri et al., 2022; Chatibura, 2021).

This study is anchored in four complementary theoretical perspectives: Experience economy and gastronomic experience theory: Gastronomic tourism research has evolved from a producer-centred view (Experience 1.0) to co-creation (Experience 2.0) and foodscapes (Experience 3.0), where food links place, identity, culture, and social interaction (Richards, 2021). Transforming fried rice into hotel cuisine is viewed as designing a curated gastronomic experience that integrates product, place, and narrative.

Service-dominant logic and co-creation: Food tourism emphasizes co-created value between producers (chefs, hotels) and consumers (tourists, “foodies”), in which authenticity, interaction, and emotional engagement shape satisfaction and loyalty (Okumus, 2020; Richards, 2021; Chatibura, 2021). Branded fried rice in hotels must be co-designed with consumer expectations while drawing from street-food heritage.

Food quality and safety systems in prepared foods: Prepared fried rice quality is governed by interactions among processing technologies, ingredient characteristics, and storage conditions, influencing microbial stability, starch retrogradation, oxidation, and sensory changes (Huang et al., 2023; Montero et al., 2020; Wang et al., 2023; Yu et al., 2017; Zhang et al., 2020; Li et al., 2023). This framework emphasizes process optimization (thermal/non-thermal treatments, freezing, monitoring) to achieve hotel-level safety and consistency.

Culinary and destination branding: Traditional or local foods can function as gastronomic brands for destinations and hotels when presentation, nutrition, colour, and authenticity are strategically managed (Marwanti et al., 2020; Praesri et al., 2022; Chatibura, 2021; Syahrial & Anjarsari, 2023). The transformation of fried rice is conceptualized as a branding exercise that elevates a street dish into a recognizable, premium icon.

Prepared fried rice has been identified as an emerging category with Chinese characteristics but still limited research coverage [1](#). Major quality challenges include microbial contamination, staling due to high starch content, vegetable water loss and discolouration, and oxidation of meats during processing and storage (Huang et al., 2023).

Effective marketing strategies, particularly in restaurant businesses, are shown to play a crucial role in attracting customers and maintaining market presence. In addition, ambiance and service quality are identified as key factors influencing customer satisfaction and enhancing the overall culinary tourism experience. From an operational perspective, efficient housekeeping services contribute significantly to meeting guest expectations and improving service delivery in hospitality settings. Furthermore, the use of digital promotion is highlighted as an essential tool for increasing hotel competitiveness, enabling businesses to reach wider audiences and adapt to evolving market trends. Collectively, these findings suggest that integrating marketing innovation, service excellence, and digital strategies is vital for success in the tourism industry (Putra et al., 2024; Sukartini et al., 2024; Putri et al., 2025; Kencanawati et al., 2025).

Novel physical processing technologies—irradiation, high-voltage electric field, microwave, radio-frequency, and ohmic heating—are proposed as alternatives or complements to conventional heat treatments, offering improved microbial control with less damage to colour, flavour, and nutrients (Huang et al., 2023; Yu et al., 2017; Rani et al., 2023; Zhang et al., 2020; Li et al., 2023). Microwave-assisted pasteurization systems (MAPS) can extend chilled fried rice shelf life from approximately 5 days to up to 6 weeks at 7 °C while maintaining acceptable sensory and physicochemical properties (Montero et al., 2020).

Reviews on cooked and convenience rice show that pre-cooking steps (washing, soaking), cooking methods, and post-cooking operations (cooling, freezing, drying, storage) strongly influence texture, stickiness, and flavour through mechanisms such as water diffusion, amylose leaching, and starch retrogradation (Yu et al., 2017).

Non-thermal or combined technologies, including high-pressure treatments and optimized freezing protocols, can better preserve sensory attributes than high-temperature processing, though challenges remain in preventing textural deterioration during storage (Yu et al., 2017; Zhang et al., 2020). Frying-focused reviews outline how deep-fat frying generates desirable golden colour, crispiness, and aroma, but also high oil content, potentially hazardous compounds, and sensory inconsistencies (Wang et al., 2023; Rani et al., 2023; Zhang et al., 2020; Li et al., 2023).

Novel frying and pre-treatment techniques (vacuum frying, microwave-vacuum frying, ultrasound-assisted frying, pulsed electric fields) aim to reduce oil uptake, energy use, and formation of toxic compounds, while maintaining texture and flavour (Rani et al., 2023; Zhang et al., 2020; Li et al., 2023). The use of plant extracts and antioxidants is another route to limit acrylamide, heterocyclic amines, and oxidative breakdown, with variable effects on sensory properties (Li et al., 2023).

Comprehensive reviews of fried foods emphasize that appearance, flavour, and texture are the main drivers of consumer acceptance and that industrial producers often struggle with instability and inconsistency in these attributes. Factors such as frying temperature-time profile, batter composition, oil quality, and post-frying handling determine crust formation, browning, volatile generation, and internal moisture, which then translate into perceived crispiness, colour, and taste (Wang et al., 2023; Rani et al., 2023).

Research on rice-based fried batters shows that health-oriented modifications, such as increasing resistant starch content, can be achieved without significantly compromising consumer-perceived hardness, fracturability, crispness, or tooth-packing in battered products (Boué et al., 2021). This indicates that sensory and nutritional objectives can be balanced through ingredient and process design, an insight relevant to healthier, premium fried rice formulations.

Food tourism research shows that food has become central to tourism experiences and destination competitiveness, with key themes including authenticity, unique food experiences, destination marketing, and sustainability (Okumus, 2020). Gastronomic experiences have shifted from basic consumption of meals to complex “foodscapes” that integrate place, culture, identity, and social interactions. High-quality, localized dishes can co-create meaning between visitors, residents, and producers, especially when supported by storytelling, aesthetics, and participatory experiences (Okumus, 2020; Richards, 2021; Marwanti et al., 2020).

Within this context, rice-based innovations have been used to develop culinary icons that strengthen destination appeal. A study on “Pindul Rice,” a grilled rice-and-cassava product for Pindul



Cave tourism, found that recipe innovation using local ingredients combined with sensory and satisfaction testing can generate a distinctive, accepted culinary icon that supports local livelihoods (Marwanti et al., 2020).

Similarly, qualitative work on Bugis-Makassar traditional treats in star hotels illustrates how strategic gastronomic branding—through attention to nutrition, colour, shape, layout, and slice arrangement—can integrate local wisdom with international standards, positioning traditional foods as core elements of upscale hospitality (Syahrial & Anjarsari, 2023). Street food-focused studies highlight marketing mix and critical success factors in street food tourism. In Bangkok, price, people, process, product, and physical evidence have been shown to shape tourists' positive perceptions and provide a model for developing street food tourism as a niche attraction (Praesri et al., 2022).

Reviews of street food destinations stress the importance of diverse food resources, strong cultural narratives, and appropriate regulatory frameworks (especially hygiene and safety) as conditions for successful street food tourism (Chatibura, 2021). Consumer research on specific fried rice outlets indicates that food quality is the primary driver of satisfaction, but perceived uniqueness, price-value alignment, ambiance, and service are crucial to maintaining loyalty and enhancing culinary tourism potential (Lionel & Budi, 2024).

Bibliometric analyses of restaurant research show that consumer behaviour, satisfaction, authenticity, and social media have become dominant themes, with a growing focus on luxury and ethnic restaurants (Rejeb et al., 2022). High-end restaurants are conceptualized not only as food providers but as sites of prestige, comfort, and lifestyle enhancement, where brand image and perceived authenticity shape willingness to pay and revisit intentions (Richards, 2021; Rejeb et al., 2022). Post-COVID-19, hygiene and sanitation have become critical attributes in restaurant evaluations, reinforcing the importance of robust safety and quality systems for any dish aspiring to star-hotel status (Rejeb et al., 2022).

Drawing from the above background, theory, and prior research, several key problems emerge that this study seeks to address:

- (1) How can street-style fried rice be processed to meet star-hotel safety standards without sacrificing its characteristic sensory qualities? Current industrial processing often trades off safety against flavour, colour, and texture, and limited studies specifically examine the application of novel thermal and non-thermal technologies to fried rice for premium hospitality contexts.
- (2) What product and process parameters are critical for achieving consistent, hotel-level sensory profiles in fried rice derived from street-food traditions? Factors such as rice type, pre-cooking treatments, frying methods, oil management, incorporation of health-oriented modifications (e.g., resistant starch, reduced oil), and reheating protocols need to be systematically aligned with sensory optimization knowledge to deliver stable, desirable attributes.
- (3) How can fried rice be re-positioned, presented, and branded as a star-hotel gastronomic icon while preserving authenticity and supporting culinary tourism? There is a knowledge gap on how to translate informal street dishes into hotel-branded experiences using gastronomic branding, experience co-creation, and destination marketing frameworks, particularly in relation to local rice-based dishes.
- (4) What integration of safety, sensory, and branding strategies best supports the dual goals of guest satisfaction and destination image-building? Existing work tends to treat processing/technology and tourism/branding separately. A combined framework is needed to specify how food safety systems, sensory standardization, and culinary tourism narratives can be orchestrated in the case of fried rice for star hotels.

Addressing these research problems will provide a conceptual and practical pathway for transforming street-style fried rice into a signature star-hotel dish that is safe, sensorially compelling, culturally authentic, and strategically positioned within culinary tourism.

2. Method

2.1. Data Collection

This qualitative study explored how street-style fried rice can be repositioned as a star-hotel signature dish, focusing on safety, sensory quality, and culinary tourism appeal. Instead of laboratory

experiments, product understanding was gained through field observation of how fried rice is prepared and presented in two main settings: (a) Street-food stalls (as everyday, “authentic” reference), (b) Hotel and upscale restaurants (as premium reference), similar to case-study approaches in restaurant and hotel research. Researchers noted ingredients, cooking processes, hygiene practices, plating styles, and guest–staff interactions.

Participants were selected purposively, focusing on information-rich cases (a) Street fried-rice vendors and hotel chefs (menu development, standard recipes, quality consistency), (b) Hotel F&B managers (branding, safety standards, pricing), and (c) Domestic and international tourists who had eaten both street fried rice and hotel fried rice (perceptions of authenticity, quality, and value). Sample size followed qualitative saturation principles rather than statistical representativeness.

Three main techniques were used, consistent with qualitative fried-rice and culinary tourism studies: (a) Semi-structured interviews, Conducted with vendors, chefs, managers, and tourists to explore: Views on “authentic” fried rice vs. “hotel-style” fried rice, Expectations for taste, presentation, hygiene, and price, and Perceptions of fried rice as a culinary icon and tourism attraction. (b) Non-participant observation; Systematic observation at stalls and restaurants documented: workflows, cleanliness, service style, guest reactions, and overall atmosphere, similar to studies of street food and traditional culinary venues. (c) Documentation: Collection of menus, promotional materials, social media posts, and hotel branding documents to understand how fried rice is positioned in marketing and destination narratives (Praesri et al., 2022).

2.2. Data Analysis

Data were analysed using a descriptive–thematic approach inspired by Miles & Huberman and Creswell (Lee et al., 2025). (1) Data organization and transcription; Interview recordings and field notes were transcribed verbatim. Observation sheets and documents were compiled into a unified database. (2) Data reduction (coding): Using manual coding or qualitative software, meaningful segments were labelled with initial codes such as: “street authenticity,” “premiumized fried rice,” “standard recipe,” “food safety image,” “culinary icon,” “tourist experience,” “price–value perception”. (3) Data display: Codes were grouped into broader themes and displayed in matrices (e.g., comparing street vs. hotel perceptions of quality, hygiene, and authenticity; vendor/chef vs. tourist views on what makes fried rice “luxury”). (4) Conclusion drawing and verification: Themes were interpreted to build an integrated narrative on: How fried rice is currently experienced in street and hotel contexts, Which sensory, safety, and presentation changes make it feel “star-hotel” while staying authentic, and How such a dish can act as a culinary tourism attraction.

Credibility was strengthened through triangulation of interviews, observations, and documents, and by comparing perspectives across different participant groups. This qualitative method provides an in-depth, context-rich understanding that supports practical guidelines for transforming street-style fried rice into a hotel-level culinary tourism product.

3. Results and Discussion

3.1 Results

Transforming street-style fried rice into a star-hotel–grade cuisine requires processing routes that deliver fine-dining sensory quality and culinary reliability at scale, while assuring robust microbial safety. Emerging physical processing technologies and advanced quality-monitoring tools provide a technical foundation for this shift.

3.1.1 Processing and safety innovations

Prepared fried rice is intrinsically vulnerable in the supply chain: it is easily contaminated by microorganisms, rich in starch that stales, and includes vegetables prone to water loss and discoloration and meats susceptible to oxidation and deterioration (Huang et al., 2023). Conventional post-cooking heat treatments (pasteurization, high-temperature or ultra-high-temperature sterilization) can secure safety but often damage colour, aroma and delicate texture, undermining the premium expectations of luxury hotels (Huang et al., 2023; Obileke et al., 2022).

Modern physical-field technologies—irradiation, high-voltage electric field, microwave, radio frequency and ohmic heating—have been identified as especially relevant for prepared fried rice (Huang et al., 2023). These methods enable more uniform or volumetric heating, shorter processing times and lower overall energy use, while better preserving nutrients, colour and flavour



than conventional high-temperature thermal sterilization (Huang et al., 2023; Pokharel, 2023). Within this toolbox, microwave-based systems are particularly promising for centralized hotel production.

Microwave-assisted pasteurization systems (MAPS) have been applied directly to fried rice, extending chilled shelf-life at 7 °C from the typical 5–7 days to approximately 6 weeks, with no spoilage-associated sensory attributes detected over storage (Montero et al., 2020). Across six weeks, MAPS-treated rice showed no major physical or chemical deterioration; microbial growth remained the principal spoilage mechanism, indicating that safety targets were met without over-processing (Montero et al., 2020). Sensory analysis revealed that MAPS-rice maintained desirable attributes, including a firmer egg texture compared with conventionally frozen controls (Montero et al., 2020). This combination of safety, extended refrigerated shelf-life, and stable sensory quality makes MAPS an attractive platform for high-volume hotel banqueting, buffets, and room-service operations, where centralized preparation and just-in-time regeneration are critical.

Similar hybrid microwave technologies, such as microwave-assisted induction heating, have produced ready-to-eat rice with colour, texture and sensory attributes comparable to traditionally steamed rice, while achieving rapid in-pack pasteurization and meeting stringent lethality targets (e.g., >6-log reduction of non-proteolytic *Clostridium botulinum*) (Lee et al., 2025). These developments demonstrate that microwave-assisted, in-package heating can deliver both safety and a “fresh-cooked” eating experience compatible with star-hotel standards.

Beyond microwaves, ohmic and radio-frequency heating offer rapid, volumetric heating with reduced processing times, improved energy efficiency and better retention of product quality 3. When combined with irradiation or high-voltage electric fields for microbial control, these methods support “hurdle” strategies that lower the intensity of each individual treatment while maintaining safety and minimizing damage to delicate fried rice matrices (Huang et al., 2023; Pokharel, 2023; Wu et al., 2022; Xue et al., 2023). Non-thermal technologies such as high-pressure processing, cold plasma and ozone can further extend shelf-life and enhance microbial inactivation with minimal impact on heat-sensitive nutrients and aroma compounds, providing additional options for premium ready-to-eat rice components in hotel kitchens (Obileke et al., 2022; Allai et al., 2022; Wu et al., 2022; Xue et al., 2023).

3.1.2 Advanced monitoring and control of quality

To align with fine-dining expectations, safety innovations must be integrated with precise quality monitoring. Raman spectral imaging, near-infrared spectral imaging, and low-field nuclear magnetic resonance (NMR) have been proposed as non-destructive tools to track moisture migration, starch retrogradation and ingredient deterioration in prepared fried rice (Huang et al., 2023). These methods can detect staling of starch, drying and colour loss in vegetables, and oxidation in meat inclusions—key mechanisms by which street-style fried rice loses its just-cooked appeal during storage (Huang et al., 2023).

Routine use of such imaging and NMR tools in central hotel production would allow early detection of deviations in water distribution, texture setting and lipid oxidation, enabling rapid correction of process parameters (e.g., reheating protocol, blast-chilling profile, packaging atmosphere). In combination with optimized cold-chain management and gentle physical-field processing (microwave, RF, ohmic), these controls mitigate staling, maintain grain integrity and gloss, stabilize vegetable colour, and limit off-flavours, producing a finished dish whose texture, colour and aroma remain within a narrow, high-end specification window over extended refrigerated holding (Montero et al., 2020; Huang et al., 2023; Pokharel, 2023; Allai et al., 2022; Lina & Min, 2022).

Street fried rice is typically cooked and consumed immediately, with culinary value tied to wok hei, intense aroma release and informal presentation. For star hotels, the challenge is to translate this sensory signature into a controllable, safe, and logistically robust product that can be produced centrally, portioned, held under refrigeration, regenerated rapidly, and plated with precision.

The integration of MAPS or related microwave-assisted technologies with non-thermal or mild-thermal hurdles, coupled with spectroscopic and NMR-based quality monitoring, provides a processing architecture that can: (a) Achieve commercial-level microbial safety and regulatory shelf-life targets for chilled ready-to-eat fried rice (Montero et al., 2020; Huang et al., 2023; Obileke et al., 2022; Allai et al., 2022; Wu et al., 2022; Xue et al., 2023). (b) Preserve key sensory markers such as distinct grain structure, pleasant roasted rice aroma and defined textures of inclusions (egg, vegetables, meats) (Montero et al., 2020; Huang et al., 2023; Wang et al., 2023; Lina & Min, 2022). (c)

Support centralized production models, where large batches are prepared in a central kitchen and distributed to multiple hotel outlets or banquet venues under strict cold-chain control (Montero et al., 2020; Huang et al., 2023; Wu et al., 2022).

Within this framework, premium plate presentation and culinary storytelling—emphasizing regional ingredients, authenticity and nutritional balance—can be layered on top of a technologically stabilized core product. In effect, processing and safety innovations provide the hidden infrastructure that allows a traditionally perishable, informal street dish to be consistently delivered as a refined, safe and sensorially complex star-hotel cuisine.

3.1.3 Culinary tourism and branding outcomes

Case evidence from innovative rice-based products, such as “Pindul Rice” developed as a destination-specific grilled rice icon, showed high sensory acceptance and strong potential as a culinary tourism symbol able to increase local welfare and ingredient value (Marwanti et al., 2020). Models of organic rice-based culinary attractions demonstrate that structured product development and stakeholder coordination can turn rice preparations into core elements of destination portfolios.

Studies of Michelin-starred and other destination restaurants show that star-level venues promote place by leveraging local produce, recipes and cooking techniques, and by crafting unique gastronomic experiences that augment destination attractiveness and media capital (Batat, 2020; De Albuquerque Meneguel et al., 2019; Huang et al., 2024).

Street-food research indicated that food sensory appeal, cultural experience, health and safety, service, physical environment, and menu design are key quality dimensions that shape perceived price fairness, involvement, and repurchase intention for rice-based street food (Jeaheng et al., 2023; Jeaheng & Han, 2020). In luxury gastronomy and gastronomic tourism, value is co-created through immersive, multisensory experiences, co-production possibilities, and integration of local narratives and terroir; these elements are central to experience quality and to positioning food as a primary travel motivator (Prayag et al., 2020; Richards, 2021; Pan et al., 2025; Park et al., 2021).

3.2 Discussion

The findings suggest that transforming street fried rice into star-hotel cuisine is technically feasible and strategically aligned with current trends in gastronomic tourism, provided the innovation simultaneously addresses processing safety, sensory refinement, and experiential/place branding.

Street fried rice is vulnerable to microbial contamination, staling, vegetable water loss and discolouration, and lipid oxidation in meats (Huang et al., 2023). These weaknesses conflict with the extended *mise-en-place* times, centralized kitchens, and strict liability regimes that characterize high-end hotels. Physical-field technologies (irradiation, high-voltage electric field, RF, ohmic heating) and MAPS directly tackle this gap by enabling rapid, volumetric heating and microbial inactivation with less damage to volatile aroma compounds and pigments than prolonged conventional heat (Huang et al., 2023; Montero et al., 2020).

From a star-hotel perspective, this capability supports several strategic needs: (a) Consistent quality at scale for buffets, banquets and in-room dining, by supplying safe, semi-prepared fried rice components with a long chilled shelf-life (Montero et al., 2020). (b) Menu reliability across seasons and occupancy cycles, as extended shelf-life reduces waste and protects against supply interruptions. (c) Regulatory and brand risk management, because non-destructive monitoring (Raman/NIR/NMR) allows hotels to verify product integrity and document due diligence (Huang et al., 2023). In culinary tourism, hygiene and safety perceptions substantially influence tourists’ willingness to consume street food and their repurchase intentions (Jeaheng et al., 2023; Jeaheng & Han, 2020).

By embedding advanced safety technologies in the back-of-house, hotels can offer “street-inspired” fried rice that satisfies the desire for authenticity while overcoming risk concerns that might deter more cautious or high-spending visitors.

Star-hotel cuisine demands sensory precision and narrative coherence. The research on prepared fried rice shows that post-cooking processing has decisive effects on flavour and texture; uneven reheating can seriously degrade eating quality. MAPS minimized textural and flavour changes over 6 weeks, and even enhanced certain attributes such as egg firmness, indicating that carefully tuned process parameters can stabilize and even optimize the sensory profile for fine-dining contexts (Montero et al., 2020).



Parallel work on traditional treats in starred hotels demonstrates how gastronomic branding uses nutrition, colour, shape, layout and slicing to transform everyday items into perceived luxury products while preserving local identity. Applying these principles, street-style fried rice can be:

- (a) Re-plated as a composed dish (portion-controlled rice cylinders or quenelles) with architected garnishes rather than a mound in a wok.
- (b) Enhanced by controlled contrasts in texture (crispy rice elements, carefully cooked vegetables, well-defined egg and protein pieces) made possible by gentle processing and careful holding conditions (Huang et al., 2023; Montero et al., 2020).
- (c) Communicated as a “chef’s interpretation” of street heritage, aligning with contemporary Michelin-level practices that re-imagine traditional foods while maintaining recognizable flavour profiles (Batat, 2020; De Albuquerque Meneguel et al., 2019; Huang et al., 2024).

This aligns with the broader evolution from “Experience 1.0” (basic food service) to “Experience 3.0” foodscapes, in which gastronomy connects place, identity, and culture in a holistic experiential environment (Richards, 2021).

Evidence from Pindul Rice and organic rice culinary attractions illustrates that innovated rice dishes can become destination icons when they: (a) incorporate local ingredients and techniques, (b) secure strong consumer sensory acceptance, and (c) are embedded into tourism narratives and product systems (Marwanti et al., 2020). Such products increase the economic value of local crops, support small producers, and diversify the tourism offer.

Michelin-starred and other destination restaurants demonstrate that high-end venues can function as engines of gastronomic tourism by: (a) Designing unique, place-specific gastronomic experiences; (b) Promoting terroir products and local food heritage; (c) Contributing to the “gastronomization” of destinations and strengthening their media capital (Batat, 2020; De Albuquerque Meneguel et al., 2019; Huang et al., 2024).

Positioning an elevated fried rice as a signature dish in star-hotels can serve similar functions. By “putting place on the plate” through local rice varieties, vegetables, sauces, and storytelling about street markets and neighbourhood vendors, hotels can anchor guests’ perception of the destination’s culinary identity. This is consistent with research showing that tourists increasingly seek authentic, destination-specific foods and that such experiences strongly shape destination image and attachment (Prayag et al., 2020; Richards, 2021; Rachão et al., 2019).

The street-food literature identifies cultural/local experience, core food quality, sensory appeal, health and safety, and physical environment as key drivers of perceived value, price fairness and repurchase intention (Jeaheng et al., 2023; Jeaheng & Han, 2020).

Star-hotels can leverage these insights by (a) Delivering high sensory quality and clear safety assurances, which justify premium pricing while maintaining perceptions of fairness (Jeaheng et al., 2023). (b) Curating environments (interior design, open kitchens, service rituals) that evoke the vibrancy of street settings in a controlled, comfortable space, thus combining novelty with security (Pan et al., 2025; Jeaheng et al., 2023; Jeaheng & Han, 2020). Offering interactive or serious-leisure style activities (fried-rice masterclasses, market-to-table experiences) that support co-creation and deepen involvement, which has been shown to enhance value perception and experiential outcomes in culinary tourism (Prayag et al., 2020; Pan et al., 2025). As hotels increasingly adopt localized gastronomy to differentiate their brands and drive higher average daily rates, integrating an iconic, street-inspired fried rice aligns with proven strategies in hotel F&B growth and culinary tourism (Rachão et al., 2019; Chatterjee, 2025)..

Table 1: Rice-Based Gastronomic Innovation and Tourism Positioning

Aspect	Key Findings for Fried Rice Transformation
Processing & safety	Physical-field tech, MAPS extend shelf-life, maintain quality, ensure safety
Sensory & presentation	Gentle processing preserves texture; plating, colour, layout build luxury image
Destination icon potential	Rice innovations can become culinary icons and tourism attractions

Gastronomy & place promotion	Star restaurants use local produce, narratives to enhance destination appeal
Tourist behavior & valuation	Sensory appeal, safety, authenticity, environment drive price fairness, revisit

4. Conclusion

This study set out to explore how street-style fried rice can be transformed into star-hotel cuisine by integrating innovations in processing, safety, sensory quality, and culinary tourism positioning. Across these dimensions, the evidence indicates that such an upgrade is both technologically feasible and strategically valuable.

On the processing and safety side, emerging physical-field technologies (irradiation, high-voltage electric field, microwave, radio-frequency, ohmic heating) and advanced monitoring tools (Raman and near-infrared spectral imaging, low-field NMR) directly address key weaknesses of fried rice—microbial contamination, starch staling, vegetable water loss, and meat oxidation—while better preserving nutrients, colour, and flavour than conventional high-temperature sterilization [1](#). These innovations provide the reliability, shelf-life, and traceable safety performance required in star-hotel operations and large-scale catering.

In terms of sensory quality and presentation, gentle processing and optimized cold-chain logistics support stable texture and aroma, creating a consistent base on which chefs can build premium plating and gastronomic narratives. Gastronomic branding work in starred hotels shows that deliberate use of nutrition, colour, shape, layout, and slice arrangement can successfully elevate traditional treats while preserving authenticity. Applied to fried rice, this allows a shift from everyday street food to a curated, chef-driven signature dish that still reflects its roots.

Regarding culinary tourism positioning, rice-based innovations such as Pindul Rice demonstrate that new yet tradition-anchored rice products can become local culinary icons, improving tourist appeal and community welfare (Marwanti et al., 2020). Broader food-tourism research confirms that visitors increasingly travel for distinctive, authentic food experiences, and that local cuisine is a powerful differentiator in destination marketing and image building (Okumus, 2020; Richards, 2021; Sio et al., 2021; Mtapuri et al., 2024).

Embedding an elevated, street-inspired fried rice as a star-hotel signature aligns with these trends, especially when it draws on local ingredients, stories, and multisensory design to create memorable experiences (Prayag et al., 2020; Pan et al., 2025; Park et al., 2021; Li et al., 2021; Jeaheng & Han, 2020).

Overall, the transformation of street-style fried rice into star-hotel cuisine is not merely a matter of recipe modification, but a holistic innovation process. It requires marrying advanced food processing and safety technologies with refined sensory design and strong place-based storytelling. When these elements are aligned, fried rice can evolve from an informal street staple into a flagship gastronomic product that supports hotel differentiation, strengthens destination image, and contributes to sustainable culinary tourism development.

References

- Allai, F., Azad, Z., Mir, N., & Gul, K. (2022). Recent Advances in Non-Thermal Processing Technologies for Enhancing Shelf Life and Improving Food Safety. *Applied Food Research*. <https://doi.org/10.1016/j.afres.2022.100258>.
- Batat, W. (2020). The role of luxury gastronomy in culinary tourism: An ethnographic study of Michelin-Starred restaurants in France. *International Journal of Tourism Research*. <https://doi.org/10.1002/jtr.2372>.
- Boué, S., Chen, M., Daigle, K., Lea, J., & Bett-Garber, K. (2021). Changes in Fried Rice Batter with Increased Resistant Starch and Effects on Sensory Quality of Battered Fried Onions. *Cereal Chemistry*. <https://doi.org/10.1002/cche.10502>.
- Chatibura, D. (2021). Critical success factors of street food destinations: a review of extant literature. *International Journal of Tourism Cities*. <https://doi.org/10.1108/ijtc-09-2019-0174>.



- Chatterjee, S. (2025). The Study of the Impact of Local Cuisine on the Growth of Hotel Management. *International Journal of Advanced Research in Science, Communication and Technology*. <https://doi.org/10.48175/ijarsct-25224>.
- De Albuquerque Meneguel, C., Mundet, L., & Aulet, S. (2019). The role of a high-quality restaurant in stimulating the creation and development of gastronomy tourism. *International Journal of Hospitality Management*. <https://doi.org/10.1016/j.ijhm.2018.10.018>.
<https://doi.org/10.1108/tr-11-2019-0450>.
<https://doi.org/10.30892/gtg.34106-617>.
- Huang, J., Zhang, M., & Fang, Z. (2023). Perspectives on Novel Technologies of Processing and Monitoring the Safety and Quality of Prepared Food Products. *Foods*, 12. <https://doi.org/10.3390/foods12163052>.
- Huang, Y., Hall, C., & Chen, N. (2024). Destination Restaurants' Practices and the Production of Locality: The Case of Michelin Restaurants in China. *Foods*, 13. <https://doi.org/10.3390/foods13121838>.
- Jeaheng, Y., & Han, H. (2020). Thai street food in the fast growing global food tourism industry: Preference and behaviors of food tourists. *Journal of Hospitality and Tourism Management*, 45, 641-655. <https://doi.org/10.1016/j.jhtm.2020.11.001>.
- Jeaheng, Y., Al-Ansi, A., Chua, B., Ngah, A., Ryu, H., Ariza-Montes, A., & Han, H. (2023). Influence of Thai Street Food Quality, Price, and Involvement on Traveler Behavioral Intention: Exploring Cultural Difference (Eastern versus Western). *Psychology Research and Behavior Management*, 16, 223-240. <https://doi.org/10.2147/prbm.s371806>.
- Kencanawati, A. A. M., Meirejeki, I. N., Supiatni, N. N., & Suarta, I. K. (2025). The role of digital promotion in enhancing hotel competitiveness in Bali's tourism sector. *Journal of Commerce, Management, and Tourism Studies*, 4(2), 300-313. <https://doi.org/10.58881/jcmts.v4i2.366>
- Lee, C., Abdullah, T., Hallak, R., & Kallmuenzer, A. (2025). Hospitality on the streets: A mixed-method study of Indonesian street food micro-enterprises. *International Journal of Hospitality Management*. <https://doi.org/10.1016/j.ijhm.2025.104236>.
- Lee, Y., Hwang, C., Tsai, Y., & Huang, Y. (2025). Development and pasteurization of in-packaged ready-to-eat rice products prepared with novel microwave-assisted induction heating (MAIH) technology. *Applied Food Research*. <https://doi.org/10.1016/j.afres.2025.100697>.
- Li, B., Zhong, Y., Zhang, T., & Hua, N. (2021). Transcending the COVID-19 crisis: Business resilience and innovation of the restaurant industry in China. *Journal of Hospitality and Tourism Management*, 49, 44 - 53. <https://doi.org/10.1016/j.jhtm.2021.08.024>.
- Li, C., Chen, L., McClements, D., Liu, W., Long, J., Qiu, C., Wang, Y., Yang, Z., Xu, Z., Meng, M., & Jin, Z. (2023). Utilization of plant extracts to control the safety and quality of fried foods-A review.. *Comprehensive reviews in food science and food safety*. <https://doi.org/10.1111/1541-4337.13148>.
- Lina, G., & Min, Z. (2022). Formation and release of cooked rice aroma. *Journal of Cereal Science*. <https://doi.org/10.1016/j.jcs.2022.103523>.
- Lionel, J., & Budi, S. (2024). Understanding Consumer Preferences and Behavior in Culinary Choices: A Case Study of Nasi Goreng Mak Sutan at G-Town Square Gading Serpong. *Asian Food Science Journal*. <https://doi.org/10.9734/afsj/2024/v23i11753>.
- Marwanti, M., Hamidah, S., & Sandya, E. (2020). Cooked Rice Innovation To Increase The Tourism Attraction Of Pindul Cave. *GeoJournal of Tourism and Geosites*.
- Montero, M., Sablani, S., Tang, J., & Ross, C. (2020). Characterization of the sensory, chemical, and microbial quality of microwave-assisted, thermally pasteurized fried rice during storage.. *Journal of food science*. <https://doi.org/10.1111/1750-3841.15384>.
- Mtapuri, O., Giampiccoli, A., Phuong-Anh, D., Dłużewska, A., Mnguni, E., & Long, P. (2024). Street Food Tourism. Current Trends and Envisaged Trajectories. *Annales Universitatis Mariae Curie-Skłodowska, sectio B – Geographia, Geologia, Mineralogia et Petrographia*. <https://doi.org/10.17951/b.2024.79.0.33-47>.
- Obileke, K., Onyeaka, H., Miri, T., Nwabor, O., Hart, A., Al-Sharify, Z., Al-Najjar, S., & Anumudu, C. (2022). Recent advances in radio frequency, pulsed light, and cold plasma technologies for food safety. *Journal of Food Process Engineering*. <https://doi.org/10.1111/jfpe.14138>.
- Okumus, B. (2020). Food tourism research: a perspective article. *Tourism Review*.
- Pan, Q., Zhang, Q., Tian, J., Zhang, J., & Chen, Q. (2025). Embodied Multisensory Gastronomy and Sustainable Destination Appeal: A Grounded Theory Approach. *Sustainability*. <https://doi.org/10.3390/su17167296>.
- Park, E., Muangasame, K., & Kim, S. (2021). 'We and our stories': constructing food experiences in a UNESCO gastronomy city. *Tourism Geographies*, 25, 572-593. <https://doi.org/10.1080/14616688.2021.1943701>.
- Pokharel, B. (2023). Advancements in Food Processing Technologies: Enhancing Safety, Quality, and Sustainability. *Interantional Journal Of Scientific Research In Engineering And Management*. <https://doi.org/10.55041/ijirem23682>.

- Praesri, S., Meekun, K., Lee, T., & Hyun, S. (2022). Marketing mix factors and a business development model for street food tourism. *Journal of Hospitality and Tourism Management*. <https://doi.org/10.1016/j.jhtm.2022.06.007>.
- Prayag, G., Gannon, M., Muskat, B., & Taheri, B. (2020). A serious leisure perspective of culinary tourism co-creation: the influence of prior knowledge, physical environment and service quality. *International Journal of Contemporary Hospitality Management*. <https://doi.org/10.1108/ijchm-10-2019-0897>.
- Putra, R. M., Nahor, M. I. B., Suastika, I. K. D., Tinu, M. M., Indah, M., Ardhika, N. K. R. L., & Sananta, I. K. B. P. (2024). Analysis of marketing strategy at JeKo resaturant. *Journal of Commerce, Management, and Tourism Studies*, 3(2), 110–117. <https://doi.org/10.58881/jcmmts.v3i2.192>
- Putri, N. M. K. E., Putra, I. K. M., Wajdi, M., & Mazher, M. A. (2025). An operational assessment of housekeeping services in fulfilling guest requests: A case study of Rby Bali. *Kajian Pendidikan, Seni, Budaya, Sosial Dan Lingkungan*, 2(2), 88–101. <https://doi.org/10.58881/kpsbsl.v2i2.119>
- Rachão, S., Breda, Z., Fernandes, C., & Joukes, V. (2019). Food tourism and regional development: A systematic literature review. *European Journal of Tourism Research*. <https://doi.org/10.54055/ejtr.v2i1.357>.
- Rani, L., Kumar, M., Kaushik, D., Kaur, J., Kumar, A., Oz, F., Proestos, C., & Oz, E. (2023). A review on the frying process: Methods, models and their mechanism and application in the food industry. *Food research international*, 172, 113176 . <https://doi.org/10.1016/j.foodres.2023.113176>.
- Rejeb, A., Abdollahi, A., Rejeb, K., & Mostafa, M. (2022). Tracing knowledge evolution flows in scholarly restaurant research: a main path analysis. *Quality & Quantity*, 57, 2183-2209. <https://doi.org/10.1007/s11135-022-01440-7>.
- Richards, G. (2021). Evolving research perspectives on food and gastronomic experiences in tourism. *International Journal of Contemporary Hospitality Management*, 2021, 1037-1058. <https://doi.org/10.1108/ijchm-10-2020-1217>.
- Sio, K., Fraser, B., & Fredline, L. (2021). A Contemporary systematic literature review of gastronomy tourism and destination image. *Tourism Recreation Research*, 49, 312-328. <https://doi.org/10.1080/02508281.2021.1997491>.
- Sukartini, N. W., Kanca, I. N., Budiarta, I. P., & Sumawidari, I. A. K. (2024). The role of ambiance and service in culinary tourism: A case study at D'Warung . *Journal of Commerce, Management, and Tourism Studies*, 3(3), 181–198. <https://doi.org/10.58881/jcmmts.v3i3.218>
- Syahrial, S., & Anjarsari, H. (2023). The Gastronomic Branding Strategies of Bugis-Makassar Traditional Treats in Starred Hotels. *SIGn Journal of Social Science*. <https://doi.org/10.37276/sjss.v3i2.328>.
- Wang, X., McClements, D., Xu, Z., Meng, M., Qiu, C., Long, J., Jin, Z., & Chen, L. (2023). Recent advances in the optimization of the sensory attributes of fried foods: Appearance, flavor, and texture. *Trends in Food Science & Technology*. <https://doi.org/10.1016/j.tifs.2023.06.012>.
- Wu, C., Wu, S., Lin, Y., Wu, Y., Huang, B., Huang, H., & Wang, C. (2022). High pressure processing-based hurdle strategy for microbial shelf life of packed food in the Cold Chain. *Food Packaging and Shelf Life*. <https://doi.org/10.1016/j.fpsl.2022.100983>.
- Xue, W., Macleod, J., & Blaxland, J. (2023). The Use of Ozone Technology to Control Microorganism Growth, Enhance Food Safety and Extend Shelf Life: A Promising Food Decontamination Technology. *Foods*, 12. <https://doi.org/10.3390/foods12040814>.
- Yu, L., Turner, M., Fitzgerald, M., Stokes, J., & Witt, T. (2017). Review of the effects of different processing technologies on cooked and convenience rice quality. *Trends in Food Science and Technology*, 59, 124-138. <https://doi.org/10.1016/j.tifs.2016.11.009>.
- Zhang, X., Zhang, M., & Adhikari, B. (2020). Recent developments in frying technologies applied to fresh foods. *Trends in Food Science and Technology*, 98, 68-81. <https://doi.org/10.1016/j.tifs.2020.02.007>.

