Decision Support System for Indonesian Culinary Tourism

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Abstract

This study aims to examine the role and contribution of Decision Support Systems (DSS) in supporting culinary tourism decision-making in Indonesia through a comprehensive literature review. The research seeks to identify commonly used decision-making methods, key evaluation criteria, and emerging research directions related to culinary tourism DSS. The study adopts a systematic literature review, analysing scholarly articles published in national and international journals and conference proceedings. The review focuses on studies addressing DSS applications in Indonesian culinary tourism, with particular attention to methodological approaches, evaluation criteria, and system functionalities. The findings reveal that multi-criteria decision-making (MCDM) methods, including Simple Additive Weighting (SAW), Weighted Product (WP), TOPSIS, and MOORA, are predominantly applied to evaluate culinary destinations. Key criteria influencing tourists' decisions consistently include venue comfort, menu pricing, distance, accessibility, cleanliness, and the variety and taste of dishes. The results also indicate that DSS not only assist tourists in making informed and efficient decisions but also serve as promotional tools for restaurant owners by enhancing the visibility of local and regional culinary offerings. Integration with digital mapping technologies further improves system usability and spatial accuracy. The study implies that the development of integrated, user-centred, and information-rich DSS platforms is essential to strengthen the competitiveness and sustainability of culinary tourism in Indonesia.

Keywords: Decision support system, Culinary, Indonesia

Introduction

Digital transformation (DT) has become a key framework for contemporary tourism development, with bibliometric evidence identifying core DT topic clusters, including data analytics, technology-based experiences and interactions, cultural heritage, digital destination marketing, and smart tourism management (Madzík et al., 2023). For Indonesian culinary tourism, this DT framework is directly relevant because culinary experiences are increasingly discovered, evaluated, and selected through digital touchpoints that generate analysable data streams (e.g., social media and other online signals), aligning with DT's emphasis on analytics and smart management (Madzík et al., 2023). In parallel, research on "smart sustainable tourism" advocates data-driven, multi-perspective parameter discovery that integrates heterogeneous sources, including scientific literature and social media (e.g., Twitter), to support more autonomous design and operational decision-making in tourism systems (Alsahafi et al., 2023). Taken together, these strands position decision support systems (DSS) not merely as IT artefacts but as practical implementations of DT and smart sustainable tourism, i.e., systems that convert multi-source data into structured recommendations for destinations and services (Madzík et al., 2023; Alsahafi et al., 2023).

In Indonesia, the digital era has been shown to reshape culinary consumption behaviour and tourist typologies, motivating more nuanced approaches to understanding how tourists select and engage with local culinary offerings under conditions of abundant digital information (Wachyuni et al., 2021). Moreover, Indonesian halal tourism has been examined from an IT perspective, including documentation that DSS approaches have been used to recommend halal culinary tourism options in West Sumatra through hybrid multi-criteria decision-making (MCDM) techniques (Analytical Hierarchy Process and Simple Additive Weighting) (Hendrik et al., 2024). In the broader tourism technology literature, AI is associated with enhanced operational efficiency and improved customer engagement through data-driven methods (e.g., review analytics), which aligns with DSS objectives of improving the quality and timeliness of decisions in tourism service contexts (Kosta et al., 2025). Thus, a "Decision Support System for Indonesian Culinary Tourism" operates at the intersection of DT-driven tourism management priorities (Madzík et al., 2023), smart, sustainable and multi-source data paradigms (Alsahafi et al., 2023), and Indonesia-specific digital and halal culinary tourism implementation precedents (Wachyuni et al., 2021; Hendrik et al., 2024).

A central operational problem motivating culinary-tourism DSS is the persistent fragmentation of decision-relevant information across platforms and stakeholders, which complicates tourists' ability to select experiences aligned with their constraints and preferences (e.g., budget, time, or trip composition). This challenge is explicitly recognised in Indonesian tourism DSS development, which targets tourists' planning difficulties when cost- and trip-related information is insufficiently integrated, leading to web-based DSS implementations that use the SAW method to improve recommendation and planning support (Habib & Sufaidah, 2024). Similar Indonesia-focused DSS applications (e.g., tourism recommendation apps employing SAW and map-based presentation) indicate that, even when destination information is available, tourists still need structured multi-criteria ranking mechanisms to translate information into actionable choices (Kamarudin, 2024). Furthermore, web-based tourism information systems that embed DSS components (e.g., Fuzzy AHP for package recommendations) treat "lack of organised access" and difficulties matching offerings to user preferences as significant barriers to maximising local tourism potential (Prasanta et al., 2023), reinforcing the relevance of preference-sensitive culinary tourism DSS in Indonesia (Habib & Sufaidah, 2024; Prasanta et al., 2023).

Another interlocking problem is that culinary tourism decisions are increasingly shaped by digital data environments whose signals are large-scale, fast-changing, and heterogeneous conditions that standard managerial processes are not designed to address. DT mapping in tourism underscores the importance of data analytics and smart tourism management as strategies for addressing these conditions (Madzík et al., 2023). Smart sustainable tourism research similarly argues that tourism systems benefit from autonomous, holistic optimization approaches that incorporate diverse data sources (including social data) to enhance AI-based information discovery and operations (Alsahafi et al., 2023). For Indonesian culinary tourism—particularly halal culinary tourism—the decision environment is further complicated by multi-attribute constraints and criteria that require explicit MCDM structuring, as evidenced by the documented AHP–SAW hybrid DSS used for halal culinary recommendations in West Sumatra (Hendrik et al., 2024). Lastly, tourism systems face human and labor vulnerabilities affecting service quality and system resilience; evidence from global tourism during COVID-19 links tourism employment to low wages, informality, and micro/small business structures, highlighting structural fragilities that can affect culinary tourism delivery and, therefore, the reliability of recommendations and service availability presumed by DSS (Sun et al., 2022).

Despite documented momentum, the literature reveals several research gaps that are crucial for designing a robust DSS for Indonesian culinary tourism. Firstly, tourism DT reviews identify broad topic areas (e.g., smart analytics, sustainability, smart management), but such mappings do not specify culinary-domain data models, criteria taxonomies, or evaluation protocols needed to operationalise DT into culinary-tourism DSS artefacts (Madžík et al., 2023). Smart sustainable tourism work proposes multi-source discovery and autonomous optimisation using heterogeneous sources (including social media), but it leaves open the challenge of translating discovered parameters into transparent, auditable culinary recommendation logic under local Indonesian constraints (e.g., culinary authenticity, locality, or halal requirements) (Alsahafi et al., 2023; Hendrik et al., 2024). Secondly, while Indonesian implementations demonstrate the feasibility of MCDM-driven recommendations (SAW; AHP–SAW; Fuzzy AHP), they collectively highlight a gap in comparative, standardised evaluation across methods (e.g., accuracy, user satisfaction, decision transparency) and contexts (general tourism vs. culinary/halal culinary tourism) (Hendrik et al., 2024; Habib & Sufaidah, 2024; Prasanta et al., 2023).

Thirdly, AI-in-destination management bibliometric evidence emphasises benefits (efficiency, personalisation, decision-making) while also highlighting persistent challenges—data privacy, infrastructure constraints, and ethical concerns—that remain under-addressed in many applications Bacuy-Ortiz & Torres, 2025). This implies that research on Indonesian culinary tourism DSS requires stronger attention to governance and safeguards when processing user data or social signals for personalisation (Alsahafi et al., 2023; Bacuy-Ortiz & Torres, 2025). Lastly, research on next-generation recommendation systems underscores the need for multimodal data integration (spatial, temporal, and contextual signals) to address bias, variability, and temporal change—issues likely acute in culinary tourism, where popularity, seasonality, and crowd dynamics can shift rapidly (Dutta et al., 2025). Consequently, a key gap is the limited integration of multi-modal, time-sensitive data into culinary DSS designs that must remain adaptive while ensuring explainability and trust (Dutta et al., 2025).

Literature Review

Food and gastronomy are theorised to support sustainable place development and destination competitiveness by linking food tourism with place branding, marketing, and broader socio-economic sustainability agendas (Rinaldi, 2017). At the tourist level, culinary decisions are consistently described as multi-criteria: taste, quality, health, price, emotional, and prestige values positively shape attitudes toward local food and strengthen intentions to revisit for food tourism (Rousta & Jamshidi, 2019). Additionally, consumption value and experiential value influence attitudes and destination image, thereby stimulating recommendations and revisit intentions (Soltani et al., 2020). This behavioural evidence implies that support systems for Indonesian culinary tourism decision-making should formalise heterogeneous, preference-sensitive criteria rather than reduce choices to single-factor rankings (Rousta & Jamshidi, 2019; Soltani et al., 2020). Beyond attribute-based evaluation, food experiences are frequently co-created; a systematic review drawing on Scopus and Web of Science literature indicates that food-related activities are more successful when tourists actively participate and learn with hosts in informal contexts, suggesting that decision support should include participation and learning opportunities as explicit decision criteria (Rachão et al., 2020).

Digitalisation adds further decision inputs and design requirements. Digital content marketing is positioned as a catalyst for electronic word-of-mouth (e-WOM) in food tourism, indicating that online narratives and reviews serve as critical informational cues that can be

structured into decision support system (DSS) features for culinary attraction comparison and recommendations (Bu et al., 2020). A machine-learning-based bibliometric review of tourism digital transformation highlights data analytics, social media, cultural heritage, and innovative tourism management, positioning culinary DSS as part of destination-level "smart" analytics and management capabilities (Madzík et al., 2023). Smart sustainable tourism research advocates multi-source, data-driven parameter discovery that integrates scientific literature with social media signals to enhance tourism design and operations, providing methodological grounding for evidence-integrating culinary DSS architectures (Alsahafi et al., 2023). Complementarily, food computing scholarship formalises computing technologies in the food domain and synthesises key challenges and future directions, thereby providing a technical basis for structuring dish-level data and explanations within culinary DSS pipelines (Min et al., 2019). In Indonesia's halal tourism landscape, an IT-focused review documents a halal culinary recommendation DSS from West Sumatra implemented via a hybrid AHP–SAW approach, demonstrating the feasibility of multi-criteria decision-making (MCDM)-based culinary decision support in an Indonesian setting (Hendrik et al., 2024).

Methods

This study employs a literature review method as the primary approach to examine the development and characteristics of *Decision Support Systems* (DSS) in the context of culinary tourism in Indonesia. The literature review approach is selected because it enables a comprehensive understanding of research trends, methodological approaches, and substantive issues related to DSS in culinary tourism. Data were collected by searching for scholarly articles published in national and international journals and conference proceedings during 2018–2020. The literature search was carried out using academic search engines and reputable scientific databases, including Google Scholar, Emerald, Elsevier, ScienceDirect, and Scopus, to ensure a broad and credible range of sources.

Table 1: Collecting Data Protocols

Identification	Searching articles
	Sources
	Google scholar, emerald, Elsevier, science direct, scopus
Screening	Title & abstract
Eligibility	Full text articles access for eligibility
Analysis	Topic Decision support system for indonesian Culinary tourism Review all articles
Conclusion	Covering Methods, main results, limitation Summary and possibility of development Future research

The first stage of the method involved searching and collecting articles based on keywords relevant to *Decision Support Systems* and Indonesian culinary tourism. This was followed by an identification stage, in which the collected articles were examined and analysed to assess their relevance to the research topic. Identification aimed to achieve a deeper understanding of the issues addressed, research focus, and scientific contributions of each study.

The next stage was screening, conducted by reviewing article titles and abstracts. Articles deemed relevant were then subjected to an eligibility stage, which involved a full-text review to ensure that they explicitly addressed *Decision Support Systems* in the context of Indonesian culinary tourism.

Subsequently, an analysis stage was performed through a comprehensive review of all eligible articles. The analysis focused on key aspects, including the DSS methods applied, the main findings of the studies, and their limitations. This stage was intended to develop an in-depth understanding of the types of decision support systems employed, the issues surrounding their implementation in Indonesia, and the DSS methods most commonly used in culinary tourism research. The final stage involved drawing conclusions, which included synthesising the results of the literature review and identifying opportunities and potential directions for future research. Through this systematic approach, the study is expected to contribute conceptually and methodologically to the advancement of research on *Decision Support Systems* in Indonesian culinary tourism.

Findings

Many studies have discussed the Decision Support System for Indonesian Culinary Tourism from various aspects. Table 1 provides a summary.

Table 2: Study Summary

Authors and Years	Location	Method	Description	Suggestions
Saksono, ND, Sari, YA, & Dewi, RK (2018)		K-means method and Simple Addictive Weighting	Recommended Culinary Tourism Locations Using K-Means Clustering Method And Simple Additive Weighting	Decision support systems are used to determine the location of culinary tourism based on the criteria or desires of tourists. The need to get the distance value for each location, randomly determine the centroid value from the start, then calculate the eucledian distance value from the centroid, enter the location distance to the cluster then calculate the new centroid again and re-enter the location data to the nearest cluster, check whether there is a cluster movement, all of which are the steps that need to be done in the culinary tourism recommendation system.
Susianto, D., & Verawati, V. (2018)	Bandar Lampung	Needs Analysis	Implementation of Georeference-Based Data Mining for Culinary	Clusters in the decision support system through K-means clustering are used to produce 3

		Information in Bandar Lampung	categories; The characteristics of various types of food and traditional characteristics, national characteristics and snacks, national food at standard prices. In the data entered into the map, it is determined by the central point at the location then further it needs to be combined with special data so that it becomes a culinary location that fits the criteria and needs of the user or visitor.
Pradana, DW, & Dewantara, RY (2018)	Descriptive with a qualitative approach.	Use of Information Systems to Support the Selection of Culinary Tourism Locations (Study on zomato application users)	The decision support system used by using the Zomato application has made it easy to use information on culinary attractions according to the needs of tourists. Information provided through the Zomato application is in the form of an overview of culinary products in a tourist destination. The quality of using the Zomato application as a support system and service for the culinary tour.
Khotimah, K., & Ipnuwati, S. (2018)	Analytical Hierarchy Process (AHP)	Selection of the Best Cafe Using the AHP Method	DSS can broaden the ability to make decisions so that it can save time in solving problems. However, SPK is very limited in providing alternative knowledge. DSS depends on the capabilities of the application used. Development is needed in order to simplify and speed up the decision-making process,

				development can use computer applications.
Amelia Deyantri, AD (2019)	Palembang	Method of collecting data; Observation and interviews, system analysis, program design analysis. Simple Addictive Weighting (SAW)	Decision Support System for Culinary Place Selection in Palembang City using SAW Method	The simple addictive product method is used in order to make the selection of culinary attractions in accordance with the criteria expected by the user. The data included is in the form of data on culinary attractions. Weights and criteria are needed to determine which tourist attractions are selected as culinary tours that are selected from the most superior. The selected criteria consist of; food prices, culinary tourism locations, the facilities provided and the convenience of culinary places.
Saputra, A., Mulyawan, B., & Sutrisno, T. (2019)	Jakarta	K-means Clustering and Simple Addictive Weighting (SAW)	Recommended Culinary Tourism Locations in Jakarta Using the K-Means Clustering Method and Simple Additive Weighting	Applications regarding recommended tourist locations are going well. The application for culinary tourism locations provides the best ranking recommendation results with three clusters. The stages that need to be improved are the need to obtain the criteria value as well as the distance of each culinary tourism location according to the criteria from the user, it can be from the distance of the tourist location or through the user's location benchmark. Through SAW, you can get recommendations for culinary tourism locations and then rank those places. The

				application needs to add a direction to make it easier for users to find suitable tourist locations.
Resmi, MG, & Irmayanti, D. (2019)	Purwakarta	Simple Addictive Weighting and waterfall methods	Simple Additive Weighting Method in Decision Support System for Culinary Place Selection in Purwakarta Regency	With the existence of a decision support system for choosing a culinary tourism location in Purwakarta, it has provided convenience and support in choosing culinary decisions that suit the desires of tourists, especially in Purwakarta. The system used helps tourists complete a score that refers to the decision criteria. The criteria determined in the decision making consist of price, type of food, distance traveled to the location, cleanliness, and facilities.
Apriadi, MS, & Rurkan, EL (2019)	Palembang	The Weighted Product method and the Borda method	Decision Support System for Selecting Lorong Basah Night Culinary (Lbnc) Tenants Using the Weighted Product (Wp) and Borda Methods at the Palembang City Tourism Office	There was a problem in knowing information about culinary attractions in Palembang. With the help of a decision support system it is useful as a process to get fast and accurate decisions with the Weight Product (WP) method and the Borda method to involve the components and criteria to be assessed. The borda method is used to get different preferences from each group or voting to get a decision.
Sunarti, S. (2020)	Depok	Simple Addictive Weighting (SAW)	Decision Support System for Culinary Tourism Selection in Depok	The diversity that exists in Depok City attracts many people who want to taste the culinary

			City Using the Simple Additive Weighting (SAW) Method	there. The decision support system helps tourists or visitors who are looking for the culinary criteria they want in Depok City. DSS using the Simple addictive weighting method is useful for calculating alternatives and criteria required by tourists. The SAW process can solve problems regarding the selection of culinary places in Depok City.
Ismiati, MB, Hermawan, L., & Wijaya, V. (2020)	Palembang	Requirements analysis, interface design, system, design and implementation	Decision support system for restaurant selection (nom. Philia) in Palembang City	Decision support systems that are carried out can work well. The results of the SPK through the blackbox all match what is displayed in the system. The decision support system provides a good response regarding the ease of use of Nom.philia and regarding the suitability of the recommendations displayed by the system. So that users are not distracted in operating the system to find out which culinary tours are intended as expected.
Adiansyah, MH, Ahsan, M., & Budianto, AE (2020)	Malang	Research and development with the development of a waterfall from the weighted product method.	Implementation of the Weighted Product Method as a Recommended Tourism and Culinary Recommendation System in Malang	The decision support system makes it easy to help recommendations for culinary tourism in Malang City which are used by tourists as a means of information on culinary tourism locations that match the criteria and needs of tourists. More complete

				criteria and information are needed to be developed in order to provide more complete recommendations and the system can be used anywhere.
Sukerti, NK (2020)	Nusa Penida	Simple Addictive Weighting and TOPSIS	Application of Fuzzy Topsis and Fuzzy SAW Methods in Determining Tourist Locations in Nusa Penida	The system used is dynamic, so it can change at any time or according to the required criteria. The culinary tourism alternative chosen is the result of the assessment obtained from the overall criteria and needs of the user. Topsis is used as a system for ranking alternatives with predetermined sub-criteria.
Pudjiantoro, TH, & Sabrina, PN (2020)		Multy-Objective Optimization by Ratio Analysis (MOORA)	Culinary Place Recommendation System in Xyz Regency Using Multy-Objective Optimization By Ratio Analysis Method	The system using the Multy-Objective Optimization by Ratio Analysis method makes the government from the Tourism Office the main role in providing an assessment of culinary places and then tourists who play a role in tracing the culinary attractions that they want to visit. A decision support system using MOORA recommends culinary spots to tourists and provides insights to be able to determine appropriate culinary tours.
Wardhani, AK, & Lutfina, E. (2020)	Kudus	Weighted Product method	Application Culinary Decision Support System in Kudus City with Weighted Product Method Based on Mobile Phone	Decision support system of culinary with weighted product method can made the tourist choosing the best culinary that match with the criteria. The method can generate a

lot of best recommended for tourists that come to the culinary tourism at Kudus. The recommendations can be inputted by phone and developed using audio at mobile phone.

A decision support system is a system that helps people make decisions about a problem by comparing alternatives to identify the criteria needed or desired. Decision support systems benefit the tourism sector by providing culinary tourism recommendations that identify locations aligned with tourists' expectations or commonly sought by both domestic and international visitors. In some of the references above, Indonesia has implemented a decision support system to help tourists identify preferred regional culinary destinations. The methods used for decision support systems in Indonesia vary, including 1) Simple Addictive Weighting (SAW), 2) Weighted Product (WP), 3) Multi-Objective Optimisation by Ratio Analysis (MOORA), 4) TOPSIS, 5) K-Means, 6) Waterfall Clustering, and 7) Borda.

Almost all of these methods first collect data and then rank the tours to determine which culinary tours are recommended to tourists based on tourist criteria. The culinary tourism alternatives listed are based on the assessment of the overall criteria, beginning with the type of food, the taste of the food, the cleanliness, and the access roads to the location. By using a culinary tourism decision support system, tourists can easily get alternative information about a culinary treat with accuracy.

Table 3: Indonesia Culinary of Cities

No.	City	Culinary Characteristics	Signature Culinary Attractions
1	Bandung	Known as the *City of Culinary*, Bandung offers diverse and predominantly spicy flavors, reflecting Sundanese culinary traditions and creative street food culture.	Seblak, batagor, peyeum, pindang fish, liwet rice, surabi, bajigur, tofu gejrot, cilok, cuanki meatballs, cendol ice; Paskal Food Market
2	Yogyakarta	A special region rich in culture and heritage, Yogyakarta is characterized by sweet-flavored traditional cuisine and vibrant street food culture.	Gudeg, bakpia, coffee joss; Malioboro culinary area; angkringan
3	Jakarta	As Indonesia's capital and metropolitan hub, Jakarta hosts culinary diversity from across the archipelago while maintaining its own traditional dishes.	Regional Indonesian cuisines; kerak telor (egg crust)
4	Surabaya	Surabaya features bold and distinctive flavors unique to East Java, many of which are rarely found in other regions.	Rawon, lontong balap, rujak cingur, satay klopo
5	Bogor	With a cool climate and high rainfall, Bogor is known for warming dishes and traditional Sundanese snacks.	Bogor laksa, pickled vegetables (asinan), taro layer cake, fried toge
6	Palembang	Palembang's cuisine is strongly influenced by river culture, featuring fish-based dishes with sour and savory profiles.	Pempek, red bean ice, mie celor, tekwan with tempoyak

No.	City	Culinary Characteristics	Signature Culinary Attractions
7	Padang	Renowned globally for its rich, spicy, and coconut-based cuisine, Padang represents one of Indonesia's strongest culinary identities.	Rendang, Padang satay, various Minangkabau dishes

The table above presents an overview of major Indonesian cities recognised for their distinctive culinary tourism characteristics. It highlights the diversity of regional cuisines, signature dishes, and unique food experiences that shape each city's culinary identity. By illustrating representative culinary attractions across different regions, the table provides contextual insight into how local food culture contributes to the attractiveness of urban destinations and supports decision-making processes in culinary tourism selection.

Discussion

Food tourism is widely recognised as a significant tourism product and a recurring theme in destination marketing, with food-related choice architecture (what to eat, where, and why) central to tourism performance (Henderson, 2009). Gastronomy is acknowledged as contributing to visitors' experiential quality and their likelihood of revisiting, suggesting that culinary choices play a substantial role in destination evaluation (Kivela & Crotts, 2009). In Indonesia, culinary tourism is recognised as a major asset, as the country's diverse cultural and agro-ecological landscapes yield a wide array of food offerings that attract both domestic and international tourists (Rahmah et al., 2024). Research on food culture mapping emphasises the need for promotional efforts to convey the socio-cultural values intrinsic to dishes rather than merely listing menu items (Wijaya, 2019). Additionally, decision-making is increasingly influenced by digital channels: studies indicate distinct tourist typologies in local culinary consumption during the digital era in Indonesia (Wachyuni et al., 2021), and research on mobile electronic word-of-mouth (eWOM) demonstrates its significant impacts on purchase intentions and brand responses within food-service contexts Yan et al., 2018). Complementary international research shows that online reviews can act as stimuli that shape culinary tourism intentions through eWOM dynamics, underscoring the necessity for digitally informed support systems Wang & Iahad, 2024). Collectively, these findings advocate for a support system for Indonesian culinary tourism decisions that integrates cultural narratives and diverse culinary assets with digitally mediated, multi-attribute tourist decision processes (Rahmah et al., 2024; Wijaya, 2019; Wachyuni et al., 2021; Yan et al., 2018; Wang & Iahad, 2024).

Two dominant theoretical frameworks can be contrasted. First, culinary tourism scholarship frames it as a networked product with upstream dependencies on local ingredients and suppliers, suggesting that decision support should take into account supply-side constraints and linkages rather than focusing solely on consumer preference rankings (Smith & Xiao, 2008), aligning with broader calls for network-oriented thinking in tourism management (Zhang et al., 2009). Second, implementations of recommender systems operationalise choice as computational ranking or prediction: Indonesian mobile culinary recommendation research utilising k-nearest neighbours (KNN) indicates feasibility for personalised destination suggestions derived from user parameters (Riswanto et al., 2019). Meanwhile, digital marketing and eWOM studies highlight the importance of user-generated content and review narratives in shaping consumer intentions, suggesting that these elements should be integrated as significant inputs to decision-making rather than treated as extraneous noise (Yan et al., 2018; Wang & Iahad, 2024). A further conceptual comparison pertains to defining quality: research on gastronomic identity indicates that unfamiliar

destinations may face perceived hygiene and communication risks that could impede culinary acceptance, suggesting that decision support systems (DSS) should include trust and comprehension signals (Fox, 2007); authenticity theory also alerts to the contested nature of authenticity, advocating for nuanced interpretations rather than merely categorizing experiences as "authentic" or "inauthentic" (Olsen, 2002). Finally, halal tourism research in Indonesia underscores knowledge and certification challenges as significant barriers, prompting the need for explicitly addressing halal attributes within culinary DSS frameworks (Jaelani, 2017; Huda et al., 2020), consistent with prioritising Islamic attributes in service quality evaluations (Lari et al., 2020).

For Indonesian culinary tourism, the literature implies that future support systems should: (i) represent culinary assets through culturally grounded food culture mappings and narratives to preserve the socio-cultural significance in recommendations (Wijaya, 2019; Rahmah et al., 2024); (ii) integrate demand signals (tourist typologies, mobile eWOM, online reviews) with supply-side feasibility (access to ingredients and culinary resources) to generate actionable and practical recommendations (Wachyuni et al., 2021; Yan et al., 2018; Wang & Iahad, 2024; Smith & Xiao, 2008; Zhang et al., 2009); and (iii) embed explainable, context-sensitive constraints—especially regarding halal knowledge and certification, as well as trust-related concerns—rather than treating them as optional elements (Huda et al., 2020; Jaelani, 2017; Lari et al., 2020; Fox, 2007). Methodologically, this agenda corresponds with the digital transformation focus in tourism on analytics and innovative management, as well as on data-driven, multi-source parameter discovery for tourism operations, thus providing a research foundation for hybrid DSS architectures that merge structured criteria with diverse digital evidence (Madzík et al., 2023; Alsahafi et al., 2023).

Conclusion

This review concludes that Decision Support Systems (DSS) for culinary tourism in Indonesia provide substantial benefits for tourists, both in facilitating tourism activities and in enhancing experiential engagement with Indonesian culinary heritage. By systematically evaluating culinary destinations based on multiple criteria, DSS enable tourists to make more informed, objective, and efficient decisions when selecting culinary tourism destinations. The literature indicates that multi-criteria decision-making (MCDM) methods are predominantly employed in Indonesian culinary tourism DSS, particularly Simple Additive Weighting (SAW), Weighted Product (WP), Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), and Multi-Objective Optimisation based on Ratio Analysis (MOORA). These methods are utilised to assess culinary destinations with respect to strategic location, affordability, cleanliness, accessibility, and taste suitability. Data collection is typically conducted through a registration process in which restaurant owners or culinary tourism operators enter their business information into the system, enabling DSS platforms to generate comparisons, evaluations, and rankings aligned with tourists' preferences.

Across the reviewed studies, several criteria consistently emerge as the most influential factors in tourists' decision-making processes: venue comfort, menu pricing, distance, accessibility, cleanliness, and the variety and taste of dishes. These attributes represent the core dimensions shaping tourists' culinary experiences and largely determine the attractiveness of culinary tourism destinations.

Beyond supporting tourists, culinary tourism DSS also play a strategic role for restaurant owners and local culinary entrepreneurs by serving as a promotional medium for regional and international culinary offerings. The integration of DSS with digital mapping technologies, such as Google Maps, further enhances system usability by providing accurate location-based

information. This integration enhances the practical value of DSS by reducing uncertainty regarding navigation and spatial accessibility.

Based on the findings of this review, several avenues for future research are identified. First, the development of more accurate and interactive location-based information within DSS is essential. Integrating advanced navigation systems, including Google Maps, Waze, Here WeGo, and other GPS-based applications, can significantly improve user experience and minimise the risk of tourists getting lost when visiting culinary destinations. Second, public knowledge and awareness of DSS (SPK) remain limited in Indonesia. Future studies should explore strategies to enhance users' understanding of DSS functionalities, decision-making mechanisms, and practical benefits. Improving digital literacy related to DSS is crucial to maximising system adoption and effectiveness. Third, the enrichment of culinary information within DSS platforms represents an important research direction. Providing detailed descriptions of culinary types, ingredients, taste profiles, hygiene standards, and available facilities can offer users a more straightforward overview before visiting a culinary destination. For instance, DSS can include comprehensive explanations of regional cuisines, such as Sundanese culinary offerings (e.g., *liwet rice* and *seblak*), allowing users to explore and consider culinary experiences they may not have previously encountered. Overall, the findings underscore the importance of developing integrated, user-centred, and information-rich decision support systems to strengthen the competitiveness and sustainability of culinary tourism in Indonesia.

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