Safeguarding Malaysian Gastronomic Tourism Products Through Digital Online Platforms: Challenges and Opportunities

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Abstract
This paper aims to examine the challenges and opportunities in safeguarding Malaysian gastronomic tourism products through the lens of digital online platforms to educate food producers and tourists on the importance of safeguarding the local food heritage. By employing a qualitative approach of in-depth interviews with nine participants from three different categories including local tourists, hospitality and tourism lecturers, and hospitality industry experts, the results revealed that the digital divide, regulatory compliances, cultural and social, and authenticity, consistency and sustainability concerns are the challenges that the Malaysian gastronomic tourism industry is confronting in protecting local food products and culture through the use of digital online platforms. Additionally, the opportunities of employing digital online platforms in preserving Malaysian gastronomic tourism products were highlighted and this includes enhancing online presence and promotion through digital marketing, creating experiences through virtual tours and gastronomic tourism packages, and encouraging community engagement and sustainability practices. This research benefits both tourism scholars and related industry practitioners in filling the knowledge gap of understanding the pivotal role of the available digital online platforms to better understand, plan and develop strategies in safeguarding Malaysian gastronomic tourism products.
Keywords: Gastronomic Tourism, Malaysian Gastronomic Tourism Products, Digital Online Platforms, Challenges and Opportunities, Malaysia.

Introduction

Tourism is a major player in international commerce and represents one of the main income sources for many developing countries. Throughout the decades, tourism has experienced continued growth and deepening diversification despite many major pitfalls and challenges (World Tourism Organization, 2023). As a fragmented industry made up of numerous businesses that provide products and services to meet tourists' demands, the hospitality sector is one of the key drivers of the tourism industry, with food and beverages being an integral component of this sector (Mofokeng, 2018).

Hall and Mitchell (2007) suggested that food and wine has historically remained in the background of the tourist experience as part of the overall hospitality service. Therefore, it is not surprising to see that food and wine has become a focal point for travel decision-making and is also one of the hallmarks of attraction for tourists to travel to various destinations around the world. A tourist's experience with food and related products and activities while travelling, which involve experiencing authentic, traditional, and/or innovative culinary experiences, is also known as gastronomic tourism. It is often related to other tourism activities such as visiting the local producers, participating in food festivals, and attending cooking classes (World Tourism Organization, 2019).

According to Zainal et al (2010) as well as Sukerti and Marsiti (2020) , food is an attribute that shapes tourists' perceptions of the attractiveness of a destination other than climate, accommodation, and captivating scenery. Urry (2002) suggested that in order to balance the visual experience, tourism should involve various sensescapes, such as soundscapes, smellscapes, tastescapes, and the geography of touch in addition to landscapes. Park and Widyanta (2022), on the other hand, claimed that gastronomic tourism experiences cannot be understood without relating them to the local foodscape. Since foodscape is not static but rather is constantly changing alongside food choices, eating and other elements that generates relationship with food Park & Widyanta (2022); Brembeck & Johansson (2010), a deeper understanding of the interaction between tourists and the local suppliers is necessary to better understand the on-going process of constructing the destination foodscape.

Well-known for its multiracial and multicultural diversity, Malaysia, a country located in Southeast Asia, is composed of two non-contiguous regions: Peninsular Malaysia and East Malaysia. The country offers a wide variety of sandy beaches, mountain parks and tropical rainforests. Malaysia is surrounded by Indonesia, Thailand, Singapore, and Brunei, and celebrates many traditional and cultural festivals that portray a multi-cultural ethnicity. Additionally, its history in trading with neighboring countries such as China, the Middle East, India, and others, along with the interaction and exchange of different cultures, has greatly influenced the evolution of its cuisine. Owing to its ethnical diversity, it is not surprising to see the evolution of Malaysia turn into a cultural melting pot that has contributed to the great Malaysian gastronomic food heritage (Sanip & Mustapha, 2020; Zainal et al., 2010). The various culinary heritages also have become an invaluable part of tourists' experience that supports the hospitality and tourism sector, which has enticed international travelers who seek culinary pleasures to visit the country (Karim et al., 2009).

In recent years, empirical studies has flourished on the relationship between gastronomic tourism products and sustainability. More recently, increasing attention has

been paid to the relationship between gastronomic tourism products, socio-cultural sustainability, and digital inclusion (Zheng, 2023; Ramazanova et al., 2022; Zochi et al., 2021; Omar & Omar, 2018; Shariff & Zakaria, 2011). From the viewpoint of academics and practitioners, the preservation of gastronomic tourism products can be viewed as a potential strategy for accomplishing social and cultural sustainability objectives (Zochi et al., 2021). According to Orgun (2021), gastronomic tourism sustainability can be expressed as a concept that includes "the orientation to agricultural foods, local and traditional gastronomic elements and rural areas with gastronomic tourism, not an attraction created within gastronomic tourism". In this perspective, cuisine that is local, authentic, beneficial for human health, nostalgic, highly nutritious, produced using local methods, and prepared and enjoyed in an environmentally friendly way, can be considered a driving force for tourists to travel (Orgun, 2021; Ozkaya et al., 2013).

The distinctiveness of Malaysian gastronomic products could open the opportunity for Malaysia to become a gastronomic tourism destination in Asia. The proliferation of Malaysian gastronomic products through digital online platforms including social media sites, knowledge-based platforms, service-based platforms, or media sharing platforms, has been significant in fostering the development of the country's gastronomic tourism experience locally and internationally. However, questions pertaining to the challenges and opportunities in safeguarding Malaysian gastronomic products remain puzzling. To date, some studies have been conducted on safeguarding gastronomic tourism products from the viewpoint of "food as cultural heritage". However, little attention has been paid so far to examine the challenges and opportunities in safeguarding Malaysian gastronomic tourism products through the lens of digital online platforms. Thus, this paper discusses the various challenges faced in safeguarding Malaysian gastronomic tourism products through digital online platforms from three different perspectives, namely local tourists, hospitality and tourism lecturers, and hospitality industry experts. Furthermore, the paper also sheds light on the opportunities to protect gastronomic tourism products via various digital platforms. Following this, it is hoped that the insights and findings will be of value to the hospitality and tourism sector, specifically within the niche area of gastronomic tourism.

Literature Review

In recent decades, the development of new technologies has led to remarkable digital transformation in the industrial landscape. The growth of science and technology, and the introduction of innovation, not only developed new business relationships, but has also assisted in the emergence of new trends in global development (Konstantinova, 2019). New digital technologies have introduced major innovations in factories, hospitals, hotels and restaurants, cities, and industries. As suggested by Pencarelli (2020), Industry 4.0 signals the end of well-established patterns and has challenged scholars, managers, and citizens to adapt to this ever changing and increasingly complex environment by observing it through different lenses and new paradigms.

In the case of hospitality and tourism, the dynamic changes, challenges, and the growing competition in the tourism industry has called for a new business model that requires a comprehensive review of current strategies and practices. Konstantinova (2019) asserted that digital transformation creates numerous opportunities that can become a driving force to the success of hospitality and tourism businesses in the future. According to the World Economic

Forum's Digital Transformation Initiative (DTI), from 2016 to 2025, digitalization in aviation, travel and tourism is expected to create up to US$305 billion for the industry by increasing profitability, migrating US$100 billions of value from traditional players to new competitors, and generating benefits valued at US$700 billion for customers and the wider society (BBC Travel, 2023). With these tremendous advantages that technology contributes, further digitalization is vital if the expectations of tomorrow's consumers are to be met. As outlined by experts within the hospitality sector, digital transformation takes place in several directions, which includes robots, chatbots, automation artificial intelligence, recognition technology, internet of things, virtual reality, augmented reality, and others (Konstantinova, 2019).

Considered as one of the dimensions resulting from digital transformation in tourism, digital online platforms can be defined as a technological basis for delivering or aggregating services or content in digital format (Nikopoulou et al., 2023; Van Gorp & Batura, 2015). Digital platforms can be operated as a multi-sided platform, which can facilitate information exchange between or social interaction among end-users. In other words, digital online platforms can be looked as a sharing economy of platforms in the perspective of tourism.

Traditionally, hospitality and tourism services have been provided by businesses such as hotels and tour operators (Dwivedi et al., 2024). In the old days, most of these businesses have relied on human capital to operate. However, due to the rapid advancement in transportation, aviation and technology, the tourism industry saw humongous growth in the number of travelers globally, which has changed the landscape of the sector. In this new century, the industry has evolved and reached new heights, which resulted from rapid technological advancement and digital revolution. As travel becomes more affordable in the long run, and with the transition from traditional to digital nomadism, the players within the hospitality and tourism sector are now more willing to share their views, expertise, and knowledge with tourists (Zhou et al., 2024). This type of sharing, referred to as "sharing economy", uses digital online platforms to fulfill the supply and demand of tourists and consumers who seek for services and information related to businesses under the tourism sector (Lho et al., 2022). Among the digital online platforms that utilize sharing economy concepts are accommodation (i.e. Airbnb, Agoda, etc.), transportation (i.e. Uber, Grab, etc.) travel experiences (i.e. TripAdvisor, Klook, etc.), and dining (Yelp, Timeout, etc.). As claimed by Konstantinova (2019), the increasing use of the internet and its possibilities has enabled the creation of easy-to-access and cheap online platforms. As a result, a large scale of tourists has begun to use digital online platforms, since the majority of existing mobile applications are free and accessible worldwide.

As a niche sector under the tourism umbrella, gastronomic tourism has been recognized as an integral part of local life and is forged by the history, culture, economy, and society of a territory (Sanip & Mustapha, 2020; Dixit & Prayag, 2022). Gastronomic tourism bears the natural potential to enrich the visitor experience by establishing a direct connection to the region, its people, culture, as well as heritage as postulated by Pololikashvili (2019). Therefore, it is not surprising to see that many tourism destinations have considered gastronomic tourism as an important tool in attracting tourists to visit their destination.

As the competition between tourism destinations in the Asia region increases, Malaysian local food and culture have been recognized as a valuable attraction for tourists (Jalis et al., 2014; Zainal et al., 2010). Tourists' quest for authentic tastes and exciting gastronomic experiences can be looked at as a fundamental thrust for tourism destinations to develop their own unique and distinctive identities. In Malaysia, gastronomic tourism not only acts a key in attracting tourists to visit the country; it also plays a critical role in safeguarding local gastronomic products. The unique culinary spectrum that results from the blend of different tastes, ingredients, and cooking methods from the multiracial and diverse cultures in Malaysia has created a delicate cuisine that needs to be protected for future generations. With the rapid changes in technologies, added with the homogenizing pressure of the digital era, it is of utmost important to preserve the creation of valued products, particularly local delicacies (Sanip & Mustapha, 2020; Ramli et al., 2016; Shariff et al., 2008, UNESCO, 2008). Having said that, therefore, this investigation on the challenges and opportunities in safeguarding Malaysian gastronomic products is relevant to understand the pivotal role of digital online platforms and to plan and develop strategies in protecting the Malaysian local food heritage.

Methodology

In-depth qualitative interviews were employed to gather input from three different categories of participants. Open-ended questions were developed by the researcher to gather rich information for the data collection. The participants' insights were collected through face-to-face meetings with the aim of investigating the challenges and opportunities in safeguarding Malaysian gastronomic tourism products through digital online platforms.

A total of nine adults aged between 21 to 53 years old participated in this study and were segregated to three categories: local tourists, hospitality and tourism lecturers, and hospitality industry experts who came from diverse socioeconomic backgrounds, ethnicities, and localities in Malaysia. The inclusion criteria were (1) local Malaysian citizen and above 18 years old; (2) possess knowledge and experience with the topic under investigation; (3) have the willingness to participate and share their experiences related to the topic of study; and (4) possess effective communication skills. The participants were recruited through a composite of the convenience sampling technique, comprising of the purposive sampling method. It was deemed that data saturation point was reached upon completion of nine interviews. According to Guest et al (2006), nine participants in a homogenous group are adequate to achieve saturation of data for interviews. The homogenous group for this study refers to the three groups of participants as they are expected to be familiar with gastronomic tourism.

The interview was conducted by the first author alone without any third-party presence to prevent bias. The interview was audio-recorded using a voice recorder. Previous literature related to the subject of gastronomic tourism was used as a guideline for the interview as well as in developing the interview questions. When appropriate, prompts were deployed to re-direct or encourage interaction. A pilot qualitative test was conducted on three adults aged between 21 to 40 years of age to test the clarity, flow, and the duration of interview before the interviews were conducted. All data collected from the in-depth interviews were then transcribed, coded, and thematically analyzed (Braun and Clarke, 2019). Table 1.0 below summarizes the participants' profile for this study.

Table 1.0

In-depth Interview Participants Profile

Category	Code	Age	Race	Gender	Education Level
Local Tourists	LT1	21	Chinese	Male	Bachelor's degree
	LT2	40	Malay	Female	Master's degree
	LT3	40	Bidayuh	Female	Diploma
Hospitality and Tourism Lecturers	HTL1	52	Malay	Female	Master's degree
	HTL2	38	Chinese	Female	Master's degree
	HTL3	34	Malay	Male	Master's degree
Hospitality Industry Experts	HIE1	45	Chinese	Female	Master's degree
	HIE2	53	Malay	Male	Master's degree
	HIE3	51	Malay	Male	Master's degree

Findings and Discussions

Challenges in Safeguarding Malaysian Gastronomic Products Through Digital Online Platforms

From the in-depth interviews conducted with the participants, several challenges were recognized in safeguarding Malaysian gastronomic products using digital platforms. The challenges ranged from technological issues, regulatory challenges, to cultural and social factors to address authenticity, consistency, and sustainability concerns. Table 1.1 summarize the key findings of the challenges and opportunities in safeguarding Malaysian gastronomic products through digital online platforms.

Table 1.1

Challenges in safeguarding Malaysian gastronomic products through digital platforms

Themes	Sub-themes	Key findings
Challenges	Digital divide: Reliability of digital infrastructure	• Not all citizens have access to digital technology. • Digitalization is perceived as complex, costly and unnecessary. • Lack of necessary digital infrastructure. • Lack of technological knowledge and talents • Low coverage and accessibility of the internet at sub-urban or rural areas. • Poor connectivity and network issues.
	Regulatory Compliance	• Requires extensive collaboration among different stakeholders. • The navigation of the digital platforms may be difficult as each stakeholder may have different digital infrastructure and systems. • Lack of guidelines and coordination between the private sector and local authorities. • Compliance with local regulations, specifically in areas such as data protection, online transaction, health, and safety issues.

	Cultural and social challenges	• Malaysian local food systems are deeply rooted in cultural practices and traditions may lead to resistance. • The need to design platforms that respect and incorporate local cultural nuances.
	Authenticity, Consistency and Sustainability	• Maintaining authenticity when representing local gastronomic products can be difficult, since tourists have different expectations and perceptions of authenticity. • Exposure to numerous digital channels may increase the risk of diluting the authenticity of local food experiences, but also inadvertently misrepresent the local food culture that led to cultural misunderstandings. • Negative reviews or misrepresentation that emerge from digital online platforms can significantly impact the reputation of local food businesses as well as the hospitality and tourism industry. • The increased use of technology especially during the preparation of local food can contribute to environmental concerns, such as electronic waste and energy consumption. • The risk of over-tourism may emerge in certain areas due to the success of digital promotion.

Digital Divide: Reliability of Digital Infrastructure Challenges

The majority of the participants opined that the reliability of digital infrastructure in Malaysia is one of the major challenges when it comes in protecting the Malaysian gastronomic products using digital online platforms. According to HIE2, even though continuous efforts have been taken by the local authorities and government to improve the reliability of the digital infrastructure in Malaysia, not all Malaysian citizens have access to digital technology, particularly at certain locations or demographics, which may exclude them from using the online platforms. The participant further said that digitalization is perceived as complex, costly, and unnecessary. Therefore, for some Malaysian restaurant business operators and small medium enterprises who produce Malaysian gastronomic products, having digital platforms as part of their business strategy is considered irrelevant as the costs of operating the websites can be used to support other areas of the business. Moreover, the lack of necessary digital infrastructure may also affect the implementation and management of an efficient online booking system along with other digital tools as claimed by HIE3. As for HTL1 and HTL3, the participants stressed that lack of technological knowledge and talent are also among the reasons why Malaysian businesses may find it challenging to embrace digital transformation. Different concerns were raised by participants LT1 and LT2, who claimed that when it comes to the reliability of digital infrastructure, the low coverage and accessibility of the internet particularly at sub-urban and rural areas are still a major issue that gives a

negative impact towards ensuring the success of safeguarding Malaysian gastronomic products. Even though several strategies have been taken by the local authorities to enhance the reliability of the digital platforms, however, due to poor connectivity and network, it has taken a toll in enhancing tourists' experiences and satisfaction in browsing gastronomic tourism-related websites during their visit to Malaysia.

Facing Regulatory Compliance

Safeguarding Malaysian gastronomic products is a difficult task that requires extensive collaboration among different stakeholders. When it comes to digital online platforms, the local industry, government agencies and relevant stakeholders should sit together and collaboratively discuss how to deliver quality connectivity of various digital platforms to all Malaysians as well as to tourists. However, due to the regulatory compliances between the stakeholders, the navigation of the digital platforms may be difficult as each stakeholder may have different digital infrastructure and systems. Additionally, the lack of guidelines and coordination between the private sector and local authorities may also hinder the planned strategies in safeguarding Malaysian food to be deployed and executed either at the state or national level. As mentioned by HIE1, the lack of standardized formats and interoperability between different digital platforms can interfere with the seamless exchange of information from one stakeholder to another. Hence, it is advisable for stakeholders to establish a common standard for data formats or communication protocols to foster the collaboration among various stakeholders when it comes to exchanging information on gastronomic tourism products. HTL1, on the other hand, added that compliance with local regulations, specifically in areas such as data protection, online transaction, health, and safety issues, can be complicated and requires a lot of demand from local businesses. Thus, to rectify these issues, additional infrastructure development and training programs, together with standardized formats of digital platforms, should be encouraged among the stakeholders to overcome this situation.

Cultural and Social Challenges

Apart from regulatory challenges, cultural and social factors were also listed by the participants as significant challenges in protecting Malaysian gastronomic products. According to LT3, as a multiracial and multicultural country, Malaysian local food systems are deeply rooted in cultural practices and traditions. Therefore, it is important to consider these cultural factors when implementing digital platforms as it may lead to resistance if the cultural factors are neglected. The same notion was highlighted by HIE1 who asserted that since Malaysia has 13 states and three federal territories, it is pivotal to design platforms that respect and incorporate local cultural nuances. Considering that Malaysian gastronomic products offer a unique culinary spectrum that originates from Malaysia's multiethnic population, the digital platform created should include various types of dishes, sampling tastes, local ingredients, and methods of preparation and cooking that represent the different states. By acknowledging the specialty of each state, the platforms can be utilized to boost local delicacies, agricultural and farming as well as strengthen the local image and regional identity, thereby helping to safeguard and promote local culture and heritage.

Authenticity, Consistency and Sustainability Concerns

Another challenge brought up by the participants in relation to the topic concerns issues related to authenticity, consistency, and sustainability. From the perspective of hospitality

industry experts, maintaining authenticity when representing local gastronomic products can be difficult, since tourists have different expectations and perceptions of authenticity. Moreover, the exposure to numerous digital channels may increase the risk of diluting the authenticity of local food experiences, which not only can lead to the loss of cultural richness, but also inadvertently misrepresent the local food culture that led to cultural misunderstandings. Regarding consistency, local tourist participants acknowledged that negative reviews or misrepresentation that emerge from digital online platforms can significantly impact the reputation of local food businesses as well as the hospitality and tourism industry. Hence, it is crucial for entrepreneurs, especially those within the food and beverages sectors, to maintain consistent quality and authenticity in the preparation or even representation of the local food as the delicacies may represent the identity, local culture, and heritage of the community.

From the viewpoint of sustainability, different opinions were raised by the hospitality and tourism lecturers. For instance, participant HTL3 stressed on the environmental impact that the digital online platforms may have on the tourism industry. According to him, the increased use of technology especially during the preparation of local food can contribute to environmental concerns, such as electronic waste and energy consumption. The participant further argued that in the older days, when preparing local food, traditional equipment and utensils such as the pestle and mortar or millstone roller were used to prepare spices and pastes. However, as the world evolved, hand blenders and electronic mixers have been used to replace traditional utensils to ease the food preparation process. HTL1 conceded that the risk of over-tourism may emerge in certain areas due to the success of digital promotion. Even though digital online platforms may give benefits to the local community especially in boosting the economy, however, it may also strain the local resources and ecosystem. In this situation, besides providing training and educational resources, the participants suggested that it is important for local authorities and government agencies to develop a strategic plan to overcome the challenges to ensure that the digital platforms are inclusive, culturally sensitive, and contribute to the sustainable development of local gastronomic tourism.

Opportunities in Safeguarding Malaysian Gastronomic Products Through Digital Online Platforms

The digital revolution has changed the landscape of the global industry. In the case of the hospitality and tourism sector, the exchange of information and data has grown exponentially, creating valuable opportunities. Digital platforms open various opportunities for Malaysian gastronomic products that can enhance visibility, sustainability and accessibility within the hospitality and tourism industry. The opportunities can be segregated in to three main categories: (1) enhancing online presence and promotion through digital marketing, (2) creating experiences through virtual tours and gastronomic tourism packages, and (3) encouraging community engagement and sustainability practices as summarized in Table 1.2.

Table 1.2

Opportunities in safeguarding Malaysian gastronomic products through digital platforms

Themes	Sub-themes	Key findings
Opportunities	Enhancing online presence and promotion through digital marketing	• Utilized as a channel to enhance the online presence and promotion of Malaysian gastronomic tourism products through different segments such as social media, websites, blogs, and media sharing contents. • To share visually appealing content, including videos, images, and stories about local food experiences. • Different states have different delicacies, digital platforms can be used to promote and introduce the methods of preparing the foods, the local ingredients used, and the history behind the emergence of the delicacies. • Search engine optimization (SEO) can be used to assist tourists who seek exciting and distinctive culinary experiences in Malaysia. • Improvisation of current reservation platforms and apps through online booking systems, include ongoing events related to food as well as nearby restaurants or food hot spots to inform users of the culinary activities within a specific location. • Existing food apps at mobile phone can be improved by allowing visitors to browse and book food-related activities conveniently.
	Creating experiences through virtual tours and gastronomic tourism packages	• A great opportunity to create and enhance local gastronomic experiences using virtual reality or augmented reality. • Virtual tours of Malaysia local food markets, farms, cooking classes, and even a trip to local villages to tourists who have not yet physically visited the location. • Online cooking classes offer a valuable experience that should be considered by the hospitality industry. • To create bundled packages that include accommodations, food and tasting tours, and trips to local food markets or food streets between hospitality industry players. • Special promotional discounts for specific culinary experiences of local food products.

	Encouraging community engagement and sustainability practices	- Local community can share their own experiences, reviews and recommendations on popular delicacies, food spots, or restaurants within their localities via digital platforms. - Forums and discussions boards are effective platforms to share information, especially to potential tourists who intend to visit the country for the holidays. - Emphasized on the use of local and sustainable ingredients when preparing local culinary offerings that promote environmentally friendly practice. - Educational content should be taken into consideration to create awareness toward responsible tourism.

Enhance Online Presence and Promotion through Digital Marketing

From the analysis of the in-depth interviews, the majority of the participants agreed that digital online platforms can be utilized as a channel to enhance the online presence and promotion of Malaysian gastronomic tourism products through different segments such as social media, websites, blogs, and media sharing contents. The expansion of the Malaysian gastronomic products through digital platforms not only helps to safeguard and promote Malaysian culinary heritage products, but also create a positive image among local and international tourists to visit the country. As postulated by HIE1, by creating a dedicated website or app that showcases local food offerings, culinary experiences, and unique dining options, the platform can connect to a broader audience, where the local gastronomic products can be promoted to consumers regionally, nationally, or even at the global international tourism market. Moreover, platforms such as Instagram, Facebook, or Twitter can be used to share visually appealing content, including videos, images, and stories about local food experiences. The participant further suggested that since each of the states in Malaysia has its own unique delicacies which represent the cultural diversity of the people, therefore, it is worth to promote the local food heritage using the digital online platforms. Not only would this entice international tourists to come and visit Malaysia; it may also introduce them to the methods of preparing the foods, the local ingredients used, and the history behind the emergence of the delicacies.

Offering a different point of view, HTL3 contended that digital marketing tools such as search engine optimization (SEO) can be used to assist tourists who seek exciting and distinctive culinary experiences in Malaysia. Through the usage of the SEO, potential visitors would be directed to specific relevant online contents that can assist them in discovering local food options that are suited to their tastebuds. HIE3, on the other hand, added that the hospitality and tourism industry should enhance and improvise current reservation platforms and apps through online booking systems. According to him, hotel reservation platforms should include ongoing events related to food as well as nearby restaurants or food hot spots to inform users of the culinary activities within a specific location. Regarding mobile apps, participants LT1 and LT3 proposed for existing food apps to be improved by allowing visitors

to browse and book food-related activities conveniently. By refining current food apps with the right mix of features, not only will it boost customer engagement, but it would also provide additional value to restaurant business operators by improving their efficiency and productivity and reduce wastage during the operationalization of their businesses.

Creating Experiences through Virtual Tours and Gastronomic Tourism Packages

Several participants expressed that digital online platforms provide a great opportunity to create and enhance local gastronomic experiences using virtual reality or augmented reality. According to HTL1, the rapid development of digital infrastructure offers a wide range of prospects for the hospitality and tourism industry to accelerate the development of the sector to a higher level. With regards to virtual reality or augmented reality, the participant asserted that digital technology can be used as a tool to educate and foster knowledge about the Malaysian gastronomic culture and its local products. Virtual tours of Malaysia local food markets, farms, cooking classes, and even a trip to local villages to tourists who have not yet physically visited the location can generate a better understanding and introduction to Malaysia and simultaneously create a long-lasting image of Malaysian culinary delights, as images have been shown to be an important material in the selection of a tourism destination. This notion was seconded by HIE2, who contended that the hospitality sector has created virtual travel experiences using 360-degree video technology to stimulate multiple senses of potential customers and allow them to immerse themselves in the '*try before you buy*' experience. In addition to virtual reality tours, online cooking classes can also offer a valuable experience that should be considered by the hospitality industry to safeguard Malaysian gastronomic products. As claimed by LT2; by providing online classes or workshops using local recipes and cooking techniques, the participants would not only be exposed to the types of local ingredients or the traditional way of preparing the dishes but can also appreciate the unique food cultures of Malaysia.

To ensure that Malaysian gastronomic tourism continues to expand and grow, it is important for the hospitality and tourism agencies to come up with creative ideas and strategies to promote local products. Another way of doing this is by designing gastronomic tourism packages to tourists or potential tourists who visit Malaysia. According to participant HIE3, hotels and travel agencies should collaborate with local food and beverage businesses to create bundled packages that include accommodations, food and tasting tours, and trips to local food markets or food streets to create a memorable gastronomic experience to the tourists. Besides this, special promotional discounts for specific culinary experiences of local food products can be offered to tourists who use digital online platforms to book their meals. This idea was similar to HTL3's view who suggested that the associations of hotels and travel agencies in Malaysia should aggressively organize Malaysian food fairs or festivals to showcase the unique culinary spectrum and products that the country possesses to international tourists. Apart from local delicacies, local exotic fruits including the "king of fruits" or durian, variations of dried or wet fish crackers known as "*keropok*", "*keropok leko*" or "*keropok gote*", and Sarawak's famous black pepper corn and pearl sago, to name a few, should be featured in creating images of the gastronomic destination. By exploring new cuisines and food that are unfamiliar to the tourist, it would increase the tourists' gastronomic experience and become a pull factor to promote Malaysia as a tourism destination.

Encouraging Community Engagement and Sustainability Practices

The next opportunity that was recognized from the analysis includes encouraging community engagement and sustainability practices. In relation to community engagement, the local community plays a significant role in preserving local gastronomic products. For instance, HIE2 stated that by using digital online platforms, the local community can share their own experiences, reviews and recommendations on popular delicacies, food spots, or restaurants within their localities. Other than that, the local community can also post pictures or videos to social media platforms such as TikTok, Instagram, or Facebook to spread information about places of interest. From the viewpoint of LT1, forums and discussions boards are effective platforms to share information, especially to potential tourists who intend to visit the country for the holidays. Travel guidance platforms such as Tripadvisor.com, Time Out, or Eater.com, for example, can assist potential tourists to seek guidance and exchange information and tips on the best places to experience local cuisine. Furthermore, the platform also provides comprehensive listings, information, and reviews of cultural events and other entertainment features related to food and restaurants that would be a great help for travelers, as argued by LT3.

It is worth mentioning that the sustainability of the gastronomic products should be preserved to ensure that future generations are able to appreciate the local traditional food. This is in line with the suggestion of LT2, who postulated that local gastronomic products represent the blend of the rich intangible culture of Malaysian citizens throughout the decades. Therefore, the participant emphasized on the use of local and sustainable ingredients when preparing local culinary offerings that promote environmentally friendly practices. Local ingredients such as lemongrass, wild ginger flowers, varieties of fresh local salads or also known as "*ulam-ulaman*" such as "*daun ulam raja*", "*daun selom*", "*pucuk putat*", "*petai*" or stinky beans, or "*jering*" can be promoted or commercialized by local farmers. As for HTL1, educational content was recommended as an approach that should be taken into consideration to safeguard Malaysian gastronomic products. By sharing information about the cultural and environmental significance of local food practices to local communities and tourists, it can raise their awareness toward responsible tourism and help build a better understanding on the importance of preserving local resources in enhancing opportunities for the future generations.

Conclusion

Renowned for its combination of flavors and sheer variety, Malaysia have faced great challenges in positioning itself to become a world class gastronomic tourism destination. This paper aimed to examine the challenges and opportunities in safeguarding Malaysian gastronomic tourism products through the lens of digital online platforms. The study is highly relevant in today's increasingly interconnected and technologically advanced world. The result of the study provides valuable insights into the evolving landscape of tourism theory, particularly how digital interaction shape tourist behavior, motivation and satisfaction. Furthermore, the study also gives benefits to both tourism scholars and related industry practitioners in filling the knowledge gap of understanding the pivotal role of the available digital online platforms to better understand, plan and develop strategies to safeguard Malaysian gastronomic tourism products.

The analysis of the in-depth interviews suggests that the numerous existing challenges comprises of technological issues, regulatory compliances, cultural and social factors, as well as authenticity, consistency, and sustainability concerns that are major drawbacks that need to be confronted by the stakeholders in the hospitality and tourism sectors in safeguarding Malaysian gastronomic products. Consequently, the identification of several opportunities can be looked at as a steppingstone for the Malaysian gastronomic tourism industry to compete with other tourism destinations. The enhancement of online presence and promotion through digital marketing, the creation of experiences using virtual tours or augmented reality, the offering of gastronomic tourism packages by hospitality and tourism agencies, as well as the encouragement of community engagement and sustainable practices can not only attract a broader audience but can also contribute to the preservation of local culinary traditions and heritage. However, while these challenges and opportunities have been identified, there is a pivotal need to recognize the theoretical and contextual contributions of the multifaceted impact of integrating digital tools into the preservation and promotion of gastronomic heritage.

From the theoretical perspective, this study has highlighted the importance of preserving cultural heritage; whereby the digital platforms can become an archive to traditional recipes, cooking methods, or even food-related practices which can be view as a new method for safeguarding intangible cultural assets. Moreover, the findings have shown that the development and use of digital platforms in gastronomic tourism offer valuable case studies for innovation in digital services and user experience design. Not only the study contributes to the theoretical understanding of how digital tools can enhance user engagement and satisfaction, but eventually, it provides a theoretical framework on the intersection of food, technology and society. On the other hand, the contextual contributions of this study can be looked from three different angles: (1) promotion of local cuisine and the economic development, (2) cultural exchange and knowledge sharing, and (3) community engagement, sustainability and ethical consumption. From the viewpoint of promotion of local cuisine and development, digital platforms can assist in promoting local gastronomic traditions to a global audience, which will increase the awareness and appreciation of local regional cuisines. These contextual contributions not only foster the economic growth of the tourism destination, yet at the same time increased the revenue for local food producers, restaurateurs, and other relatable business, contributing to sustainable economic development. In regard to cultural exchange and knowledge sharing, the digital platforms may provide educational resources about culinary history, techniques and ingredients used for regional cuisine, which will facilitate cultural exchange among the tourists. This will enhance their experience in diverse culinary traditions, contributing to greater cultural appreciation and lifelong learning and skill development. As for community engagement, sustainability and ethical consumption, the study has recognized the important role of digital platforms whereby it can be used to engage local communities by involving them in the creation and promotion of local gastronomic products. The involvement of the local communities also is pivotal specifically in promoting sustainable and ethical food practices, such as the use of local ingredients, or organic farming which align with global efforts towards a more responsible tourism.

In this respect, future studies could examine the challenges and opportunities of gastronomic products elements on its diversity and variability. Specifically, institutions and

scholars should also pay more attention to the continuity and changes in the living tradition to keep local gastronomic tourism products and regional food cultures alive (West, 2020). As asserted by Sanip et al (2021), by enriching the tourists' sensory experiences through different aspects of the food-related experiences — such as cooking classes or local food-themed events — tourists are encouraged to choose Malaysia as their gastronomic tourist destination. By fully utilizing technological advancements and strengthening the collaboration between the stakeholders, it can create a better understanding of the Malaysian traditional food culture amongst tourists and simultaneously act as a digitalized repository guardian of Malaysian gastronomic products for future generations.

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References
Ab. Karim, M. S., Chua, B. L., & Salleh, H. (2009). Malaysia as a culinary tourism destination: international tourists' perspective. *Journal of Tourism, Hospitality & Culinary Arts (JTHCA)*, *1*(3), 1-16.

BBC Travel. (2023). The new tourism trend: How digitalization is revolutionizing the travel industry. Retrieved from https://www.bbc.com/storyworks/travel/the-new-tourism-trend/technology-redefine-tourism-industry.

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative research in sport, exercise and health*, *11*(4), 589-597.

Brembeck, H., & Johansson, B. (2010). Foodscapes and children's bodies. *Culture Unbound*, *2*(5), 707-818.

Dixit, S. K., & Prayag, G. (2022). Gastronomic tourism experiences and experiential marketing. *Tourism Recreation Research, 47* (3), 217-220.

Özkaya, D. F., Sünnetçioğlu, S., & Can, A. (2013). The Role Of Geographical Indication In Sustainable Gastronomy Tourism Mobility. *Journal of Tourism and Gastronomy Studies*, *1*(1), 13–20.

Dwivedi, Y. K., Pandey, N., Currie, W., & Micu, A. (2024). Leveraging ChatGPT and other generative artificial intelligence (AI)-based applications in the hospitality and tourism industry: practices, challenges and research agenda. *International Journal of Contemporary Hospitality Management*, *36*(1), 1-12.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field methods*, *18*(1), 59-82.

Hall, C. M., & Mitchell, R. (2007). Gastronomic tourism: Comparing food and wine tourism experiences. In *Niche tourism*, pp. 73-88. Routledge.

Jalis, M. H., Che, D., & Markwell, K. (2014). Utilising local cuisine to market Malaysia as a tourist destination. *Procedia-Social and Behavioral Sciences*, *144*, 102-110.

Konstantinova, S. (2019). Digital transformation in tourism. *KNOWLEDGE-International Journal*, *35*(1), 188-193.

Lho, L. H., Quan, W., Yu, J., & Han, H. (2022). The sharing economy in the hospitality sector: The role of social interaction, social presence, and reciprocity in eliciting satisfaction and continuance behavior. *Humanities and Social Sciences Communications*, *9*(1), 1-12.

Mofokeng, N. E. M. (2018). Safeguarding township tourism in South Africa from counterfeit consumable products through consumer-oriented technological solutions. *African Journal Hospitality, Tourism and Leis*ure *7*, 1-23.

Nikopoulou, M., Kourouthanassis, P., Chasapi, G., Pateli, A., & Mylonas, N. (2023). Determinants of digital transformation in the hospitality industry: Technological, organizational, and environmental drivers. *Sustainability*, *15*(3), 2736.

Omar, S. R., & Omar, S. N. (2018). Malaysian heritage food (MHF): a review on its unique food culture, tradition and present lifestyle. *International Journal of Heritage, Art and Multimedia*, *1*(3), 1-15.

Örgün, E. (2021). Gastronomy Experience and Sustainable Gastronomy Tourism. *I. Yazıcıoğlu, A. Iş ın, O. Yayla (Eds.), Gastronomy and Hospitality Studies in Tourism*, 245-256.

Park, E., & Widyanta, A. (2022). Food tourism experience and changing destination foodscape: An exploratory study of an emerging food destination. *Tourism Management Perspectives*, *42*, 100964.

Pencarelli, T. (2020). The digital revolution in the travel and tourism industry. *Information Technology & Tourism*, *22*(3), 455-476.

Pololikashvili, Z. (2019), *Guidelines for the Development of Gastronomy Tourism*, UNWTO, Madrid, DOI: https://doi.org/10.18111/9789284420957

Ramazanova, M., Lopes, C., Albuquerque, H., de Freitas, I. V., Quintela, J., & Remelgado, P. (2022). Preserving ritual food as intangible cultural heritage through digitisation. The case of Portugal. In *International Conference on Tourism Research*. Vol. 15, No. 1, pp. 334-343.

Ramli, A. M., Zahari, M. S. M., Halim, N. A., & Aris, M. H. M. (2016). The knowledge of food heritage Identity in Klang Valley, Malaysia. *Procedia-Social and Behavioral Sciences*, 222, 518-527. Available at: https://doi.org/10.1016/j.sbspro.2016.05.145

Sanip, M. N. A. M., & Mustapha, R. (2020). Sustainability of Gastronomic Tourism in Malaysia: Theoretical Context. *International Journal of Asian Social Science*, 10(8), 417-425.

Sanip, M. N. A., & Mustapha, R. (2020). The Role of Gastronomic Tourism Education in Sustaining Malaysian Heritage Food. *Sustainable Tourism Development: Futuristic Approaches*, 16.

Sanip, M. N. A., Mustapha, R., & Mohamed, S. (2021). Analysing the importance of Malaysian gastronomic tourism campaigns and tour packages in attracting tourists to visit. *Journal of Tourism, Hospitality and Culinary Arts*, *13*(3), 242- 255.

Shariff, N. M., & Zakaria, Z. (2011). Digital Mapping of Intangible Cultural Heritage: The Case of Traditional Foods. *International Journal of the Humanities*, *8*(11).

Shariff, N. M., Mokhtar, K., & Zakaria, Z. (2008). Issues in the Preservation of Traditional Cuisines: A Case Study in Northern Malaysia. *International Journal of the Humanities*, 6(6).

Sukerti, N. W., and Marsiti, C. I. R. (2020, February). Developing Culinary Tourism: The Role of Traditional Food as Cultural Heritage in Bali. In 2nd International Conference on Social, Applied Science, and Technology in Home Economics (ICONHOMECS 2019) (pp. 188-192). Atlantis Press.

UNESCO. (2008). World heritage information Kit. France: UNESCO world heritage center. Retrieved from: https://whc.unesco.org.

Urry, J. (2002). *The tourist gaze*. Sage.

World Tourism Organization (2023). Gastronomy and Wine Tourism. Retrieved from: https://www.unwto.org/gastronomy-wine-tourism

Van Gorp, N., & Batura, O. (2015). Challenges of Competition Policy in a DigitalisedEconomy. European Parliament. *Directorate General for Internal Policies: IP/A/ECON/2014*, *12*.

West, H. G. (2020). Crafting Innovation: Continuity and Change in the "Living Traditions" of Contemporary Artisan Cheesemakers. *Food Foodways*, *28*, 91–116.

World Tourism Organization and Basque Culinary Center (2019), Guidelines for the Development of Gastronomy Tourism, UNWTO, Madrid, DOI:https://doi.org/10.18111/9789284420957.

Zainal, A., Zali, A. N., & Kassim, M. N. (2010). Malaysian gastronomy routes as a tourist destination. *Journal of Tourism, Hospitality & Culinary Arts (JTHCA)*, *2*(1), 1-10.

Zheng, S. (2023). Safeguarding food heritage through social media? Between heritagization and commercialization. *International Journal of Gastronomy and Food Science*, *31*, 100678.

Zhou, L., Buhalis, D., Fan, D. X., Ladkin, A., & Lian, X. (2024). Attracting digital nomads: Smart destination strategies, innovation and competitiveness. *Journal of Destination Marketing & Management*, *31*, 100850.

Zocchi, D. M., Fontefrancesco, M. F., Corvo, P., & Pieroni, A. (2021). Recognising, safeguarding, and promoting food heritage: challenges and prospects for the future of sustainable food systems. *Sustainability*, *13*(17), 9510.