

Heritage Food on my Plate!?

Exploring Authenticity and Safety Risks
in Foodservice Establishments



Mohammad Almansouri

Propositions

1. A higher complexity of heritage dishes will lead to a higher vulnerability of authenticity risks.
(this thesis)
2. Mothers are better protectors of authentic heritage dishes than culinary chefs.
(this thesis)
3. Avoiding food waste is a matter of education.
4. Climate change will lead to lower food quality and safety.
5. A simple smile is the prerequisite to start a conversation regardless of nationality.
6. Conducting a PhD in a foreign country is more life-changing to the family than to the PhD candidate.

Propositions belonging to the thesis, entitled

Heritage Food on my Plate!?

Exploring Authenticity and Safety Risks in Foodservice Establishments

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Heritage Food on my Plate!?

Exploring Authenticity and Safety Risks in Foodservice Establishments

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The image features a large, white, serif-style capital letter 'I' centered against a dark, textured, and splattered background. The background is composed of various shades of gray and black, with a rough, ink-splattered appearance. The letter 'I' is clean and white, standing out prominently against the dark, mottled backdrop. The overall composition is abstract and artistic, with the letter 'I' being the central focus.

Chapter I

General introduction

I.I Culture and food

Food plays an important role in various aspects of human life, from fulfilling basic physiological needs to building social interactions and psychological expression. Food is recognised as an expression of identity and culture and is fundamental to cultural identity (Si & Couto, 2020). Culture is a key concept in our knowledge of societies in understanding past and present, and its definitions are continually evolving and refining (Giles & Middleton, 1999). Integrating food and culture reflects on many aspects of a specific culture such as local products, prevalent cooking methods, spices, and herbs, as well as the accumulated knowledge of decades, if not centuries, of people preparing and cooking meals (Si & Couto, 2020). Thus, bringing cultural values to the forefront, makes food a fundamental identity marker, defining personality, socioeconomic status, lifestyles, gender roles, and connections from family to community to ethnic groups or nationality, in a manner that varies through time and space (Boutaud et al., 2016).

Furthermore, food habits provide a link between individuals and their culture and ethnic groups, and it is frequently utilised to explain the cultural identity of people (Sibal, 2018). The sort of food individuals eat for breakfast, lunch, and dinner, as well as their meal times, reveal a lot about the culture and lifestyle of a nation. The frequency and duration of meals in various nations are highly variable (Si & Couto, 2020). Eating habits vary widely among people from diverse cultural backgrounds and are influenced by where families live and their ancestral roots. Eating habits reflect patterns of food choices within a cultural or regional group. For instance, a decent meal in the United States should consist of a main dish and side dishes, such as meat, vegetables, and starch. In China and many other regions of Asia, rice is required for a proper meal whereas, in some Europe countries, bread is essential (Si & Couto, 2020). Understanding culture through food is an interesting process because once a person starts asking these questions, such as how something is made, what ingredients are in it, or why it is called a certain way, the answers go beyond culinary learning.

I.2 The expansion of food concepts related to culture

Within the broader context of culture and food, various food concepts can indicate the uniqueness of a specific culture, such as traditional food, ethnic food, local food, and heritage food.

In literature, the relationship between food and culture is expressed as traditional, local, ethnic, and heritage food. According to Hanssen and Kuven (2016), traditional food comprises an essential element of culture, heritage, and identity. It links to a particular region and sensory quality (Guerrero et al., 2009). Trichopoulou et al. (2007) defined traditional food as “derived from land and sea, which constitute an essential aspect of a country’s culture, history, lifestyle, and local economy.” These foods are recognized by the local people and commonly consumed for a long time, and the methods of preparation of such foods have been transmitted from generation to generation (Trichopoulou et al., 2007). Local food pertains to the cuisine served in a specific location, encompassing both regional culinary specialties and dishes prepared using locally sourced ingredients (Björk & Kauppinen-Räsänen, 2016).

Furthermore, ethnic food also can be defined as culinary traditions embraced and prepared by specific groups who share a common religion, language, culture, or heritage (Kwon, 2015). Matta (2013) defined food heritage as “a set of material and immaterial elements of food cultures, which are considered to be a shared legacy or a common good”. Food heritage involves several elements such as agricultural products, ingredients, dishes, techniques, recipes, and food traditions (Ramli et al., 2016). Recently, Zocchi et al. (2021) elaborated the concept of food heritage from different perspectives as it acts as an umbrella for different heritage related food definitions such as agri-food heritage (e.g. agricultural products, production practices and traditional knowledge), culinary heritage (e.g. ingredients, cooking accoutrements, recipe, tastes, and smells) gastronomic heritage (e.g. ingredients, cooking utensils, and recipes). However, in literature, there are some definitions of traditional food and ethnic food and multiple aspects of heritage food, but still very limited information on the heritage food concept.

I.3 The increasing interest in heritage food

The interest in heritage food has been growing among locals and tourists, supported by the recognition of United Nations Educational, Scientific and Cultural Organisation (UNESCO). In 2010, UNESCO acknowledged food as intangible cultural heritage, adding the Mediterranean diet, Mexican cuisine, and French gastronomic meal to their representative list (Medina & Aguilar, 2019). Since then, more food-related cultures have been added annually. These initiatives aim to protect and promote both tangible and intangible aspects of the foodscape (Zocchi et al., 2021), highlighting the importance of heritage cuisines for identity, cultural traditions, and local community

development (Oliveira et al., 2020). Beyond food, cultural traditions associated with heritage cuisines foster activities that emphasize hospitality and closeness (Abd Aziz et al., 2021), contributing to the uniqueness of each culture's heritage food. Therefore, the preservation of heritage food and its quality attributes are essential considerations.

1.3.1 Locals

The cultural heritage embedded in a region's cuisine is integral to the identity of its people, as food represents not only a physical necessity but also local culture and tradition (Turner et al., 2016). Heritage food plays a significant role in a country's wealth, global recognition, reputation, and local economy (Timothy, 2015). Consequently, there is a growing concern among locals about the preservation and consumption of heritage food. In multicultural nations, local communities face external influences that challenge their traditions and cultural identity, leading to fears of losing their heritage food over time (Quintero-Angel et al., 2022). In the era of globalization, people tend to embrace new trends that bring changes in traditional foods, as these foods are closely tied to people's lifestyles (Ali & Abdullah, 2012). The influence of Western food, such as fast food, has particularly exerted pressure on traditional food consumption (Zulhazman et al., 2019). Therefore, it is crucial for local societies to establish a distinct culinary identity that represents their nation's authenticity and tradition, ensuring the preservation of their heritage.

1.3.2 Tourists

Heritage food has gained significant attention in the realm of travel and tourism. In the tourism context, authentic traditional foods contribute to a country's positioning on the global tourist map and help it stand out among other destinations (Bertella, 2011). In today's competitive world in tourism, being distinctive and memorable is crucial, and heritage food can play a key role in achieving that goal. Leisure travellers actively seek and engage in diverse food and drink experiences, whether food is their primary motivation or an additional aspect (Stone & Migacz, 2016). These culinary experiences influence tourists' intention to revisit a destination (Gupta & Sajnani, 2020), as they evoke psychological and emotional connections through sensory characteristics like taste and smell, providing an authentic feeling and experience (Björk & Kauppinen-Räsänen, 2016). Such experiences not only allow tourists to engage with cultural heritage (Di Giovine et al., 2017) but also enhance the number of tourist attractions and improve the food image of the destination (Choe & Kim, 2018; Telfer & Wall, 1996).

I.4 Quality attributes and heritage food

Besides having a unique taste and flavour, and being healthy and nutritious (Brulotte & Di Giovine, 2016; Shukla, 2021; Trubek, 2008), heritage foods must be safe and authentic. These two essential quality attributes will be discussed in the following sections.

I.4.1 Food authenticity

Authenticity encompasses origin, genuineness, history, traditions, locality, and culture. Definitions of authenticity vary, with different nuances and synonymous terms used. It can denote something genuine, true, and real, (Cambridge, 2019; Collins, 2019; Ivanova et al., 2014) or refer to the faithful representation or imitation of an original (Chhabra, 2005; Cohen, 1988; Collins, 2019). However, authenticity, especially in relation to food, is highly subjective (Hamzah et al., 2013; Heidegger, 1996). Food authenticity, as described by Groves (2001), pertains to the genuine version of a food product associated with a specific place, region, or country. It encompasses elements such as origin, preparation, ingredients, recipes, and context, including serving and presentations (Assiouras et al., 2015). The authenticity of heritage foods can be influenced by specific ingredients, preparation methods, and serving styles (Ramli et al., 2016). Factors like the use of alternative ingredients due to seasonal availability or inadequate knowledge of heritage cuisine recipes may lead to deviations (Autio et al., 2013; Kim et al., 2009; Nor et al., 2012). Furthermore, not following exact heritage food recipes can impact both taste and authenticity (Lu & Fine, 1995). The style of food presentation also contributes to authenticity. This underpins the importance of authenticity for heritage food and the need to know which factors could influence the authenticity in the preparations of heritage dishes.

I.4.2 Food safety

The preparation and cooking of heritage food in food service establishments (FSEs) can pose food safety hazards, which can have implications for consumer health. Food safety is defined as the absence of microbiological, chemical, and physical hazards in food or their presence at acceptable levels (Luning & Marcelis, 2020). These hazards are relevant to the preparation of heritage foods. Despite the implementation of food safety regulations in many countries, there have been reports of unhygienic food handling and preparation in local restaurants (Abdul-Mutalib et al., 2015; Sapawi et al., 2019). For example, a sushi restaurant in the United States experienced an *Escherichia coli* outbreak due to poor food handling and hygiene practices (Jain et

al., 2008). A study conducted in traditional restaurants has identified faecal coliform bacteria and *E. coli* in food, drinking water, the hands of chefs, and various food utensils, highlighting the lack of personal hygiene and adherence to Good Manufacturing Practices (GMP) principles (Shaw, 2018). It is essential to control the risk factors associated with foodborne outbreaks in the hospitality industry. Although there is common knowledge about food safety risk factors in the catering industry, there is limited understanding of specific risk factors inherent to the production of heritage foods, from ingredients to serving.

1.5 Societal trends and heritage food

Figure 1.1 shows the three societal trends (increasing tourism, increase consumption of Western food and health, and legal food safety requirements and heritage food) and its impact on heritage food. Heritage food has an important linkage to its quality attributes such as sensory aspects, health, safety and authenticity. These quality attributes can be influenced by the societal trends. Figure 1.1 will be explained in more detail in the following sections.

1.5.1 Increasing tourism interest in heritage food

Tourists often encounter challenges when experiencing new food. Some tourists may avoid consuming unfamiliar food due to concerns about potential food safety hazards (Sapawi et al., 2019) as depicted in Figure 1.1. Although tourists are experimental eaters, tourists often exhibit low acceptance of traditional dishes, primarily due to concerns about hygiene and food safety practices followed by small local food service providers (Choe & Kim, 2018; Lim et al., 2015; Sapawi et al., 2019). This low acceptance can be attributed to the perception that the quality and taste of the products do not meet the visitors' standards. Moreover, tourists can contribute to authenticity issues in heritage food experiences (Sims, 2009). These authenticity issues are related ingredients, recipes, cooking equipment, as well as the presentation and sensory aspects of the dish. For instance, tourists' demand for alternative ingredients in heritage cuisine recipes may compromise authenticity (Autio et al., 2013; Kim et al., 2009; Lu & Fine, 1995; Nor et al., 2012) (see Figure 1.1). Furthermore, food service establishments (FSEs) can impact recipe authenticity by deviating from traditional cooking equipment for reasons related to cost and time. Therefore, the authenticity of heritage food might be at risk.

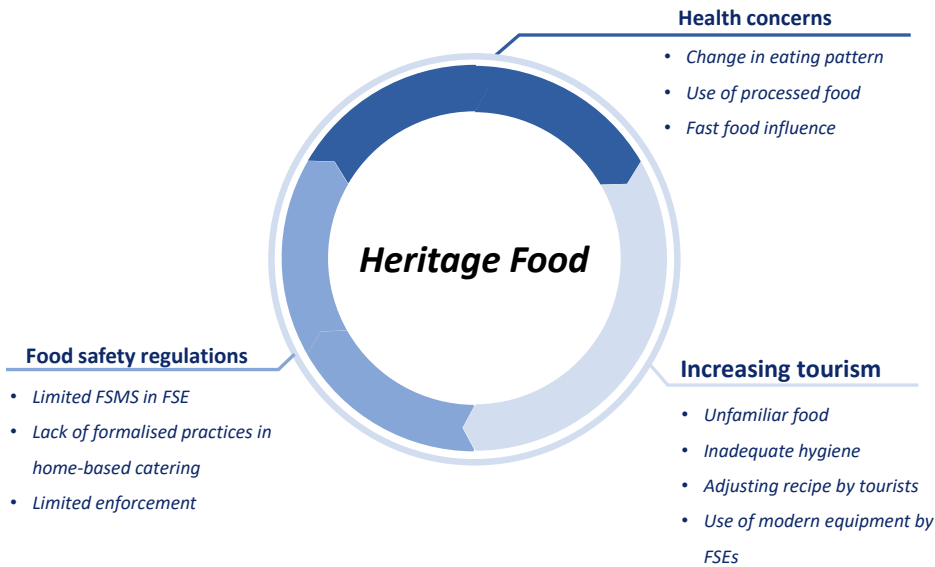


Figure 1.1: Social trends challenges of heritage food.

1.5.2 Health concerns and heritage food

The consumption of Western fast food has become a prominent trend in society, with significant health implications (Mathur & Patodiya, 2016). Eating patterns in various nations have shifted towards processed meals and quick-service restaurants, leading to a decreased consumption of traditional foods (Savvaidis et al., 2022) (see Figure 1.1). Unlike heritage food, which is typically found in limited locations, fast food is widely available and accessible across countries. Heritage foods contribute significantly to the daily intake of essential nutrients such as proteins, vitamins, and minerals (Gagne et al., 2012; Kuhnlein & Receveur, 2007) whereas fast food is considered to be nutritionally deficient in micronutrients, high in fat, salt, and sugar, and lacking in fibre (Block et al., 2004; Davis & Carpenter, 2009; Fraser et al., 2010). This shift in dietary habits towards fast food has led to an increased prevalence of non-communicable diseases such as obesity, diabetes, hypertension, and abnormal blood lipids (Savvaidis et al., 2022). The introduction of Western fast food disrupts traditional eating habits and replaces heritage food consumption, raising health concerns for local populations

1.5.3 Legal food safety requirements and heritage food

Food safety is a critical concern, and all food establishments are now required to comply with general hygiene standards and implement a HACCP-based food safety

management system (FSMS) (CAC, 2003; Garayoa et al., 2014). While commercial food service establishments (FSEs) must adhere to these standards, they operate in a distinct context from food industries, which necessitates specific safety control and assurance practices (Luning et al., 2013). Additionally, there are home-based caterings, also known as productive families, where food is prepared and catered from home (Osaili et al., 2022). FSEs typically handle a variety of meals that need to be prepared in advance, often in the same area, under time pressure, and with uncertain customer numbers (Chinchilla, 2009; Sun & Ockerman, 2005; Worsfold, 2001). Commercial FSEs have unique characteristics related to product, process, organization, and supply chain, such as highly sensitive ingredients, reliance on suppliers for raw materials, limited technological resources, and high employee turnover (Luning et al., 2013). Specific hygiene codes based on HACCP principles have been developed to address these challenges (Association, 2004; Directive, 1993). However, the enforcement of HACCP-based systems for heritage foods prepared in commercial FSEs is sometimes limited, and people do not always follow proper hygiene and food safety procedures. Moreover, in home-based caterings, where heritage foods are also prepared, formalized hygiene practices are often lacking. There is still limited understanding of the food safety situations in these home-based caterings and commercial FSEs where heritage foods are prepared.

1.6 Why heritage food from Saudi Arabia as a case study?

Saudi Arabia is investing in tourism to reduce its dependence on oil and gas, aiming to diversify its economy through Vision 2030. This initiative focuses on transforming Saudi Arabia into a service-based economy and includes the development of sectors such as health, education, infrastructure, recreation, and tourism (Abuhjeeleh, 2019; Saleh & Malibari, 2021). As part of the tourism promotion, there is an increasing demand for heritage food in Saudi Arabia, with surveys showing that heritage restaurants are popular among respondents due to their reflection of cultural values, environment, dishes, meals, and traditions (Aliraqi & Al-Zahrani, 2017). With the number of tourists visiting Saudi Arabia on the rise and expected to reach 32 million by 2026, it is essential for local authorities to ensure the availability of safe and authentic heritage food for visitors (World Travel & Tourism Council, 2016; Foo et al., 2013; Stephenson & Al-Hamarneh, 2017).

In Saudi Arabia, the Ministry of Municipality and Rural Affairs is responsible for controlling products in markets, restaurants, hotels, and local plants. Moreover, it

is responsible to carry out inspections to verify compliance and they impose fines in case of violations (Al-Kandari & Jukes, 2012). However, Saudi Arabia has been confronted with several food safety issues with heritage food prepared at home, in catering, and in restaurants. According to a report published by the Health Ministry Saudi Arabia, approximately 2191 foodborne diseases were reported in 2018 (Saudi Arabian Ministry of Health, 2018). In Jordan and Saudi Arabia, serious foodborne outbreaks happened in caterings with more than 50 sick patients because of insufficient cooking temperature-time (Tajkarimi et al., 2013). Furthermore, in Saudi Arabia, it is quite common that local women prepare traditional dishes in their own homes to cater for parties, dinners, events, ...etc. This situation contradicts food safety legislation, which mandates certain requirements for food production areas. It prohibits the use of home kitchens as it obstructs health standards and regular inspections (Saudi Arabian Ministry of Municipal and Rural Affairs, 2009). The dishes provided from their own homes are produced in a manner that may not comply with the food safety and quality standards that are required in the hospitality industry, an issue that may prevent hospitality institutes to outsource local heritage food to their guests. On the other hand, food preparation by local people according to traditional methods is essential for the authenticity of heritage food. The increase in consumption of heritage food by locals and tourists in Saudi Arabia sets requirements for the organisation of the preparation of these foods by local people especially women as outsourcing heritage food preparation to local domestic preparation can lead to serious health issues and economic damage for the sector.

In Saudi Arabia, authentic heritage food is yet not reachable to tourists and no measures are yet in place to ensure authenticity and safety. In anticipation of the increased tourism, the hospitality industry currently focuses mainly on international brands and using globalized food recipes, preventing the catering of Saudi heritage foods. Moreover, many foreign workers currently operate in hospitality. Any foreign food handler or chef will be influenced by their cultural background (Avieli, 2013; Özdemir & Seyitoğlu, 2017), which affects their food preparation practices. There are yet no clear requirements nor codes of conduct in preparing heritage food, which also hampers control of authenticity by local authorities. To gain insight into best practices, it is valuable to compare Saudi Arabia's current practices regarding authenticity and safety with countries that have a long-standing tradition of preparing authentic and safe heritage food.

1.7 Inductive approach in qualitative research

The main overall approach of the research is the inductive approach used in qualitative research. Qualitative research encompasses a variety of data gathering and analytic methods designed to provide cultural and contextual descriptions and interpretations of social phenomena (Corbin & Strauss, 2008; Levitt et al., 2017). The inductive approach is a method that helps in collecting comprehensive data and involves working exclusively from the participant's experiences (Azungah, 2018). This approach is relevant to exploring heritage food as the concept has not yet been widely studied. The approach involves various data collection and analysis techniques such as the use of semi-structured, open-ended interviews and thematic content analysis (Dudwick et al., 2006; Gopaladas, 2016). The detailed information obtained through interviews with experts in the field combined with a systematic analysis of qualitative data enables a holistic understanding of what was said (Gale et al., 2013) and ensures that all important aspects of the data are captured (Charmaz, 2014; Gale et al., 2013).

1.8 Objectives and thesis outline

The research aims to gain insight into the heritage food concept and identify the risk factors that influence the authenticity and safety of heritage food in the hospitality industry and assess the influence of control and assurance measures on safety and authenticity. To fulfil this purpose, the heritage food concept was developed and risk factors for safety and authenticity were identified to assess these risks in the foodservice establishments (FSEs). To reach this aim, four research questions were formulated:

1. How to conceptualise heritage food?
2. What are valid of heritage food concept and authenticity risk factors in heritage food production?
3. What is the occurrence of food safety and authenticity risks situations in the preparation of heritage food dishes in different food service establishments (FSEs)?
4. To what extent do the food safety and authenticity related practices differ among home-based catering and commercial catering in different countries?

Figure 1.2 presents the thesis outline covering six chapters overall, of which 4 are research publications, each aimed at answering one of the research questions. Chapter 1 presents the general introduction to the thesis, providing a background perspective to the research, the underlying concepts, theories, and the overall research aim and

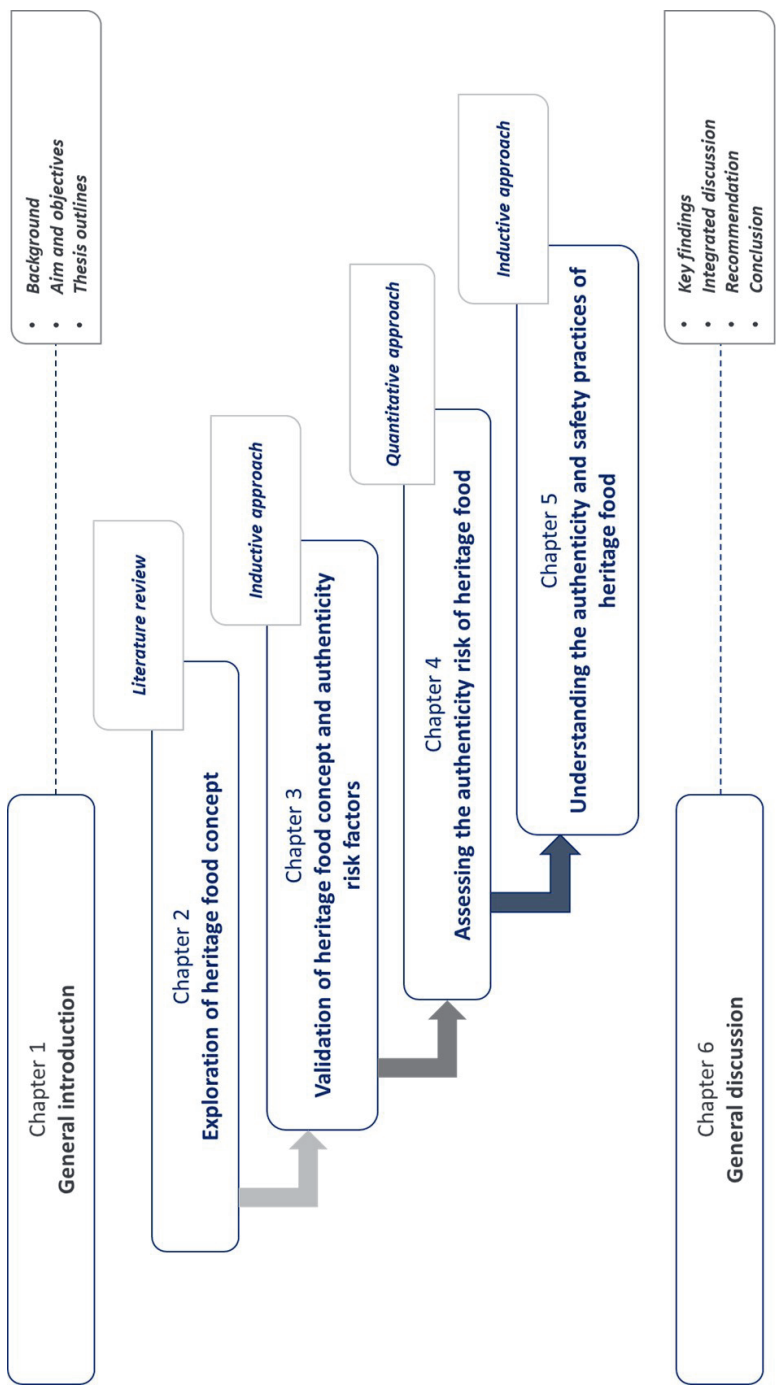


Figure 1.2: Thesis outline.

research questions. Chapter 2 presents the conceptualisation of heritage food and identifies the possible authenticity and safety risk factors. A semi-structured literature review was conducted to explain the heritage dimensions and to evaluate multiple food concepts relating to heritage to define the heritage food concept. Furthermore, risk factors were inferred from the literature that could compromise the safety and authenticity of heritage food. Chapter 3 presents a validation of the heritage food concept and the authenticity risk factors in the production of heritage food. Semi-structured interviews with culinary professionals from foodservice establishments in Saudi Arabia and Italy were conducted to validate the concept and evaluate the risk factors based on their professional expertise. Chapter 4 assesses the authenticity and safety risks of the production of heritage food dishes in different food service establishments. The study is based on an online questionnaire administered in Saudi Arabia and culinary professionals responded from different FSEs. Chapter 5 presents a deeper understanding of how home-based catering take care of hygiene (safety) and authenticity during the production of heritage food. We study this in three different countries where heritage food is made by households/small catering settings. In-depth interviews and observations were conducted to investigate the safety and authenticity risks in different countries. Chapter 6 presents the general discussion, conclusions, recommendations, and suggestions for future research.

2

Chapter 2

Exploration of heritage food concept

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Abstract

Background: Heritage food has gained attention and recognition by locals as a cultural identity and by tourists as a new food experience. Two important intrinsic quality attributes of heritage food encompass safety and authenticity. As heritage food dishes are prepared in foodservice establishment, it entails requirements on ensuring safety and authenticity of heritage food.

Scope and approach: The study aims to conceptualise heritage food and identify risk factors that may compromise safety and authenticity. A semi-structured literature review was conducted to explain the heritage dimensions and to evaluate multiple food concepts relating to heritage to define the heritage food concept. Furthermore, risk factors were inferred from the literature that could compromise the safety and authenticity of heritage food.

Key findings and conclusions: Three main heritage dimensions identified from literature are legacy, people and place. Based on the evaluation against the three heritage dimensions, traditional food was mostly linked to the legacy and place dimensions. Ethnic food was typically related to the dimensions people and legacy, whereas for local food the dimension place was most dominant. Literature showed that all dimensions seem to be relevant for heritage food, but the number of definitions available in the literature is still limited. Therefore, it is not yet clear if all dimensions are equally important. Furthermore, a framework was developed with the identified authenticity risk factors, which originated from literature about ethnic, local and traditional food. The identified safety risk factors are common in the foodservice sector. The framework needs to be further validated through studies with stakeholders in heritage food production

2.I Introduction

There has been an increasing interest in extrinsic food quality attributes that relate to how foods are produced, e.g. traditionally, with attention to their unique origins, the culture-specificity of food, or heritage aspects (Luning & Marcelis, 2009; Renko et al., 2014; Verbeke & Roosen, 2009). Such foods can be a significant part of the dietary patterns of people (Vanhonacker et al., 2013) and structure an important part of their cultural identity (Chambers et al., 2007; Chryssochoidis et al., 2007; Vermeir & Verbeke, 2008). More recently, food of a particular place of any destination seems to play an increasing role in a tourist's experience since their perspective of travelling is changing nowadays (Abubakar, 2010; Kaufman, 2010). In the past, tourists focussed on choosing their destinations depending on things to be seen like arts, archaeological sites, and natural environment. Nowadays, this perspective is changing to choosing countries providing experiences that cover the five senses of taste, sight, touch, smell, and sound (Jacobsen & Haukeland, 2002; Lin et al., 2011). Food has thus become an important part of this experience and tourists are willing to be involved in unusual experiences with food (Mak et al., 2012).

In 2010, UNESCO, for the first time, recognized food as intangible cultural heritage and they added the Mediterranean diet, Mexican cuisine and French gastronomic meal to the representative list of the "Intangible Cultural Heritage of Humanity" (Medina & Aguilar, 2018). UNESCO (2017) describes cultural heritage as "the legacy of tangible and intangible attributes of a group or society that are inherited from the past generations, maintained in the present and bestowed for the benefit of future generations". Food can thus be essential for a specific group or community residing in a specific location as part of cultural heritage (Brulotte & Di Giovine, 2016). Moreover, food, as inherited from the past, serves nowadays an important role as a cultural identity in the multicultural environment (Brulotte & Di Giovine, 2016). Therefore, food plays an important part in the cultural heritage.

As part of the cultural heritage, there are two concepts linked with food, which are heritage food and food heritage. Sometimes, they are used interchangeably but they are different. Heritage food has been described as "a traditional local food which is inherited, prepared and practised daily, rooted in a mixture of various cultures, religions, and beliefs" (Omar et al., 2015). On the other hand, food heritage has been defined as "the set of material and immaterial elements of food cultures that are considered as a shared legacy or a common good" (Bessière & Tibère, 2010). Food heritage covers typical aspects related to agricultural products (raw materials), ingredients/compositions, dishes, preparation techniques, recipes, food traditions,

table manners, as well as the symbolic dimension and material aspects such as utensils and dishware (Bessière & Tibère, 2010). It can be understood from both definitions that heritage food refers to the physical object used in the preparation of the food and consumption while food heritage is the combination of all the requirements of heritage food.

Furthermore, the heritage food can be also important for rural area because it is strongly related to a peasant identity, and specifically, to particular food productions (Bessière, 2013). In rural areas, the culinary heritage reflects shared memory and origins, which support a feeling of belonging to a territory (Bessière, 2013). These aspects can be valuable as they can be the means and the motives to attach to a specific place/area. According to Baldacchino (2015) and Sidali et al. (2015), the authenticity of the food and the heritage of specific cultures could work as an effective tool to sustain rural tourism in particular and rural communities in general.

Heritage foods are increasingly prepared in the hospitality industry at a larger scale, which requires appropriate measures to ensure the safety and authenticity of such foods (Rodriguez, 2015). As with all food served for direct consumption, food might involve various food hazards of which may lead to safety problems, depending on the quality and treatments of raw materials, ingredients, the processing conditions, and the handling circumstances (Kristbergsson & Otlés, 2016). Therefore, heritage food production could also face several challenges in terms of safety issues. To illustrate, in Germany, an outbreak occurred in one of the hotels where they prepared various traditional sausages. The cause of the outbreak was linked to poor hygiene of staff and equipment (RKI, 2004b). Niode et al. (2011) interviewed 41 managers of ethnic restaurants. They identified several challenges in meeting food safety standards, such as maintaining proper food cooking and storage temperatures, and lack of knowledge of food safety practices. Therefore, the preparation of heritage food may have implications for food safety and the current food hygiene rules maybe be conflicting with the specific practices of heritage food. For this reason, safety risks because of heritage food preparation need to be investigated.

Furthermore, the authenticity of heritage foods is another quality attribute that is easily threatened. The term “authentic” is associated with “genuineness”, “reality,” and “truth” (Grayson & Martinec, 2004). Authenticity is typically defined as “which is believed or accepted to be real or genuine” (Taylor, 1992). Food authenticity relates to a wide range of elements, such as origin, preparation, ingredients, recipes, and the context, such as the serving and presentation of the food (Assiouras et al., 2015). This makes the control of authenticity challenging because it is not only related to

the food products itself, but also to how heritage food dishes are prepared, and who prepares them. The authenticity control might be particularly strict for heritage food as a breach of trust can easily compromise the whole heritage food sector of a specific country/geographical area. Also, it has not yet been investigated what kind of factors may compromise the authenticity of heritage food.

There is thus increasing interest in heritage food in the tourism industry, but the concept of heritage food is yet unclear and there is very limited information about heritage food. On the other hand, to anticipate the growing interest in heritage food, safety and authenticity should be guaranteed. Therefore, the study aims to conceptualise heritage food and identify the risk factors that may compromise its safety and authenticity. A semi-structured literature search was done to firstly define the general heritage dimensions and secondly to evaluate multiple food concepts relating to heritage to define the heritage food concept. Thirdly, risk factors were inferred from the literature that could compromise the safety and authenticity of heritage food.

2.2 Approaches

To conceptualise heritage food, firstly literature was searched to identify the dimensions describing the heritage concept. Next, literature was searched to evaluate several food concepts that have characteristics associated with heritage (i.e., traditional, ethnic, and local food) to assess the particular dimensions of each food concept. From this analysis, we inferred the possible dimensions of heritage food into a conceptual frame. Lastly, a literature search was conducted to identify the risk factors of the safety and authenticity of heritage food in the hospitality industry.

First, a semi-structured literature search on identifying heritage dimensions was done through structured searching in Scopus, Science Direct and the Google Scholar website. The keywords included in the search were “heritage and definition”, and “heritage and define” because these keywords yielded relevant articles about heritage definitions. The search terms were found in the title and abstract sections of the articles. The search was filtered by focusing on journals related to heritage, culture, tourism, and social studies. Moreover, Dictionary and Cambridge websites were used to define heritage. Then, seven full articles were analysed to find definitions of heritage. From these definitions, typical characteristics were extracted, and similar characteristics were grouped and defined into a dimension.

The next literature search, to evaluate the heritage-related food concepts, was carried out using three databases: Scopus, Google Scholar, and Science Direct. The keywords used for the search were ‘heritage food’, ‘traditional food’, ‘ethnic food’, and ‘local food’. Titles, abstracts, and keywords of all retrieved documents were reviewed and judged based on the following inclusion criteria: (i) published in English or Arabic language; (ii) the document is published in research articles or book chapters or governmental websites. Governmental websites were also used to search for definitions of heritage food as there are limited definitions of heritage food. In total, 19 articles and two governmental websites were used to identify the characteristics of the food concepts from their definitions. For each food concept, these characteristics were categorised according to the previously determined heritage dimensions. Subsequently, the data were analysed by using MAXQDA Analytics Pro 2018 (Release 18.2.0, Foxit Software Company, Germany). The characteristics of each heritage definition were coded and subsequently assigned to the corresponding heritage dimension. For each food concept, a list of codes characteristics, categorised for the heritage dimensions, was obtained. The frequency of the characteristics, as found in the literature, gives an indication of the significance of the particular heritage dimension(s) for the food concept.

The third literature search was conducted to identify the risk factors of safety and authenticity of heritage food. The websites used were Scopus, Google Scholar, and Science Direct. The combination of keywords used was: ‘heritage food’, ‘traditional food’, ‘ethnic food’, ‘safety’, ‘authenticity’, and ‘food service establishment or hospitality industry’. Additionally, the Boolean operators “AND” and “OR” were used so that a single search of each database could be conducted that included all of the search terms. The keywords “heritage food”, “traditional food”, “ethnic food” were combined with authenticity or safety such as ‘traditional food’ AND ‘safety’ AND ‘food service establishment’. The summaries and/or full texts of the relevant documents were read and judged based on the inclusion criteria, resulting in a final body of 25 documents.

2.3 Dimensions of the heritage concepts

Table 2.1 presents the definitions found for heritage showing different characteristics. Characteristics repeatedly mentioned or with similar meanings were the basis for defining the dimensions that typify heritage. The first set of characteristics comprises the terms history, traditions, culture, and ‘past generations preserved and handed on to the present’. These characteristics typically refer to ‘legacy’, which relates to anything

Table 2.1: Definitions of heritage and related characteristics

| Definitions | Characteristics |
|---|---|
| “The history, traditions and qualities that a country or society has had for many years and that are considered an important part of its character” (Oxford Dictionary). | <ul style="list-style-type: none"> • History • Traditions • Country • Society • Many years |
| “features belonging to the culture of a particular society, such as traditions, languages, or buildings, that were created in the past and still have historical importance” (Cambridge Dictionary). | <ul style="list-style-type: none"> • Particular society • Traditions • Created in the past and still have historical importance. |
| “Heritage defined as that which a past generation has preserved and handed on to the present and which a significant group of the population wishes to hand on to the future” (Hewison, 1989). | <ul style="list-style-type: none"> • A past generation has preserved and handed on to the present. • Group of population |
| “The word heritage in its broader meaning is generally associated with the word inheritance; that is, something transferred from one generation to another. Owing to its role as a carrier of historical values from the past, heritage is viewed as part of the cultural tradition of a society” (Nuryanti, 1996). | <ul style="list-style-type: none"> • Something transferred from one generation to another • Culture traditions • Society |
| “Heritage refers to the capital of specific, singular resources aimed at ensuring the perpetuation of the group while feeding its collective dynamic founded on a certain cultural, historical, even geographical identity” (Rautenberg, 2012). | <ul style="list-style-type: none"> • Capital of specific • Group • Certain cultural, historical • Geographical identity |
| “Heritage is directly linked to the social memory of the community. As a ‘Set of memories recognised by a given group’, social memory as a common heritage, thus preserves the cultural and social identity of a given community, through more or less ritualised situations” (Flores, 1995). | <ul style="list-style-type: none"> • Social memory of the community • Group • Preserves the culture • Social identity |
| “Understanding heritage as a form of expression and social differentiation brings us to contemplate the idea of continuity between the past and the present, of preservation, of a proven persistence” (Bessière, 2013). | <ul style="list-style-type: none"> • Social differentiation • The idea of continuity between the past and present of preservation of a proven persistence |
| “Heritage denotes the accumulation of wealth or patrimony of tangible and intangible goods that a society inherits from the past, preserves in the present, and passes on to the future” (Brulotte & Di Giovine, 2016). | <ul style="list-style-type: none"> • Society • Inherits from the past, preserves in the present, and passes on to the future |
| “Everything associated with the nation’s past inherited history, culture, wildlife and landscape” (Sharpley, 1996). | <ul style="list-style-type: none"> • Nation’s past inherited history • Culture |

that was transferred from the past to the present (Hewison, 1989). Therefore, ‘legacy’ was defined as a dimension of heritage. The second set of characteristics includes the terms group, society, and community (Flores, 1995), which mainly refer to ‘people’, which was assigned as another heritage dimension. The third set of characteristics involves terms like country and geographical identity (Rautenberg, 2012) and refers to ‘place’, which we inferred as another heritage dimension of heritage.

2.4 Evaluation of food concepts using the heritage dimensions

The three identified dimensions of heritage formed the lens for evaluation of the concepts of ethnic, local, traditional, and heritage food, as shown in full definitions in Table 2.2. These definitions were extracted from literature then entered in MAXQDA program to be evaluated qualitatively against heritage dimensions as shown in Table 2.3. For ethnic food, the most frequently reported characteristics were categorised under the dimension ‘people’ but also characteristics associated with ‘legacy’ were often mentioned. Ethnic foods are edibles that are eaten and prepared by groups of people who share a common religion, language, culture, or heritage (Prakash, 2016). The most frequently reported characteristics for local food were associated with the dimension ‘place’. To illustrate in Table 2.2, local food refers to food, which is served at a particular destination, but it also encompasses local food specialties and food that is prepared from local ingredients (Björk & Kauppinen-Räsänen, 2016). The dimension ‘legacy’ was most obvious for traditional food, although, various characteristics also refer to the dimension ‘place’ (Table 2.3). Gellynck and Kühne (2008) described “traditional food products as food products (1) for which key production steps are performed in a certain area at national, regional or local level; (2) which have authentic recipes (mix of ingredients), origin of raw material, and/or production process; (3) which are commercially available for about 50 years; and (4) which are part of the gastronomic heritage” (Table 2.2). Table 2.2 and 2.3 also show a dimension ‘others’ which included characteristics that did not fit into the three identified heritage dimensions but were related to the origin of raw materials, authentic recipe, etc.

For the heritage food concept, only a few definitions were found in the literature but they all addressed the characteristics related to all three heritage dimensions (Omar et al., 2015; Wahid, 2009). One of the most comprehensive definitions was provided by The Saudi Commission for Tourism and National Heritage. They defined heritage food as “Food that is associated with the customs and traditions of each region

Table 2.2: The process of evaluation of food concepts on heritage dimensions

| Definitions | Reference | Dimensions | | | |
|--|---------------------------------|------------|-------|--------|--------|
| | | Legacy | Place | People | Others |
| Ethnic food | | | | | |
| “Ethnic foods are edibles that are eaten and prepared by groups of people who share a common religion, language, culture, or heritage.” | Prakash (2016) | ✓ | | ✓ | |
| “In narrow sense, ethnic foods are foods originating from a heritage and culture of an ethnic group who use their knowledge of local ingredients of plants and/or animal sources.” | Kwon (2015) | ✓ | | ✓ | ✓ |
| “In broader sense, it is an ethnic group’s or a country’s cuisine that is culturally and socially accepted by consumers outside of the respective ethnic group. Furthermore, foods eaten by people of different religions are also considered ethnic food.” | Kwon (2015) | | ✓ | ✓ | |
| “Ethnic foods have cultural identity and heritage concepts just like traditional food, but they are not related to the Western world. Ethnic groups are minorities that have formed part of a society relatively recently. In Europe, for example, Afro-Caribbean, Chinese, Indian, and Pakistani ethnic groups form part of a modern multicultural society.” | Beer (2016) | ✓ | | ✓ | |
| “Ethnic food is defined as products that a particular ethnic (racial, national) or cultural group favours, such as Mexican, Chinese or Kosher foods.” | Food Marketing Institute (1998) | | | ✓ | |
| “Ethnic foods are foods that are regarded as unique to a particular cultural group, race, religion, nation, or heritage. Consumers of ethnic diets often have cultural but also socioeconomic, religious, or regional characteristics that are distinctive. From the cultural standpoint, ethnic foods serve as a familiar link with the past and help those who are accustomed to them maintain ethnic identity.” | Dwyer and Bermudez (2003) | ✓ | | ✓ | |

Table 2.2 continues on next page.

Table 2.2: Continued

| Definitions | Reference | Dimensions | | | |
|--|--|------------|-------|--------|--------|
| | | Legacy | Place | People | Others |
| Traditional food | | | | | |
| “Traditional food products are defined according to four criteria: (1) the key production steps of a traditional food product must be performed in a certain area, which can be national, regional or local. (2) The traditional food product must be authentic in its recipe (mix of ingredients), origin of raw material, and/or production process. Further, (3) the traditional food product must have been commercially available for at least 50 years and (4) it must be part of the gastronomic heritage.” | Gellynck & Kühne (2008) | ✓ | ✓ | | ✓ |
| “From consumers’ perspective, a traditional food product is a product frequently consumed or associated with specific celebrations and/or seasons, normally transmitted from one generation to another, made accurately in a specific way according to the gastronomic heritage, with little or no processing/manipulation, distinguished and known because of its sensory properties and associated to a certain local area, region or country.” | Guerrero et al. (2009) | ✓ | ✓ | | ✓ |
| “traditional” related to foods: ‘traditional’ means proven usage on the domestic market for a period that allows transmission between generations; this period is to be at least 30 years’. | European Commission (2012) | ✓ | | | |
| “Traditional foods are foods that are typically whole, naturally grown or raised, and used in their original form or have undergone only basic processing (drying, cooking, and natural fermentation). They are nutrient-rich and have a long history of supporting health and wellness, and have been consumed for thousand years.” | Prakash (2016) | ✓ | | | ✓ |
| “a coherent tradition of food preparation that rises from the daily lives and kitchens of a people over an extended period in a specific region of a country, or a specific country, and which, when localized, has notable distinctions from the cuisine of the country as a whole.” | Ivanova, Terziyska, & Trifonova (2014) | ✓ | ✓ | | ✓ |

| | | | | |
|---|--|---|---|---|
| “Derived from land and sea, which constitute an essential aspect of a country’s culture, history, lifestyle, and local economy. These foods are recognized and commonly consumed by the local people for a long time.” | Trichopoulou et al. (2007) | ✓ | ✓ | ✓ |
| “A product must be linked to a territory, and it must also be part of a set of traditions, which will necessarily ensure its continuity over time.” | Jordana (2000) | ✓ | ✓ | |
| Local food | | | | |
| “Local food refers to food, which is served at a particular destination. It also refers to local food specialties and food that is prepared from local ingredients.” | Björk & Kauppinen-Räsänen (2016) | ✓ | ✓ | ✓ |
| “Local food commonly describes food that has been produced, processed, and distributed within a particular geographic boundary or is associated with a particular geographic region.” | Duram (2010) | | ✓ | |
| “There is no legal or universally accepted definition of local food. In part, it is a geographical concept related to the distance between food producers and consumers. In addition to geographic proximity of producer and consumer, however local food can also be defined in terms of social and supply chain characteristics. In terms of defining distance, opinions are quite varied. Distances that are perceived as local may vary by region. Concept of local food may extend to the production method, who produced the food, the characteristics of intermediate stages of the supply chain.” | Martinez et al. (2010) | ✓ | ✓ | ✓ |
| “The term local food focuses on origin of produce, usually limited in terms of geographical distance (e.g. grown or raised within 50 km) or administratively (produced within the boundaries of the same administrative unit, usually a district).” | Ivanova, Terziyska, & Trifonova (2014) | | ✓ | |
| “food and drink that is produced or grown in the local area or local specialty food that has a local identity.” | Enteleca Research Consultancy (2000) | ✓ | ✓ | ✓ |

Table 2.2 continues on next page.

Table 2.2: Continued

| Definitions | Reference | Dimensions | | |
|---|---|------------|-------|--------|
| | | Legacy | Place | Others |
| “food products or dishes made or prepared locally, based on traditions, techniques, and non-generic products that are associated with a given geographical area.” | Frisvoll, Forbord, & Blekesaune (2016) | | ✓ | ✓ |
| “local food refers to food produced, retailed and consumed mainly in the specific area.” | Bosona & Gebresenbet (2011) | | ✓ | |
| Heritage food | | | | |
| “classical and traditional foods, which are cooked by all generations without their flavours and tastes being altered and are still common today.” | Wahid (2009) | ✓ | | ✓ |
| “(Malaysian) Heritage food is traditional local food which is inherited, prepared and practiced daily, rooted from mixture of various cultures, religious and beliefs.” | Omar, Karim, & Omar (2015) | ✓ | ✓ | |
| “Food that is associated with the customs and traditions of each region according to their distinct heritage. These practices have continued over generations and years and it may vary depending on the climate, nature of life, and the type of plants planted in each region.” | Saudi Commission for Tourism and National Heritage (2018) | ✓ | ✓ | ✓ |

Table 2.3: Visual representation of the identified heritage dimensions for the existing food concept

| Code System | Ethnic foods | Local food | Traditional food | Heritage food |
|-------------|--------------|------------|------------------|---------------|
| Place | | | | |
| Legacy | | | | |
| People | | | | |
| Others | | | | |

A larger circle indicates that the term was reported more frequently.

according to their distinct heritage. These practices have continued over generations and may vary depending on the climate, nature of life, and the type of plants occurring in each region” (Table 2.2). However, based on these few definitions, it is not possible to judge if all three dimensions are equally important. In Figure 2.1, we, therefore, propose heritage food as a food concept encompassing all three dimensions legacy, people and place, whereas, for the other concepts, one or two dimensions seem to be particularly dominant. The local food is particularly related to place because it refers to a particular destination in which the raw materials and ingredients for food and drinks are produced locally (Ivanova et al., 2014). For ethnic food, it is placed between the people and legacy dimensions. People dimension is related to a specific ethnic group that has specific knowledge about food preparation which origins from a unique and distinct culture (Beer, 2016; Kwon & Tamang, 2015). For the legacy dimension, it means that this specific ethnic food is transmitted from the past generation to the present and it is part of the origin country (Dwyer & Bermudez, 2003).

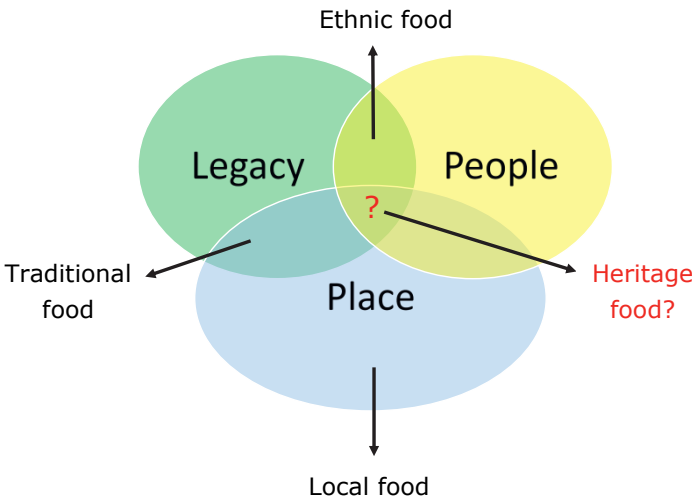


Figure 2.1: Proposing heritage food as a food concept encompassing all three dimensions legacy people, and place.

Traditional food is placed between the dimensions of legacy and place because these foods have been transferred from the past generations to the present in a specific country or region. Moreover, traditional food should not be necessarily cooked by people from the country of origin. For example, immigrants to a specific country can learn the knowledge of traditional food and they can start cooking the food (Kwik, 2008). Therefore, traditional food knowledge is crucial for the cultural tradition of sharing food, recipes, cooking skills and techniques and passing down this collective knowledge and skill through generations (Kwik, 2008).

According to Piernoi et al. (2016), heritage food also relates to food sovereignty, as culturally appropriate signifies that the food that is available and accessible for the population should fit with the cultural background of the people consuming it. Food sovereignty gives the right of local communities to shape their foodscapes and take care of their food bio-cultural diversity and heritage (Forum for Food Sovereignty, 2007; Nolan & Pieroni, 2014). At the heart of the food sovereignty concept lies the idea of the crucial need to truly foster environmental sustainability and social justice in food production and consumption. It promotes short food chains based on heritage foods and conviviality (Biglino et al., 2011). Heritage food is thus also considered to be a foundation for sustaining safe, clean and equitable food throughout the world (Petrini, 2007).

2.5 Conceptual framework

The conceptual framework (Figure 2.2) consists of four parts which are the activities in preparing heritage food (A), the heritage food dimensions related to the production of heritage food (B), the possible authenticity risk factors (C) and the possible safety risk factors in the production of heritage food (D).

Heritage food preparation starts with the sourcing of raw materials and ingredients. The *place* dimension is specifically relevant here because sourcing of ingredients must be from a specific place or area. According to Raji et al. (2017), the uniqueness of Malay heritage food is due to the ingredients which are produced locally. After sourcing, the heritage food is prepared and cooked. Here, the dimensions *legacy* and *people* seem to be more relevant because the way heritage foods are prepared and cooked relate to the recipes and knowledge inherited from the past to the present. Timothy (2015) stated that knowledge and recipes are important for heritage cuisine as they should be passed down to the next generation. The last two steps in heritage food preparation are serving and consumption. In these stages, all heritage food dimensions

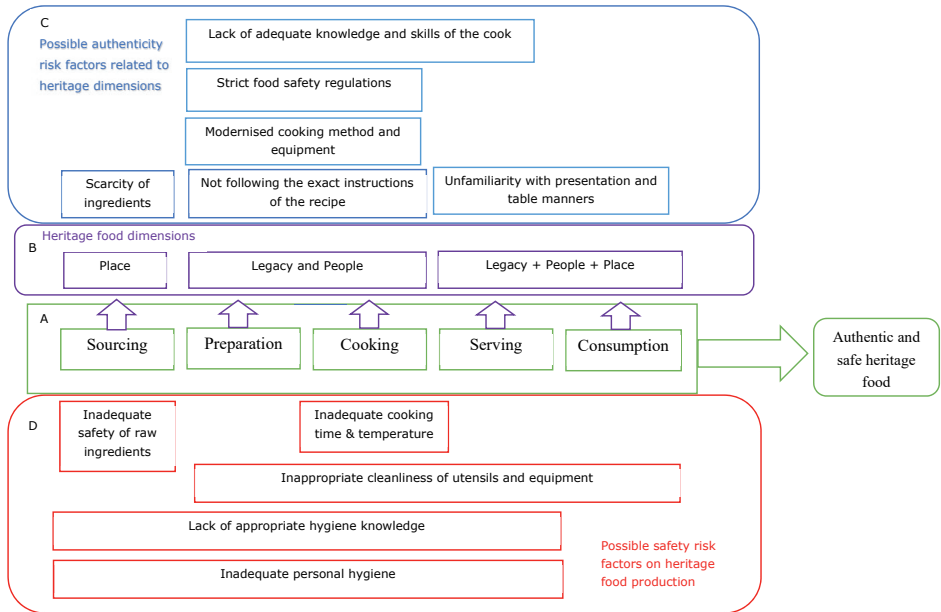


Figure 2.2: Conceptual framework of heritage food and related risk factors of authenticity and safety.

legacy, people and place play a role. The reason is that the presentation during serving and consumption should comply to specific rules that are passed through generations, which relate also to the knowledge of people and a specific culture (Bessière, 2013; Bessière & Tibère, 2010; Civitello, 2011; Molnár et al., 2011; Montanari, 2006; Timothy, 2015). The possible risk factors of the authenticity and safety of the production of heritage food will be discussed in the following two sections.

2.5.I Possible risk factors compromising the authenticity of heritage foods (HF)

Figure 2.2 shows six possible authenticity risk factors, which may compromise the production of heritage food. Scarcity of raw ingredients can be a risk factor in the sourcing activity of heritage food production. Ingredients are usually seasonal, hence they are only available at certain times of the year (Ivanova et al., 2014). Heritage food ingredients can be sourced from a region with a characteristic local climate, topography and soil composition (Brulotte & Di Giovine, 2016; Trubek, 2008). Using alternative ingredients compromises the authenticity of a dish, therefore any changes in the ingredients, whether alternatives or alternatively sourced may thus compromise the authenticity of heritage food (Nor et al., 2012).

Furthermore, not following the exact instructions of the recipe on the preparation and cooking process can be a risk factor. The recipes include the description of the

composition or formulation of ingredients and the procedures or instructions to make the dish, are essential for the authentic preparation of heritage food (Bessière & Tibère, 2010; Raji et al., 2017; Wahid, 2009). Several studies confirmed that both preparing the heritage food dishes according to the authentic recipes and the way of cooking are important for dining restaurants which provide heritage dishes related to their regional traditions (Association, 2015; Jang & Ha, 2015; Sukalakamala & Boyce, 2007). Therefore, adding or missing or changing a step of the recipe during preparation and cooking heritage food could compromise the authenticity of the heritage dish.

Also, using modernized cooking equipment and methods and or limited availability of original equipment and tools can be a risk factor for the production of heritage food. Hashimoto and Telfer (2015) discussed that using modernised cooking equipment and methods may disqualify a dish from being authentic. Raji et al. (2017) stated that some of the traditional equipment and tools to prepare Malay heritage food are hard to find in urban areas and may only be used in rural areas or villages. They also mentioned that usage of modernized tools may cause alteration of the dish's taste, making it no longer original, thus compromising the authenticity.

The strict food safety regulations may also influence the authenticity of heritage food. Some of the authentic practices may not be following current food safety standards, which may require adjustments in ingredients, equipment or ways of cooking. A study about the gastronomic heritage quality in traditional Azorean restaurants in a Brazilian city revealed that difficulties were observed in the control of the productive process of typical dishes when following the methodologies and legislations of hygienic and sanitary quality (Uggioni et al., 2010). This challenge could influence the authenticity of heritage food if it is conflicting with food safety regulations. This challenge could differ for every heritage food dish. Sometimes, food safety risks are more related to the equipment used in that particular case, therefore, it might be less compromising for authenticity. However, in case of the processing conditions or recipe may be conflicting, then indeed more in-depth risk assessment needs to be done to check to what extent the heritage food preparation could lead to safety issues and if exceptions could be made in specific legalisation in case of low risks.

Lack of adequate knowledge and skills of the cook for producing heritage food dishes is another possible risk factor. Nor et al. (2012) stated that traditional food knowledge is an important part of cultural identity to transfer this knowledge of a particular culture via the recipes and cooking skills. The knowledge and skills should be transmitted to the next generation to preserve traditional food practices, and one

should be knowledgeable on the requirements regarding ingredients, equipment, preparation and cooking methods, and cooking skills of the heritage food. Therefore, without the precise knowledge and skills about the heritage food dish, the cook will not be able to produce authentic heritage dishes.

Lastly, unfamiliarity with the presentation of heritage food and table manners could be a risk factor. The presentation of heritage food dishes reveals the particular culture determining its authenticity (Nield et al., 2000). Each nation has its unique gastronomical tradition, which comprises the selection of food, presentation of dishes, preparation skills, and the aesthetics of each dish (Long, 2004). Furthermore, Bessière (2013) stated that adopting table manners are a step towards understanding the cultures, tastes and all the good things the region has to offer in consuming gastronomic specialities. Therefore, unfamiliarity with the presentation of heritage food dishes and table manners could compromise the authenticity of these dishes.

2.5.2 Possible risk factors compromising the safety of heritage foods (HF)

Figure 2.2 shows five safety risk factors that are common for food service establishments and thus also for the production of heritage food. Inadequate safety of raw ingredients is a potential risk factor as found in many restaurant premises. For instance, a study found that the vehicle of pathogens in some traditional Greek dishes were the raw ingredients as well as the contamination from processing (Panagou et al., 2013). Nabeel and Alamgir (2018) observed in their study that traditional South Asian restaurants relied heavily on the way their dishes are produced to provide an authentic taste but food contact surfaces were not properly washed, rinsed and sanitized after each use. Another study confirmed that around 28% of the food code violations in the ethnic restaurants were the inappropriate cleanliness of equipment and utensils (Lee et al., 2014).

Furthermore, inadequate personal hygiene of food handlers is an important safety risk during the whole process in the kitchen. The commonly reported food handlers' errors, which can lead to food safety issues, are handling of food by an infected person or by a person carrying a food-borne pathogen, bare-hand contact with food, improper hands washing practices, and insufficient cleaning of processing or preparation equipment (Greig et al., 2007; Nørrung & Buncic, 2008), as also reported in a study to ethnic restaurants (Roberts et al., 2011).

Moreover, inadequate compliance with the required temperature and time conditions in cooking is another common food safety risk factor. Several outbreaks were reported

in England, Germany, Turkey, and Canada because of Doner kebab (traditional food) that was prepared at an improper cooking temperature (Cagri-Mehmetoglu, 2018). Likewise, O'leary et al. (2009) identified the undercooked meat as the cause of a *Campylobacter* infection outbreak in a traditional restaurant. In the same vein, *Salmonella* caused an outbreak during a wedding party in Saudi Arabia where heritage foods with meat and rice were the items incriminated because of inadequate heat treatment, time and temperature misuse (Aljoudi et al., 2010). Another common risk factor is the lack of appropriate hygiene knowledge resulting in poor sanitary practices. Studies demonstrated that the lack of hygiene knowledge associated with poor compliance to crucial control measures such as checking food-holding time and temperature e.g. (Niode et al., 2011). A study among ethnic restaurants in the United States indicated the lack of hygiene knowledge as a major source of food safety problems (Kwon et al., 2010).

The described common food safety risk factors are mainly inferred from the literature about traditional food and ethnic food, but to what extent these factors are more or less relevant for heritage food is not yet clear. It is expected that particular requirements on the preparation of certain heritage foods could lead to higher food safety risks, such as using the traditional methods to prepare certain heritage food dishes. However, no empirical studies have yet been done to provide evidence for these potential safety risks.

2.6 Conclusion and future perspective

To our knowledge, this is the first study that conceptualised heritage food and related potential authenticity and food safety risk factors. The three general heritage dimensions identified from literature are legacy, people and place. The food concepts traditional, ethnic, local food, and heritage food were evaluated for these three general heritage dimensions. Traditional food was most frequently associated with legacy and place dimensions. Ethnic food was typically related to the dimensions of people and legacy, whereas for local food the dimension place was most dominant. Literature showed that all dimensions are relevant to heritage food. However, due to the limited number of definitions available in the literature, it is not yet clear if all dimensions are equally important.

Furthermore, a conceptual framework was developed presenting the main activities for the production of heritage food, their connection to the identified heritage food dimensions, and the potential risk factors that could compromise the authenticity

and safety of heritage food. The identified authenticity risk factors mostly origin from ethnic and traditional food literature; they are related to the ingredients, recipes, utensils and equipment, knowledge of chefs, presentation and table manners. The safety risk factors are likely to be similar to the common ones reported for food service establishments. However, it is expected that particular requirements for the preparation of certain heritage foods could lead to specific food safety risks. However, this presumption needs to be further investigated to provide empirical evidence. Moreover, the validity of the heritage food concept as well as the proposed framework needs to be further assessed through studies with various stakeholders in heritage food production.

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3

Chapter 3

The heritage food concept and its authenticity risk factors - Validation by culinary professionals

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Abstract

The increasing interest in heritage food by tourists requires a deeper understanding of its concept. A previous study conceptualised heritage food into three dimensions (i.e. legacy, people and place) and developed a framework describing the main activities in heritage food production, the connection to the identified dimensions and potential authenticity risk factors. This study aims to validate the heritage food concept and the identified authenticity risk factors in the production of heritage food dishes. Semi-structured interviews with culinary professionals of foodservice establishments in Saudi Arabia and Italy were conducted to validate the concept and evaluate the risk factors based on their professional expertise. Data were analysed by thematic content analysis using MAXQDA to infer categories describing the heritage food concept. The results indicated that the previously determined heritage food dimensions were confirmed by professionals. The identified categories 'inheritance' and 'authenticity of the recipe and cooking' corresponded with legacy, whereas the category 'locality of ingredients' linked to place. The category 'knowledgeable chefs representing their culture' is related to people. Another category 'heritage food is subject to cultural and societal influences' emerged which demonstrates that authenticity is not static but evolves. Most culinary chefs from both countries confirmed the earlier identified authenticity risk factors. Moreover, three new authenticity risk factors arose from the interviews including 'adaptation to customer preference', 'costs of ingredients', and 'non-native origin of chef'. Further research is necessary to investigate how these risk factors differ among various types of foodservice establishments.

3.I Introduction

In the last decades, intangible cultural heritage, including heritage food, has earned attention specifically in the tourist sector (Giovanelli, 2019). Tourists go to see tangible heritage (e.g. museums and temples) and enjoy intangible heritage (e.g. music, dance, celebrations, folklore, and heritage food) (Timothy, 2015). As part of intangible heritage, heritage foods have become a trend in several countries in the world, especially in countries that are popular because of their cuisines such as Italy, France, Mexico and Thailand (Karim & Chi, 2010). Worldwide, there is an increasing demand for heritage food in the hospitality industry (Timothy, 2015). However, the cultural globalisation in cuisine triggered the so-called process of 'authentication' undertaken by chefs and cooks who aim at re-establishing culinary traditions. Authentication entails of highlighting characteristics such as, the surrounding environment, obsolete farming practices, and old-fashioned utensils that do not necessarily represent any traditional form of gastronomy (Warde, 1997). Producers highlight new (invented) food characteristics and sell them as 'traditional', establishing events and practices that may not always help to preserve the traditional dishes. As a result, a tainted culinary culture may spread from tourist to tourist, eventually leading to the establishment of ethnic restaurants all over the world. Furthermore, restaurateurs in foreign countries make use of stereotypical ethnic theming (i.e. décor, music, costumes and other stimuli associated with the culture of the cuisine served) in the sole attempt to create an 'authentic' environment in restaurants) (Ebster & Guist, 2005). Thus, it has become increasingly difficult to determine which dishes still represent one country's authentic heritage cuisine.

The concept of authenticity is rather complex and articulated (Beer, 2008). In general, 'authentic' indicates something genuine, true and real (Cambridge Oxford Dictionary, 2021; Ivanova, Terziyska & Trifonova, 2014), but also refers to the good representation or imitation of an original (Collins Dictionary, 2021; Chhabra, 2005; Cohen, 1988). Furthermore, authenticity is highly subjective as it is maintained that in terms of the authenticity of a thing such as food, any consumer eventually determines his or her one (Heidegger, 1996; Hamzah et al., 2013). Food authenticity relates to various aspects like unique/typical origin, preparation, ingredients, recipes, but also the context of the food, such as serving and presentation of the food (Assiouras et al., 2015, Robinson & Clifford, 2012). Experts and the local communities of a certain country may not agree on a general definition of food authenticity, due to the myriad of changes that can be made in the ingredients, methods, cooking styles and taste of a single dish (Hamza et al., 2013; Ramli et al., 2016). For example, the

use of alternative ingredients due to seasonal availability or inadequate knowledge of cooks about the recipes of heritage cuisine may lead to deviations from the original food (Autio et al., 2013; Kim et al., 2009; Nor et al., 2012). However, it is not yet clear what risk factors could compromise the authenticity of heritage food.

In a previous study, we conceptualised heritage food into three dimensions, i.e. legacy, people and place. A conceptual framework was proposed describing the main activities in heritage food production, their connection to the identified dimensions, and potential risk factors (Almansouri et al., 2021). The identified authenticity risk factors mostly originated from heritage, ethnic and traditional food literature and lacked empirical underpinning. Therefore, this study aims to validate the heritage food concept and the identified authenticity risk factors in the production of heritage food dishes. For this purpose, semi-structured interviews were conducted with culinary chefs, experienced in preparing heritage food dishes, from Italy and Saudi Arabia. In both countries, the regional cuisine is strongly relevant. In Italy, heritage food has a long-standing history, is widely recognised through references to city-based identities and is a pillar of the hospitality industry (Capatti & Montanari, 2003). The Mediterranean diet is common in multiple countries belonging to the Mediterranean basin, including Italy (UNESCO, 2019). Italian cuisine has a long tradition of presence overseas (Hjalager & Corigliano, 2000) and is currently the second global cuisine after the Chinese one. Therefore, Italian restaurants play the crucial role of ambassadors promoting Italian heritage food abroad (Martinelli & De Canio, 2019). Also, in Saudi Arabia, there is a growing interest in heritage food by both locals and tourists, which triggered the need for preserving heritage foods. Aliraqi and Al-Zahrani (2017) showed that locals usually go to restaurants that serve heritage dishes because it reflects their heritage values, environment, dishes, meals, and traditions of service providers. Moreover, the Saudi Ministry of Cultural Authority has developed an initiative dedicated to stimulating heritage foods in the hospitality industry (Saudi Ministry of Culture, 2019a). The perspectives of the Italian and Saudi Arabian professional chefs shed light on the heritage food dimensions and relevant authenticity risk factors.

3.2 Materials and methods

3.2.1 Study design

The interviews with the culinary professionals were carried out in Riyadh in Saudi Arabia during April and May in 2019 and Liguria in Italy in January of 2020. Both regions were recognised for preparing specific heritage dishes and the culinary

professionals have comprehensive expertise with multiple heritage food dishes. The interviews consisted of 1) an introduction, 2) general questions to characterise the respondents, 3) questions regarding the concept of heritage food (i.e. to elicit what does it encompass), 4) questions about the typical requirements on heritage food preparation, 5) question to rate these requirements, and 6) questions regarding the authenticity challenges of heritage food. The questions were mostly open-ended, except for one question concerning the rating of the requirements of heritage food. Furthermore, the questions about authenticity challenges consisted of closed (yes or no) questions and follow-up questions to gain insight into the reason for the challenges. The interviews were face-to-face at the location of the hotel or restaurant. On average, an interview took one hour.

3.2.2 Participants

Culinary professionals were selected based on their expertise as chefs in the hospitality industry. These chefs were contacted based on available information of hotels and heritage restaurants and the number of contacts was expanded by asking the chefs for other contacts. Each chef was contacted through a telephone call or by e-mail and got information about the project. The choice of the chefs was based on the following criteria 1) more than five years' experience working in the hospitality industry 2) more than five years' experience with cooking various heritage food dishes, and 3) they should have adequate and enough skills and knowledge regarding cooking heritage dishes. The selection of the participants was based on regions that serve different types of heritage food dishes. They represent an important part of the population as a whole and they have the experience and knowledge about other heritage dishes from other regions. In total, 12 Saudi Arabian chefs and 12 Italian chefs followed the criteria and wanted to take part. All the chefs were working either in independent heritage restaurants or independent hotels or chain hotels where they served heritage food dishes.

3.2.3 Data analysis

A thematic content analysis approach was used for analysing the qualitative data of the interviews following the systematic approach as described in the literature (Bardin, 2016; Vaismoradi et al., 2013; Zanin et al., 2021). The approach consisted of the following five steps. Step one included multiple readings of the transcribed interviews. In step two, meaningful words or terms in the interview answers were identified and coded, i.e. the so-called *unit of analysis*. For example, 'something inherited from generations' was coded as a unit of analysis. Thirdly, the full phrase

or paragraph that assigns the meaning to the unit of analysis was extracted from the answers, i.e. the so-called *context meaning*. For instance, ‘heritage food is something inherited from generations from the past to the present’. In the fourth step, similar context meanings were clustered, based on similarities and/or relevance, into a group and got a name that overall covered the meaning, i.e. the so-called *core of meaning*. To illustrate, a core of meaning was ‘food relating to the past, which passed to the present and future’. Finally, cores of meaning were further grouped into *categories* if cores of meaning include multiple aspects of the same issue. The qualitative data including the units of analysis, context meanings, cores of meaning, and categories were transferred into the software program MaxQDA (version 18.2). This program was used to organize, code and assist in analysing the qualitative data.

The qualitative analysis was performed in three phases following the steps of thematic content analysis (Bardin, 2016). In the first phase, the first author analysed the data manually by using Microsoft Excel to organise the data. The second phase encompassed a new round of manual analysis to verify the first analyses. Finally, in the third phase, the first author analysed the data again in the software MAXQDA using visual tools to confirm the previous code system. The three-phase approach is aimed at enhancing the intra reliability of the findings (O’Connor & Joffe, 2020).

3.3 Results and discussions

3.3.1 The heritage food concept

In earlier research, three dimensions were inferred from the literature on heritage food including legacy, place and people (Almansouri et al., 2021). The current study aimed at validating these dimensions through interviews with culinary chefs from Saudi Arabia (SA) and Italy (IT). The MAXQDA map (Figure 3.1) shows the five categories, which emerged from the interviews, with the underlying cores of meaning explaining the characteristics of the category. The categories ‘inheritance’ and ‘authenticity of the recipe and cooking’ are comparable to the legacy dimension, whereas the category ‘locality of ingredients’ corresponds well with the place dimension. The category ‘knowledgeable chefs representing their culture’ obviously relates to the people dimension. The category ‘heritage food is subject to cultural and societal influences’ demonstrates that heritage food can be dynamic as it can change over a longer time. This implies that changes in original recipes do not necessarily compromise the authenticity of the heritage food dish. Weichselbaum et al. (2009) concluded that traditional foods have experienced continuous modifications, which reflect the history

of a country or a region. The historical changes that were incorporated into heritage food take hundreds of years to change habits while globalization could jeopardize the authenticity of heritage food at a much faster pace. Figure 3.1 shows that the same categories emerged from the interviews with the Saudi Arabian (SA) and Italian (IT) culinary chefs, except for the category ‘cultural and social influences’ (only for the Saudi Arabian chefs) and some differences in cores of meaning were observed.

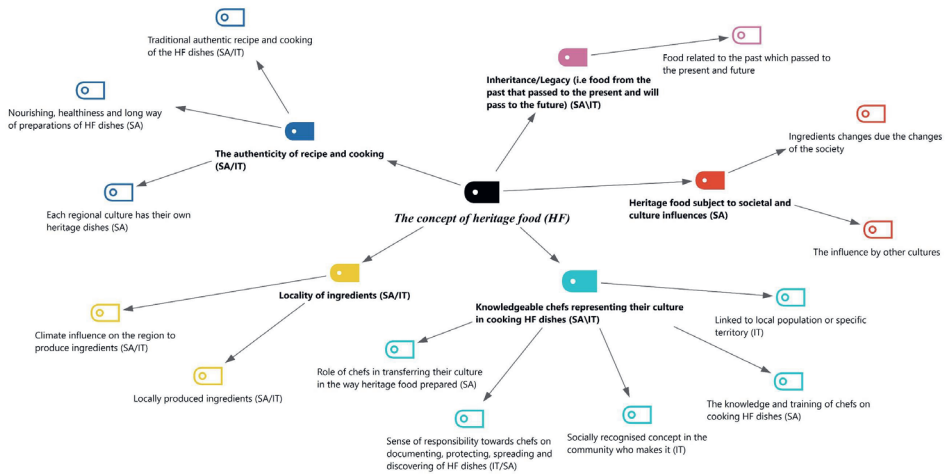


Figure 3.1: Categories (in bold) with their cores of meaning describing the heritage food concept (HF) as emerged from the interviews with the Saudi Arabian (SA) and Italian (IT) culinary professionals.

The category ‘locality of ingredients’ showed similar cores of meaning. Most of the chefs from both countries indicated that the ingredients of heritage dishes must be locally produced, and local climate plays a crucial role in the production of the ingredients. A survey study by Ramli et al. (2020) about the public perception of heritage food determinants among 676 respondents in Malaysia, revealed that most of the respondents agreed that food heritage is linked with the distinctive local ingredients of a region or state. In contrast, in another study, they found that the value of ‘origin of raw materials’ and ‘dependent on the season’ are relatively low for the definition of traditional food (Ivanova et al., 2014). This is contradictory to our heritage food concept, which stresses the importance of the origin of the raw materials.

The category ‘authenticity of recipes and cooking’ (Figure 3.1) showed some similarities and differences in cores of meaning. Most Italian and Saudi Arabian chefs mentioned that the traditional authentic recipe and cooking are crucial for the heritage dishes and various Saudi chefs also stressed the importance of regional authenticity of

recipes. This is in line with a study by Vanhonacker et al. (2010) about the European consumers' definition and perception of traditional food, the results showed that 79% of the consumers agreed that authentic recipe is one of the elements of the concept of traditional food. Similarly, studies concluded that both preparing the heritage food dishes according to authentic recipes and the way of cooking are important for dining restaurants, which provide heritage dishes related to their regional traditions (Association, 2015; Jang & Ha, 2015; Sukalakamala & Boyce, 2007). Furthermore, some Saudi chefs stated that the authentic recipe and cooking of heritage dishes have a function in providing nourishing and healthy properties to the dish. This is in line with the increasing demand for traditional foods because of public interest in healthy eating (Al Faris, 2017; Trichopoulou et al., 2007).

The category of 'knowledgeable chefs representing their culture' shows differences in the cores of meaning (Figure 3.1). Most Saudi Arabian chefs emphasised the importance of knowledge and training for the chefs to prepare and cook heritage food dishes according to their culture. This is consistent with Nor et al. (2012) who did a qualitative study among mothers and daughters in Malay's culture to investigate the transmission of traditional food knowledge within the generation. They concluded that the transfer of traditional food knowledge includes knowledge regarding ingredients, preparation, methods of cooking, equipment and cooking skills. Moreover, oral communication, observation and hands-on practices were the ways of transferring the Malays food knowledge and skills, and this process must happen continually.

For Italy, most chefs highlighted that heritage food must link to the local population or specific territory. According to Sims (2009), heritage dishes are perceived as traditional products with a long history of production in a specific location, hence production and location cannot be separated. The Italian chefs also mentioned that heritage food is a socially recognised concept (i.e. the heritage food concept is socially popular among Italian people) emphasising the long history of heritage food in Italy. According to Sert (2017), Italian cuisine is one of the oldest cuisines in Europe, has its roots in ancient cultures, and locals try to carefully protect it. Turmo (2010) stressed the importance of continuous protection of heritage food since it is a cultural expression that conveys the history of one generation to another in the form of special ingredients, preparations, and dining etiquettes. Interestingly, in our study, several culinary chefs from both countries explicitly mentioned that chefs are responsible for documenting, protecting, and spreading the HF dishes.

The category of 'heritage food is subject to cultural and societal influences' only emerged from the data from the interviews with Saudi chefs. This category consists

of two cores meaning. The first shows the influence of other cultures on heritage food dishes. A report of the cultural status of the Kingdom of Saudi Arabia pointed out that the Saudi kitchen acquired new food elements that became a major part of its daily dishes (like rice) because of the commercial trade between the western and eastern caravans of the Kingdom across the sea or through the land with convoys coming from e.g., Iraq (Saudi Ministry of Culture, 2019b). For 1400 years, over 2 million pilgrims visited Makkah and Al-Madina and these pilgrims brought with them their own culture and food habits which influenced the local food culture. New food items and methods of cooking were introduced to the Kingdom and adopted by the people (Allothaimeen, 1991). Furthermore, the various regions along the land border of the Kingdom have been influenced by the traditional culinary practices of the neighbouring countries that share the same cultural roots and geographical climate (Saudi Ministry of Culture, 2019b). Today, these effects are still visible in the similarity of heritage foods between the border regions. For example, in the southern region of the Kingdom, some of the dishes are like Yemeni food. Interestingly, according to Capatti & Montanari (2003), Italy has been influenced by other cultures at the borders like French cuisine in Piedmont by unifying practices of food preparations and presentation. This influence by other cultures is also happening in Italy for a long, but the Italian chefs did not mention that. The authenticity of heritage food recipe can also evolve because of societal changes. To illustrate, the discovery of the New World (i.e. the North and South of America) and the development of international trade influenced traditional food in Europe. Because of the limited availability of ingredients, the new ingredients introduced from the north and south of America replaced local ingredients affecting the original dishes in Europe (Timothy, 2015; Weichselbaum et al., 2009).

3.3.2 Requirements on heritage food production

To get a deeper understanding of what is required to make heritage food dishes, the culinary chefs also gave their opinions about requirements, which served as the basis for identifying the authenticity risk factors. Figure 3.2 shows the five categories with their cores of meaning that emerged from the interviews about the requirements on heritage food production. Figure 3.3 shows the importance rating regarding these requirements assessed by the Saudi Arabian [A] and Italian chefs [B]. The Saudi Arabian chefs [A] mentioned 'knowledge' as the most important requirement and to a lesser extent 'authentic ingredients' and 'cooking methods', whereas 'tables manners' seem to be the least important. The results are consistent with other studies, which confirmed the importance of the knowledge for heritage cuisine (Bessi re, 1998; Clark

& Zimmerman, 2000; Humphrey, 1989; Oum, 2005; Sharif et al., 2014; Taylor, 1999; Trichopoulou et al., 2007). The Italian culinary chefs considered the ‘ingredients’ as the most important and to a lesser extent ‘knowledge’ and ‘recipe’ (Figure 3.3 [B]). Lee, Pung & Chiappa (2021) did a qualitative study among 35 restaurants owners in Italy to explore how they define traditional and modern restaurants. They

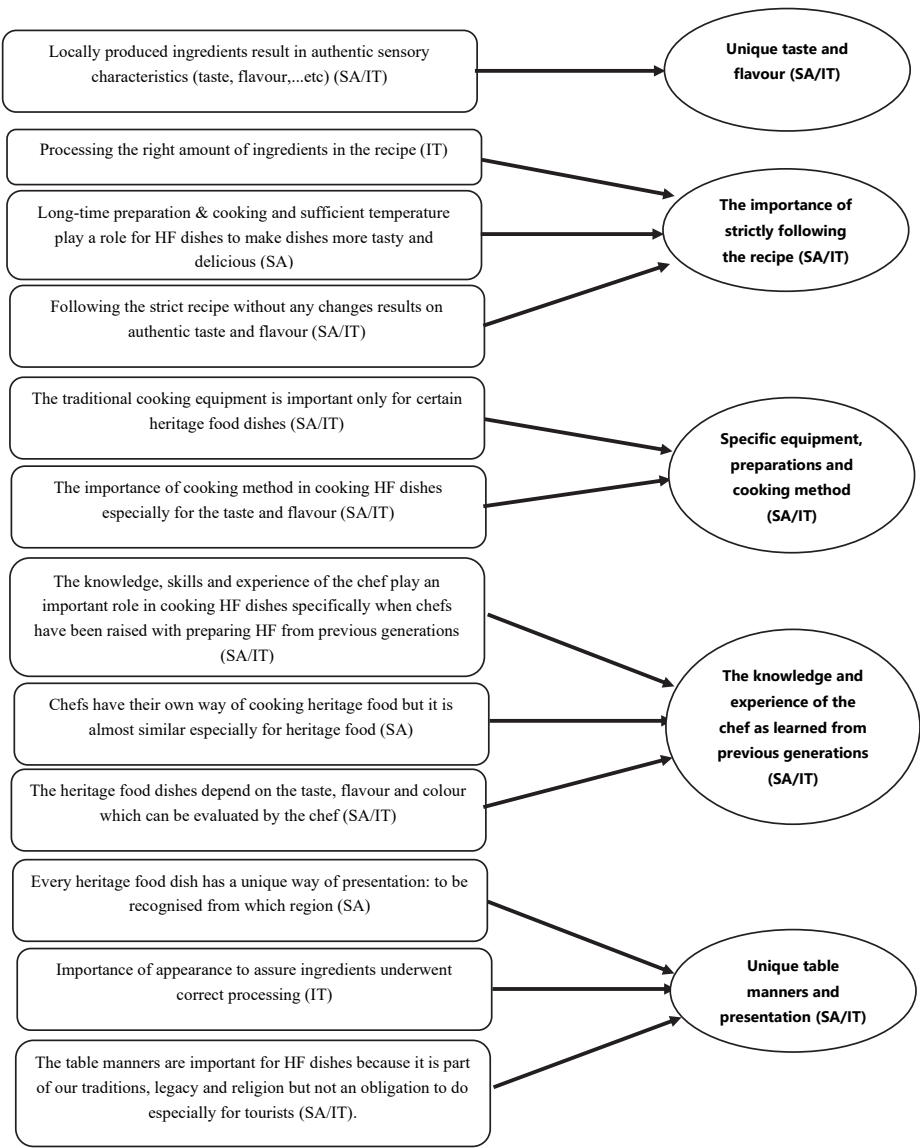


Figure 3.2: Categories (in bold) with their cores of meaning describing the requirements of heritage food (HF) as emerged from the interviews with the Saudi Arabian (SA) and Italian (IT) culinary.

concluded that for traditional restaurant owners it is important to focus on typical recipes, dishes, and cuisine that prioritises local ingredients, as these are considered central to a traditional image. These authors also stressed the central role of local ingredients in traditional Italian dishes.

The category (Figure 3.2) of ‘specific equipment, preparations and cooking method’ shows similarities in the cores of meaning from both countries. Saudi Arabian and Italian chefs pointed out that cooking equipment and method are important for certain heritage food dishes as illustrated below.

“It is necessary to use the traditional equipment because the nutrients contained in each ingredient are preserved, and above all, enhanced. The aromas are different depending on the type of equipment and cooking methods” (Chef 1/IT).

It is clear from this quote that chefs’ opinions are not scientific truth because there are many ways to preserve or improve the nutritional quality of heritage food using modern equipment. However, some heritage food dishes still need cooking equipment to get sensory characteristics. According to Raji et al. (2017), some heritage food dishes need cooking equipment to cook the dish which provides unique taste and flavour. For example, *lesung batu* (stone mortar and pestle) and *batu giling* (stone hand grinder) are specific kitchen utensils used in Malaysian heritage cuisine (Tan & Shekar, 2004). Nevertheless, Raji et al. (2017) pointed out that some traditional

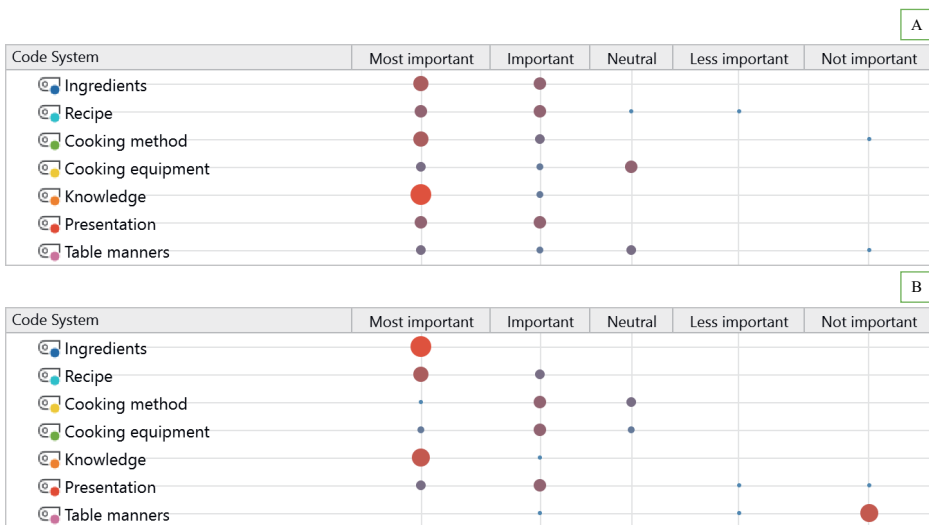


Figure 3.3: Rating of the requirements for heritage food concept by the Saudi Arabian [A] and Italian culinary professionals [B].

equipment is hard to be found in the urban area and may only be used in the villages, especially during occasions.

Furthermore, the category 'the importance of strictly following the recipe' (Figure 3.2) shows differences between Italian and Saudi Arabian chefs. The Italian chefs pointed out the importance of processing the right amount of ingredients in the authentic recipe whereas the Saudi chefs stressed that the long-time of preparation and correct temperature were the most important. These different views suggest that each culture has its unique preparation characteristics of heritage dishes as illustrated by the quote below.

"The recipe is very important for cooking heritage food because there are phases for cooking heritage food which needs to be followed; we cannot change anything in the recipe, or it will not be heritage food" (Chef 2/SA).

Other important differences in the cores of meaning belong to the category (Figure 3.2) 'unique table manners and presentation'. The Saudi Arabian and Italian culinary chefs have different views on the presentation of heritage food. The Saudi Arabian chefs stressed that the unique presentation is important for the dish for regional recognition as illustrated by the quote below.

"Every heritage food has its presentation as it shows the food in its special way typical for the region" (Chef 4/SA).

On the other hand, the Italian chefs mentioned the importance of the appearance to ensure the ingredients underwent correct processing as illustrated by the quote below.

"Appearance is important and depends on the ingredients you use and the way you cook them. If you use the right methods, you obtain the right colour and smell" (Chef 10/IT).

Similarly, the study of Molnár et al. (2011) revealed that traditional foods are typified by the presentation, which contributes to the traditional character of their culture. Alibabić et al. (2012) found in a study of the Bosnian cuisine that poor style of presentation of the Bosnian cuisine was noticed in many restaurants. This could influence the perception of tourists about the heritage presentation of a dish (Vujko et al., 2017). It shows the importance of the right style of presentation of certain heritage dishes to be known by the consumers.

For table manners, only a few chefs from both countries agreed that it could be important.

“The table manners are important for HF dishes because it is part of our traditions, legacy, and religion” (Chef 12/SA).

In a study by Bessière (2013) about the French tourists' experience with heritage food, they mentioned that in consuming gastronomic specialities, adopting table manners is a step towards understanding the cultures, tastes and all the good things the region has to offer. Tourists learn about table manners, new ingredients, and various methods of cooking when they travel abroad (Kim et al., 2009).

3.3.3 Authenticity risk factors of heritage food

The authenticity of heritage food is crucial as it refers to originality and uniqueness, and it is an important quality attribute for the value of cultural heritage (Chhabra, 2005). In a previous study, six authenticity risk factors for heritage food were inferred from the literature (Almansouri et al., 2021). The identified authenticity risk factors mostly originated from ethnic and traditional food literature. They are related to the ingredients, recipes, utensils and equipment, knowledge of chefs, presentation and table manners. For instance, related to the ingredients, most of the ingredients are seasonal and they are only accessible at specific periods of the year (Ivanova et al., 2014). Heritage food ingredients can be found in areas with unique climates, terrain, and soil composition (Brulotte & Di Giovine, 2016; Trubek, 2008). Therefore, any changes in the ingredients, whether alternatives sourced may thus compromise the authenticity of heritage food (Nor et al., 2012).

In the current study, these risk factors were validated through interviews with chefs from Saudi Arabia (SA) and Italy (IT). Table 3.1 presents the opinions of chefs (IT & SA) on the previously identified authenticity risk factors of heritage food. All the chefs from both countries confirmed that ‘lack of adequate knowledge of the chef’ is the most important risk factor in the preparation and cooking of heritage food. Most chefs agreed about other authenticity risk factors such as ‘scarcity of ingredients’, ‘not following strictly the recipe’, ‘modernisation of cooking method and equipment’ and ‘unfamiliarity with the presentation’ whereas for the other risk factors there was less consensus among the chefs (e.g. for ‘strict food safety regulations’ and ‘unfamiliarity with table manners’). Furthermore, the chefs confirmed that the availability of local ingredients can be challenging because seasonality can lead to scarcity of ingredients and is thus a risk factor (Table 3.1). A study by Miele and Murdoch (2002) maintains that the use of ingredients that are from different areas could compromise the authenticity of heritage food because of the lack of sensory characteristics that are unique given the terroir, the weather and the environment.

Table 3.1: Validation of the authenticity risk factors of heritage food

| Previously identified risk factors | The opinions of chefs (IT & SA) on the authenticity risk factors for heritage food dishes |
|--|--|
| Lack of adequate knowledge, skills and experience of the cook (Nor et al., 2012). | <ul style="list-style-type: none">• All the chefs confirmed that the knowledge and experience are the priority for each heritage dish to be considered a real dish (IT/SA).• The knowledge and experience are fundamental because it includes several important elements recipe, ingredients and the way of cooking, and how to use the cooking equipment, how to present it authentically, therefore, these elements must be well-known to be authentic (IT/SA).• No knowledge and experience may cause alterations to the characteristics of the dish (IT/SA).• The identity of the dish will be lost if there is no knowledge and skills for the heritage dish (SA). |
| Scarcity of ingredients (Brulotte & Di Giovine, 2016; Ivanova et al., 2014; Nor et al., 2012; Trubek, 2008). | <ul style="list-style-type: none">• Most of the chefs (IT/SA) agreed that it is very important for the essential local ingredients to be presented in the dish.• Replacing the ingredients will influence the sensory characteristics (taste, flavour,etc) of the meal at the end (IT/SA).• Sourcing the right ingredient is what makes the heritage dish correct, therefore, people will recognise the taste of it (IT/SA).• The local ingredients that have been used through generations must not be changed (SA)• Seasonality is important, there is a difference in taste between ingredients produced in the greenhouse and the season (IT). |
| Not following strictly the recipe (Association, 2015; Jang & Ha, 2015; Sukalakamala & Boyce, 2007). | <ul style="list-style-type: none">• Most of the chefs agreed that the following recipe is important for the authenticity of the heritage dish (IT/SA).• Not following the recipe of the heritage dish can influence the legacy of the heritage dish (IT/SA).• It will influence the final taste and flavour (IT/SA).• Any steps that are not followed could cause change the identity of the dish (SA).• Chefs should be experienced in cooking heritage food dishes to follow exact steps (SA). |

| | |
|---|---|
| Modernisation of cooking equipment and method (Hashimoro & Telfer, 2015; Raji et al., 2017). | <ul style="list-style-type: none"> • Most of the chefs agreed that the cooking method and equipment are important for authenticity in certain heritage dishes (IT/SA). • The modernisation of the cooking equipment and method would cause alteration on the original taste and aroma of the dish (IT/SA). • It recalls the traditions and old customs of a community, so using modern machines and new technique will affect the authenticity of the dish (IT/SA). • No using the right equipment would cause losing the identity of the heritage dish (SA). |
| Unfamiliarity with presentation and table manners (Bessière, 2013; Long, 2004; Nield et al., 2000). | <ul style="list-style-type: none"> • Most of the chefs agreed that the presentation of the dish is important for authenticity because it is reflected in the culture of the country (IT/SA). • Each region of a country has its presentation of the heritage dishes and it has specific ingredients or traditions in presenting the heritage dish. Therefore, authentically presenting the dish makes locals recognise the dish from which region (IT/SA). • Very few chefs agreed that table manners can be a challenge because it has some traditions and customs that belong to a specific region of a country which needs a traditional way of serving (IT/SA). • Most of the chefs agreed that table manners cannot be a challenge because it is very subjective, and it is related to the consumption of the heritage food dishes not to food preparations (IT/SA). • Following the religious rules are an important point in the table manners in Saudi Arabia because it has been used for a long time (SA). |
| Strict food safety regulations (Uggioni et al., 2010). | <ul style="list-style-type: none"> • Few chefs agreed that food safety regulations could be a challenge because in some foodservice establishment rules does not allow to use traditional equipment and cooking method (IT/SA). • It can influence on general food safety regulations because some heritage dishes need to use hands without gloves (SA). • HACCP cannot be used with wood equipment (IT). |

Table 3.2 shows three new risk factors that emerged from the qualitative data analysis of the interviews when discussing the potential challenges of the authenticity of heritage food. These risk factors include ‘adaptation to consumer preference’, ‘costs of ingredients’, and ‘non-native origin of the chef’. For ‘adaptation to consumer preference’, most chefs agreed that it could harm the authenticity of heritage food. The chefs noticed that dietary preferences and food choices have changed enormously in

Table 3.2: New authenticity risk factors of heritage food inferred from the culinary professionals

| New authenticity risk factors | The opinions of chefs (IT & SA) on the authenticity risk factors for heritage food dishes |
|------------------------------------|--|
| Adaptation for customer preference | <ul style="list-style-type: none"> • Most of the chefs agreed that heritage dishes must not be changed to be authentic (IT/SA). • It affects the way the heritage dish is cooked (IT/SA). • The heritage dishes are reflected in the specific culture including its traditions for making these dishes (SA). • Changing, removing or adding ingredient influence the authenticity of the dish and the heritage dish might not be recognisable (SA). • The customers’ preference affects authenticity because of all the diet trends (IT). |
| Costs of ingredient | <ul style="list-style-type: none"> • Most of the chefs agreed that it would influence the characteristics (IT/SA). • Costs are a pretty important factor when it comes to authenticity because buying cheaper ingredients and make more money, it would result in differences in quality and taste (IT/SA). • Costs play a role as it may have a long shelf life, but the taste will differ and less intense (IT). • Costs are relevant in the authenticity of HF because often when the prices are high some people decide not to buy a certain ingredient, therefore they modify the recipe to spend less money (IT). • It depends on chefs because with skills and experience in making the heritage dishes may result in an authentic dish and nobody can distinguish the differences (SA). |
| Non-Native origin of the chef | <ul style="list-style-type: none"> • Half of the chefs agreed that non-native origin of the chef could be a challenge for the authenticity of the heritage dish because it is part of the culture and customs (IT/SA). • The native chefs will have the bone history of these dishes (IT/SA). • The non-native chefs may not know everything about the dish and their cultural background could influence the authenticity of the chefs (SA). • It is part of the legacy which is inherited from parents and grandparents (SA). |

the last couple of years, and increasingly consumers present food allergies and intolerances, which requires them to adjust recipes. Recipes are also adjusted to meet tourists and consumers taste expectations; cooks make them milder than the original ones (Chhabra, 2005; Lu & Fine, 1995). Furthermore, the need for a more quick serving of a broad variety of dishes to tourists may force cooks to use alternative equipment or methods to speed up the preparation. It is a challenge for local chefs to safeguard the authenticity of the dishes on one hand and satisfy tourists demands on the other hand. The price of local ingredients could also be a risk factor for heritage food. Both the Italian and Saudi Arabian culinary professionals stressed that when restaurants cannot afford the purchase of certain ingredients some tend to buy lower quality ingredients, whereas others raise the price of their dishes. Lu and Fine (1995) also noticed in their study that restaurants with economic constraints tended to minimize their ingredient costs to make a profit, compromising the original recipe. The culinary experts attributed the risk of cooking heritage dishes by non-native origin chefs to the lack of knowing the original taste of the dishes which hamper adequate preparation. Studies concluded that any foreign food handler or chef will be influenced by their cultural background (Avieli, 2013; Özdemir & Seyitoğlu, 2017). Native chefs can play an important role in training and educating local people to learn about the authentic preparations of the heritage dishes.

3.4 Conclusions

Previous research conceptualised heritage food and this study aimed to validate the identified heritage food dimensions and its authenticity risk factors. The study was conducted with culinary professionals with comprehensive experience with heritage food dishes from Italy and Saudi Arabia as heritage food is well-established in Italy whereas in Saudi Arabia it is a new trend in the hospitality industry to serve heritage food to tourists. The categories 'inheritance' and 'authenticity of the recipe and cooking', 'locality of ingredients', and 'knowledgeable chefs representing their culture' that emerged from the qualitative data analysis corresponded with three previously defined dimensions legacy, place, and people respectively. An additional category appeared 'heritage food is subject to cultural and societal influences' suggesting that heritage food is not static but can change over time, which may compromise the authenticity.

Both the Saudi Arabians and Italians culinary professionals confirmed the knowledge of the cook and the authenticity of ingredients as the most important requirements in preparing heritage food. Most culinary chefs confirmed the previously identi-

fied authenticity risk factors but there was full consensus on the risk factor ‘lack of adequate knowledge’. Furthermore, three new authenticity risk factors arose from the interviews including ‘adaptation to customer preference’, ‘costs of ingredients’, and ‘non-native origin of the chef’. Further research is necessary to investigate if and how these risk factors differ among various types of foodservice establishments in the hospitality industry. Moreover, the study was performed in regions of Italy and Saudi Arabia. It would be interesting to extend the study to investigate possible regional differences for both countries and the underlying reasons.

3.5 Implication for gastronomy

In 2010, UNESCO recognised food as an intangible cultural heritage; the Mediterranean diet, Mexican cuisine and French gastronomy were the first added to the list of “Intangible Cultural Heritage of Humanity”. The increasing interest of tourists who seek extraordinary food experiences and different food cultures, however, can become a threat for the preservation of heritage food. The current study contributes to a better understanding of heritage food, which is a crucial part of the contemporary gastronomy. Understanding the concept of heritage food is important for gastronomy to protect unique food preparations of specific cultures. In our previous study, we conceptualised heritage food into three dimensions, i.e. legacy, people and place and identified risks which can compromise the authenticity of heritage food. In the current, these dimensions and authenticity risks were validated by culinary professionals from two different cultures, i.e. Italy and Saudi Arabia. Chefs are the main key-player in the gastronomy industry because their role is to cook professionally for other people and is referred to as a highly-skilled professional cook who is proficient in all aspects of food preparation. The chef is responsible to maintain the quality of food especially in taste and texture, preserve the cooking method and recipes, but also initiate the innovation of food. The chefs confirmed the identified heritage dimensions and authenticity risks and added new risks including adaptation to customer preference’, ‘costs of ingredients’, and ‘non-native origin of chef’. The insights serve as an input for managing authenticity risks and protect heritage dishes.

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4

Chapter 4

Safety and authenticity risks in
heritage food preparation at different
types of food service establishments:
A case study of Saudi Arabia

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Abstract

In Saudi Arabia, tourism is becoming increasingly popular, and forms an essential element of Vision 2030. Accordingly, food service establishments (FSEs) including hotels, ordinary restaurants, heritage restaurants and productive families (i.e., home-based catering) provide heritage cuisine to tourists. This study aimed to assess the authenticity and safety risks associated with the production of heritage food dishes in different FSEs. An online questionnaire was administered in Saudi Arabia, and a total of 85 culinary professionals from different FSEs responded. The culinary professionals were requested to provide opinions on the frequency of food safety and authenticity risk situations at their FSEs, using a five-point Likert scale. The results indicate that most food safety risk situations occur less frequently in hotels because of strict food safety management systems. In contrast, food safety risk situations are more frequent in ordinary and heritage restaurants, particularly in the absence of personal hygiene requirements. In productive families, most food safety risk situations occur because there are no control systems or inspections. Authenticity risks occur less frequently in productive families and heritage restaurants than in other FSEs. Hotels often/always face authenticity risk situations, such as cooking of heritage dishes by non-Saudi culinary professionals and the use of modern equipment. Ordinary restaurants face the highest risk, mostly because of the limited knowledge and skills of the cooks. Overall, this study provides the first insight into the occurrence of possible safety and authenticity risk situations during the preparation of heritage dishes; this information may contribute to improve the production of safe and authentic heritage dishes in the hospitality industry for tourists and local people.

4.I Introduction

Recently, heritage cuisine, which is a part of the identity and culture of a destination, has gained increasing interest (Quintero-Angel et al., 2022; Timothy, 2015). Heritage cuisine has become an attraction for tourists expecting rare or exceptional culinary experiences (Cohen & Avieli, 2004; Hall & Mitchell, 2007; S. Kim et al., 2019; Quan & Wang, 2004). Tourist demand for heritage foods and culinary traditions may help increase awareness of their value and even promote their preservation. Heritage food involves intangible elements such as dining etiquette, service style, specialty ingredients, and preparation. Previous studies have developed and validated a heritage food concept encompassing three main dimensions: legacy, people, and place, as well as factors that can compromise their safety or authenticity (Almansouri et al., 2021). Various risk factors, such as lack of adequate knowledge of chefs and scarcity of ingredients, can specifically compromise the authenticity of heritage food; further, food safety risk factors are applicable to foods typically prepared in food service establishments (FSEs) (Almansouri et al., 2022).

Heritage or traditional dishes are prepared in different types of FSEs such as hotels, ordinary restaurants, and specific heritage food restaurants (Mareth & Turgarini, 2019; Napitupulu et al., 2016; Renko et al., 2014; Som et al., 2020). These establishments differ in their clients, size, menus, and management (Luning et al., 2013). Hotels are typically used by tourists, with a growing interest in heritage food; thus, hotels increasingly serve heritage food on their menus (Wahid, 2009). Ordinary restaurants usually serve heritage dishes mainly to the local population, but also to tourists (Kim et al., 2020; Josiam et al., 2004) noted that visitors of heritage restaurants were significantly more motivated to understand the local history and culture, and more open a 'new eating experience'.

In some countries, productive families or home-based catering represent another type of FSE in the catering business (Alosaimi et al., 2020; Juera, 2020); these also prepare heritage food. In Saudi Arabia, a productive family (home-based catering) is defined as a family of one or more individuals residing in one house and engage in preparing foods for local sale including heritage dishes (Ministries, 2019). For example, in Saudi Arabia, it is quite common for women to prepare heritage dishes in their homes for catering wedding parties or large dinners. They are quite successful because they offer more personalised services at a relatively low price compared with those of hotels and restaurants that prepare similar heritage foods (Juera, 2020). Thus, different types of FSEs serve heritage foods, but their clients, size, menus, and management differ substantially.

These differences in the FSE type and client expectations can also influence the authenticity and safety of heritage foods. For example, authentic heritage food dishes served to the local population could differ from the dishes served to tourists. The challenge of adjusting authentic recipes to satisfy tourist demands may lead to authenticity risks (Almansouri et al., 2022; Chhabra, 2005; Lu & Fine, 1995). For instance, in a study of the Bosnian cuisine, (Alibabić et al., 2012) found there was a poor style of presentation in many restaurants serving tourists (Vujko et al., 2017). Food safety risks may also differ because of the different characteristics of FSEs (Luning et al., 2013). In general, the food safety management systems (FSMS) in FSEs differ substantially from those of the food industry, as FSEs need to prepare a large number of meals that must be partly prepared in advance, often in the same area; further, the number of clients is not known beforehand and the workers stand for long periods performing repetitive activities (Chinchilla, 2009; Sun & Ockerman, 2005; Vieira et al.; Worsfold, 2001). Several studies have reported that food safety problems occur within the catering industry because of staff and FSE characteristics, such as education levels, large numbers of complex meals, food provision to numerous vulnerable consumers, variety of operations, and limited knowledge of the staff concerning food safety (Griffith, 2000; Pichler et al., 2014; Silva et al., 2021). They also suggest a relationship between the catering business type and food illness outbreaks. Food safety management systems are based on implementing good hygiene practices (GHP) and hazard analysis and critical control points (HACCP); therefore, these differ for each FSE. Most studies have mainly focused on the food safety of common meals served in FSEs. To the best of our knowledge, differences in the authenticity and safety risk factors of FSEs serving heritage food remain to be studied.

Therefore, this study aimed to assess the safety and authenticity risks associated with the production of heritage food dishes in different FSEs. This study was performed in Saudi Arabia because of its growing tourism industry, and the relative novelty of the hospitality industry serving heritage food to tourists. Safety risks are expected to be higher in productive families than in other FSE types, whereas authenticity risks are expected to be higher in hotels.

4.2 Materials and methods

4.2.1 Questionnaire design

The questionnaire was designed to gain insights into food authenticity and safety risk situations as perceived by culinary professionals from different FSEs. The question-

naire comprised four sections and was designed based on (Iarossi, 2006). The first section included general questions to typify the respondents (e.g., city, kind of dishes they cook, and how they learned to prepare heritage food), and their definition of the heritage food concept. The second section reflected the characteristics of their FSEs. The third and fourth sections included questions related to risk situations that could compromise the authenticity or safety of heritage food preparations, respectively. The closing section included questions to typify the respondent personal characteristics, such as age, level of education, and experience in cooking heritage food. The culinary professionals were requested to provide their opinions on how frequently food safety and authenticity risk situations occur at their FSEs, using a five-point Likert scale (always, often, sometimes, rarely, and never). The questionnaire was translated into Arabic because the respondents were more familiar with their native language than with English. The questionnaire was pretested by two culinary professionals to determine its readability and comprehensibility, after which minor changes were made before the survey was administered. Supplementary Material 1 contains the detailed questionnaire.

4.2.2 Selection of culinary professionals

Culinary professionals were selected according to the following criteria: 1) more than five years of experience working in the hospitality industry, 2) more than five years of experience cooking various heritage food dishes, 3) local nationality (Saudi), and 4) involvement in the production of heritage food dishes; 5) particularly for productive families, educational background (bachelor's degree) was considered because it enabled them to understand the survey contents. Culinary professionals (hotels, ordinary restaurants, and heritage restaurants) were selected based on the available information about FSEs in Saudi Arabia and through authors' networks. They were asked to complete an online survey using Qualtrics, an online survey platform allowing survey design, distribution, and response analysis from a single convenient online location. Qualtrics is widely used in academic research and is a user-friendly online platform including a large array of question types; further, it can translate a survey into multiple languages (Qualtrics, 2022). The final sample comprised 85 respondents.

4.2.3 Conducting the survey

Potential respondents were informed about the characteristics and aim of the study, data anonymisation and their confidentiality. Subsequently they were inquired for their willingness to participate. Participating respondents provided their oral consent. The survey took 10–15 minutes to complete. We checked all the surveys to determine

whether the answers were fully completed. For productive families, we contacted the respondents personally to check whether all questions were clear and understandable. If the questions were unclear, additional information was provided.

4.2.4 Data analysis

All data were entered into Excel for translation into English. All statistical analyses were then performed using the IBM SPSS Statistics Version 25. Descriptive statistics were performed to determine the frequency of the respondent responses regarding their demographic information and FSE characteristics. Cross-tabulation analysis (crosstab) was performed to understand the relationship between FSEs and each food safety and authenticity risk situation to determine the number of culinary professionals who indicated the occurrence of these situations. The analysis of risk situation occurrence was based on whether half or more than half of the culinary professionals (depending on the FSE) indicated always, often, sometimes, rarely, or never.

4.3 Results and discussion

4.3.1 Characteristics of culinary professionals and FSEs

Table 4.1 shows the characteristics of culinary professionals in FSEs (i.e., hotels, ordinary restaurants, heritage restaurants, and productive families). Most culinary professionals working in hotels, ordinary restaurants, and heritage restaurants were men, whereas those in productive families were all women. The majority of culinary professionals were between 30 and 49 years of age. In hotels and ordinary restaurants, six cooks completed secondary schooling at the highest level, whereas the others had a subject diploma in food ($n = 10$, $n = 5$, respectively), bachelor's degree ($n = 5$, $n = 3$, respectively), or postgraduate degree or higher ($n = 4$, $n = 6$, respectively). Most respondents from heritage restaurants and productive families had a diploma ($n = 6$, $n = 4$, respectively) or bachelor's degree ($n = 9$, $n = 13$, respectively), and a few completed secondary school or below. Half of the culinary professionals in hotels, ordinary restaurants, and heritage restaurants had between one and nine years of experience in the hospitality industry, whereas in productive families, half of the culinary professionals had no experience in the hospitality industry. These results are aligned with those of (Aldosari et al., 2013) and (Hussein et al., 2021), who found that most culinary professionals in Saudi Arabia have experience ranging between 1 and 10 years in the hospitality industry. This could be attributed to the relative novelty of the tourism sector and is a promising part of Saudi Arabia's Vision 2030

which envisages the tourism sector as a significant contributor to job creation and a source for developing more skilled workers in this sector (Shabir & Sharma, 2019).

Table 4.1: Characteristics of culinary professionals in the foodservice establishments

| Characteristics of ..culinary professionals/cooks | Hotels N=25 | Ordinary Restaurant N=20 | Heritage Restaurants N=20 | Productive Families N=20 |
|---|----------------|--------------------------------|---------------------------------|--------------------------------|
| Gender | | | | |
| Male | 13 | 14 | 10 | * |
| Female | 12 | 6 | 10 | 20 |
| Age | | | | |
| 20-29 | 5 | 4 | 2 | 1 |
| 30-39 | 10 | 7 | 7 | 13 |
| 40-49 | 9 | 8 | 7 | 3 |
| 50-59 | 1 | 1 | 3 | 3 |
| 60 or more | * | * | 1 | * |
| Highest education level | | | | |
| Below secondary school | * | * | 3 | 1 |
| Secondary school | 6 | 6 | 2 | 2 |
| Subject diploma in food | 10 | 5 | 6 | 4 |
| Bachelor | 5 | 3 | 9 | 13 |
| Postgraduate degree or above | 4 | 6 | * | * |
| Experience in the hospitality industry (Years) | | | | |
| No experience | * | * | * | 10 |
| 1-9 | 12 | 15 | 12 | 7 |
| 10-19 | 7 | 5 | 4 | 3 |
| 20-29 | 6 | * | 1 | * |
| 30-39 | * | * | 3 | * |
| Experience in cooking HF dishes (Years) | | | | |
| 1-9 | 11 | 9 | 12 | 8 |
| 10-19 | 9 | 6 | 4 | 6 |
| 20-29 | 4 | 3 | 1 | 1 |
| 30-39 | 1 | 2 | 3 | 5 |
| Learning to cook HF dishes | | | | |
| Parents/grandparents | 18 | 16 | 16 | 17 |
| Relatives | 8 | 5 | 8 | 6 |
| Social Media | 3 | 7 | 4 | 4 |
| Book | 2 | 2 | 1 | 1 |
| Work | 10 | 1 | 6 | 2 |
| Food safety training | | | | |
| No food safety training | 6 | 10 | 10 | 15 |
| Basic food safety training in a restaurant | 9 | 8 | 8 | 5 |
| Official food safety training (HACCP, ISO22000, others) | 13 | 2 | 3 | 2 |
| Food safety courses in education (university) | 7 | 1 | 2 | 1 |

Specific food safety training was provided to the majority of culinary professionals in hotels ($n = 13$ official training, $n = 9$ basic, and $n = 7$ specific courses), whereas most culinary professionals in other FSEs only underwent basic food safety training or no training at all. Most culinary professionals learned to cook heritage food from their parents or grandparents. In Saudi Arabia, training of cooks in the hospitality industry began in 2009 (Saudi Arabian Ministry of Municipal and Rural Affairs, 2009). Currently, training has become an essential requirement in hotels and restaurants (Alsayeqh, 2015). According to Faour-Klingbeil (2022), ongoing training of food handlers and conveying science-based information on food safety risks are essential for enhancing their awareness, positive attitudes, and compliance with food safety requirements and operating procedures.

Table 4.2 shows that productive families are typically family-owned businesses, whereas the other FSEs, were privately owned, part of a chain, or family-owned. The productive families employed only Saudi Arabian workers, whereas the other FSEs also employed workers of other nationalities. Regarding food safety guidelines and standards, hotels implemented various standards, such as hazard analysis and critical control points (HACCP) ($n = 20$), good hygiene practices (GHP) ($n = 10$), ISO 22000 ($n = 13$), and ISO9001 ($n = 10$); 12 and 8 hotels had an ISO2200 and ISO9001 certificate, respectively. HACCP and GHP were also implemented by ordinary ($n = 9$ and $n = 2$, respectively) and heritage restaurants ($n = 8$ and $n = 8$, respectively), whereas productive families did not implement any guideline/code. In Saudi Arabia, in 2009, the municipalities issued regulatory guides for hygiene and sanitation and HACCP implementation in FSEs (Alsubaie & Berekaa, 2020; Saudi Arabian Ministry of Municipal and Rural Affairs, 2009) but no specific guidelines or rules were set for productive families. In the United Arab Emirates (UAE), a neighbouring country of Saudi Arabia, domestic workers are often not governed by regulations/regular food safety inspections or compulsory training (Saeed et al., 2021). Saudi Arabia and UAE are two Middle Eastern countries with the same culture for domestic working. In hotels, compliance with food safety regulations is typically evaluated through unannounced inspections by public authorities ($n = 20$), announced third party audits ($n = 10$), and internal audits ($n = 17$). In ordinary and heritage restaurants, this is typically done through annual inspections by public authorities ($n = 8$ and $n = 10$, respectively), unannounced inspections by public authorities ($n = 12$ and $n = 10$, respectively), and internal audits ($n = 12$ and $n = 9$, respectively). Although commercial FSEs are regularly inspected to ensure implementation of FSMS, HACCP programs, risk control procedures, and monitoring systems, productive families have yet to be included in any official inspection program and they do

Table 4.2: The characteristics of different foodservice establishments

| Characteristics of FSE | Hotels N=25 | Ordinary Restaurants N=20 | Heritage Restaurants N=20 | Productive Families N=20 |
|---|----------------|---------------------------------|---------------------------------|--------------------------------|
| Characterizing the FSE | | | | |
| Private owner | 3 | 11 | 8 | * |
| Part of chain | 10 | 4 | 6 | * |
| Family owner | 12 | 5 | 6 | 20 |
| Native Saudi Arabian workers | | | | |
| None | 2 | 8 | 4 | * |
| A few | 15 | 10 | 12 | * |
| Some | 5 | 1 | 2 | * |
| Most | 3 | 1 | 2 | * |
| All are Saudi workers | * | * | * | 20 |
| Target clients | | | | |
| Regional residents | 17 | 19 | 16 | 20 |
| International residents | 9 | 2 | 9 | 5 |
| Local visitors | 14 | 7 | 7 | 7 |
| International visitors | 16 | 3 | 9 | 3 |
| Regulations/guidelines/standards of FSE | | | | |
| HACCP | 20 | 9 | 8 | N/A |
| GHP (Good Hygiene Practices) | 10 | 2 | 8 | N/A |
| ISO22000 | 13 | 2 | 5 | N/A |
| ISO9001 | 10 | 5 | 1 | N/A |
| Certificate of FSE | | | | |
| ISO22000 | 12 | 2 | 4 | N/A |
| ISO9001 | 8 | 4 | 1 | N/A |
| Evaluating compliance with food safety regulation | | | | |
| Annual inspection by public authorities | 5 | 8 | 10 | N/A |
| Unannounced inspection by public authorities | 20 | 12 | 12 | N/A |
| Inspection in case of problems by public authorities | 4 | 1 | 7 | N/A |
| Announced third-party audits to check compliance with the standards | 10 | 4 | 2 | N/A |
| Unannounced third-party audits to check compliance with the standards | 7 | 1 | 3 | N/A |
| Internal audit | 17 | 12 | 9 | N/A |
| Measures for non-compliance to food safety regulations | | | | |
| Warning | 20 | 15 | 15 | N/A |
| Follow up inspection | 12 | 9 | 15 | N/A |
| Fine | 17 | 12 | 13 | N/A |
| Suspension | 9 | 6 | 9 | N/A |
| End of licenses | 5 | 1 | 4 | N/A |
| Closure of establishment | 6 | 4 | 6 | N/A |

Table 4.2 continues on next page.

Table 4.2: *Continued*

| Characteristics of FSE | Hotels N=25 | Ordinary Restaurants N=20 | Heritage Restaurants N=20 | Productive Families N=20 |
|---|----------------|---------------------------------|---------------------------------|--------------------------------|
| Measures for non-compliance with the private standards (ISO22000 and ISO9001) | | | | |
| Warning | 13 | 9 | 10 | N/A |
| Following-up audits | 12 | 10 | 7 | N/A |
| Suspension | 11 | 6 | 5 | N/A |
| Certificate not extended | 9 | 3 | 3 | N/A |

*N/A: Not Applicable

not typically conduct any kind of internal audit. Specific parameters are monitored by the appointed inspectors, including FSE maintenance, employee hygiene, and storage control (Saudi Arabian Ministry of Municipal and Rural Affairs, 2017). In case of non-compliance, the municipality commonly gives a warning (n = 20, n = 15, and n = 15, respectively), conducts follow up inspections (n = 12, n = 9, and n = 15, respectively) and imposes fines (n = 17, n = 12, and n = 13, respectively) (Table 4.2). For instance, in 2013, more than 350 restaurants were temporarily closed and fined by Riyadh Province Municipality (RPM) after an intensive campaign against establishments that violated food safety protocols (Alsayeqh, 2015).

4.3.2 Dimensions of the heritage food concept

The concept of heritage food is relatively new, and there is no clear consensus yet. Therefore, we investigated culinary professionals’ perceptions of the three previously identified heritage food dimensions: legacy, people, and place (Almansouri et al., 2021). The legacy dimension indicates that the heritage food is passed from the past generation to the present and is part of the origin country (Dwyer & Bermudez, 2003). The people dimension is related to a specific ethnic group with specific knowledge of food preparation, which originates from a unique and distinct culture (Beer, 2016; Kwon & Tamang, 2015). Heritage food is particularly related to place because it refers to a specific destination where the raw materials for preparing the food and drinks are produced locally (Ivanova et al., 2014). Most culinary professionals from FSEs (strongly) agreed on all three dimensions, and their importance in the production of heritage foods. Only a few culinary professionals disputed the relevance of these dimensions. These findings further confirm the relevance of these dimensions, which have also been validated by experts in another study (Almansouri et al., 2022).

4.3.3 Food safety risk situations in the production of heritage food

Table 4.3 shows the number of culinary professionals who indicated how frequently food safety risk situations occur in the production of heritage food in their hotels, ordinary restaurants, heritage restaurants, or productive families, along with their mode scores. Food safety risk situations were divided into four categories: receiving raw ingredients, storage, processing (preparing and cooking), and personal hygiene. Overall, for hotels, a mode score of three was obtained for all food safety risk situations, indicating that the highest number of hotel culinary professionals responded that these situations rarely/never occurred. In contrast, for ordinary and heritage food restaurants, personal hygiene-related risk situations mostly had a mode score of one, indicating that the highest number of culinary professionals in these restaurants responded that these situations occur often/always. Productive families showed a mode score of one for more than half of the safety risk situations, related to receiving raw materials (situations 1 and 2), storage (3, 5), processing (8, 9), and personal hygiene (13, 15, 16, 17).

The relatively low occurrence of food safety risk situations in hotels could be attributed to the implementation of the GHP and/or HACCP guidelines and/or the ISO2000 standard in their FSMS. Furthermore, these systems are mostly evaluated through unannounced inspections by public authorities and internal audits (Table 4.2). Oduol, (2020) investigated the role of FSMSs in five-star hotels and found a significant improvement in food safety. They attributed this improvement to better personal hygiene procedures, improved environmental hygiene, more adequate food storage conditions, and the use of sanitary measures to prevent cross-contamination. Similarly, Shi, (2017) concluded that HACCP-based FSMS improved food quality and safety in hotels. Nevertheless, Table 4.3 shows that between four and eight culinary professionals from hotels indicated that several food safety risk situations (situations 1 to 18) occur often or always. Thus, although hotels implement food safety guidelines and standards, it can be challenging for staff to implement them accurately and obey all the rules, as reported in various studies (HND, 2011; Luning et al., 2013; Rebouças et al., 2017). In a study of 265 food handlers and 32 culinary professionals and managers from hotels in Brazil by (Rebouças et al., 2017), most food handlers had good knowledge, attitudes, and practices that were appropriate for personal hygiene. Nevertheless, some non-conformities were identified, including failure to use disposable gloves when handling or distributing food, and tasting food with their hands.

Table 4.3: Occurrence of particular food safety risk situations upon production of heritage food dishes as assessed by culinary professionals in various food service establishments

| Categories | N | Food Safety Risk Situations | Hotels N=25 | | | | | Ordinary restaurants N=20 | | | | | Heritage restaurants N=20 | | | | | Productive families N=20 | | | | |
|---------------------------|---|---|----------------|---|----|---|----|------------------------------|----|---|----|---|---------------------------------|----|----|---|----|-----------------------------|---|---|---|---|
| | | | 1 | 2 | 3 | M | 1 | 2 | 3 | M | 1 | 2 | 3 | M | 1 | 2 | 3 | M | 1 | 2 | 3 | M |
| Receiving raw ingredients | 1 | Purchasing raw ingredients from non-approved suppliers. | 6 | 2 | 17 | 3 | 10 | 4 | 6 | 1 | 12 | 2 | 6 | 1 | 14 | 4 | 2 | 1 | | | | |
| | 2 | No inspection (visual, smell, dirtiness... etc) of the raw ingredients when receiving them. | 5 | 2 | 18 | 3 | 6 | 3 | 11 | 3 | 7 | 2 | 11 | 3 | 11 | 2 | 7 | 1 | | | | |
| Storage | 3 | Raw ingredients are not immediately stored after receiving. | 7 | 1 | 17 | 3 | 5 | 5 | 10 | 3 | 2 | 3 | 15 | 3 | 12 | 5 | 3 | 1 | | | | |
| | 4 | The storage temperature (refrigerator/freezer) reading exceeds the acceptable range. | 4 | 2 | 19 | 3 | 4 | 3 | 13 | 3 | 5 | 2 | 13 | 3 | 3 | 9 | 8 | 2 | | | | |
| | 5 | Incoming raw ingredients are not systematically labelled | 4 | 4 | 17 | 3 | 7 | 6 | 7 | 1 | 3 | 6 | 2 | 12 | 3 | 4 | 4 | 1 | | | | |
| | 6 | Raw and processed food are not separated in the fridge/freezers. | 5 | 2 | 18 | 3 | 5 | 4 | 11 | 3 | 6 | 2 | 12 | 3 | 6 | 4 | 10 | 3 | | | | |

| | | | | | | | | | | | | | | | | | | |
|------------------------------------|----|--|----|---|----|---|----|---|----|---|----|---|----|---|----|---|----|---|
| Processing (Preparing and Cooking) | 7 | Cooking time and temperature is not the same as in the recipe. | 4 | 4 | 17 | 3 | 5 | 6 | 9 | 3 | 3 | 4 | 13 | 3 | 5 | 4 | 11 | 1 |
| | 8 | No separate utensils and cutting boards for preparing food | 6 | 2 | 17 | 3 | 11 | 6 | 3 | 1 | 9 | 4 | 7 | 1 | 13 | 1 | 6 | 1 |
| | 9 | Inadequate cleaning of the surfaces for food preparation before re-using. | 7 | 2 | 16 | 3 | 7 | 2 | 11 | 3 | 4 | 3 | 13 | 3 | 15 | 0 | 5 | 1 |
| | 10 | No cleaning of used equipment for food preparation before re-using. | 7 | 2 | 16 | 3 | 8 | 1 | 11 | 3 | 9 | 1 | 10 | 3 | 6 | 0 | 14 | 3 |
| | 11 | No Handwashing before preparing food. | 8 | 1 | 16 | 3 | 15 | 1 | 4 | 1 | 13 | 0 | 7 | 1 | 6 | 0 | 14 | 3 |
| | 12 | No Handwashing after preparing food. | 6 | 1 | 18 | 3 | 12 | 1 | 7 | 1 | 14 | 1 | 5 | 1 | 6 | 0 | 14 | 3 |
| | 13 | No washing of hands between tasks (handling raw ingredients, garbage disposal etc) | 6 | 1 | 18 | 3 | 13 | 2 | 5 | 1 | 8 | 1 | 11 | 3 | 16 | 0 | 4 | 1 |
| | 14 | No wearing gloves during preparing and cooking the food. | 7 | 1 | 17 | 3 | 14 | 2 | 4 | 1 | 13 | 0 | 7 | 1 | 9 | 0 | 11 | 3 |
| | 15 | Not wearing a hairnet or a cap while preparing and cooking | 5 | 1 | 19 | 3 | 9 | 6 | 5 | 1 | 11 | 0 | 9 | 1 | 11 | 0 | 9 | 1 |
| | 16 | Not wearing personal items (e.g. rings, necklaces, watch) while preparing and cooking. | 10 | 1 | 14 | 3 | 5 | 5 | 10 | 3 | 11 | 2 | 7 | 1 | 12 | 0 | 8 | 1 |
| Personal Hygiene | 17 | Food handlers touch hair, mouth, and face during food preparation. | 9 | 2 | 14 | 3 | 12 | 2 | 6 | 1 | 8 | 2 | 10 | 3 | 10 | 0 | 10 | 1 |
| | 18 | Employees work when they have illnesses | 6 | 3 | 16 | 3 | 14 | 2 | 4 | 1 | 11 | 2 | 7 | 1 | 10 | 0 | 10 | 1 |

M: mode score N: number of situations 1:always/often, 2: indicate sometimes, 3: indicate rarely/never

Regarding food safety risk situations related to storage, Table 4.3 shows that many culinary professionals in ordinary (10–13) and heritage restaurants (12–15) indicated that they rarely or never compromised on storage requirements (situations 3, 4, and 6). In contrast, more than half of the culinary professionals in productive families indicated that they did not often/always have the required storage conditions. This could be explained by the fact that they commonly purchase raw materials from the local market (usually non-approved suppliers) and immediately prepare heritage food dishes without storing any ingredients or dishes in a refrigerator. (Abuqurayn, 2019) observed that Saudi women commonly buy fresh ingredients for their traditional diet, which are then prepared and cooked immediately to maintain authentic taste. However, there is a potential safety risk in keeping the ingredients or prepared dishes outside the storage conditions before delivery to clients. Owing to the characteristic high temperatures, especially in the Middle East, fresh foods (mostly of animal origin) are prone to rapid spoilage, quality degradation, and most importantly, hazards related to foodborne infectious diseases (Faour-Klingbeil, 2022).

Regarding personal hygiene, between 10 and 15 culinary professionals from ordinary and heritage restaurants specified that they often or always compromised on various personal hygiene requirements (Table 4.3). The relatively high occurrence of unsafe personal hygiene situations in ordinary and heritage restaurants could be attributed to non-implementation of strict FSMS based on GHP and HACCP by most of these FSEs (Table 4.2). According to Alsayeqh (2015), restaurants in Saudi Arabia were fined and closed for violations such as poor personal hygiene, working without valid health certificates, and workers with visible signs of disease.

In productive families, more than half of the culinary professionals indicated that they rarely/never compromised on the requirements of handwashing before and after preparing and cooking (situations 11, 12). Interestingly, for all other personal hygiene-related risk situations, culinary professionals indicated either that they often/always or rarely/never compromised these requirements. In a study of 1490 Saudi women by Arfaoui et al. (2021), women aged 26 years and older, with marriage experience, and with children had significantly higher food safety knowledge than that of young, single women and women without children. Moreover, women with higher education levels and those employed in health-related professions showed significantly higher knowledge and practice scores than others. This suggests that the structure of productive families could play a role in having good personal hygiene practices.

4.3.4 Food authenticity risk situations in the production of heritage food

Table 4.4 shows the number of culinary professionals indicating how frequently food authenticity risk situations occur during the production of heritage food in their hotels, ordinary restaurants, heritage restaurants, or productive families, and the mode scores. Overall, for heritage restaurants, Table 4.4 shows that for all food authenticity risk situations, the mode score was three, indicating that the highest number of culinary professionals responded that these situations rarely/never occurred. These restaurants are dedicated to heritage food and aim to preserve and maintain the authentic character of heritage dishes (Dai et al., 2018). However, a substantial number of culinary professionals reported that authenticity risk situations sometimes, often, or always occur. Heritage restaurants (nine culinary professionals), as well as ordinary restaurants (13 culinary professionals), were found to not always follow recipes because of the limited knowledge and skills of the culinary professionals/cooks. This is a major issue in Saudi Arabia, as sufficient culinary professionals of Saudi nationality are not available to work at these restaurants. In Saudi Arabia, food service outlets, such as restaurants, favour employing foreign workers because of their willingness to work for low wages (Sadi & Henderson, 2005).

For productive families, the mode score was three for more than half of the authenticity risk situations related to preparing and cooking (situations 3, 4, 5, 8, 9), and serving (10, 11) (Table 4.4). However, two food authenticity risk situations, related to receiving raw materials (1, 2) were found to occur sometimes or often/always, such as replacing authentic ingredients because of limited availability and price. This could be explained by the fact that productive families have relatively low incomes (Alosaimi et al., 2020), which limits their budget for buying ingredients; therefore, they may replace these with cheaper substitutes, which may influence the authentic taste (Timothy, 2015).

For hotels as well, more than half of the food authenticity risk situations showed a mode score of three. These situations are linked to receiving raw ingredients (1, 2), preparing and cooking (3, 5, 6), and serving (10, 11). Between 13–16 culinary professionals indicated that they often/always use modernised equipment because of the requirements of their FSE. This can be explained by the fact that hotels have high standards for food safety, which do not always allow the use of traditional equipment (Faour-Klingbeil, 2022). Moreover, several culinary professionals (13) from hotels indicated that heritage food dishes are often/always cooked by non-Saudi culinary professionals because of the lack of experienced local culinary professionals, mainly attributed to the focus on an international workforce, which is typical for

Table 4.4: Occurrence of particular food authenticity risk situations upon production of heritage food dishes as assessed by culinary professionals in various foodservice establishments

| Categories | | Hotels N=25 | | | | Ordinary restaurants N=20 | | | | Heritage restaurants N=20 | | | | Productive families N=20 | | | | |
|---------------------------|--|----------------|---|----|---|------------------------------|----|---|---|------------------------------|---|----|----|-----------------------------|-----|-----|-----|---|
| N | Food Authenticity Risk Situations | 1 | 2 | 3 | M | 1 | 2 | 3 | M | 1 | 2 | 3 | M | 1 | 2 | 3 | M | |
| Receiving raw ingredients | 1 Replacing the authentic ingredients because of limited availability. | 7 | 7 | 11 | 3 | 8 | 9 | 3 | 2 | 5 | 5 | 10 | 3 | 7 | 8 | 5 | 2 | |
| | 2 Replacing the authentic ingredients because of the price. | 6 | 7 | 12 | 3 | 13 | 6 | 1 | 1 | 5 | 5 | 10 | 3 | 9 | 5 | 6 | 1 | |
| Preparing and Cooking | 3 Adapting the original recipe because of customers' preferences. | 8 | 6 | 11 | 3 | 5 | 12 | 3 | 2 | 4 | 7 | 9 | 3 | 2 | 5 | 13 | 3 | |
| | 4 Not following the original cooking procedure step by step because of time constraints. | 10 | 7 | 8 | 1 | 8 | 4 | 8 | 1 | 3 | 4 | 3 | 13 | 3 | 1 | 3 | 16 | 3 |
| | 5 Not following the original cooking procedure step by step because of limited knowledge and skills. | 6 | 5 | 14 | 3 | 13 | 4 | 3 | 1 | 9 | 2 | 9 | 1 | 3 | 0 | 2 | 18 | 3 |
| | 6 Adapting the original recipe because of food safety regulations. | 7 | 6 | 12 | 3 | 9 | 4 | 7 | 1 | 8 | 3 | 9 | 3 | N/A | N/A | N/A | N/A | |

| | | | | | | | | | | | | | | | | | |
|----|--|----|---|----|---|----|---|---|---|---|---|----|----|---|-----|-----|-----|
| 7 | Using a modernized cooking method and/or equipment instead of traditional ones because of the legal requirements of the foodservice establishment. | 16 | 4 | 5 | 1 | 7 | 7 | 6 | 1 | 2 | 5 | 5 | 10 | 3 | N/A | N/A | N/A |
| | | 10 | 6 | 9 | 1 | 4 | 7 | 9 | 3 | 4 | 7 | 9 | 3 | 3 | 4 | 8 | 8 |
| | | 13 | 6 | 6 | 1 | 8 | 5 | 7 | 1 | 6 | 7 | 7 | 2 | 3 | 5 | 1 | 14 |
| 8 | Using a modernized cooking method and/or equipment instead of traditional ones because of the speed. | 13 | 6 | 6 | 1 | 8 | 5 | 7 | 1 | 6 | 7 | 7 | 2 | 3 | 5 | 1 | 14 |
| 9 | Cooking heritage food dishes by non-Saudi culinary professionals due to the lack of experienced local culinary professionals. | 13 | 6 | 6 | 1 | 8 | 5 | 7 | 1 | 6 | 7 | 7 | 2 | 3 | 5 | 1 | 14 |
| 10 | Not authentically presenting the heritage food dishes because of unfamiliarity. | 6 | 8 | 10 | 3 | 14 | 2 | 4 | 1 | 4 | 3 | 13 | 3 | 3 | 3 | 2 | 15 |
| 11 | Not following traditional table manners because of unfamiliarity. | 7 | 5 | 13 | 3 | 8 | 8 | 4 | 1 | 2 | 4 | 3 | 13 | 3 | 3 | 3 | 14 |

M: mode score N: number of situations 1:always/often, 2: indicate sometimes, 3: indicate rarely/never

hotels. However, this might influence authenticity because foreign food handlers or culinary professionals could be influenced by their own cultural backgrounds (Avieli, 2013; Özdemir & Seyitoğlu, 2017), which could affect the preparation practices of heritage food.

For ordinary restaurants, most authenticity risk situations showed a mode score of one, indicating that the highest number of culinary professionals responded that these situations occur often/always. These authenticity risk situations were related to receiving raw ingredients (2), preparing and cooking (4, 5, 6, 7, 9), and serving (10, 11) (Table 4.4). The most authenticity risk situations indicated by the majority of culinary professionals were related to replacing the ingredients because of price and not authentically presenting the heritage dishes because of unfamiliarity. Ordinary restaurants in Saudi Arabia usually provide different types of dishes, and are not purely focused on heritage dishes; thus, they may not serve authentic local cuisine (Kim et al., 2020).

4.4 Implications to ensure food safety and authenticity of heritage food

Food safety risks are potentially higher in productive families and ordinary restaurants than in hotels. In hotels, food safety risk situations do not vary significantly, as they commonly have a FSMS in place, which is regularly inspected or internally audited. However, hotels still face challenges in fulfilling all hygiene requirements. For ordinary and heritage restaurants, risk situations do not differ significantly, and they mainly occur with personal hygiene issues, which may imply a risk for clients. For instance, an outbreak occurred at a traditional wedding in Saudi Arabia after food was delivered from a traditional restaurant, wherein 88 of 238 guests developed gastroenteritis (Aljoudi et al., 2010). Unhygienic practices during food preparation were discovered, including cooking with bare unclean hands and lack of handwashing. Moreover, after the food was delivered to the wedding, it was served traditionally, first to the males and then to the females, resulting in its exposure to room temperature for a long period during the celebration. Consequently, *Salmonella*, which was present in the heritage dish meat or rice (or both), multiplied to numbers sufficient to cause more infections in females than in males (Aljoudi et al., 2010).

Based on our findings for productive families, food safety risk situations can occur at all stages of heritage food production. According to (Savvaïdis et al., 2022), homemade preparations and practices continue to be a part of daily life in the Middle East and

Gulf regions, posing a risk of unhygienic safety practices including improper cooking, unhygienic food handling, and high ambient temperature. (Al-Beesh et al., 2019). A conducted a study among Saudi Arabian women to assess food safety and hygiene awareness, behaviour, and practices. The findings showed that most women in the Eastern region (>90%) were well aware of food safety and washed their hands, cutting boards, knives, and plates. However, approximately 25% of female respondents considered that it was “safe” to keep hot/cold foods out of the refrigerator for more than 4 hours, while 60% believed it “safe” to thaw frozen foods outside the refrigerator. Our study demonstrates that various food safety risk situations still occur often or frequently in these FSEs, together with a lack of formal inspections, which may imply risks for consumers eating heritage food prepared by productive families (Table 4.3).

Regarding authenticity, the differences in the occurrence of risk situations between the FSEs were less obvious. Overall, heritage restaurants and productive families revealed that fewer authentic risk situations occur often/always. The main differences between productive families and heritage restaurants are that all productive families are Saudi citizens with many years of experience in cooking heritage dishes, whereas heritage restaurants employ more international workers who lack the knowledge to prepare authentic dishes. This is an essential aspect of the heritage food dimension “people” (Almansouri et al., 2022). Almansouri et al. (2022) discussed that the non-native origin of culinary professionals could be a challenge in producing authentic dishes because heritage food is part of the legacy, culture, and identity of a region.

In hotels, the authenticity of heritage food dishes can be compromised mostly by time constraints, availability of local staff, and the legal requirements of the FSE. For example, most culinary professionals mentioned that using modernised equipment instead of traditional equipment because of legal requirements or speed mostly occurs in hotels (Table 4.4). The need for a quicker service for a wide variety of dishes to tourists may also force cooks to use alternative equipment or methods to speed up preparation (Almansouri et al., 2022). Therefore, it might be challenging for local culinary professionals to safeguard the authenticity of dishes as well as satisfy tourist demands. These risk situations are particularly critical when the heritage dish recipes are complex and strictly require the use of traditional equipment to obtain authentic flavour, texture, and appearance. However, authenticity can still be safeguarded for other heritage dishes that are simpler and require less demanding equipment and recipes.

In ordinary restaurants, authenticity risk situations occur more often than in other FSEs because they do not strictly care for the authenticity of the heritage dish.

According to Greco (2022), who conducted interviews with autochthones and expats in Saudi Arabia, restaurants rarely present a strictly local menu, which is always accompanied by other cuisines, such as Yemeni and Lebanese. Native people stressed that the food served in restaurants is mostly local, but not necessarily traditional, owing to the influence of cooking styles from other cultures. This may result in a lack of explicit representation of “traditional cuisine” through institutional and social channels, which erodes the authenticity of the culinary experience (Greco, 2022).

4.5 Conclusion

To our knowledge, this is the first study to assess the authenticity and safety risk situations in different types of FSEs involved in preparing heritage foods in Saudi Arabia. Our results indicate that in hotels, food safety risk situations occur less frequently than in other FSEs. In ordinary and heritage restaurants, food safety risk situations occur more frequently, particularly those related to personal hygiene requirements, which may have potential implications for the safety of heritage foods. Most food safety risk situations occur more frequently in productive families than in other FSEs. In contrast, in heritage restaurants and productive families, the fewest authenticity risk situations occur often/always. Ordinary restaurants have the most authenticity risk situations that occur often/always. Overall, this study indicates the importance of the economy, citizens’ health, and protection of tourists in Saudi Arabia. Moreover, the insights provided by these findings can enhance the awareness of safety and authenticity risks in heritage food preparation and contribute to the production of safe and authentic heritage dishes for both locals and tourists in FSEs. Further research could lead to more in-depth insights on effects of preparation heritage foods on safety and authenticity risks in food service establishments. Hereby use of profound interviews with culinary professionals and on-site observations are useful methodologies.

Acknowledgement

The authors would like to thank Saif Alswied, who helped with data collection in Saudi Arabia.

Supplementary Material I



Dear participant,

Welcome and thank you for agreeing to participate in this survey regarding perception of authenticity and safety risk factors for heritage food.

Heritage foods are increasingly prepared in the food service establishment at a larger scale; which requires more attention to ensure the safety and authenticity of such foods. This survey aims to assess the perception of chefs towards authenticity and safety risk factors of heritage food production in different food service establishments in Saudi Arabia.

The survey consists of five parts:

- A. General questions
- B. Characteristics of your food service establishment
- C. Risk factors of authenticity of heritage food preparation
- D. Risk factors of safety in heritage food preparation
- E. Closure questions

It will take 10-15 minutes to fill out the whole survey.

We want to assure you that your responses are confidential and are completely anonymous. The responses cannot be traced back to the respondent in any way. Besides, your responses will be combined with those of many others and summarised in a report to further protect your anonymity.

Thank you.

Part A. General questions

1. In which city your restaurant is located?
2. From which region have you cooked heritage food dishes before? (you can tick more than one)
 - a. Heritage food dishes from the middle of Saudi Arabia
 - b. Heritage food dishes from the south of Saudi Arabia
 - c. Heritage food dishes from the north of Saudi Arabia
 - d. Heritage food dishes from the west of Saudi Arabia
 - e. Heritage food dishes from the east of Saudi Arabia

Could you give examples of HF dishes below (part of the question)

3. How did you learn to cook the heritage food dishes? (you can tick more than one)
 - a. From parents and/or grandparents
 - b. Relatives
 - c. From social media
 - d. From books
 - e. At work
 - f. Others:
4. For the following statements, please indicate to what extent you agree:

Heritage food is

1. Related to legacy (Food that was cooked in the past and is transferred to the present).
 - a. Strongly agree - agree - neutral - disagree - strongly disagree
2. Related to specific people (Native people who cook heritage food dishes).
 - a. Strongly agree - agree - neutral - disagree - strongly disagree
3. Related to a specific place (Belong to the geographical area that the heritage dish originates from).
 - a. Strongly agree - agree - neutral - disagree - strongly disagree
4. Others explain

Part B. Characteristics of your food service establishment

1. In which food service establishment do you currently work?
 - a. Hotels
 - b. Heritage restaurants
 - c. Catering businesses
 - d. Ordinary restaurants (serve heritage food dishes in their menu)
2. How would you characterize your food service establishment?
 - a. Private owner
 - b. Part of chain
 - c. Family owner
 - d. Others:
3. Could you indicate the number of native Saudi Arabian workers working in your food service establishment?
 - a. None
 - b. A few
 - c. Some
 - d. Most
 - e. All are Saudi workers
4. What are your target clients in your food service establishment? (you can tick more than one)
 - a. Regional residents
 - b. International residents
 - c. Local visitors
 - d. International visitors

5. Please indicate which regulations/guidelines/standards you use to set up your safety management system? (You can tick more than one)
 - a. GHP (Good Hygiene Practices)
 - b. HACCP
 - c. ISO22000
 - d. ISO9001
 - e. Others: Explain

6. Which certificate do you have for your food safety management system? (You can tick more than one)
 - a. ISO22000
 - b. ISO9001
 - c. Others:
 - d. Not applicable

7. How is the compliance to food safety regulation inspected? (you can tick more than one)
 - a. Annual inspection by public authorities
 - b. Unannounced inspection by public authorities
 - c. Inspection in case of problems by public authorities
 - d. Announced third audits to check compliance to the standards
 - e. Unannounced third audits to check compliance to the standards
 - f. Internal audit
 - g. Others: Explain

8. Which measures would be taken in case of non-compliance to the food safety regulations? (you can tick more than one)
 - a. Warning
 - b. Follow up inspection
 - c. Fine
 - d. Suspension
 - e. End of licenses
 - f. Closure of establishment
 - g. Others

9. Which measures are taken in case of non-compliance to the private standards (ISO22000, ISO9001, others)? (you can tick more than one)
 - a. Warning
 - b. Following-up audits
 - c. Suspension
 - d. Certificate not extended
 - e. Others
 - f. Not applicable

Part C. Questions related to authenticity in heritage food preparation

Please indicate to what extent you experienced the following situations when preparing heritage food dishes:

1. Replacing the authentic ingredients because of limited availability.
always, often, sometimes, rarely, never
2. Replacing the authentic ingredients because of the price.
always, often, sometimes, rarely, never
3. Adapting the original recipe because of customers' preferences.
always, often, sometimes, rarely, never
4. Adapting the original recipe because of food safety regulations.
always, often, sometimes, rarely, never
5. Not following the original cooking procedure step by step because of time constraints.
always, often, sometimes, rarely, never
6. Not following the original cooking procedure step by step because of limited knowledge and skills.
always, often, sometimes, rarely, never
7. Using a modernized cooking method and/or equipment instead of traditional ones because of the speed.
always, often, sometimes, rarely, never

8. Using a modernized cooking method and/or equipment instead of traditional ones because of the food service establishment requirements.
always, often, sometimes, rarely, never
9. Not authentically presenting the heritage food dishes because of unfamiliarity.
always, often, sometimes, rarely, never
10. Not following traditional table manners because of unfamiliarity.
always, often, sometimes, rarely, never
11. Cooking heritage food dishes by non-Saudi chefs due to the lack of experienced local chefs.
always, often, sometimes, rarely, never

Part D. Questions related to safety in heritage food preparation

Please indicate to what extent you experienced the following situations when preparing heritage food dishes:

1. Purchasing raw ingredients from non-licensed suppliers.
always, often, sometimes, rarely, never
2. No inspection (visual, smell, dirtiness...etc) of the raw ingredients when receiving them.
always, often, sometimes, rarely, never
3. Raw ingredients are not immediately stored after receiving.
always, often, sometimes, rarely, never
4. Raw and processed food are not clearly separated in the fridge/freezers.
always, often, sometimes, rarely, never
5. Incoming raw ingredients are not systematically labelled.
always, often, sometimes, rarely, never
6. The storage temperature (refrigerator/freezer) reading exceeds the acceptable range.
always, often, sometimes, rarely, never

7. Cooking time and temperature is not the same as in the recipe.
always, often, sometimes, rarely, never
8. Inadequate cleaning of the surfaces for food preparation before re-using.
always, often, sometimes, rarely, never
9. No cleaning of used equipment for food preparation before re-using.
always, often, sometimes, rarely, never
10. No separate utensils and cutting boards for preparing food.
always, often, sometimes, rarely, never
11. No Handwashing before preparing food.
always, often, sometimes, rarely, never
12. No Handwashing after preparing food.
always, often, sometimes, rarely, never
13. No washing of hands between tasks (handling raw ingredients, garbage disposal etc).
always, often, sometimes, rarely, never
14. No wearing gloves during preparing and cooking the food.
always, often, sometimes, rarely, never
15. Not wearing a hairnet or a cap while preparing and cooking.
always, often, sometimes, rarely, never
16. Not wearing personal items (e.g. rings, necklaces, watch) while preparing and cooking.
always, often, sometimes, rarely, never
17. Food handlers touch hair, mouth, and face during food preparation.
always, often, sometimes, rarely, never
18. Employees work when they have illnesses.
always, often, sometimes, rarely, never

Part E. Closure questions

1. What is your gender?
 - a. Male
 - b. Female
2. What is your age?
3. What is your education level?
 - a. Below secondary school
 - b. Secondary school
 - c. Diploma
 - d. Bachelor
 - e. Postgraduate degree or above
4. How many years of experience do you have working in the food service establishment?
5. How many years of experience do you have in cooking heritage dishes?
6. What type of food safety training did you follow? (You can tick more than one)
 - a. I had no a particular food safety training
 - b. I had basic food safety training in the restaurant
 - c. I had official food safety training (HACCP, ISO22000, others)
 - d. I had food safety courses in education (university)
 - e. Others:

Are you willing to participate in an in-depth interview?

- a. Yes
- b. No

► If yes, please provide your email and telephone number below.

Email:

Mobile number:



Thank you for participating in this survey!

If you have any questions, please contact me!

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Chapter 5

Safety and authenticity practices in
heritage food production in
home-based and commercial catering:
A multiple country case study

Submitted as:

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production in home-based and commercial catering: A multiple country case study.*

Abstract

In Saudi Arabia, cooking heritage food dishes has gained popularity owing to increasing attention to the tourism sector. Therefore, food service establishments, such as commercial catering, cook heritage dishes for tourists. In contrast, home-based catering focuses on cooking these dishes for locals. In the present study, we gained insights into the authenticity and safety practices in preparing heritage foods in home-based and commercial catering settings in Saudi Arabia and compared them with those in Indonesia and Malaysia, which have a longstanding history of heritage foods in the hospitality industry. Sixty culinary professionals participated in the study: 30 from home-based catering (10 from each country) and 30 from commercial catering (10 from each country). Semi-structured interviews were used. For authenticity practices, similar findings were observed among all countries, and both catering types checked the availability of essential ingredients in advance as well as taste, flavour and texture to ensure the quality of the recipe. In terms of differences, compared with the culinary professionals in Indonesia and Malaysia, those in Saudi Arabia emphasised the importance of authenticity practices, including having an experienced cook, following specific written recipes, supervising new cooks, providing advice to use the original recipe and presenting authentic dishes without modifications. In terms of similarities in food safety practices, most culinary professionals in the three countries suggested the importance of checking colour and freshness; cleaning equipment with water and chemicals (soap); and wearing protective cooking uniforms (aprons). However, most Saudi Arabian culinary professionals mentioned various other food safety practices compared with other countries, including checking smell, washing hands and wearing gloves, washing hands and regularly changing gloves, washing cooking equipment with special chemicals, closing catering services when owners are unwell or not allowing cooks to work when unwell. These practices can help prevent cross-contamination and produce safe heritage dishes.

5.I Introduction

There is growing interest in cultural foods such as ethnic, traditional, local and heritage foods among consumers (Cui et al., 2020; Jakubowska & Pacholek, 2022; Kauppinen-Räsänen et al., 2013; Riptiono et al., 2023; Sims, 2009). These food concepts encompass cultural aspects; however, their focus is slightly different. Ethnic foods are classified based on the dimensions of people and places; traditional foods are based on legacy and place and local foods are based on the dimension of place (Almansouri et al., 2021). Heritage food has been conceptualised as food associated with all three dimensions: legacy, people and place (Almansouri et al., 2021). Heritage cuisine is important for locals because it has been passed down over generations and is a condensed reflection of their lifestyle (Zhang et al., 2019). Furthermore, heritage cuisine creates social bonds and cultural identities for locals (Brulotte & Di Giovine, 2016). Moreover, local cuisine provides a gateway for travellers to accurately learn about another culture by experiencing new food at places different from what they consume at home in terms of cooking, presentation and consumption (Hegarty & O'Mahony, 2001). Furthermore, local cuisine allows visitors to appreciate a destination's culture (Chang et al., 2010). In particular, culture-specific foods are valued for their authenticity. Studies have reported that consumers perceive locally produced food as authentic and pure (Kauppinen-Räsänen et al., 2013; Sims, 2009). The growing interest in cultural foods has raised awareness of the need to protect the authenticity of such foods (Pearson et al., 2011) as well as ensure their safety, a prerequisite for any food type.

Previous studies have identified factors that can compromise the authenticity of heritage dishes, including scarcity of ingredients, not following the dish's recipe and using modern equipment instead of traditional ones for specific heritage dishes (Almansouri et al., 2021, 2022). Replacement of traditional equipment with modern equipment results in the loss of the cultural identity of heritage dishes; furthermore, changing traditional cooking equipment can affect the unique sensory properties of the food or dish, compromising its authenticity (Abarca, 2004; Raji et al., 2017). In terms of food safety, many studies have identified and highlighted issues in producing cultural foods. Furthermore, studies have reported several outbreaks associated with the safety of traditional foods in different countries, including Germany (Lücke & Zangerl, 2014), Middle Eastern countries (Tajkarimi et al., 2013) and Turkey (Cagri-Mehmetoglu, 2018). Many factors such as low-quality raw materials, poor hygiene of food handlers and equipment, improper cooking procedures and storage temperature were the reasons for the outbreaks reported (Lücke & Zangerl, 2014;

Tajkarimi et al., 2013). Similar risk factors have been identified in preparing heritage foods (Almansouri et al., 2021).

An empirical study involving culinary professionals in Saudi Arabia was undertaken to elucidate the occurrence of authenticity and safety risk situations while preparing heritage dishes and demonstrate differences among types of food service establishments (FSEs) by using a survey (Almansouri et al., 2023). In ordinary restaurants, the most commonly occurring authenticity risk situations are replacing ingredients because of price and not authentically presenting heritage dishes because of unfamiliarity. Productive families (i.e., home-based catering) have the lowest occurrence of authenticity risk situations. In contrast, food safety risk situations, including inappropriate storage conditions, lack of inspection of raw ingredients and some personal hygiene issues, most frequently occur in productive families compared with hotels and heritage restaurants (Almansouri et al., 2023). The study shed light on the possible occurrence of safety and authenticity risk situations but actual practices were not investigated. Furthermore, the study was only conducted in Saudi Arabia because serving heritage food to tourists is gaining popularity owing to the development of the hospitality sector (Saudi Ministry of Culture, 2019b). Other countries, including Malaysia and Indonesia, have a longstanding history of serving heritage food dishes to locals and tourists (Fatimah et al., 2021; Saad et al., 2021) and both countries are well known for preparing heritage food dishes via home-based as well as commercial catering services (Arif et al., 2021; Octavia, 2019).

The present study aimed to obtain insights into the authenticity and safety practices in preparing heritage food in home-based and commercial catering services in Saudi Arabia and compare them with those in Indonesia and Malaysia, which have a longstanding history of serving heritage food in the hospitality industry.

5.2 Materials and Methods

5.2.1 Study design

To conduct this comprehensive multicase study, collaboration was established between researchers from Saudi Arabia, Indonesia and Malaysia. Semi-structured interviews with culinary professionals were designed to gain a deeper understanding of the practices that ensure authenticity and safety in home-based and commercial catering. A total of 60 culinary professionals participated in this study: 30 from home-based catering and 30 from commercial catering, with 10 from each country. Research-

ers in Indonesia and Malaysia underwent training from the first author to conduct semi-structured interviews.

5.2.2 Selection of catering facilities and recruitment of participants

Selection of home-based and commercial catering was based on the following criteria: (1) the home-based or commercial catering has a minimum experience of 5 years in the country's local market; (2) the home-based or commercial catering must cook heritage food dishes; (3) the home-based or commercial catering is recognised by locals for its quality and taste (via social media) and (4) culinary professionals from these catering facilities have >5 years of experience and knowledge of heritage dishes. Culinary professionals were identified based on the information available on catering; the number of contacts was expanded by asking culinary professionals for other contacts. Recruitment was tailored to each country's local culture. In Saudi Arabia, culinary professionals in home-based catering were approached by a female contact to explain the study objectives. In commercial catering, the first author directly approached the participants. In Indonesia and Malaysia, researchers familiar with local habits approached culinary professionals in home-based and commercial catering.

5.2.3 Semi-structured interviews

The culinary professionals were interviewed between August 2021 and October 2022. Interviews were conducted at the convenience of the participants, whether in home-based or commercial catering. Three researchers (one from each country) conducted interviews. The questions were open-ended and comprised the following: (1) a brief introduction, (2) general questions regarding heritage food (i.e. learning about cooking heritage dishes and famous heritage dishes cooked in the catering facility), (3) questions regarding the authenticity practices of cooking heritage dishes, (4) questions regarding the safety practices of cooking heritage dishes and (5) concluding questions, such as how to advertise heritage food dishes and the procedure for ordering heritage food dishes. Face-to-face interviews were conducted, and each interview was for an average of 1 hour.

Interview guide

To maintain consistency, the first author developed a comprehensive interview guide. The interview guide began by thanking the culinary professionals for their time and effort in participating in the study. Then, the study's aims and purpose were explained. Subsequently, two definitions were explained to allow culinary professionals to easily understand the terms. The following definitions of safety and authenticity were used

in this study: for food safety practices, ‘Hygiene and safety refer to the measures to be taken according to any kind of legislation or rules to avoid food getting spoiled and/or people getting ill’, and for food authenticity practices, ‘Authenticity is about all kind of measures or activities that people apply to take care that heritage food is authentic and authentically prepared, so made according to the tradition’. Thereafter, ethical aspects were explained, and permission for recording was obtained. Each participant signed a consent form. Finally, interview sections were provided at the beginning of the interviews. The researchers from each country were trained on how to interview the culinary professionals and how to use the interview guide.

Interview pretesting

Before starting the pretesting, the questions were translated into each country’s local language and then piloted to check whether the formulations fit the local language and whether it was clear to them. Minor changes were made to enhance the understanding of the interview questions.

5.2.4 Data analysis

Information collected from the in-depth interviews in each country was transcribed, translated, coded, synthesised, and organised manually under thematic headings. Interviews were coded using a hybrid deductive/inductive analytical approach. This approach allows researchers to identify themes using broad *a priori* categories (i.e. deductive) as well as generate unique categories from qualitative data (i.e. inductive) (Trofholtz et al., 2022). Deductive categories were identified based on the findings of previous studies (Almansouri et al., 2022; Almansouri et al., 2021). Thematic analysis was performed as previously described by Almansouri et al. (2021). Briefly, thematic analysis of raw data included (1) reading and re-reading the corpus to become familiar with its contents and (2) developing the coding system, which involved generating concise labels (i.e. analysis units, context units, core meanings and subcategories) arising from the corpus. All the core meanings and subcategories were classified under specific categories that were identified deductively. After finishing the first round of authenticity and safety data analyses, another author verified the established coding system and discussed it with the second and final authors. This action reduces bias in qualitative data analysis and ensures reliable inference of patterns from the data (Lester et al., 2020; Zanin et al., 2021).

5.2.5 Ethical approval

This study was approved by the Social Sciences Ethics Committee of Wageningen University and Research (Number:2021-56-Luning). All participants agreed to participate and signed the informed consent form.

5.3 Results and Discussion

5.3.1 Authenticity practices in home-based and commercial catering facilities in the three countries

Five categories of major authenticity practices for heritage foods identified in a previous study were used: (A) ensuring the availability of essential ingredients, (B) compliance with recipe procedures, (C) cooks' knowledge, (D) traditional equipment use and (E) ensuring authenticity while catering to customer needs. Table 5.1 presents, per category, the subcategories and diversity of authenticity practices that emerged from interviews with the culinary professionals in home-based and commercial catering in Saudi Arabia, Indonesia and Malaysia. For example, to ensure the availability of essential ingredients (A), culinary professionals either check the essential ingredients or search for alternatives. Furthermore, to ensure compliance with recipes (B), practices included providing an accurate recipe, supervising and teaching cooks, hiring knowledgeable chefs and checking customer satisfaction with authenticity after eating. Moreover, typical practices to ensure a cook's knowledge included having competent chefs, training and supervising them or gaining knowledge through self-learning (C).

Despite the wide range of practices, Table 5.1 shows that the common practices among all culinary professionals were ensuring the availability of essential ingredients in advance and using the sensory characteristics to verify compliance with recipe procedures. Experienced chefs and cooks are aware that following a recipe is not just a matter of measuring the ingredients and following the steps in order and that it is important to use all their senses—sight, smell, taste and touch—to ensure that the dishes come together, as illustrated below.

'I have experience in cooking heritage dishes for a long time. I know exactly what I should do for the recipe by checking till I reach the desired taste of the heritage food' (SA/HC 5).

'Usage of essential ingredients is very important for heritage dishes. Usually, we order it in advance so the customer can be satisfied with our food. We do not change the essential ingredients at all' (IN/CC 7).

‘We can tell how the heritage dish is prepared just by its smell, taste, and appearance’ (MAL/HC 2).

Different cultures emphasise the use of specific ingredients and preparation techniques for heritage dishes. In Saudi Arabia, some of the key ingredients used in such dishes are dates, cardamom, saffron and various spices. These ingredients impart a unique taste to heritage dishes, a key criterion for evaluating the authenticity of local dishes (Greco, 2022). In traditional Malay cuisine, ingredients such as lemongrass, turmeric and coconut milk are essential for creating distinct flavours and aromas associated with their cuisine. Preparing ingredients in advance and precisely adhering to traditional recipes ensure that the final dish maintains its unique taste and authenticity (Sharif et al., 2016).

Authenticity practices in home-based catering in Saudi Arabia compared with other countries

Table 5.1 demonstrates that for home-based catering, most culinary professionals in all countries stressed that knowledgeable and experienced cooks are important for ensuring the authenticity of heritage dishes.

‘Since I am the only person who cooks the heritage dishes, I have the knowledge and skills about these dishes. I cook the same dishes for a long time, and the recipe is already used for many years’ (SA/HC 8).

‘The owner has a long experience in cooking heritage food and she cooks the heritage food herself’ (IN/HC7).

‘I prepare the heritage food dishes based on my memory and experience’ (MAL/H7).

Some culinary professionals from Saudi Arabia mentioned that they chose family relatives as cooks to ensure the cook’s knowledge.

‘I taught my daughters everything about cooking heritage dishes because this is the important thing they need to know to keep and preserve for the future’ (SA/HC 7).

In Saudi Arabia, experienced cooks who have learned about heritage dishes from previous generations or are trained in traditional culinary schools have a comprehensive understanding of the cultural and historical context of the dish and are considered important cultural artefacts. Furthermore, there is a sense of respon-

sibility among those who prepare these dishes to prepare them in a manner that accurately reflects their cultural origins. Women in Saudi Arabia mostly prepare traditional meals for their families, which is their primary responsibility as home makers (Kaufman, 2010). Moreover, daughters are expected to acquire cooking abilities from their mothers while they are still young. With continued practice, daughters can prepare various traditional dishes for their families (Alissa, 2017). In Indonesia, daughters are always included when traditional foods are prepared by their mothers (Sutrisno et al., 2021). Cooking is not just a skill but also a form of cultural knowledge that is passed over generations through family members. In Malaysia, grandmothers and mothers are considered the primary sources of knowledge and experience in food preparation, emphasising the importance of the intergenerational transmission of culinary knowledge (Chenhall, 2010). These studies highlight the importance of families and communities in preserving cultural heritage and traditions.

Regarding serving customer needs (E), most Saudi professionals in home-based catering stressed that when customers request the recipe to be modified, no modifications are made by the culinary professionals because it is part of heritage, culture and authenticity (Table 5.1), as illustrated below.

‘For me, I cook only the authentic dishes. I will not change anything about my heritage dishes as it is part of our culture. If they want to change anything in the recipe, they can go and request from other restaurants or families’ (SA/HC 4).

Almansouri et al. (2023) have reported previously that the practice of adapting a recipe to consumer preferences is rare in home-based catering in Saudi Arabia. However, in Malaysia, the modern and dynamic society has led to many changes in Malay food culture, cooking methods, equipment and eating decorum (Ishak et al., 2019); this appears to be a primary concern among the older generation and government (Ishak et al., 2013). Our findings suggest that Saudi professionals in home-based catering tend to prioritise the preservation of cultural heritage and authenticity in their cooking over the accommodation of customer requests for modifications to heritage dishes, reflecting a strong attachment to the cultural significance of food and desire to maintain the integrity of traditional recipes.

Authenticity practices in commercial catering in Saudi Arabia compared with other countries

Table 5.1 demonstrates that for commercial catering, most culinary professionals in Saudi Arabia provide specific written recipes or have knowledgeable chefs who

Table 5.1: Categories with their cores of meaning describing the food authenticity practices of heritage food (HF) in home-based and commercial catering as emerged from the interviews with the Saudi Arabian (SA), Indonesian (IN) and Malaysian (MAL) culinary professionals

| Categories ^a /subcategories ^b | | Home-based | | | Commercial | | |
|---|---|------------|----|-----|------------|----|-----|
| | | SA | IN | MAL | SA | IN | MAL |
| A. Ensuring the availability of essential ingredients | | | | | | | |
| Checking essential ingredients | Checking the availability of essential ingredients in advance | | | | | | |
| | Checking taste and smell | | | | | | |
| Alternatives to missing ingredients | Substituting ingredients but not essential ones | | | | | | |
| | Ordering ingredients from other regions | | | | | | |
| | Finding a solution for missing ingredients | | | | | | |
| | Using only essential ingredients or not cooking the dish | | | | | | |
| B. Ensuring compliance with recipe procedure | | | | | | | |
| Provide accurately written recipe | Specific written recipe | | | | | | |
| | Knowledgeable chefs supervise cooks | | | | | | |
| Supervising and teaching cooks | Teaching new cooks | | | | | | |
| | Experienced cooks | | | | | | |
| | Learned from previous generations | | | | | | |
| Customer satisfaction | Checking customer satisfaction with dishes | | | | | | |
| | Checking taste, flavour, and texture | | | | | | |
| Checking cooking | Checking the recipe during cooking | | | | | | |
| C. Ensuring knowledge of cooks | | | | | | | |
| Competent cooks | Knowledgeable/experienced/skilled cooks | | | | | | |
| | Choosing native locals cooks | | | | | | |
| | Family relatives cooks | | | | | | |
| | Evaluating the cook before hiring | | | | | | |

| | | | | | | | | |
|---|---|--|--|--|--|--|--|--|
| Training and supervision | Supervising non-Saudi cooks | | | | | | | |
| | On-the-job training of cooks | | | | | | | |
| | Learning from social media | | | | | | | |
| | Learning from a cooking book | | | | | | | |
| D. Ensuring traditional equipment use | | | | | | | | |
| Traditional equipment (partly) ensured | Traditional equipment use is dish-dependent | | | | | | | |
| | Importance of traditional equipment for taste and flavour | | | | | | | |
| | Knowledge of using the traditional equipment | | | | | | | |
| | Traditional equipment replaced by modern equipment | | | | | | | |
| Traditional equipment is not applied | Fast modern equipment not influencing taste | | | | | | | |
| | Traditional equipment is not possible because of the price | | | | | | | |
| | Traditional equipment not allowed (e.g., because of food law) | | | | | | | |
| | No traditional equipment needed | | | | | | | |
| E. Ensuring authenticity while serving customer needs | | | | | | | | |
| No modifications | No modifications because of heritage, culture, authenticity | | | | | | | |
| | Providing advice to take the original recipe | | | | | | | |
| Change the recipe conditionally | Changing the recipe but first, give advice or let them try | | | | | | | |
| | Changing the recipe but not the essential ingredients | | | | | | | |
| | Changing the recipe because of health issues | | | | | | | |
| | Changing the recipe but keeping the authenticity | | | | | | | |
| | Changing the recipe according to the customer's request | | | | | | | |

a: Categories created by deductive approach. b: subcategories and specific practices created by inductive approach.

Green: Most/Majority of the culinary professionals mentioned the core of meaning (6 ≥, culinary professionals).

Red: Few/fewer culinary professionals mentioned the core of meaning (5 ≤ culinary professionals). White: it was not mentioned by culinary professionals.

supervise less experienced cooks to ensure recipe compliance. In contrast, these practices were not mentioned by culinary professionals from Indonesia and Malaysia.

‘We are writing the recipes for our cooks because these heritage dishes need to be documented. So we write every step with every small details just to give us the desired taste and flavour’ (SA/CC 2)”

‘I have to go around while the cooks are cooking and see if they are following the recipe or not. Supervision for the heritage dishes is important because it represents our identity’ (SA/CC 8).

Elalem (2018) has reported that chefs in Saudi Arabia are experienced and skilled in preparing traditional dishes and place strong cultural and historical significance on these dishes. However, Almansouri et al. (2023) have reported that FSEs in Saudi Arabia are increasingly employing international chefs who lack the knowledge to prepare authentic heritage dishes. This emphasises the importance of documenting every step as well as small details of the recipe or supervising cooks in commercial catering facilities to ensure that dishes are prepared traditionally and authentically. Therefore, preserving heritage dishes may be important in commercial catering businesses in Saudi Arabia, whether via the experience and skills of local chefs or by documenting and supervising international chefs.

Furthermore, regarding ensuring knowledge (C), most culinary professionals in Saudi Arabia mentioned that they perform on-the-job training. In contrast, only a few culinary professionals in Indonesia and Malaysia mentioned this.

‘I train all the cooks in my kitchen about the heritage dishes and let them practice them as well’ (SA/CC 7).

Both Gazette (2020) and Sharif et al. (2015) have emphasised the importance of training and transferring knowledge about traditional cuisine to younger generations. Gazette (2020) highlighted how training cooks to prepare traditional dishes can not only help preserve the authenticity of heritage cuisine but also encourage the young generation to learn about traditional recipes from older generations. Similarly, Sharif et al. (2015) have reported that the willingness of older generations to teach and train younger generations about traditional Malay cuisine can lead to the accurate transfer of knowledge, skills and techniques.

Furthermore, most culinary professionals in commercial catering facilities in Saudi Arabia stressed that when customers ask for modifications to the recipe, either no

modifications are made or they are advised to take the original recipe, which is similar to what was mentioned by the culinary professionals in home-based catering (Table 5.1). Nevertheless, these two practices were not mentioned by any of the culinary professionals in Indonesia and Malaysia.

‘I cannot change the recipe of heritage food dishes because I will then change the food of our culture and our heritage’ (SA/CC 6).

‘I will not change anything from my authentic heritage dishes because I cook only the original recipe. I always advice consumers to take the original recipe’ (SA/CC 4).

Similarly, Almansouri et al. (2022) observed that Saudi Arabian chefs expressed concern about modifying heritage dishes because they believed that altering the recipe will harm the authenticity of the dish and make it unrecognisable as a heritage dish. However, the same study also observed the increasing prevalence of dietary preferences and food allergies in recent years, leading to a need to adjust recipes to accommodate customer needs (Almansouri et al., 2022).

However, culinary professionals in Indonesia and Malaysia appeared to be more flexible in responding to customer needs for modifications to their dishes. Various studies have argued that these cultures emphasise customer satisfaction and that tourism also plays a role because visitors have different dietary requirements and preferences (Fatimah et al., 2021; Saad et al., 2021). Ultimately, it is crucial to strike a balance between preserving cultural traditions and meeting customer needs in the catering industry. Communication with customers can help ensure that their needs are met but the cultural heritage is also respected.

Furthermore, in commercial catering in Saudi Arabia, culinary professionals ensured the availability of essential ingredients [A] by substituting some ingredients but not substituting essential ingredients or ordering essential ingredients from other regions (Table 5.1). These practices were not mentioned by culinary professionals in Indonesia and Malaysia.

‘We serve heritage food dishes that are from other regions, however, the ingredients sometimes are not available. So we order the ingredients from these regions to bring them to us’ (SA/CC 2).

Demir and Alper (2021) discussed how the nature of a country’s geography can influence the kind of food and beverages available and the preparation methods of the

ingredients. In Saudi Arabia, where certain ingredients may not be locally available, it may be necessary to order them from other regions to maintain the authenticity of heritage dishes. However, the practice of substituting ingredients, while necessary in some cases, can affect the authenticity of heritage dishes (Almansouri et al., 2023).

5.3.2 Safety practices in home-based and commercial catering in the three countries

In a previous study, we identified seven common safety practices used in heritage food preparation. These practices are as follows: (A) checking ingredients, (B) handling ingredients upon arrival, (C) storing ingredients, (D) cleaning practices, (E) hand-washing practices, (F) wearing protective clothes during preparation and (G) illness procedures. Table 5.2 shows, per category, the subcategories and various specific hygiene practices that emerged from the interviews with culinary professionals in both catering types in the three countries. The safety practices mentioned by most culinary professionals were as follows: checking ingredients based on their colour and freshness; cleaning equipment with water, chemicals and soap and wearing protective clothing while handling food. Awareness of the importance of the quality of ingredients used in traditional diets ensures the taste and appeal of the food as well as its safety for consumption (Abuqurayn, 2019; Jalis et al., 2014).

Safety practices in home-based catering in Saudi Arabia compared with the other countries

Table 5.2 shows that most culinary professionals in home-based catering in Saudi Arabia mentioned that they check the smell, appearance, shape and presence of dirty/foreign particles as well as colour and freshness.

‘I check the cleanliness of vegetables and we check also for the appearance’
(SA/HC 2).

Culinary professionals in Saudi Arabia strongly emphasised the use of sensory cues to assess the quality of ingredients, in contrast to their counterparts in Indonesia and Malaysia. This distinction can be attributed to cultural variations and divergent culinary practices. Yavas and Tuncalp conducted an insightful study in 1984 to examine whether perceived risk affects consumer behaviour in the context of supermarket patronage in Saudi Arabia. They observed that consumers exhibit a preference for purchasing food products from grocery stores or local markets where items are openly displayed, enabling them to visually inspect, touch and even smell the goods before purchasing them (Yavas & Tuncalp, 1984).

Upon the arrival of ingredients (B), various culinary professionals in home-based catering in all three countries mentioned that they washed, cleaned and directly used the ingredients to cook their heritage dishes (Table 5.2). In Saudi Arabia, it is not a common practice to store ingredients, as reported by Almansouri et al. (2023). This practice suggests that home-based caterers in Saudi Arabia prioritise the use of fresh ingredients and immediate preparation over storage.

For handwashing practices (E), different strategies were adopted in each country. Most culinary professionals in Saudi Arabia mentioned that they wash their hands and wear gloves; however, culinary professionals in Indonesia mentioned that they only wash their hands before and during cooking with soap and sanitisers.

‘I wash my hands first before I start my cooking, then I wear gloves’ (SA/HC 7).

‘Handwashing has become a habit, we wash our hands with soap and water before touching food ingredients and after handling food’ (IN/HC 3).

According to Almansouri et al. (2023), more than 50% of the culinary professionals in home-based catering facilities in Saudi Arabia rarely compromise on handwashing and wearing gloves because of cultural and religious influences. In Saudi Arabia, but also Indonesia and Malaysia, personal hygiene, associated with religious practices such as ablution (part of it is the ritual of washing hands), is considered important and is practised every day (Abdraboh et al., 2016; Hidayatullah, 2020; Latif & Rahman, 2020). However, studies observed that hand washing before cooking is less frequent in Indonesian and Malaysian households (Hirai et al., 2016; Lihan et al., 2019). Notably, the reasons for this disparity may vary and be influenced by factors such as education, awareness and cultural norms.

For the illness procedure (G), each country seems to have a strategy for dealing with the illness of cooks. Most culinary professionals in Saudi Arabia indicated that catering is closed when the owners are unwell. In Indonesia, most culinary professionals mentioned that cooks are not allowed to work. In Malaysia, culinary professionals mentioned that they substitute sick workers with other cooks. Despite the various ways in which culinary professionals can prevent the spread of illnesses, some workers may still choose to work when they are unwell. Almansouri et al. (2023) observed that only 50% of the surveyed culinary professionals in home-based catering in Saudi Arabia reported that they rarely or never worked when they were unwell. In the present study, some culinary professionals mentioned that professionals with noncontagious illnesses are allowed in kitchens (Table 5.2). This may cause some workers to feel pressured to work when they are sick, even if their illness is not contagious. In contrast,

Table 5.2: Categories with their specific food safety practices of heritage food (HF) in home-based and commercial catering as emerged from the interviews with the Saudi Arabian (SA), Indonesia (IN) and Malaysian (MAL) culinary professionals

| Categories ^a /subcategories ^b | | Home-based | | Commercial | | | |
|---|--|------------|----|------------|----|----|-----|
| | | SA | IN | MAL | SA | IN | MAL |
| A. Checking ingredients | | | | | | | |
| Sensory inspection | Checking taste and texture | | | | | | |
| | Checking smell | | | | | | |
| Visual inspection | Checking colour and freshness | | | | | | |
| | Checking shape/appearance | | | | | | |
| Physical inspection | Cleaning check (dirty, musty,etc) | | | | | | |
| | Checking the production location and expiration date | | | | | | |
| | Checking weight | | | | | | |
| | Packaging check | | | | | | |
| Trust suppliers | No inspection (trust ingredients from suppliers/supermarket) | | | | | | |
| B. Handling ingredients at arrival | | | | | | | |
| Incoming ingredients handling | Direct storing and washing before use | | | | | | |
| | Cleaning, storing and washing and disinfecting before use | | | | | | |
| | Cleaning and storing | | | | | | |
| | Washing, cleaning and direct use | | | | | | |
| C. Storing ingredients | | | | | | | |
| Cold storage | Keeping in the fridge | | | | | | |
| | Keeping in the freezer | | | | | | |
| Fixed storage time | Fixed short storage period (one, up to a few days) | | | | | | |
| | Maximum storage period depending on the product (two weeks up to three months) | | | | | | |

| | | | | | | | | | |
|-------------------------------------|--|--|--|--|--|--|--|--|--|
| Expiry date storage | Positioning ingredients based on first in first out | | | | | | | | |
| Dry storage | Container use | | | | | | | | |
| Check products and equipment | Daily or every two days ingredients check (freshness, .etc) | | | | | | | | |
| | Checking temperature daily | | | | | | | | |
| Direct use | Daily direct use of ingredients | | | | | | | | |
| Wrapped in paper | Wrapping in newspaper | | | | | | | | |
| D. Cleaning practices | | | | | | | | | |
| Manual cleaning equipment and tools | Cleaning equipment with water, chemicals (soap) and water | | | | | | | | |
| | Special cleaning treatment of equipment/ cutting boards (sanitation box, chemical treatment) | | | | | | | | |
| | Separated cleaning of cutting boards (soap and water) | | | | | | | | |
| | One or two kinds of cutting boards (washed before with water and after with soap and water) | | | | | | | | |
| Dishwashing | Use of dishwasher | | | | | | | | |
| Use of hot water | Using hot water before and after cooking | | | | | | | | |
| E. Handwashing practices | | | | | | | | | |
| Hand hygiene practices | Washing hands before and during cooking (soap and sanitiser) | | | | | | | | |
| | Washing hands before cooking (soap and water) | | | | | | | | |
| | Washing hands and wear gloves | | | | | | | | |
| | Washing hands and regularly changing gloves | | | | | | | | |
| Informing handwashing instructions | Personal hygiene based on self-consciousness | | | | | | | | |
| | Written handwashing instructions | | | | | | | | |
| | Teaching handwashing instructions | | | | | | | | |
| Checking hygiene practices | Checking personal hygiene | | | | | | | | |
| | Checking compliance with hand washing instructions | | | | | | | | |

Table 5.2 continues on next page.

Table 5.2: Continued

| Categories ^a /subcategories ^b | | Specific practices ^b | Home-based | | | Commercial | | |
|---|--|--|------------|----|-----|------------|----|-----|
| | | | SA | IN | MAL | SA | IN | MAL |
| F. Protective clothes during food preparation | | | | | | | | |
| Kind of protective clothes | | Wearing a protective cooking uniform (apron) | | | | | | |
| | | Wearing hairnet | | | | | | |
| | | Wearing protective shoes | | | | | | |
| | | Wearing gloves | | | | | | |
| | | Wearing mask | | | | | | |
| No protective cloths | | No protective cloths | | | | | | |
| G. Illness procedure | | | | | | | | |
| No ill cooks in the kitchen | | Cooks are not allowed to work when ill | | | | | | |
| | | Catering closed when the owner is ill | | | | | | |
| | | Substitute the sick worker | | | | | | |
| Check healthiness | | Checking with the local doctor | | | | | | |
| | | Checking the physical health of cooks when comes to work | | | | | | |
| | | Checking the psychological health of cooks | | | | | | |
| Sick cooks permitted in the kitchen | | Noncontagious sickness permitted in the kitchen | | | | | | |
| | | Sick cooks permitted to work (with masks) | | | | | | |

a: Categories created by deductive approach. b: subcategories and specific practices created by inductive approach.

Green: Most/Majority of the culinary professionals mentioned the core of meaning (6 ≥, culinary professionals).

Red: Few/fewer culinary professionals mentioned the core of meaning (5 ≤ culinary professionals). White: it was not mentioned by culinary professionals

Ibnu (2022) has reported a study among Malaysian females, if a cook cannot cook on a designated day, either because they were too busy or felt unwell, another person can replace the sick cook. This approach demonstrates a sense of community and understanding of illness in the Malay female community in the culinary industry.

Safety practices in commercial catering in Saudi Arabia compared with other countries

Table 5.2 demonstrates that most culinary professionals in commercial catering in Saudi Arabia mentioned that they check the ingredients via physical inspections such as checking expiry date, weight and packaging and store ingredients differently compared with Indonesia and Malaysia.

The high percentage (82%) of food handlers who perform physical inspections to check, for example, the expiration dates of ingredients, as found by Al-Shabib et al. (2016), suggests that food handlers are aware of the importance of checking food quality and safety in their establishments. Similarly, a study conducted by Al-Mohaithef et al. (2021) among restaurant supervisors in the Dammam region of Saudi Arabia revealed that supervisors displayed good knowledge regarding safe temperature control for cold food (93.8%), as well as proper storage practices in the freezer (83.5%) and refrigerator (79.4%). However, the study also highlighted a concerning lack of knowledge regarding safe temperature control for hot food (14.4%) and the temperature range at which bacteria rapidly multiply (commonly known as the danger zone temperature) in food (15.5%). The limited understanding among restaurant supervisors regarding safe temperature control for hot food and the danger zone temperature is a matter of significant concern for public health. These knowledge gaps could potentially expose customers to foodborne illnesses if proper temperature control measures are not followed.

For handwashing practices (E), most culinary professionals in commercial catering facilities in all countries mentioned that they washed their hands before and during cooking using soap and sanitisers (Table 5.2). Furthermore, they provided written handwashing instructions, taught handwashing practices and checked compliance with the instructions. Alqarni et al. (2023) have reported that a high percentage (91.5%) of food handlers in Saudi Arabia wash their hands with soap before handling and preparing food as well as after using the toilet. In contrast, Putri and Susanna (2021) have reported that only 54% of food handlers washed their hands with soap, mostly because of the unavailability of soap at the sink. These findings suggest a lack of resources and awareness among food handlers in Indonesia regarding the importance of using soap for hand hygiene. Interestingly, Putri and Susanna (2021)

also observed no significant relationship between the knowledge or attitudes of food handlers and their food handling practices. This suggests that simply having knowledge of or a positive attitude toward hygiene may not be sufficient to ensure good hygiene practices among food handlers.

Most culinary professionals in commercial catering in Saudi Arabia and Indonesia also mentioned that cooks were not permitted to work when they are unwell. Moreover, in Saudi Arabia, several other procedures are undertaken for illness management, including closing catering when the owner is unwell, checking the physical health of cooks when they come to work and checking the psychological health of cooks. Al-Shabib et al. (2016) observed that most food handlers in Saudi Arabia take sick leave when they are unwell, which is a good practice to prevent the spread of diseases. However, Almansouri et al. (2023) observed that many culinary professionals in ordinary and heritage restaurants continue to work when they are unwell, increasing the risk of food contamination.

Commercial catering in Saudi Arabia, Indonesia and Malaysia are subject to licencing regulations that adhere to specific hygiene requirements. To ensure food safety, Saudi Arabian Ministry of Municipal and Rural Affairs (2009), Indonesian and Malaysian Ministry of Health (2011) and (2009) have developed guidelines that focus on hygiene and sanitation practices in FSEs. A common element of these guidelines is the requirement for food handlers to obtain a certificate indicating the successful completion of a food sanitation hygiene course. This certification emphasises the importance of proper training and knowledge to maintain high food safety and hygiene standards. By completing the course, food handlers obtain essential skills and understand the best practices for handling, preparing and storing food as well as preventing foodborne illnesses. These guidelines, which are aligned with the standards of the Codex Alimentarius (CAC, 2003), aim to protect public health and ensure that commercial catering establishments maintain rigorous hygiene standards. Through these measures, authorities in Saudi Arabia, Indonesia and Malaysia aim to minimise the risks associated with foodborne diseases and safeguard consumer well-being.

5.4 Conclusions

To the best of our knowledge, this is the first study to provide insights into the authenticity and safety practices in home-based and commercial catering facilities involved in preparing heritage foods in Saudi Arabia, Malaysia and Indonesia. This was done to compare the practices followed by the newly established Saudi Arabia in

preparing heritage food for tourists with those followed by Indonesia and Malaysia, which have a longstanding history of culinary hospitality. For authenticity practices, the findings were quite similar among all countries, and both catering facilities check the availability of essential ingredients in advance as well as taste, flavour and texture to ensure recipe compliance. In terms of differences, most culinary professionals in Saudi Arabia emphasised the importance of authenticity practices more than those in Indonesia and Malaysia, such as having an experienced cook, following specific written recipes, supervising new cooks, providing advice to use the original recipe and presenting authentic dishes without modifications.

Furthermore, this study sheds light on food safety practices in heritage food preparation. Most culinary professionals in the three countries indicated the importance of checking colour and freshness; cleaning equipment with water, chemicals (soap) and water and wearing protective cooking uniforms (aprons). In contrast, most culinary professionals in both catering facilities in Saudi Arabia mentioned various other food safety practices compared with other countries, including checking smell, washing hands and wearing gloves, washing hands and regularly changing gloves, washing cooking equipment with special chemicals, closing catering when owners are ill and not allowing cooks to work when unwell. These practices can help prevent cross-contamination and produce safe heritage dishes. Overall, the results of this study emphasise the importance of preserving authenticity and ensuring food safety during heritage food preparation. Culinary professionals and policymakers can use these findings to develop guidelines and best practices for heritage food preparation that prioritise both authenticity and food safety.

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6

Chapter 6

General discussion

6.I Introduction

Heritage food and its preservation have gained importance globally. There are various reasons for this increased interest such as tourism, aesthetic value, strengthening a location's sense of place, educational and scientific goals, and the creation of liveable communities (Norhidayah & Albattat, 2022). Saudi Arabia has a rich cultural and culinary heritage, with diverse and flavourful dishes that have been passed down through generations (Hassan, 2022). Locals and tourists stimulate the preservation and promotion of Saudi Arabia's heritage food (Al-Tokhais & Thapa, 2019). Locals have been cooking and enjoying these dishes for centuries, passing down recipes and techniques from one generation to the next (Lush, 2022). They take great pride in their cuisine and its place in Saudi culture. This is clearly visible in so-called productive families; families that are engaged in heritage food production and preparation using traditional methods and recipes that have been passed down through generations. These families take pride in their cultural heritage and are committed to preserving it through the preparation and sharing of heritage foods. Tourists, on the other hand, provide a unique opportunity for heritage food to be shared with people from all over the world. When visitors travel to Saudi Arabia, they are often interested in experiencing the local cuisine and learning about the country's culinary heritage (Abdelazim Ahmed, 2017). This presents an opportunity for local chefs and restaurants to showcase their heritage dishes and introduce new flavours to a global audience.

Two important quality attributes of heritage food encompass authenticity and safety. Authenticity is particularly important as it refers to the typical aspect of heritage food such as its origin/genuineness. Multiple factors such as the use of particular ingredients, cooking methods, recipes, seasonal availability, and knowledgeable cooks could influence the authenticity of heritage foods. Safety is important as various microbial and chemical hazards can contaminate the characteristic properties of heritage food via raw materials, ingredients, inadequate processing conditions, and handling circumstances. It is important to protect the authenticity of heritage food and at the same time ensure that food is safe for consumption.

At the start of the research, the concept of heritage food was not established and operationalised. It was also unknown which possible risk factors could compromise or harm authenticity and safety. Also, it was unclear whether these authenticity and safety risks would differ among foodservice establishments (FSEs) in Saudi Arabia such as hotels, ordinary restaurants, heritage restaurants, commercial catering, and productive families (home-based catering) or between countries. The scope of this research was Saudi Arabia because of the increasing interest in preserving heritage

food by local consumers and the raising attention of tourists for heritage food in the current era. Therefore, the objectives of the research were to gain insight into the heritage food concept, identify the risk factors of the authenticity and safety of heritage food and how they differ between various types of FSEs, and compare the Saudi Arabian situation with countries that have a longstanding history in heritage food. The first study focused on the conceptualisation of heritage food and its validation, two empirical studies aimed at identifying the occurrence of safety and authenticity risk situations, and the last one focused on analysing the actual practices that could compromise the authenticity and safety between different FSEs. This was also extended to different countries to put the research in a broader perspective.

6.2 Main findings

Table 6.1 shows a summary of the main results obtained in this thesis. In **Chapter 2**, the aim was to conceptualise heritage food and identify the risk factors that may compromise its safety and authenticity. First, a semi-structured literature search was conducted to define the general heritage dimensions. Then, multiple food concepts relating to heritage were evaluated to define the dimensions of heritage food. Risk factors were inferred from the literature that could compromise the authenticity or safety of heritage food. The study described in **Chapter 3** validated the heritage food concept and identified authenticity risk factors in the production of heritage food dishes. Culinary professionals specialising in preparing heritage food dishes were interviewed in Saudi Arabia and Italy through semi-structured interviews. Regional cuisine is significant in both countries, with Italy having a long-standing history of heritage food that is widely recognized for city-based identities and is essential to the hospitality industry. In Saudi Arabia, the interest in heritage food by tourists is relatively new due to the growing tourism industry and the recent focus on serving heritage food to tourists. The study in **Chapter 4**, assessed the occurrence of authenticity and safety risk situations during the production of heritage food dishes in different foodservice establishments in Saudi Arabia. Culinary professionals from hotels, ordinary and heritage restaurants, and productive families indicated via a questionnaire how often certain authenticity or safety risk situations occur. The purpose of the study described in **Chapter 5** was to get insight into the authenticity and safety practices in preparing heritage food in home-based and commercial catering in Saudi Arabia, in comparison to Indonesia and Malaysia, where heritage food has a long history in the hospitality industry. Semi-structured interviews with culinary professionals were conducted, to gain a more in-depth understanding of the

Table 6.1: Overview of the main findings of this thesis

| Chapter | Objectives | Main findings |
|---------|---|---|
| 2 | Conceptualise heritage food and identify risk factors that may compromise safety and authenticity | <ul style="list-style-type: none">• The three general heritage dimensions identified from literature are legacy, people and place.• The food concepts of traditional, ethnic, local food, and heritage food were evaluated for these three general heritage dimensions.• Traditional food was most frequently associated with legacy and place dimensions. Ethnic food was typically related to the dimensions of people and legacy, whereas for local food the dimension of the place was most dominant.• Literature showed that all dimensions are relevant to heritage food.• A conceptual framework was developed presenting the main activities for the production of heritage food, their connection to the identified heritage food dimensions, and the potential risk factors that could compromise the authenticity and safety of heritage food.• The identified authenticity risk factors mostly origin from ethnic and traditional food literature; they are related to the ingredients, recipes, utensils and equipment, knowledge of chefs, presentation and table manners.• The safety risk factors are likely to be similar to the common ones reported for food service establishments. |
| 3 | Validate the heritage food concept and the identified authenticity risk factors in the production of heritage food dishes | <ul style="list-style-type: none">• The categories ‘inheritance’ and ‘authenticity of the recipe and cooking’, locality of ingredients’, and ‘knowledgeable chefs representing their culture’ that emerged from the qualitative data analysis corresponded with three previously defined dimensions legacy, place, and people respectively.• An additional category appeared ‘heritage food is subject to cultural and societal influences’ suggesting that heritage food is not static but can change over time, which may compromise the authenticity• Both the Saudi Arabians and Italian culinary professionals confirmed the knowledge of the cook and the authenticity of ingredients as the most important requirements in preparing heritage food• Most culinary professionals confirmed the previously identified authenticity risk factors but there was full consensus on the risk factor ‘lack of adequate knowledge’• Three new authenticity risk factors arose from the interviews including ‘adaptation to customer preference’, ‘costs of ingredients’, and ‘non-native origin of the chef’ |

Table 6.1 continues on next page.

Table 6.1: Continued

| Chapter | Objectives | Main findings |
|---------|--|---|
| 4 | Assess the safety and authenticity risks associated with the production of heritage food dishes in different FSEs in Saudi Arabia | <ul style="list-style-type: none">• In hotels, food safety risk situations occur less frequently than in other FSEs.• In ordinary and heritage restaurants, food safety risk situations occur more frequently, particularly those related to personal hygiene requirements, which may have potential implications for the safety of heritage foods.• Most food safety risk situations occur more frequently in productive families than in other FSEs.• In heritage restaurants and productive families, the fewest authenticity risk situations occur.• Ordinary restaurants have the most authenticity risk situations that occur. |
| 5 | Get insight into authenticity and safety practices in preparing heritage food in home-based and commercial catering in Saudi Arabia compared to Indonesia and Malaysia | <ul style="list-style-type: none">• For authenticity practices, similar findings among all countries and both caterings are related to checking the availability of essential ingredients in advance and checking taste, flavour, and texture for ensuring the recipe.• A similar finding among all countries in home-based catering is related to having knowledgeable/experienced cooks to ensure the knowledge of the heritage dish.• Most Saudi Arabian culinary professionals in home-based highlighted important authenticity practices compared to other countries such as experienced cooks to ensure recipes, and no modifications of the heritage dish because of heritage, culture, and authenticity.• Most Saudi Arabian culinary professionals in commercial catering mentioned important authenticity practices compared to other countries such as a specific written recipe, supervising cooks by knowledgeable chefs, experienced cooks to ensure the recipe, on-the-job training of cooks and no modifications of the heritage dish because of heritage, culture, and authenticity.• The similar findings of safety practices among all countries for both caterings are related to the importance of checking colour and freshness, cleaning equipment with water, chemicals (soap) and water and wearing a protective cooking uniform (apron).• Most Saudi Arabian culinary professionals in home-based catering highlighted some safety practices compared to other countries such as checking smell and shape, washing hands and wearing gloves, and catering closed when the owner is ill.• Most Saudi Arabian culinary professionals in commercial catering indicated some safety practices compared to other countries such as checking smell and shape, fixed short storage period (one, up to a few days), special cleaning treatment of equipment/ cutting boards (sanitation box, chemical treatment), washing hands and regularly changing gloves, and cooks are not allowed to work when they are ill. |

practices used to maintain authenticity and safety in home-based and commercial catering in these three countries.

6.3 Positioning of the newly developed heritage food concept

Figure 6.1 shows the position of heritage food concept (i.e., legacy, people and place dimensions and heritage food characteristics) compared to other culture-related food concepts, how it fits in the broader perception of heritage related to food as described by (Zocchi et al., 2021), and the external influences (geographical, cultural, and societal).

6.3.1 Heritage food positioned amongst other culture-related food concepts
Heritage food incorporates the dimensions of legacy, people, and place, and complies with requirements such as unique taste, specific recipes, equipment, cooking methods, and the knowledge and experience of chefs passed down through generations (Chapter 2) (Figure 6.1). To develop the heritage food concept, firstly the heritage concept was examined. Heritage encompasses characteristics like history, culture, traditions, specific societies or populations, and geographical identity (Bermúdez Vázquez & Sánchez Cotta, 2022; Brulotte & Di Giovine, 2016; Rautenberg, 2012; Sharpley, 1996; Xiao et al., 2022). Based on these characteristics, the three dimensions of heritage, i.e., legacy, people, and place, were derived. Through literature analysis, various culture-related food concepts (including heritage food) were evaluated based on these dimensions. Culture-related food concepts are, in this thesis, described as food concepts that are determined by culinary traditions and practices that have developed over time within a particular region or community, often reflecting the geography, climate, history, and values of that culture. Examples of culture-related food concepts are ethnical (Prakash, 2016), traditional (Trichopoulou et al., 2007), local (Ivanova et al., 2014), typical (Casabianca & De Sainte Marie, 1999), and national food (Bondareva, 2023). The evaluation of culture-related food concepts demonstrated that ethnic food relates to ‘people’ and ‘legacy’; local and typical food is associated with ‘place’; traditional food and national food relate to ‘legacy’ and ‘place’. After the evaluation of food culture-related concepts and based on the scarce literature on heritage food, it was proposed that heritage food relates to all these dimensions (Chapter 2).

The interviews with culinary experts from different countries, using inductive qualitative data analysis (Chapter 3) and using Likert-scale for quantitative analysis (Chapter

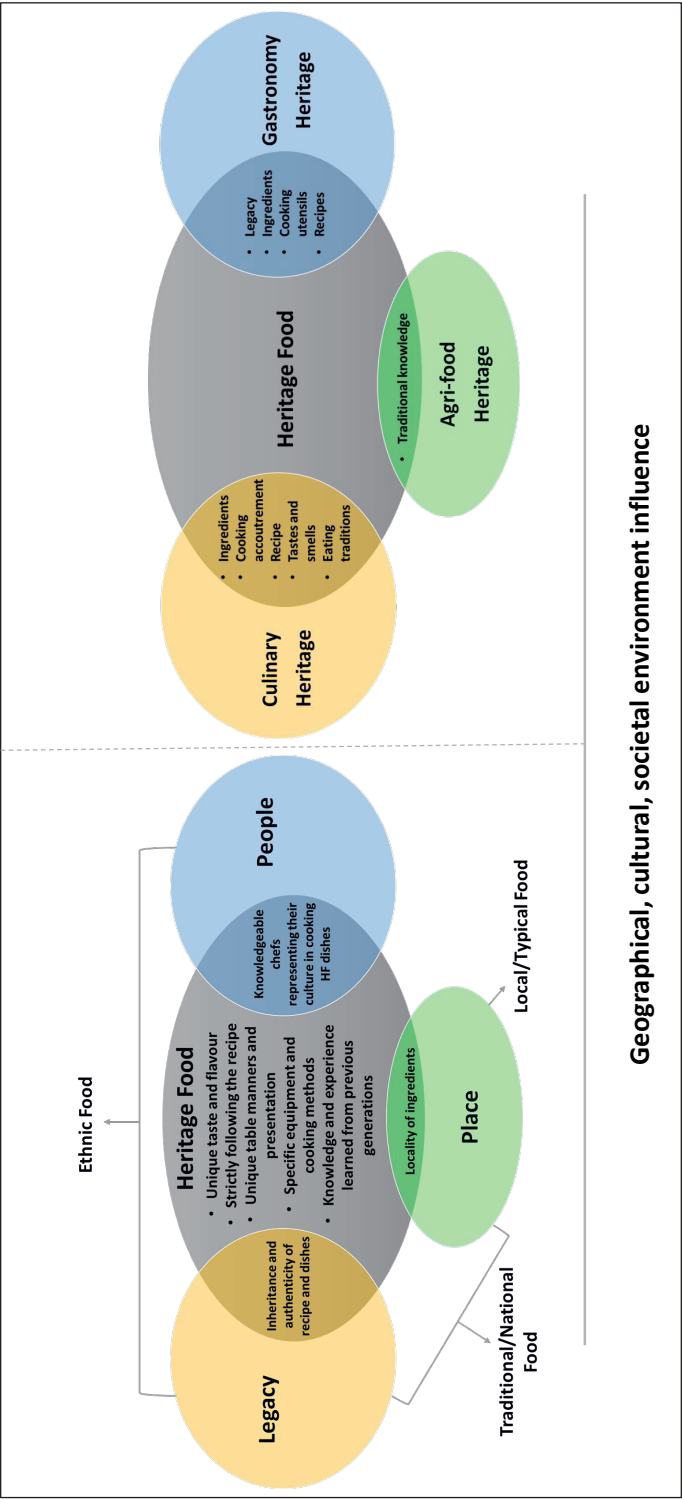


Figure 6.1: Position of the heritage food concept given the characteristics of other culture-related food concepts, the heritage characteristics of food (expressed as culinary, agri-food, and gastronomy heritage), and the external context.

4), confirmed the relevance of the three dimensions to heritage food. The inductively defined categories of ‘inheritance’ and ‘authenticity of the recipe and cooking’ align with the legacy dimension in heritage food (Figure 6.1). These categories underscore the importance of passing down culinary knowledge from one generation to another, ensuring the continuity of cultural traditions and maintaining the authenticity of heritage food (Theophano, 2002). Furthermore, the category of ‘locality of ingredients’ is associated with the sense of place in heritage food (Figure 6.1). Incorporating local ingredients in heritage food captures the distinct flavours and culinary heritage of a region (Yaacob et al., 2022). The category ‘knowledgeable chefs representing their culture’ is related to people (Figure 6.1). Skilled chefs who possess deep knowledge and experience passed down through generations play a significant role in heritage food (Guiné et al., 2021). Such knowledgeable chefs serve as cultural ambassadors, representing their culture through their culinary expertise.

6.3.2 Heritage food concept positioned in the broader perception of heritage-related food

Our concept of heritage food focuses specifically on the food or dish itself. However, in the broader context of heritage and food, other researchers (Zocchi et al., 2021) have identified distinct categories. They differentiated agri-food, culinary, and gastronomic heritage (Figure 6.1). ***Agri-food heritage*** pertains to the elements associated with the early stages of the food system, particularly the connections between farming produce, cultivation methods, and traditional knowledge rooted in rural environments. These connections are often encapsulated by the term “terroir” (represents the cultural and historical connections between a particular region and its agricultural products) (Bérard et al., 2016; Besky, 2014; Bowen & De Master, 2014; Teigen De Master et al., 2019). Our heritage food concept and the agri-food heritage concept both recognise the value of passing down traditional knowledge and practices to future generations. This involves not only safeguarding the techniques and methods of production but also transmitting the cultural significance and heritage associated with these practices. ***Culinary heritage*** encompasses aspects related to the preparation and consumption of food. As defined by Timothy and Ron (2013), culinary heritage includes a combination of tangible elements (such as ingredients and cooking tools) and intangible elements (such as flavours, aromas, recipes, and eating traditions) that contribute to the cultural values and characteristics of places. Both our heritage food concept and the culinary heritage concept are closely tied to legacy, cultural identity, and tradition. They are deeply intertwined with the history of specific regions or communities, involving specific recipes, ingredients, and cooking

techniques. They encompass heritage recipes with unique flavours, aromas, and eating traditions (Aistara, 2014; Mardatillah et al., 2019). **Gastronomic heritage** includes a diverse sociocultural element such as agricultural products, culinary dishes, spices, cooking techniques, and consumption patterns (Bessière & Tibère, 2010; Genc, 2017; Pérez-Priego et al., 2019). These components contribute to the richness of gastronomic heritage within the tourist market. Additionally, it extends to include practices and knowledge related to the cultivation, harvesting, and preservation of agricultural products (Bessière, 2013; Turner et al., 2016). Our heritage food concept and the gastronomic heritage concept share a common focus on preserving traditional culinary practices. They value traditional recipes, methods, and equipment passed down through generations. They emphasize the use of locally sourced ingredients to enhance authenticity, support local producers, and promote sustainability. Additionally, they play a vital role in preserving the cultural identity and legacy of a place by showcasing its unique culinary heritage and traditions.

6.3.3 Heritage food shaped by the environment

In Chapter 3, the interviews with culinary professionals also emphasized that heritage food is shaped by the geographical, cultural, and societal environment (Figure 6.1). A recent study by Gomez-Zavaglia et al. (2020) demonstrated that the **geography** of a country can affect the availability and accessibility of particular products or crops in a given location which can shape the preparation of heritage food. In coastal regions for example where fish and seafood are abundant, local cuisines often feature seafood as the central ingredient in many dishes which has led to the development of unique culinary traditions that reflect the local environment and culture (Gomez-Zavaglia et al., 2020). The **cultural environment** can also have an impact on the history and politics of a country. Sanchez (2022) discussed that during times of political upheaval or colonization, the preservation of heritage cuisine and cooking techniques can become a way of asserting cultural identity and resisting cultural assimilation. Interestingly, in regions where different cultures have come into contact, such as in colonial settings, the blending of different cuisines can give rise to entirely new culinary traditions (Reddy & van Dam, 2020). Social economic status as part of the **societal environment** can influence heritage food as well such as the affordability and accessibility of certain ingredients (Kwik, 2008; Malota & Mucsi, 2021). Another societal challenge is related to migration and globalization. As people migrate and cultures mix, heritage foods can change or evolve (Perry, 2017). This can result in the fusion of different cuisines or the adaptation of traditional dishes to suit different tastes and preferences.

To conclude, heritage food is a multidimensional concept that encompasses the various aspects of food or a dish and its production, preparation, and consumption and can be positioned in the centre of other culture-related food concepts and connects to the culinary, gastronomy and agrifood heritage concept as well. Heritage foods/dishes are not static but can be shaped by (changes in) the geographical, cultural and societal environment.

6.4 Authenticity is key to heritage food

Authenticity is an important quality attribute of heritage food. To deliberate the importance of this quality attribute, several topics will be discussed including verisimilitude and thereby the complexity of the authenticity concept, factors compromising the authenticity of heritage food, and authenticity differences among different foodservice establishments (FSEs).

6.4.1 Authenticity – a multifaceted concept

The term “authenticity” derives from the Latin word *authenticus* and the Greek word *authentikos*, representing qualities like genuineness, originality, sincerity, and honesty (Cappannelli & Cappannelli, 2004; Fine, 2003). However, the concept of authenticity can be seen as controversial, as it encompasses contrasting notions such as “genuineness” versus “representation” or “true” versus “imitation” (Cambridge, 2019; Collins, 2019; Taylor, 1992). Some sources acknowledge this paradox by suggesting that an authentic product is often perceived as a well-executed imitation of an original (Collins Dictionary, 2019; Shelton, 1990; Taylor, 1992). Cohen (1988) supports the perspective of authenticity as a form of representation, where it becomes a reconstruction of the past rather than an exact historical replica. Consequently, authenticity is understood as a socially constructed concept with negotiable social connotations (Adams, 1996; Cohen, 1988). It is not an inherent quality of an individual or object (Cairns et al., 2010), but rather, its attribution as “authenticity” depends on the subjective perception of those experiencing it (Shelton, 1990). In this sense, something is considered objectively “authentic” when it possesses features or conditions that genuinely make it feel real. However, authenticity becomes subjective as different individuals, influenced by their beliefs, may modify these features and perceive them differently (Hamzah et al., 2013; Taylor, 1992). To conclude, authenticity is a multifaceted concept that encompasses a range of qualities and interpretations representing a dynamic interplay between genuine attributes and socially constructed meanings. The complexity of authenticity requires careful consideration and recognition of the subjective nature of its perception.

6.4.2 Risk factors compromising heritage food authenticity

Authenticity plays a crucial role in heritage food, as it preserves the distinct characteristics and flavours that give these foods their special significance. By maintaining the integrity of traditional recipes, ingredients, and techniques passed down through generations, authenticity ensures the true essence of heritage food (Ab-Latif et al., 2022). However, the authenticity of heritage foods and dishes can be compromised by various risk factors. In total, nine risk factors were identified from literature related to ethnic, local, and traditional food and confirmed from interviews with culinary professionals (Chapters 2 & 3). These risk factors were related to receiving ingredients (such as scarcity of ingredients and costs of the ingredients), preparing and cooking (such as not following the exact instructions of the recipe, using modernized cooking equipment and methods, lack of adequate knowledge and skills of the cook, strict food safety regulations, and non-native origin of the chef, adaptation for customer preference), serving (unfamiliarity with the presentation of heritage food and table manners). Related to ingredients, replacing or omitting certain ingredients can result in the loss of authenticity as the choice of ingredients is crucial for achieving authentic flavour and taste characteristics (Brulotte & Di Giovine, 2016). Moreover, related to preparing and cooking, using non-traditional cooking equipment may affect the genuine preparation of a dish and its unique sensory characteristics (Hashimoto & Telfer, 2015). FSEs need to minimize these risks during the production of heritage food, but the risks differ depending on the type of establishment.

6.4.3 Authenticity risks differ among food service establishments

The preparation of heritage food entails distinct authenticity risks that vary across the different types of FSEs explored in this thesis. A wide range of these establishments prepares heritage food. Productive families, predominantly engaged in home-based catering, prepare heritage dishes for local gatherings, weddings, and events. Commercial FSEs including hotels, ordinary and heritage restaurants, and commercial catering services, cater to both locals and tourists. The establishments play a crucial role in safeguarding cultural traditions and culinary practices by presenting authentic dishes that showcase the unique flavours and characteristics of specific regions or cultures, thereby enabling tourists to embark on a truly genuine heritage food experience.

Insights into authenticity risks were obtained through the analysis of authenticity situations in various FSEs in Saudi Arabia (Chapter 4) and through examining authenticity practices in home-based versus commercial catering across Saudi Arabia, Indonesia, and Malaysia (Chapter 5). Overall, fewer authenticity risks were observed in productive families (home-based catering) compared to the commercial FSEs including

hotels, restaurants and commercial catering. The authenticity risks in productive families are typically related to “replacing the authentic ingredients because of the price”, and “not using traditional equipment because it is not needed or because of the price” (Chapters 4 & 5), whereas risks related to “limited knowledge of cooks” and “cooking by non-native chefs” are absent.

The common threat behind replacing ingredients and not using traditional equipment is the economic conditions of productive families (Chapters 4 & 5). To cope with these challenges, productive families may sometimes resort to modifying traditional recipes by incorporating more affordable ingredients. However, such changes to key ingredients, cooking techniques, or flavour profiles can result in dishes that resemble the original but lack the distinctive qualities that make them truly authentic. Research investigating the barriers faced by women in starting and running businesses, such as the study conducted by Winn (2005), has identified financial capital and women’s domestic roles as prominent obstacles. Similarly, a study by Alhothali (2020) examined the primary challenges encountered by home-based businesswomen in Jeddah, Saudi Arabia. Financial difficulties emerged as the most significant hurdle throughout the business life cycle, with respondents emphasizing the ongoing struggle to maintain the quality and authenticity of their dishes amidst rising costs. Adequate financial resources are crucial for purchasing essential ingredients. Sufian et al. (2022) discussed the common driving force behind initiating home-based businesses is an economic necessity in Malaysia. Fluctuations in ingredient prices, influenced by factors such as seasonality, supply and demand, and market trends as highlighted by Yoshino (2010), can have a substantial impact on profit margins if not properly accounted for. Furthermore, societal perceptions present an additional challenge for home-based businesses, as some members of society may hold the belief that such ventures are inferior, leading to unrealistic expectations of lower prices for their dishes (Alhothali, 2020).

On the other hand, productive families benefit from a significant advantage regarding risks related to limited knowledge of cooks and cooking by non-local chefs (Chapters 4 & 5). In the Middle East, cooking is predominantly carried out by women for their families (Inness, 2001). Women in Saudi Arabia, Indonesia, Malaysia have a shared cultural heritage where they have traditionally held the responsibility of food preparation, passing down culinary techniques and recipes through generations (Alissa, 2017; Pangaribowo & Iskandar, 2022; Shariff et al., 2022). Their pivotal role in households has ensured the preservation and evolution of culinary traditions in both countries. In both countries, mothers play a pivotal role in transmitting the knowledge of traditional cuisine to their daughters, illustrating the vital role of experienced and knowledgeable

women as custodians of heritage food (Chapter 5). These women serve as intermediaries, bridging the gap between the past and the future, thus safeguarding the legacy of culinary traditions in many countries (Alissa, 2017; Bianchi et al., 2000; Bolaños, 2014; Christie, 2002; Martínez, 2014; Matta, 2019; Shariff et al., 2022). Women in productive families and home-based catering should be recognised as protectors of heritage food, as they embody the fundamental dimensions of the heritage legacy (transmission of knowledge to younger generations), people (the expertise of native women who have preserved these dishes over time), and place (the connection to a specific country or region through the preparation of authentic and age-old heritage cuisine).

Besides the productive families/home-based catering, various FSEs, such as hotels, ordinary restaurants, and commercial catering, serve heritage food dishes not only to locals but also to tourists. Authenticity risks are commonly encountered in commercial FSEs (Chapters 4 & 5). The most obvious authenticity risks related to “cooking heritage food dishes by non-native culinary professionals”, “not following the original cooking procedure step by step “and changing the recipe according to the customer’s request”.

Cooking heritage food dishes by non-native culinary professionals pose a risk to the authenticity of heritage food (Chapter 4 & 5). In Saudi Arabia, people tend to hire international workers because the wages earned in countries like Saudi Arabia can still be considered significant when compared to the economic conditions and wage levels in their home countries (K. A. Aldosari, 2013). Non-native culinary professionals often lack a comprehensive understanding of the traditional cooking techniques, ingredients, and cultural significance associated with the dish, which can lead to unintended modifications to the original recipe, compromising the taste and authenticity of the dish (Lin et al., 2017). Cooking heritage food is more than just creating delicious meals; it preserves and passes on cultural knowledge, requiring chefs to possess skills beyond culinary expertise. However, while some argue that being local is not crucial as long as chefs receive adequate training (P. M. Lin et al., 2017), the consensus is that training plays a pivotal role in safeguarding the cultural heritage encapsulated in these dishes (Cox Hall, 2020).

The authenticity risk of not following the original cooking procedure step by step observed in the commercial FSEs, can be attributed to multiple reasons. The first reason is related to limited knowledge of the cook cooking of heritage food in Saudi Arabia, Indonesia and Malaysia (Chapters 4 & 5). Pereira et al. (2019) discussed that limited knowledge about the cultural and culinary traditions associated with heritage food can result in misinterpretations or inaccuracies when attempting to

recreate these dishes. Without a deep understanding of the ingredients, recipes and their traditional use, the essence and flavours of the heritage dish may be altered or lost. Because of that, there are concerns from tourists about the authenticity of the heritage dishes in restaurants (Mkono, 2012). The second reason is related to time constraints in commercial FSEs, which can be challenging when preparing some heritage food recipes that often require meticulous preparation, long cooking times, or specific techniques (Chapter 4). To meet the demands of a fast-paced industry, shortcuts or adaptations may be made that deviate from the traditional methods, impacting the authenticity of the final dish.

Changing the recipe according to the customer's request is a common authenticity risk observed in the commercial FSEs in Saudi Arabia and Indonesia and Malaysia (Chapters 4 & 5). Culinary professionals in Saudi Arabia recognise the possibility of altering the recipe of heritage dishes primarily for health-related reasons; a similar observation by the Indonesian culinary professionals (Chapters 4 & 5). However, there is a general hesitancy among culinary professionals to modify heritage dishes to cater to customer preferences due to concerns that it may compromise the traditional preparation methods and cultural significance associated with the dishes (Parasecoli, 2019). This hesitancy may stem from a cultural expectation that customers should appreciate and embrace heritage dishes as they are, except when necessary for health reasons. In contrast, culinary professionals in Indonesia and Malaysia displayed a greater openness to adapting heritage dishes to meet customer preferences (Chapter 5). This receptiveness is partially driven by the increasing number of tourists visiting these countries, who bring different tastes and preferences to the table. For instance, in Malaysia, food establishments consider the preferences of Western tourists, who typically have a lower tolerance for spiciness and sweetness in local cuisine. Consequently, adjustments to the preparation of these dishes may be required to cater to the specific tastes of this market segment (Som et al., 2020). Similarly, in European countries, where international dishes from various cultures are served, there is a recognition of the importance of adjusting these dishes to suit the taste preferences of the local population (Chironi et al., 2021). This flexibility in adapting dishes can be viewed as a means of preserving the cultural significance of heritage dishes by ensuring their continued relevance and appeal to a diverse audience.

To conclude, the authenticity of heritage food is not a static concept and can evolve. It is subject to interpretation, adaptation, and change, depending on a range of factors such as economic conditions, health issues, and social changes.

6.5 Food safety risks for heritage food production

Food safety is a fundamental requirement for any kind of food including heritage food. In Chapter 2, risk factors were identified compromising the safety of the heritage food including inadequate safety of raw ingredients, inadequate cooking time & temperature, inappropriate cleanliness of utensils and equipment, lack of appropriate hygiene knowledge, and inadequate personal hygiene. These risk factors are commonly occurring in foodservice establishments (Akonor & Akonor, 2013; Al-Kandari et al., 2019; Labović et al., 2023; Orden-Mejía et al., 2021). The actual safety risks of heritage food were investigated by analysing the occurrence of food safety risk situations and the food safety practices in different types of FSEs (Chapters 4 & 5).

In productive families and home-based families, many safety risks were observed. The most obvious safety risks are related to storage, complying with sickness rules, and personal hygiene (Chapters 4 & 5). We found that in these FSEs, raw ingredients are not always immediately stored upon arrival and are sometimes exposed to unfavourable conditions, which can increase the likelihood of temperature abuse and contamination, and raise the risk of foodborne illnesses (Stefanou et al., 2023). On the other hand, in Saudi Arabia, Indonesia, and Malaysia certain families opt to directly use the ingredients as it is common to procure fresh ingredients and promptly prepare and cook them to retain the genuine flavours (Abuqurayn, 2019).

Another safety risk faced by productive families/home-based catering relates to the issue of working while being sick. In Saudi Arabia, some FSEs accept cooks working with non-contagious illnesses, whereas in Indonesia, sick workers are permitted to work while wearing masks (Chapter 5). Nevertheless, non-contagious diseases can impact productivity due to physical discomfort, pain, or limitations that hinder efficient work performance, which may lead to mistakes in food preparation, inadequate temperature control, or improper storage practices, potentially compromising the safety of the food (S. Pichler & Ziebarth, 2015). Furthermore, masks worn by sick workers reduce respiratory droplet spread, but contamination risks persist if cooks touch their masks while preparing food; other sources like contaminated surfaces and inadequate hand hygiene also pose risks (N. Zhang & Li, 2018).

Personal-hygiene-related safety risks, such as not using hairnets, and frequently touching hair, face, or mouth during food preparation were observed among productive families in Saudi Arabia, Indonesia, and Malaysia. A study conducted in Indonesia by Rasyid et al. (2021) also highlighted the inadequate hygiene standards among households, with a lack of essential protective measures such as aprons, hairnets, and

gloves. Neglecting these measures poses a potential risk of physical contaminants, which can compromise food safety. However, limited safety risks related to handwashing were noticed in Saudi Arabia, Indonesia, and Malaysia. Similar findings were observed by Ayaz et al. (2018) with 979 Saudi mothers in households and in Malaysia by T.-P. Lim et al. (2016).

The occurrence of common safety risks can be explained by the absence of formal hygiene control procedures. Moreover, there is a notable deficiency in training and awareness regarding food safety principles and the potential hazards associated with improper food handling. Instead, these families heavily rely on shaping and reinforcing good hygiene habits that have been passed down through generations (Ramos-Morcillo et al., 2019). Additionally, religious beliefs and customs, such as the daily practice of Wudu (ablution) observed in Islam, determine specific cleanliness practices, which are common in Saudi Arabia, Indonesia, and Malaysia (Amin, 2019).

Commercial FSEs reveal fewer food safety risks (Chapters 4 & 5). The most obvious ones are related to personal hygiene. Risk situations related to handwashing and not wearing hairnet and gloves were occurring more frequently in ordinary and heritage restaurants in SA whereas good handwashing practices and wearing protective clothes were commonly found in commercial catering in all three countries. Alqarni et al. (2023) did a study among 112 food handlers in a Saudi Arabian region and found that almost 95% used uniforms and gloves at work, circa 93% washed their hands with soap before handling and preparing food and after visiting toilets, and a few (6.2%) wash without soap. Also, a study in Indonesia demonstrated poor hygiene and sanitation practices; handwashing (61.5%), unclean nails (65.4%), non-compliance with apron usage (88.5%), head coverings (38.5%), wearing masks (88.5%) or gloves (94.2%) during food preparation or serving (Firdani, 2022).

Even though commercial FSEs commonly operate under strict regulations and guidelines, are subject to inspections and the risk of fines for any violations, safety risks still occur in the FSEs investigated in all three countries. To address this challenge, Saudi Arabian Ministry of Municipal and Rural Affairs (2009), Indonesian and Malaysian Ministry of Health (2011) and (2009) have developed dedicated guidelines that specifically address hygiene and sanitation practices within FSEs. A common aspect of these guidelines is the requirement for food handlers to possess a certificate indicating their successful completion of a food sanitation hygiene course. This certification serves as evidence of their training and education in food safety practices, ensuring that they possess the necessary knowledge and skills to uphold safety standards in FSEs.

6.6 Methodological considerations

Semi-structured literature review and inductive qualitative approach were applied in this thesis. In Chapter 2, the semi-structured review was used because it allows flexibility in exploring various dimensions of a topic, adapting the search strategy based on emerging themes (Snyder, 2019). It enables a comprehensive understanding of the subject by including diverse perspectives and sources. The in-depth analysis of selected articles facilitates a deeper exploration of the literature (Snyder, 2019). This approach provided a comprehensive understanding of cultural-related food concepts, including heritage food. It facilitated the evaluation of traditional, ethnic, and local food concepts in comparison to heritage food, leading to a clear understanding of the heritage food concept. Additionally, it helped identify risk factors related to the safety and authenticity of heritage food throughout the production stages in foodservice establishments (FSE) from traditional, ethnic, and heritage literature.

In Chapters 3 and 5 of the research, an inductive qualitative approach was employed to validate the concept of heritage food, assess its authenticity risk factors, and gain a deeper understanding of the authenticity and safety practices within various food service establishments (FSEs) across different countries. The utilization of an inductive approach facilitates an open and unbiased exploration of the data, enabling the emergence of new themes and patterns derived from the narratives of the participants (Given, 2008). This methodological approach is particularly advantageous when investigating understudied phenomena, such as heritage food, as it allows for the exploration of diverse perspectives and the discovery of novel insights. Applying an inductive qualitative approach made it possible to capture rich and detailed data, as participants were encouraged to provide comprehensive descriptions and explanations of their experiences (Given, 2008). The utilization of this approach enhances the scientific rigor and validity of the study, providing a more comprehensive understanding of the authenticity and safety practices associated with heritage food in diverse FSEs.

6.7 Recommendations

6.7.1 Recommendations for foodservice establishments

In order to promote food safety and preserve the authenticity of heritage food in FSEs, several recommendations can be implemented. Firstly, raising awareness about food safety practices among cooks is essential. FSEs should provide comprehensive training programs for their employees on food safety measures even before they are

hired. This ensures that all staff members are equipped with the necessary knowledge and skills to handle food safely. Additionally, creating opportunities for local individuals who have expertise in preparing authentic heritage food can contribute to preserving culinary traditions. These individuals can be involved in training programs and collaborate with FSEs to develop specific recipes that follow authentic heritage guidelines. Furthermore, it is crucial for FSEs to serve heritage dishes that adhere to both authenticity and safety standards. This requires careful consideration and research to ensure that traditional recipes and ingredients are utilized without compromising food safety. FSEs can also benefit from training programs conducted by locals, particularly women from productive families or home-based catering, who possess extensive knowledge and skills in heritage food preparation. Their role as protectors and intermediators of heritage food can be acknowledged and leveraged to transfer their expertise to younger generations and even international cooks, fostering cultural exchange and preservation.

6.7.2 Recommendations for policymakers

To support the safety and authenticity of heritage food, policymakers can implement several recommendations. Firstly, creating awareness campaigns about the authenticity of heritage food is crucial. These campaigns should target both the younger generations, emphasizing the importance of protecting cultural culinary traditions in the face of Western foods and fast-food invasion. Furthermore, policymakers should support productive families by providing economic independence and simple codes of conduct. This support can empower productive families involved in heritage food preparation, helping them sustain their cultural traditions and contribute to the local economy.

Policymakers should also encourage, and fund projects aimed at training individuals in the preparation of heritage foods. By supporting initiatives that enhance knowledge and skills in heritage food preparation, policymakers can contribute to the preservation and promotion of culinary traditions. Additionally, establishing a national certification system for heritage foods in foodservice establishments can play a significant role in safeguarding authenticity. This certification system would set specific requirements for authenticity, ensuring that restaurants focusing on creating authentic heritage dishes meet the designated standards.

6.7.3 Recommendations for further research

This thesis extensively explores the heritage food concept through multiple methods, including literature review, validation among culinary professionals, and assessments

in various types of FSEs. This thesis also examines authenticity and safety risks, both qualitatively and quantitatively in different types of FSEs in different countries. Notably, the study extends its focus to include productive families, highlighting their significant contributions to heritage food. Based on the previous information, we recognize potential opportunities for further research. The following are recommendations for further research based on this thesis:

- In Chapters 4 and 5, we found that there are still food authenticity risks related to heritage food in different types of commercial FSEs and also in productive families/home-based catering. Creating a diagnostic tool would be useful to qualitatively differentiate authenticity risks. The essence of diagnostic tools is to gain some sort of indication of the performance of a system and the riskiness of its context (P. Luning et al., 2011). Usually, diagnostic instruments are used to get a better insight into the performance of a particular system and to judge if improvements are necessary. Therefore, a diagnostic tool can be used to assess the vulnerability towards authenticity loss of several dishes in heritage foods production.
- In Chapters 2, 4 and 5, we found that food safety risks are more common among foodservice establishments. In Chapters 4 and 5, safety risk situations occur more frequently in productive families/home-based catering and practices were done without control or inspection. Also, several personal hygiene issues were shown in commercial catering even though there are inspections and guidelines. Therefore, on-site microbial analysis would be useful for specific heritage food production for example in heritage restaurants and also productive families. A microbiological assessment scheme should be developed and used to assess microbial safety in different (high-risk) FSEs (Lahou et al., 2012) for the production of heritage food. These profiles provide an indication of the microbial safety level in the FSEs.
- Throughout this thesis, the heritage food concept and authenticity and safety risks were examined related to the perspective of culinary professionals. No studies have been done on consumers' perceptions of the heritage food concept and its authenticity and safety risks. There is a need for further research to investigate dimensions of the heritage food concept and the authenticity and safety risks from the perspective of consumers.

6.8 Conclusion

This thesis presented a conceptual framework of heritage food and related authenticity and food safety risk factors. Heritage food has gained attention and recognition by locals as a cultural identity and by tourists as a new food experience. The research highlights the significance of considering the three main dimensions of heritage food, including *legacy*, *people*, and *place*, when cooking and preserving traditional dishes. It is emphasized that heritage food is a dynamic concept influenced by several environmental factors. Furthermore, protecting authenticity emerges as a crucial quality attribute for heritage food, yet multiple authenticity risks have been identified authenticity risks that can impact the cooking of such dishes in FSEs. Comparing productive families engaged in home-based catering to commercial FSEs like hotels, restaurants, and commercial catering, we have found fewer authenticity risks in the former. This can be attributed to the deep knowledge and preservation of traditional recipes and methods within productive families. However, it is important to acknowledge that authenticity can evolve over time due to economic conditions, health concerns, and social changes. Furthermore, safety risks were more prevalent in productive and home-based families due to the absence of formal hygiene control procedures. Despite operating under strict regulations, guidelines, and inspections, commercial FSEs still exhibited some safety risks across Saudi Arabia, Indonesia and Malaysia. While commercial FSEs face penalties for violations, continuous improvement in safety measures is crucial to mitigate potential risks. Therefore, it is imperative to adopt a balanced approach that considers both authenticity and safety in the context of heritage food. This approach involves recognizing and preserving traditional practices while incorporating necessary adaptations to address safety concerns.



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Summary

The interest in heritage food has been surging among both locals and tourists worldwide, recognizing the cultural significance deeply ingrained in a region's cuisine. Food serves not only as a basic necessity but also as a representation of local culture and tradition, making it an integral part of the identity of its people. This growing enthusiasm for heritage food has also extended to the realm of travel and tourism, where leisure travellers actively seek out and immerse themselves in diverse culinary experiences, considering traditional cuisine as a primary motivation or an additional aspect of their journeys. Authenticity and safety are two crucial quality attributes associated with heritage food. The authenticity of these traditional dishes can be influenced by distinct ingredients, preparation methods, and serving styles that have been passed down through generations. On the other hand, the safety aspect comes into play when considering the potential food safety hazards during the preparation and cooking processes of heritage food in food service establishments (FSEs), which can directly impact consumer health. Therefore, the objective of this thesis is to gain insight into the heritage food concept and identify and assess the risks that influence the authenticity and safety of heritage food in different FSEs and in different countries.

In **Chapter 2**, a semi-structured literature review was conducted to explore the dimensions of heritage and evaluate different food concepts associated with heritage, with the aim of defining the concept of heritage food. Additionally, the review sought to identify risk factors from the literature that could compromise the safety and authenticity of heritage food. The literature review revealed three dimensions of heritage: legacy, people, and place. Based on the evaluation against these dimensions, it was found that traditional food was predominantly linked to the legacy and place dimensions. Ethnic food, on the other hand, was commonly associated with the people and legacy dimensions, whereas local food was primarily connected to the place dimension. It was evident from the literature that all three dimensions are relevant to heritage food. However, the available definitions in the literature were limited, making it unclear whether all dimensions hold equal importance in the context of heritage food. Furthermore, a framework was developed, and six authenticity risk factors were identified, which were derived from literature on ethnic, local, and traditional food. The safety risk factors identified were found to be common in the foodservice sector. However, it is essential to validate this framework further through studies involving stakeholders in heritage food production. Such validation would provide valuable insights and ensure the reliability and applicability of the framework.

Chapter 3 aimed to validate the concept of heritage food and the previously identified authenticity risk factors, therefore, semi-structured interviews were conducted

with culinary professionals working in foodservice establishments located in Saudi Arabia and Italy. The results obtained from the interviews confirmed the heritage food dimensions that had been previously identified. The categories 'inheritance' and 'authenticity of the recipe and cooking' aligned with the dimension of legacy, while the category 'locality of ingredients' corresponded to the dimension of place. The category 'knowledgeable chefs representing their culture' was associated with the dimension of people. Additionally, a new category emerged during the interviews, highlighting that heritage food is subject to cultural and societal influences, thus demonstrating that authenticity is not a fixed concept but rather evolves over time. Most of the culinary professionals from both Saudi Arabia and Italy affirmed the previously identified authenticity risk factors. Furthermore, three new authenticity risk factors were identified through the interviews: 'adaptation to customer preference', 'costs of ingredients', and 'non-native origin of the chef'. These factors shed light on additional novel challenges that can impact the authenticity of heritage food. However, further research is necessary to investigate how these risk factors differ among various types of foodservice establishments.

In **Chapter 4**, the objective was to assess the risks associated with the authenticity and safety of heritage food dishes in various food service establishments (FSEs). To gather data, an online questionnaire was administered to culinary professionals in Saudi Arabia, with a total of 85 respondents from different FSEs. The results obtained from this quantitative study shed light on the occurrence of both food safety and authenticity risk situations across different types of FSEs. Notably, hotels demonstrated a lower frequency of food safety risk situations due to their strict food safety management systems. On the contrary, ordinary and heritage restaurants were found to have a higher occurrence of food safety risk situations, particularly personal hygiene requirements were lacking. In productive families, the absence of control systems or inspections contributed to a higher frequency of food safety risk situations. Regarding authenticity risks, the study revealed that productive families and heritage restaurants experienced a lower occurrence compared to other FSEs. On the other hand, hotels were frequently exposed to authenticity risk situations, such as the preparation of heritage dishes by non-Saudi culinary professionals and the use of modern equipment. Ordinary restaurants faced the highest risk in terms of authenticity, primarily due to limited knowledge and skills among the cooks. This study provides valuable insights into the occurrence of safety and authenticity risk situations during the preparation of heritage dishes. The findings have practical implications for improving the production of safe and authentic heritage dishes within the hospitality industry.

In **Chapter 5**, the aim was to gain insights into authenticity and safety practices in preparing heritage food, this study expanded its objective to include home-based and commercial catering in Saudi Arabia, Indonesia, and Malaysia, countries known for their rich heritage food traditions. The study employed semi-structured interviews with a total of 60 culinary professionals, with 30 participants from home-based catering (10 from each country) and 30 from commercial catering (10 from each country). Regarding authenticity practices, the results revealed similarities among all three countries and both types of catering. These practices included checking the availability of essential ingredients in advance and ensuring the taste, flavour, and texture align with the traditional recipe. However, notable differences emerged, with culinary professionals in Saudi Arabia emphasizing the importance of authenticity practices more than in Indonesia and Malaysia. This emphasis included factors such as having experienced cooks, following specific written recipes, supervising new cooks, providing advice to adhere to the original recipe, and presenting authentic dishes without modifications. Regarding food safety practices, similarities were observed among culinary professionals from all three countries and both types of catering. These practices included checking the colour and freshness of ingredients, cleaning equipment with water and chemicals (soap), and wearing protective cooking uniforms (aprons). However, Saudi Arabian culinary professionals, in particular, mentioned a wider range of food safety practices compared to professionals from the other countries. These additional practices included checking the smell of ingredients, washing hands and wearing gloves, regularly changing gloves, washing cooking equipment with special chemicals, closing the catering establishment when the owner is ill, and prohibiting cooks from working while ill. These practices aim to prevent cross-contamination and ensure the production of safe heritage dishes.

Finally, **Chapter 6** discusses the integrated findings of the present study and presents a broader outlook on positioning of the heritage food concept among other cultural-related food concepts. Also, it discusses the most obvious authenticity and safety risk factors for heritage food in different FSEs and also in different countries. Then, methodological considerations, as well as recommendations for FSEs and policy makers and further research opportunities are presented. Finally, the main conclusions are described.



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During the challenging times of the COVID-19 pandemic, I found solace in the fact that I was always at home, able to spend more time with you and teach our children together. I am truly grateful for the opportunity to witness your growth during this

journey, from learning English to becoming more independent and establishing your own business. The years from 2010 to 2023 felt exceptionally long, and now it is finally time for us to return to Saudi Arabia and settle down. Simply thanking you, my love, does not seem sufficient, but I am committed to ensuring that you and our beloved children will have a wonderful and happy life.

Romysa and Yousef, my cherished and gifted children, watching you both grow during my PhD has been a beautiful experience. Your parents are immensely proud of you, and we are thrilled to see that you have developed new skills and gained valuable experiences while living abroad. I love you both.



About the author

Curriculum vitae

Mohammad Almansouri was born on July 25th, 1985, in Riyadh, Saudi Arabia, where he completed his primary and secondary education. He then pursued his Bachelor's studies in Food Science and Human Nutrition at King Saud University, graduating in 2009. He achieved a position among the top three students with the highest GPA in the bachelor's program.



Following his graduation, Mohammad began working as a teaching assistant in the College of Tourism and Archaeology, Department of Tourism and Hospitality Management at King Saud University in 2009. Later, he was awarded a scholarship to further his studies at the master's and PhD levels.

In 2014, Mohammad started his master's program in Food Quality Management at Wageningen University, specializing in food safety. His master's thesis focused on measuring the Food Safety Management System in hotel chains in the Netherlands, integrating quality, safety, and Halal considerations into the system. He successfully completed his master's program in August 2016.

Upon completion of his master's degree, Mohammad returned to King Saud University in which he taught and supervised students in area of Food Quality. In April 2018, he embarked on a new academic journey in the Netherlands, continuing his studies with a PhD in the chair group Food Quality and Design at Wageningen University and Research. His PhD research explored a novel topic and took him to several countries, including Saudi Arabia, Italy, Indonesia, and Malaysia. The findings of his PhD research are presented in this thesis.

During his PhD journey, Mohammad also achieved the publication of his first book, "Saudi Feast," co-authored with others.

List of publications

Almansouri, M., Verkerk, R., Fogliano, V., & Luning, P. A. (2021). Exploration of heritage food concept. *Trends in Food Science & Technology*, 111, 790-797.

Almansouri, M., Verkerk, R., Fogliano, V., & Luning, P. A. (2022). The heritage food concept and its authenticity risk factors-Validation by culinary professionals. *International Journal of Gastronomy and Food Science*, 28, 100523.

Almansouri, M., Luning, P., Almuhanha, M., & Verkerk, R. (2023). Safety and authenticity risks in heritage food preparation at different types of food service establishments: A case study of Saudi Arabia. *Heliyon*, 9(2).

Almansouri, M., Verkerk, R., Karim, S. A., Raji, M. N. A., Ismail, N., Nugrahedi, P. Y., & Luning, P. A. (Submitted). Safety and authenticity practices in heritage food production in home-based and commercial catering: A multiple country case study.

Overview of completed training activities

| Discipline-related activities | Graduate school/Organization | Year |
|---|---|------|
| Food culture: Social, sustainable development and cultural identity | Saudi Permanent Delegation and the Italian Delegation to UNESCO | 2018 |
| EFFOST conference | Elsevier | 2019 |
| MAXQDA 2018 training | MAXQDA | 2019 |
| A training workshop for the inventory and documentation of heritage foods in Al-Madinah region | Heritage Chair at King Saud University | 2020 |
| 10th International Conference on Food Studies | Marymount Manhattan College, New York, United States of America | 2020 |
| 3rd Food Summer Course - Local Indigenous Functional Food's Role: From Farm to Table | Universitas Gadjah Mada, Faculty of Agricultural Technology | 2021 |
| Food culture: Social, sustainable development and cultural identity | Saudi Permanent Delegation and the Italian Delegation to UNESCO | 2021 |
| EFFOST conference | Elsevier | 2021 |
| Training of conducting the 4th project (authenticity and safety practices of heritage food) with project leaders in Indonesia and Malaysia. | Wageningen | 2021 |
| Using Visual Tools in MAXQDA course | MAXQDA | 2022 |
| Memos and Comments in MAXQDA (Advanced course) | MAXQDA | 2022 |
| Mini-symposium Exploring Authenticity and Safety Risks in Foodservice Establishments | Wageningen | 2023 |
| MAXQDA Advanced Coding-Analysis Workshop | MAXQDA | 2023 |
| General Courses | | |
| VLAG PhD week | VLAG | 2018 |
| The Essentials of Scientific Writing and Presenting | WGS | 2018 |
| Writing Strategies | WGS | 2019 |
| Research Data Management | WGS | 2019 |
| Introduction to R | VLAG | 2020 |
| Project and Time Management | WGS | 2020 |
| Scientific Writing | WGS | 2020 |

| Optional Courses | | |
|---|-----|-----------|
| Preparation of research proposal | FQD | 2018 |
| Weekly group meetings | FQD | 2018-2022 |
| PhD trip Organization (PhD trip cancelled due to Covid) | FQD | 2019-2020 |
| Monthly PhD and staff meetings | FQD | 2018-2022 |
| Preparation of research proposal | FQD | 2018 |
| Weekly group meetings | FQD | 2018-2022 |

VLAG: Graduate School for Nutrition, Food Technology, Agrobiotechnology and Health Sciences

WGS: Wageningen Graduate School

FQD: Food Quality and Design

Colophon

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