

## Use low-carbon ingredients as guidelines for green cuisine menu development

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**Article History:** *Do not touch during review process(xxxx)*

**Abstract:** With the rise of consumer awareness, food safety is important in the process of developing the tourism industry. Therefore, the development of green cuisine is an inevitable trend. Green cuisine plays an important role in green tourism. Therefore, we should make good use of local agricultural resources to promote Low-carbon food materials create substantial benefits for the green supply chain. Therefore, this study collected 12 expert opinions and constructed the key evaluation criteria for the development of green cuisine menu development. It is recommended to use local ingredients and green supply chains to develop marketing strategies for the main target source of customers.

**Keywords:** low-carbon ingredients, Green cuisine, Local ingredients, Green supply chain

### 1. Introduction

Many major food safety incidents occurred in Taiwan. It was discovered that companies still aim to pursue profits and ignore corporate social responsibilities. With the rise of consumer awareness, green issues are an important direction for corporate sustainable operations and create a healthy and safe life environment, food safety is important in the process of developing the tourism industry. Therefore, the development of green cuisine is an inevitable trend, and local ingredients are one of the important factors that can be used in the development of green catering. More and more studies have proved that the food experience can enhance the willingness to revisit and understand the culture of the tourist location (Wijaya et al. ,2017), therefore, the characteristics of local ingredients have become an important competitiveness for innovating local tourism resources.

At present, many countries around the world use local ingredients to develop the catering industry, and this trend is becoming more and more obvious (Dzeagu-Kudjodji, J., Adjibolosoo, A., Otoo-Arthur, D.,2019). Green cuisine plays an indispensable role in green tourism, so we should make good use of local agricultural resources to promote low-carbon ingredients and create real benefits of green supply chain through the integration of regional industries. Nebioğlu (2020) study found that the menu content of restaurants is an important factor affecting the production and supply of local dishes. Therefore, this study collected 12 expert opinions and constructed the key evaluation criteria for the development of green cuisine menu development. It is recommended to use local ingredients and green supply chains to develop marketing strategies for the main target source of customers.

### 2. Literature Review

#### 2.1 low-carbon ingredients

Both the process of carbon footprinting and carbon labelling of food products are currently voluntary in the UK ( Gadema and Oglethorpe, 2011). To reduce carbon emissions in the food chain, the current human diet needs to make major changes to achieve positive environmental and health goals (Yang et al.,2019). Support low-carbon strategies through dietary changes to mitigate global climate change (Boer et al.,2016). Although consumers have positive attitudes to preserving the environment, sales of organic products are low for several reasons: perceived high price, strong habits governing food purchases, perceived low availability, lack of marketing and information, lack of trust in the labelling system, and low perceived customer effectiveness (Röös and Tjärnemo, 2011). Although most consumers may respond positively to the carbon label of food, this in itself is unlikely to drive major changes in the food system ( Gadema and Oglethorpe, 2011). Therefore, the concept of “local ingredients” can be placed in the tradition of sustainable consumption and ethical consumption (Lin, 2019), to enhance consumers' awareness of low-carbon food ingredients.

#### 2.2 Green cuisine

In England, Green Supply Chain Management (GSCM), which involves incorporating ecological considerations into supply chain management, has gained prominence in recent times (Shukla et al.,2020). The

purpose of this paper is to explore the possibility that green tourism involving traditional local foods could help reinvigorate local economy (Lee, 2006).The green cuisine menu is designed to take into account the healthy eating trend and the effect of gradual global warming (Jang and Mattila, 2019). Shin et al.(2019) This study aimed to examine underlying motivations of consumers' intention to visit a restaurant featuring organic menu items and willingness to pay (WTP) for organic menu items. In particular, this study incorporated environmental concerns, social value, and health consciousness as key motivators. The objective of this article is to identify if unique local food and local cuisine in some regions can be used as a marketing tool to attract visitors to a destination and increase its competitiveness (Kelić, I., Erceg, A. &ČandrićDankoš, I., 2020).

### **2.3 Local ingredients**

Local cuisine has become a very important itinerary factor in the travel process (Hashimoto and Telfer, 1999). The form of sightseeing that is mainly motivated by tasting the food of the travel destination is called gourmet sightseeing. Novel local cuisine will arouse the expectations of tourists, especially those who visit for the first time(Wijaya et al., 2017). Dzeagu-Kudjodji et al. (2019) Has studied and explored the use of local ingredients to package dishes, combined with the marketing of local ingredients to solve the problem of luxury hotel management.Local ingredients are considered to be an indicator of tourist satisfaction and influence the role of tourists in the destination experience (Rousta and Jamshidi, 2020).Bessiere (1998) pointed out that the cuisine of local ingredients is the best tourist attraction among the tourist destinations in Yocun. Creative tourism originates from the new mode of cultural tourism. In this new mode of gourmet tourism, experiential marketing promotion is indispensable. (Ferreira and Sousa, 2020).

### **2.4Green supply chain**

The development of food tourism must emphasize understanding of local food resources and transportation facilities, which will help to in-depth exploration of food tourism products and link the economic value of other sectors (Smith & Xiao, 2008).Green "supply chain management" means that companies pay attention to the public's values and the degree of concern and evaluation of green consumption. In the selection of suppliers in a green procurement environment, in addition to the traditional supply chain measurement standards, the supplier's performance in environmental protection must also be considered. The performance of environmental protection includes multiple standards. Therefore, the selection and selection of green suppliers Evaluation can be said to be a complex system engineering. Green consumption includes consumers' knowledge of the environment, their degree of concern for a friendly environment, their belief in a friendly environment, and the behavior of implementing the attitude and intention of a friendly environment (Pagiaslis and Krontalis, 2014). Research by Perera, Auger and Klein (2018) pointed out that encouraging people to practice green consumption is an urgent environmental education task that needs to be implemented. Therefore, people will start to pay attention to the environmental label and "production history" of green products from the "purchase awareness". Choose environmentally friendly and non-toxic products for consumption.

### **3.Methodology and Design**

This research proposes the research framework of this research based on the research motivation and purpose after collecting, sorting and analyzing the above-mentioned related documents, as shown in Figure 3-1.

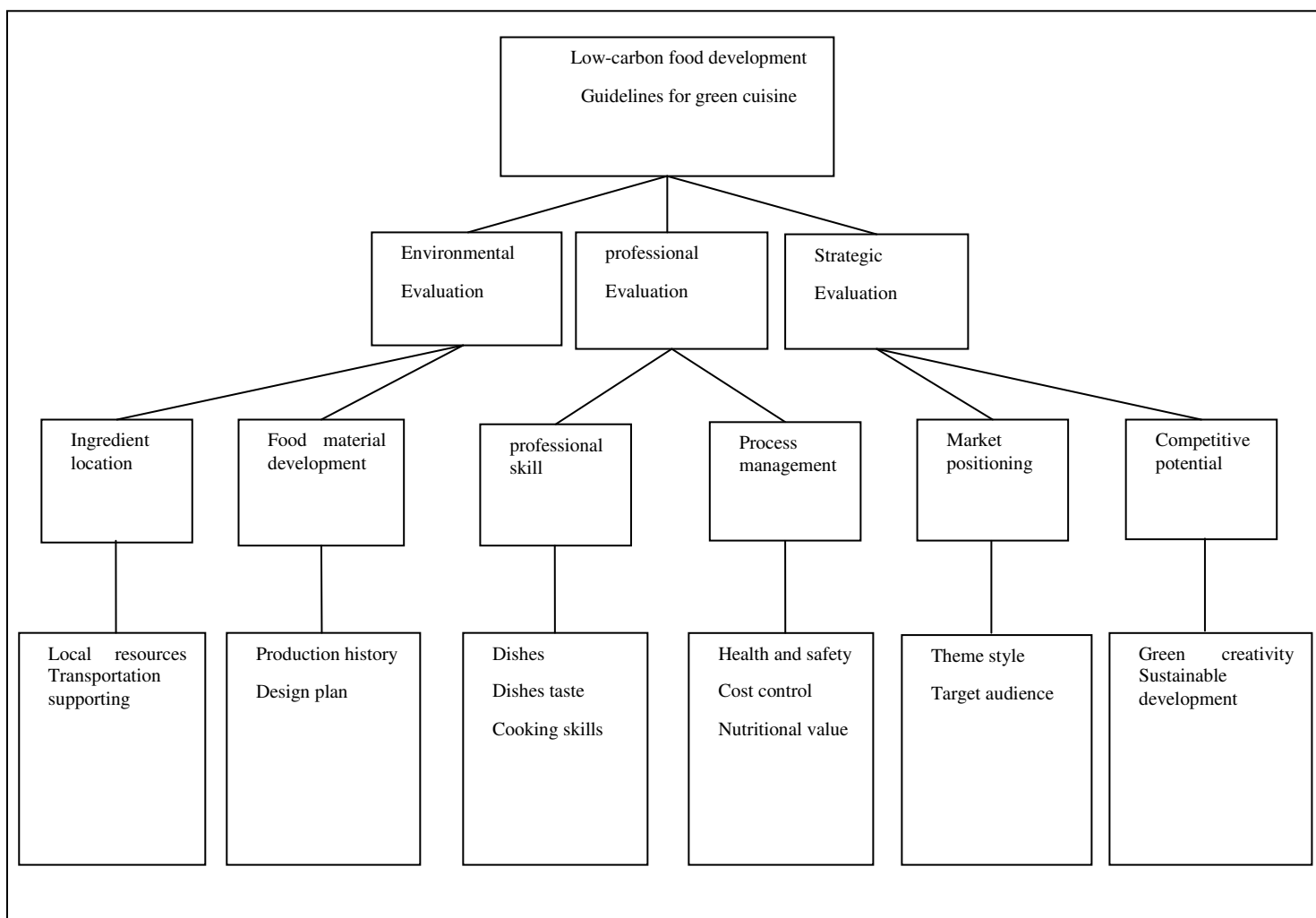


Figure 3-1 AHP hierarchy structure diagram

This research invites 12 experts to conduct a questionnaire survey. The interviewees are chefs who serve the tourist hotel industry and are well-known in the industry. Their feedback and opinions sharing are sufficient to provide quite a wealth of information for this research. The list of expert questionnaire survey participants in this research is listed in (Table 1). The expert questionnaire items are based on the relevant literature collected in this research, and the research framework is put forward after sorting and coding. Using the AHP analysis method, the priority of each key factor and the weight order of each key factor are carried out. The content of the expert questionnaire item As listed in (Table2).

**Table 1.**List of industry experts invited for this study

Number	Name	Job title	Service Units
1	Mr. Chen	Chef	H2O International Hotel
2	Mr. Cai	Chef	Big Eight Hotel
3	Mr. Yang	Executive Chef	CK Lee Garden Hotel
4	Mr. Tian	Executive Chef	Stars Hotel Kaohsiung
5	Mr. Huang	Chef	Hotel Cozzi
6	Mr. Liu	Chef	Yoho Resort
7	Mr. Ye	Chef	Kenting Unity Resort

8	Mr. Chen	Chef	Caesar Hotel
9	Mr. Xu	Executive Chef	Han Xuan Hotel
10	Mr. Chen	Executive Chef	Howard Plaza Hotel
11	Mr. Jiang	Chef	Chateau de Chine Hotel Kaohsiung
12	Mr. Zhuang	Chef	Lees Hotel

**Table 2**Comprehensive factor hierarchy

First phase	Second phase	Third phase
Environmental Evaluation (A-1)	Ingredient location  (B-1)	Local resources-whether to use the food resources provided locally? (C1-1) °
		Transportation supporting-whether there are environmentally-friendly transportation supporting measures? (C1-2) °
	Food material development  (B-2)	Production history-whether to use ingredients with certified production history? (C2-1) °
		Design plan-whether to design and plan the seasonal ingredients? (C2-2) °
Professional Evaluation (A-2)	Professional skill  (B-3)	Dishes-whether they have professional-grade dishes? (C3-1) °
		Dishes taste-whether it has professional taste? (C3-2) °
		Cooking skills-do you have professional cooking skills? (C3-3) °
	Process management  (B-4)	Health and safety-whether there is a complete sanitation and safety model? (C4-1) °
		Cost control-whether there is a complete cost control mechanism? (C4-2) °
		Nutritional value-whether it has perfect healthy nutritional value? (C4-3) °
Strategic Evaluation (A-3)	Market positioning  (B-5)	Theme style-whether to design an original dish theme style? (C5-1) °
		Target audience-whether to set the target source of market segmentation? (C5-2) °
	Competitive potential  (B-6)	Green creativity-Whether it has new ideas for green energy and environmental protection? (C6-1) °
		Sustainable development- Does it have the concept of sustainable development? (C6-2) °

**4.Results**

Low-carbon food development Guidelines for green cuisine menu, After 12 expert questionnaire evaluation and analysis, the weight value calculated by the AHP method can get the results in Table 3, including the evaluation results of the priority of each key factor and the priority order of each key factor.

**5.Conclusion and Suggestions**

From the above analysis, it can be seen that the "most important selection factor" is selected among the 14 key indicators, with "target customers" as the first priority, followed by "local resources", and "health and safety" ranked third, the most important Some experts consider "professional evaluation" as the main aspect, because through the "professional skills" and "process management" under the "professional evaluation" dimension, the dishes and dishes of the green menu design can be presented. Taste, cooking skills, hygiene and safety, cost

First phase(n=3)			Second phase(n=6)			Third phase(n=14)		
Factor	weight	rank	Factor	weight	rank	Factor	weight	rank
Environmental Evaluation	0.385	2	Ingredient location	0.1279	5	Local resources	0.1036	2
						Transportation supporting	0.0243	14
			Food material development	0.1127	6	Production history	0.0762	6
						Design plan	0.0365	12
professional Evaluation	0.400	1	professional skill	0.1974	1	Dishes	0.0296	13
						Dishes taste	0.1016	4
						Cooking skills	0.0662	8
			Process management	0.1962	2	Health and safety	0.1035	3
						Cost control	0.0384	11
						Nutritional value	0.0543	10
Strategic Evaluation	0.215	3	Market positioning	0.1917	3	Theme style	0.0625	9
						Target audience	0.1292	1
			Competitive potential	0.1740	4	Green creativity	0.0728	7
						Sustainable development	0.1012	5

control, nutritional value, etc. are well controlled, followed by "market positioning" and "competitive potential" are also the focus of green menu design.

Proposal to promote low-carbon agriculture to mitigate global climate change and promote food security. Consumers tend to choose green restaurants with low-carbon ingredients, providing a starting point for key issues related to their role in supporting climate change mitigation. The results of this study prove that to promote a green menu of low-carbon ingredients, the support of "target customers" is still needed. The public's environmental

**Table.3. weight value**

awareness and the implementation of government regulations can force the catering industry to practice green environmental policies, such as green supply chain management (GSCM) and green innovation. Therefore, you and I are an important key factor in promoting the development of green menus with low-carbon ingredients. Consuming more green restaurants and eating more fruits and vegetables can change the world.

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