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A New Decade for Social Changes
Exploring the Attitudes, Perceived Value, and Repurchase Intention of the Elderly Towards Green Restaurants

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Abstract This study investigates the attitudes, perceived value, and repurchase intentions of the elderly population towards green restaurants. With the increasing proportion of the elderly in Taiwan, their dietary needs have become more refined, focusing more on health and nutritional value. Consequently, restaurants offering healthy, nutritious, and environmentally conscious food choices are likely to be favored by this demographic. The social needs of the elderly population are also a consideration; restaurants that provide a healthy, environmentally friendly, and relaxed environment may become one of their options for social interaction, which is beneficial for maintaining mental health and quality of life. The results indicate a positive relationship between consumers’ attitudes towards the restaurant, perceived value, and repurchase intention. Consumers’ attitudes and perceived values towards green restaurants significantly impact their repurchase intentions. Additionally, consumers’ willingness to revisit is also influenced by the perceived value. Overall, this study fills the gap in research related to green restaurants and specific age groups in the catering industry and provides references for green restaurant operators in developing potential consumers and marketing strategies.

Keywords. Attitude, Perceived Value, Revisit Intention, Elderly, Green Restaurants

1. Introduction
Taiwan became an aged society in 1993 and transitioned to an aging society in 2018, with projections indicating it will enter a super-aged society by 2025. The proportion of the elderly population within the total population is expected to continue rising, surpassing 30% by 2039, and reaching 43.6% by 2070 (National Development Council, 2023). The needs of the senior population in areas such as food, clothing, housing, transportation, education, and recreation are increasingly gaining attention, thereby creating business opportunities. Food is a fundamental aspect of life for all age groups, and the elderly population often has more detailed food requirements, paying closer attention to the health and nutritional value of their diet. Against this backdrop, restaurants offering healthy, nutritious, and environmentally conscious food choices may be welcomed by the elderly population. Such restaurants typically focus on using organic ingredients, reducing food waste, energy-saving, and emission reduction practices, aligning with the elderly population’s concerns about the environment and health.
In recent years, global environmental issues have received heightened attention, with the concept of sustainable development increasingly being a focus across various fields. The catering industry, as a significant area of consumption, has also started to focus on sustainability. This encompasses not just the selection and sourcing of ingredients but also the operational practices and environmental stewardship of the restaurants. The growing proportion of the elderly population in Taiwan's overall demographic structure makes understanding their attitudes and behavioral intentions toward sustainable restaurants and diets crucial for the Taiwanese catering industry and sustainable development.

The concept of sustainable restaurants and diets emphasizes minimizing the environmental impact in the process of food production and consumption, as well as making positive contributions to society and the economy. This includes using local and organic ingredients, reducing food waste, and promoting healthy eating practices. These concepts are closely related to the health and environmental consciousness of the elderly population. Therefore, understanding their acceptance of these concepts and the factors influencing them is vital for promoting a culture of sustainable dining.

Furthermore, the social needs of the elderly population are also a direction worth considering. Restaurants that can provide a healthy, environmentally friendly, and relaxed environment may become venues for their social interactions, aiding in the maintenance of mental health and quality of life. As Taiwanese society progresses into an aging population, the elderly group is increasingly becoming an important consumer force whose consumption behaviors and preferences significantly impact the catering market. However, compared to younger consumer groups, research focused on the dining preferences of the elderly is relatively scarce (Hung & Lu, 2016), with even fewer studies addressing the topic of green restaurants. In light of this, the current study will focus on the elderly's perception and attitudes towards green restaurants, as well as their consumer behaviors in such establishments.

The primary objective of this study is to thoroughly investigate the perceptions and attitudes of the elderly in Taiwan towards green restaurants, encompassing their understanding of the concept of sustainable restaurants and their basic viewpoints on such establishments. Concurrently, the research will analyze the behavioral intentions of the elderly population towards supporting green restaurants. Additionally, this study aims to explore the key factors influencing the elderly's decision to revisit green restaurants, such as service quality, food taste, pricing, and awareness of environmental sustainability. This exploration aims to assess whether they would become loyal consumers of sustainable restaurants, contributing to our understanding of the importance of sustainable dining for the long-term operation of restaurants and how to enhance consumer loyalty. Based on the results obtained, our research will provide practical suggestions to assist the catering industry in Taiwan in better meeting the needs of the elderly population in the realm of sustainable restaurants and dining, thereby fostering sustainable development.

2. Literature review

2.1 Elderly and dining out behavior

Both globally and in Taiwan, the trend of an aging population is evident, with a continual increase in the proportion of the elderly population, significantly impacting the economy and society. Addressing this global trend, the World Health Organization (WHO, 2007) has initiated 'Age-Friendly Cities' (AFC) to respond to the urgent challenges brought about by an aging population, providing an amiable and supportive environment for the elderly. As a part of daily life, the catering industry, characterized by its service nature, can be considered an integral component of a friendly environment. The elderly population, often with
stable incomes and more leisure time, significantly influences various industries, especially the catering industry (Moschis, Curasi, & Bellenger, 2003). Specifically, as they age, elderly individuals’ health and environmental consciousness tend to strengthen, leading them to seek sustainable, environmentally friendly, and healthy dining options. When choosing restaurants, this demographic may focus more on long-term value and loyalty, potentially being a prospective consumer base for sustainable restaurants. Moreover, with their societal experience and broader perspective, they exhibit more active concern for social issues, including environmental protection and sustainability, and tend to support businesses or brands demonstrating social responsibility (MIC, 2023).

According to Taiwan's legal definition, individuals aged 45 to 65 are classified as 'middle-aged and elderly,' while those over 65 are considered 'elderly' (Ministry of Justice, 2019), with 65 also being the statutory retirement age. With the extension of life expectancy and changes in social values, staying at home is no longer the primary lifestyle for older individuals. There is a noticeable trend of increased frequency in dining out among older consumers, showing steady growth compared to the past (Restaurant Business, 2013). The consumption behavior of elderly consumers significantly differs from that of younger consumers, a disparity that is not only evident in age but may also include influences of physiological, psychological, and social factors (Moschis, 1994, 2012). These differences are crucial indicators for catering industry managers and marketing departments in predicting consumer behavior. For government agencies, a deep understanding of the dining out behavior of the elderly can assist in formulating more effective public policies, such as improving urban design and offering dining options more suitable for the elderly, thereby enhancing their quality of life. Following the government's definition, this study categorizes consumers aged 45 and above as the 'elderly population.'

2.2 Green consumption and green restaurants

In 1987, the World Commission on Environment and Development (WCED) proposed that the essence of 'sustainable development' lies in 'meeting the needs of the present without compromising the ability of future generations to meet their own needs,' a concept that has since inspired global attention towards sustainable development. In alignment with the United Nations' Sustainable Development Goals, 'sustainability' has become a proactive research and innovation topic in the foodservice industry. For instance, The Green Restaurant Association (1990) assists restaurant operators in implementing environmental sustainability through certification, guiding them in areas such as energy, water, disposables, and food. Within the broader context, the catering industry plays a role as both a processor and a consumer in the food supply chain. Some operators are dedicated to addressing the impact of food production on climate change, leading to the rise of 'green restaurants' — establishments operated and designed in an environmentally friendly manner, with even their construction concepts emphasizing adherence to sustainable goals (Lorenzini, 1994).

Different studies have explored various aspects of green restaurants. For instance, Chou, Chen, & Wang (2012) integrated the Theory of Planned Behavior (TPB) and Innovation Adoption Theory to investigate the decision-making and behavioral factors in the adoption of green practices by Taiwan's restaurant industry. Teng & Wu (2019) examined the impact of perceived value on green restaurant behavior and intentions, finding that perceived value plays a significant role in preferences and behavioral intentions towards green restaurants. Nicolau et al. (2020) focused on the millennial generation, using quantitative analysis methods to explore the factors influencing their willingness to pay additional costs for green dining options. Arun et al. (2021) conducted a systematic review of literature on consumer choices for green
restaurants, ultimately developing a 'Green Restaurant Choice Research Framework' that spans multiple theories to understand the reasons behind consumers' choices for green restaurants.

The catering industry plays a significant role in Taiwan's economy, and its robust development also signifies a more pronounced impact on the ecological environment, a concern that cannot be disregarded. In 2016, the Taiwanese government announced its commitment to the United Nations' 2050 Net-Zero Emissions sustainable goals and educated the industry on how these concepts could be integrated into industrial transformation, steering the future trend of sustainability in the domestic catering industry. Currently, in its initial phase, the focus has been on promoting eco-friendly restaurants. In 2019, the Environmental Protection Administration established the 'Green Declaration Campaign' platform and promoted the 'Environmental Protection Restaurant Label' with criteria such as 'reducing at the source – not providing disposable items,' 'using local ingredients – prioritizing domestic products,' and 'implementing waste-conscious ordering – offering meal portion adjustment services.' This initiative aims to encourage industry players to apply, with the expectation of enhancing their environmental image and thereby garnering public support for eco-friendly restaurants (Ministry of Environment, 2019).

2.3 Attitude

Zimbardo (1988) posits that attitudes are often defined as responses to specific target stimuli (such as people, ideas, or objects), characterized by positive or negative evaluations based on certain emotions and beliefs. Robbins (1989) describes attitudes as evaluative responses to people, events, or objects, serving a predictive function for behavior. Barich & Kotler (1991) view attitudes as encompassing likes or dislikes, cognitions, evaluations, emotions, feelings, or actions towards people or affairs. Ajzen (1991), meanwhile, suggests using attitudes to predict an individual's behavioral tendencies.

Attitudes encompass three elements: affect, which refers to the feelings consumers have towards an attitudinal object; behavior, indicating the intention of individuals to act towards a certain attitudinal object; and cognition, denoting the beliefs and views held by consumers about a particular attitudinal object (Breckler, 1984; Ajzen, 1989). Consumer attitudes are precursors to consumer behavior and can be described as the tendency of consumers to exhibit a preference or aversion towards a specific consumption object (Fishbein & Ajzen, 1975).

Integrating attitude theory with restaurant industry-related research is vast, with a focus on green restaurants including studies on the relationships among consumers' knowledge, environmental concerns, attitudes, and behavioral intentions towards green restaurants. Wu, Huang, & Teng (2013) examined how consumers' personal knowledge and consideration of environmental issues influence their intentions to choose green restaurants. Line, Hanks, & Zhang (2016) explored the relationship between eco-friendly practices in the catering industry and consumer behavior, also addressing the impact of sustainability communication on consumer attitudes and how to effectively convey sustainability information to consumers. Namkung & Jang (2017) investigated the extent to which consumers are willing to pay extra for restaurants' environmental practices and which consumers are more likely to do so. Their study revealed that over twenty percent of restaurant consumers are willing to pay additional fees to support environmental practices, with about a quarter of respondents willing to pay more than a 10% premium. Xu & Jeong (2019) examined the impact of different types of green advertising messages on consumers' attitudes and behavioral intentions towards green restaurants, providing referenceable suggestions for restaurateurs in formulating effective green communication strategies. Moon (2021) explored the cognitive process of green restaurant
consumer behavior through the extended theory of planned behavior, offering recommendations for effective green restaurant marketing strategies.

2.4 Perceived value

The definition of perceived value involves the consumer's overall utility assessment of a product or service, which includes the benefits obtained and costs incurred. This concept was first introduced by Zeithaml in 1988, who defined perceived value as the consumer's cognitive assessment between the benefits received (such as the quality and utility of a product or service) and the costs incurred (like price, time, energy, etc.). This encompasses evaluations of price, product performance, and cost risks. Sheth, Newman, & Grossset (1991) expanded on this concept, proposing that consumer choice behavior is influenced by five types of product values: functional value, social value, emotional value, cognitive value, and conditional value. These values reflect consumer evaluations in aspects such as product functionality, symbolic representation of social status, emotional satisfaction, knowledge acquisition, and applicability in specific situations. Subsequent researchers like Fando, Sanchez, Moliner, & Monzonis (2006) further developed the concept of perceived value, dividing its measurement aspects into functional value, social value, exploratory value, and emotional value, highlighting that besides material considerations, consumers' emotions, social needs, and desires for exploration are also significant influencing factors.

Perceived value is also often integrated into studies related to the foodservice industry. For instance, Lu et al. (2020) researched consumer satisfaction with online shopping services of small and medium-sized restaurants, focusing on the roles of e-services and food quality. The study found that both e-services and food quality are critical determinants of consumer satisfaction, with perceived value playing a mediating role. Riva et al. (2022) focused on the intentions of millennial consumers to revisit restaurants, exploring the impact of green consumption by the millennial generation in the catering industry.

2.5 Revisit intention

Oliver (1980) indicated that consumers' satisfaction evaluations arising from purchasing behaviors influence subsequent behavioral tendencies, following the 'perception-attitude-intention' process he proposed. In marketing-related research, especially in the foodservice industry, the causal relationship between these factors and revisit/repurchase intention has been validated in numerous studies, such as those by Wu Cheng, & Ai (2021), and Riva et al. (2022). This also demonstrates the significant impact of consumer revisits on the continued operation of a business, suggesting that enterprises with an ongoing ability to enhance consumers' revisit intentions have greater opportunities for sustainable operation.

Synthesizing the aforementioned literature, this study proposes the following hypotheses:

- H1. Consumer attitude (CA) positively impacts consumer perceived value (CPV).
- H2. Consumer perceived value (CPV) positively impacts revisit intention (RI).
- H3. Consumer attitude (CA) positively impacts revisit intention (RI).
3. Methodology
This study employs a quantitative research approach, designing a survey to investigate the attitudes, perceived values, and repurchase intentions of the elderly population towards green restaurants. The questionnaire was validated for expert validity and underwent a pilot test before the survey was conducted. The target respondents were individuals aged 45 and above, and the data was analyzed using SPSS 20.0 for quantitative statistical analysis.

3.1 Research design
The questionnaire of this study uses a Likert 5-point scale for measurement, with the scoring as follows: 1 point for 'Strongly Disagree,' 2 points for 'Disagree,' 3 points for 'Neutral,' 4 points for 'Agree,' and 5 points for 'Strongly Agree.' Respondents can select their responses based on their own perceptions, with higher scores indicating higher agreement with the content of the item and lower scores indicating lower agreement.

Demographic variables measured include age, gender, educational level, occupation, and monthly income, accounting for five demographic variables. The questionnaire is divided into three constructs: attitudes, perceived value, and revisit intention. Each construct's items are referenced and modified from studies by Wu, Huang, & Teng (2013) and Riva et al. (2022), adapted to the actual situation of Taiwan's catering industry.

3.2 Data collection and analysis
This study utilized 'convenience sampling' to collect the required questionnaire data. Given the relative rarity of green restaurants in Taiwan, the researchers selected survey sites in Northern Taiwan randomly based on the 'List of Green Restaurants in Taiwan' provided on the official website of the Ministry of Environment (2019). Respondents below the age requirement for this survey (45 years and above) were excluded post-survey. A total of 350 questionnaires were distributed during the survey period. After excluding those that did not meet the age criteria and invalid questionnaires, a total of 252 valid questionnaires were obtained.

4. Results
Table 1 displays the demographic information of the respondents in each group. Participants who dined at green restaurants were predominantly male (195, 77.4%). The age group was significantly concentrated between 45-55 years (106, 42.1%). In terms of educational background, the number of participants with high school (including) education and college education was close (115, 45.6%; 98, 38.9%). The occupation category was dominated by military, public service, and teaching personnel (90, 35.7%). Monthly income levels were closely matched between NTD 30,001-NTD 50,000 and NTD 50,001-NTD 70,000 (87, 34.5%; 90, 35.7%).

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>195</td>
<td>77.4</td>
</tr>
<tr>
<td>Female</td>
<td>57</td>
<td>22.6</td>
</tr>
<tr>
<td>45-55 years</td>
<td>106</td>
<td>42.1</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56-65 years</td>
<td>82</td>
<td>32.5</td>
</tr>
<tr>
<td>Over 66 years</td>
<td>64</td>
<td>25.4</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School (including) and below</td>
<td>115</td>
<td>45.6</td>
</tr>
<tr>
<td>College/ Undergraduate school</td>
<td>98</td>
<td>38.9</td>
</tr>
</tbody>
</table>
This study utilized Cronbach's α to test the consistency and stability among the collected questionnaire items. A Cronbach's α value of 0.7 is considered satisfactory. Higher Cronbach's α coefficients indicate a stronger correlation among the items and higher consistency. Table 2 shows that the Cronbach's α for all variables in this study exceeded 0.7, indicating a high degree of correlation among the items.

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>Cronbach’ α</th>
</tr>
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<tbody>
<tr>
<td>Attitude</td>
<td>6</td>
<td>0.863</td>
</tr>
<tr>
<td>Perceived Value</td>
<td>5</td>
<td>0.905</td>
</tr>
<tr>
<td>Revisit Intention</td>
<td>4</td>
<td>0.842</td>
</tr>
</tbody>
</table>

The results of the correlation analysis demonstrated the relationships among the variables of attitude, perceived value, and revisit intention (Table 3). The correlation coefficient here represents the degree of association between different variables. The correlation coefficient between attitude and perceived value is 0.602, indicating a moderate positive correlation between them; the correlation coefficient between attitude and revisit intention is 0.637, which also shows a moderate positive correlation; and the correlation coefficient between perceived value and revisit intention is 0.809, indicating a strong positive correlation. These results suggest that both attitude and perceived value have a significant and positive impact on enhancing revisit intention.

<table>
<thead>
<tr>
<th>Table 3 Correlation Analysis Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td>Attitude</td>
</tr>
<tr>
<td>Perceived value</td>
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<tr>
<td>Revisit intention</td>
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Table 4 presents the results of the regression analysis. In the regression analysis of attitude towards perceived value, the analysis reached a significant level (β = .652, F = 243.232, p < 0.001). Therefore, **H1: Consumer innovation has a significant positive impact on perceived value' is supported.**

In the regression analysis of perceived value towards purchase intention, the analysis reached a significant level (β = .854, F = 860.135, p < 0.001). Hence, **H2: Perceived value has a significant positive impact on revisit intention' is supported.**
In the regression analysis of attitude towards purchase intention, the regression equation reached a significant level ($\beta = .805$, $F = 300.295$, $p < 0.001$). Therefore, **H3: Consumer innovation has a significant positive impact on purchase intention** is supported.

### Table 4 Regression Analysis Results

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variables</th>
<th>$\beta$</th>
<th>Adjusted $R^2$</th>
<th>$F$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>Perceived value</td>
<td>.652***</td>
<td>.344</td>
<td>243.232</td>
<td>.000***</td>
</tr>
<tr>
<td>Perceived value</td>
<td>Revisit intention</td>
<td>.854***</td>
<td>.645</td>
<td>860.135</td>
<td>.000***</td>
</tr>
<tr>
<td>Attitude</td>
<td>Revisit intention</td>
<td>.795***</td>
<td>.385</td>
<td>385.274</td>
<td>.000***</td>
</tr>
</tbody>
</table>

$P < .05$, **$P < .01$, ***$P < .001$

### 5. Conclusion and research implications

The dining out behavior of the elderly not only reflects their heightened concern for health and environmental protection but also embodies their pursuit of quality of life. As they age, their dietary requirements increasingly lean towards quality and health, making them more discerning consumers regarding food sources, preparation methods, and food safety. Consequently, the food offered by restaurants must satisfy not only taste but also focus on nutritional balance and sustainability. Moreover, the survey results show that middle-class elderly individuals primarily patronize green restaurants. This indicates that, given the financial means, they are willing to pay higher prices for restaurants that offer high-quality services and healthy options, reflecting their emphasis on a high-quality life experience.

The changes in the dining out behavior of the elderly not only reflect their concern for health, environmental protection, and social responsibility but also indicate their emphasis on the quality of life. This presents both challenges and opportunities for the catering industry. While providing delicious food, businesses must pay more attention to the healthiness and nutritional value of their offerings and provide superior service.

The results of this study can serve as a reference for green restaurants to understand the consumer psychology and behavior of the elderly population, thereby aiding in the formulation of operational strategies. Future research could involve qualitative interviews to delve deeper into the values of the elderly population or differentiate studies among various elderly generations. Research directions might consider cross-cultural comparisons or comparative studies of different types of green restaurants. With the emergence of more diverse research themes, it is hoped to attract potential consumers from various groups and enable green restaurant operators to provide a safe and comfortable dining environment for special consumers.

### References


