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An Analysis on Environmental Awareness and Behavior in Chinese Hospitality Industry—A Case of Xiamen City

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Abstract

In order to seek economic interests, environmental issues are not always the top priority in the hospitality industry in China. This paper develops a model to investigate the influence of the political, economic and cultural context on the environmental awareness and behavior incorporated in Xiamen city, China. To illustrate the differences of the environmental awareness and behavior in hotels in China, 300 hotels were selected, and a total of 451 hotel managers participated in e-mail-based and internet-based survey. The study shows that the managers of hospitality industry generally recognize the need for environmental protection, who is involved in many behaviors and activities. The economic situation and environmental efforts initiated by the government were found to have an impact on certain aspects of hotel managers’ behaviors and activities. The investigation has drawn two conclusions which need to be considered when introducing environmental sustainability into the hospitality industry. The first involves incorporating responsible technical and behavioral practices in the hotels, while the second highlights the necessity of initiating greater demand for “green” practices from the customers.

Keywords: Hospitality industry, Environmental awareness, Environmental behaviors, Survey, China

1. Introduction

Tourism is often viewed as the availability of a clean natural environment without the pollution as the industry, but the hospitality industry, due to its very specific function, operating characteristics and services provided, consumes substantial quantities of energy, water and non-durable products. The resulting environmental impacts of hospitality facilities are thus characteristically greater than those

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caused by other types of buildings of similar size in China. In recognition of environmental degradation, governments, along with the green movement within the hospitality industry, and travellers, have become increasingly aware of the need for more effective measures to protect the environment. In order to achieve noticeable improvement, the managers and operators of the hospitality industry should be willing to act in an environmentally responsible manner. They also need to have adequate knowledge of the environmental issues pertinent to their activities, and sufficient funds to implement state-of-the-art environmentally sound practices.

In this paper, an investigation was put forward stating that environmental attitudes of hoteliers in different geo-political locations are expected to vary. In Xiamen city, China, where preserving high environmental quality has long received considerable political and financial support, the hospitality industry representatives are expected to be involved in environmental practices. Generally speaking, the managers of the hospitality industry from Xiamen city are likely to be less concerned about the protection of nature. The aim of the study reported in this article was to examine the empirical evidence relating to the above hypothesis. An attempt was thus made here to study the level of environmental knowledge and awareness among Chinese hospitality industry managers. The prevalence of ecological initiatives in daily operations was examined to evaluate the potential impact on the operations of individual establishments of national sustainability policies and the general level of environmental awareness in the country. Finally, the awareness and behaviour that would encourage the managers of the hospitality industry from Xiamen city to pursue environmentally oriented initiatives at their hotels were identified. The results were analyzed in the context of eco-cultural differences, as well as diversified economic situation in the countries investigated.

It is very important for China to investigate in this study. First, China has traditionally been a major tourism destination and hospitality industry market. It is visited by approximately 2000 million international and domestic tourists annually, while the hospitality industry market, estimated at 1000000 facilities and almost 50 million beds (National Tourism Administration, PRC, 2010). Second, more than 80 per cent of Chinese hotels are independently owned and managed, which implies that managers have considerable freedom in operating their facilities, as compared to affiliated establishments, where environmental policies and initiatives are frequently developed at corporate level and maintained chain-wide. In the case of independently operated facilities, environmental concern and the willingness to act are strongly dependent on the hotel manager's attitude, knowledge and financial situation. Third, significant cultural of economic interests in the developing countries, such as China are different forces and mechanisms thus drive and control the hospitality industry markets in China. The hospitality sectors in China are good examples of the influence of appreciable socio-cultural and economic differences on the environmental attitudes of tourism operators (Fig. 1).

![Fig. 1 The importance of this study](image-url)
2. Reviews

With the strengthening of low-carbon tourism awareness, many experts, academics and tourism business operators are focusing on their modes of operation, which may impact on the environment. A large part of environmental management literature has analyzed how the “greening” of hotels is brought about, through the outlining of environmental strategy typologies. There are various classifications, whose aim is to fully encompass differing strategies hotels may adopt to deal with environmental protection. Hunt and Auster (1990) focused on proposing a conceptual classification. Schaefer and Harvey had simply (1998) placed a set of companies within these categories already proposed by other authors. Vastag, Kerekes and Rondinelli (1996) elaborated their own criteria for developing typologies and/or their own classifications, and have validated them empirically using a sample of firms. The hospitality industry plays an important role in “green” environmental protection. Environment Initiative (IHEI) at the beginning of the 1990s were in the range of 120–280 m³ per guest staying overnight per year (average daily guests) for fairly efficient hospitality industry and below 120–220 m³ for facilities with good water efficiency, depending on the type and size of the hospitality industry (Bao, 1999). A more recent benchmark value from China states the quantity of water below 540 l/guest-night as satisfactory, and below 480 l/guest-night as excellent in the case of luxury hotels (Cheng, 2005), while the range of allowable water consumption according to Nordic Swan is 200–300 l/guest-night (Nordic Ecolabelling, 2002). Avoid unnecessary use of hazardous materials and products, seek substitutions when feasible, and take all reasonable steps to protect human health and the environment when such materials must be used, stored and disposed of. Reduce waste through re-use and recycling and by purchasing recycled, recyclable or refurbished products and materials where these alternatives are available, economical and suitable. Purchase and use environmentally responsible products accordingly, with particular emphasis on renewable energy supplies and environmentally responsible suppliers (Nordic Ecolabelling, 2002).

The importance of high environmental quality for the development of tourism was acknowledged by the WTO in the late 1970s with the establishment of the Environmental Committee. Following the 1992 Rio Earth Summit, which identified tourism as one of the priority areas for sustainable development, the green movements within the hospitality industry gained momentum and recognition. Increasingly stringent environment-related regulations are now being adopted and enforced in many parts of the world, especially China. Hospitality industry and tourism organizations and even hospitality companies are developing environmental guidelines, training programmes and publishing best practice case studies (Zhang, 2008). Pro-ecological initiatives are becoming increasingly popular among hoteliers worldwide.

The pressure for improved environmental performance within hospitality industry can therefore be seen as driven by: the need to preserve the local environment, the opportunity to reduce operating costs, the enforcement by authorities of environmental regulations and a growing demand for environmentally friendly hospitality industry from customers.

3. Methodology

3.1. Research time

The various investigations on environmental attitudes in the hospitality industry performed prior to the study presented here do not provide any information on the differences among Chinese hotels. It was thus the scope of this research to focus on those issues. This study was conducted by sending an e-mail-based questionnaire to a total of 300 hotels in Xiamen city, China. The questionnaire was based on a comprehensive literature review and multiple-choice questions, occasionally supplemented by open-ended follow-up comment sections to allow for greater clarification. In this study, e-mail correspondence and internet were used due to time and financial constraints. The choice of individual establishments was
thus influenced by the availability of relevant e-mail addresses. The survey was performed in two stages: during September and December 2009, and January and June 2010. A follow-up reminder was sent to each non-respondent approximately every one week.

3.2. Data

451 correctly and completely filled-in returns were collected before July 1, 2010, accounting for an effective response rate of 35 per cent in Xiamen city. The response rate, based on the total number of existing facilities in the population targeted, was 28 in Xiamen city. Version 16.0 of the SPSS program was used for the statistical evaluation of the data. It may further be assumed that hoteliers who are actively involved in environmental initiatives may be more likely to respond than those who are not. This limitation may result in a somewhat biased sample and reporting rate. Thus, while the comparative data presented in this paper may be reliable, it is difficult to establish to what extent the data collected are representative of the overall situation of hotels in Xiamen city, so the study has provided valuable insights into environmental attitudes in the hotels in Xiamen city. Profiles of respondents are presented in Table 1.

<table>
<thead>
<tr>
<th>Table 1. Profile of survey participants, per cent of respondents</th>
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<tbody>
<tr>
<td><strong>Category</strong></td>
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<tr>
<td>Function or position of the respondent</td>
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<tr>
<td>Management</td>
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<tr>
<td>Sales and marketing</td>
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<tr>
<td>Front office and services</td>
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<tr>
<td>Environmental coordinator</td>
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<tr>
<td>Anonymous answer</td>
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<tr>
<td>Size distribution of facilities</td>
</tr>
<tr>
<td>Small (&lt;50 rooms)</td>
</tr>
<tr>
<td>Medium-size (50–149 rooms)</td>
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<tr>
<td>Large (≥150 rooms)</td>
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<tr>
<td>Customer profile</td>
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<tr>
<td>Business and conference guests</td>
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<tr>
<td>Tourism</td>
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<tr>
<td>Membership</td>
</tr>
<tr>
<td>Member of a hotel or tourism association</td>
</tr>
<tr>
<td>No member of a hotel or tourism association</td>
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Many responses from the representatives of the hospitality management allow the conclusion that the survey was regarded seriously, despite the lack of support from any formal tourism organization.
Regarding the reliability of the answers, several anonymous responses, and those completed by the reception staff, indicated that some individual respondents may not possess adequate background information to enable them to answer questions on environmental issues, or other relevant activities within the facility. This may be attributed to a limited interest in environmental matters, and, in the case of Poland, insignificant attention given to these topics in tourism and hospitality schools, and during basic training.

The variations of the hospitality industry of different scales distribution of facilities can be explained by the diversified market needs and dynamics, and a variety of ownership schemes present in the investigated regions. As regards the customer profile, unless the destination is predestined for leisure purposes, a substantial number of hospitality currently rely on business and conference guests as their basic and major customers, which was reflected in the samples analyzed. Hotel and tourism associations, including hotel corporations, are believed to have an important role in promoting environmental awareness and advocating more sustainable practices among the operators of the hospitality industry. In Xiamen city, China, the national and international the hospitality industry associations were the most frequently mentioned organizations, with the national tourism organization and affiliation receiving up to four mentions each. This illustrates the still low level of corporate hotel market development in China (Fig. 2).

![Diagram of environmental awareness and behavior in hospitality industry]

Fig. 2 The formation of environmental awareness and behavior in hospitality industry

4. Environmental Awareness in the Hospitality Industry

Seen from the investigation, 8 out of 10 participants in the survey expressed the belief that the issues of natural environment and its protection are important for the performance and further development of the tourism industry. However, pressures to appear socially responsible may lead individuals to overstate their environmental commitment and the economic situation behaviour in the context of surveys. Therefore, these results need to be interpreted with a certain degree of caution. This is especially important in the light of comments received from some of the respondents, who believed environmental concerns to be limited to nature-based tourism.

The majority of hospitality representatives participating in the survey recognized that hospitality facilities had an influence on the natural environment. They further believed that the environmental impacts of their hotels were medium to significant, which corresponded well with the results of past scientific investigations. By contrast, in the Guernsey study, only 38 per cent of the respondents believed that both the tourism and hospitality sectors have a moderate to significant contribution to environmental problems. Among the comments received from the respondents in China were those questioning the negative impact of hospitality on the environment, and doubting the need for hotels to be eco-friendly at all. The number of such statements, although not significant in this study, is still indicative of the existing attitudes.
On the other hand, a serious concern for the environment expressed by a predominant majority of hoteliers (62.3 per cent in Xiamen city, China) can be seen as encouraging. In the case, this can be attributed to the high priority given to environmental issues at national level. This can be further supported by the fact that in Xiamen city, China, small, individually operated hotels seemed to be those most concerned about the environment. In contrast, in Xiamen city, China, large (often chain-affiliated) establishments expressed greater concern, which can be explained by the will to establish and maintain a good corporate image.

In Xiamen city, China, responsible waste management seemed to attract the most attention, with 82 mentions. This included waste sorting and recycling, as well as minimizing the use of single packaging. This situation can be attributed to more than 12 years of campaigns promoting responsible waste management carried out in the Nordic countries. Green purchasing, including priority given to environment-friendly, biodegradable detergents and other chemicals, no single packaging, as well as close cooperation with suppliers ranked second (42 mentions), followed by water (28 mentions) and energy (22 mentions) conservation. Towel reuse issues, energy-efficient equipment/lighting and the incorporation of renewable energies were the most frequently mentioned. For the Chinese hoteliers, efficient measures towards sustainability include an effective environmental policy and action plan within the company and industry association, and the compliance with the requirements stated in environment-related standards and certificates.

The hotels’ respondents can raise the cost-related problems of becoming “green” and environmentally responsible. Many hoteliers interviewed feared that the road to environmental sustainability might be prohibitively expensive, especially in view of the current market fluctuations, and decreasing profits (due to wars, health risks and general decrease of the economy). One respondent highlighted the need for a more adequate promotion of environmentally certified establishments. Information concerning eco-certificates attained by the hotel should be displayed in hotel catalogues/directories, city guides as well as booking and travel agencies. Such information could be especially valuable. There is, however, a continuous need to educate the general public in an attempt to increase environmental awareness.

5. Environmental Behaviors in the Hospitality Industry

Energy, water and waste-related issues are the areas targeted by the majority of pro-ecological solutions in China’s hospitality. Fields of activities undertaken by hoteliers in China participating in the study vary, often significantly, depending more on the region than on the size of the facility. It is likely that some of the differences have been the direct result of laws and regulations, as well as local conditions. The types of measures are additionally influenced by corporate policy, the level of environmental awareness at management level, ownership—operation agreement, and the financial state of the establishment. In total, more than 85 per cent of the respondents in Xiamen city reported their involvement in activities relevant to energy and water conservation, as well as responsible waste management (Fig. 3). More than half (56.9 per cent) of the hotel managers indicated having an environmental policy statement in their business plan. This situation shows that the hotel managers of Xiamen city have the environment awareness when they manage the hotel.
5.1. Energy conservation

The energy-saving potential in hospitality industry has been estimated at 10-25 per cent by Chinese experts and scholars, depending on the age and size of the hotels, as well as, type of equipment installed and the maintenance and operating procedures in use. The energy conservation potential is typically largest in non-retrofitted facilities, while the attitude of both management and employees has a decisive role on the success of the energy-saving campaign. Currently, measures of energy conservation for the hospitality industry aiming at energy conservation are increasingly popular among the hotel managers. Lighting is typically an area of significant saving potential. Depending on the category of the establishment, lighting may account for 28 per cent, and in some cases up to 50 per cent of the total energy consumption of a hotel. The high popularity of energy-efficient lighting among all respondents (over 70 per cent) may be attributed to promotion campaigns that were performed in both regions, market availability of such fixtures, and the fact that even a small energy saving translates to reasonable economic benefits.

It is important to evaluate the cost of equipment not only based on initial cost but also taking into consideration the entire life cycle. This attitude will indisputably become more common in the future, and combined with wider availability of energy labeling schemes for appliances will result in an increase of the market share of energy-efficient equipment in the hotel sector in Xiamen city. Encouraging hotel guests to save energy are more frequently displayed in the rooms of hotels in Xiamen city (85 per cent). The relatively low popularity of leaflets may be interpreted by the role that hotels have in society. They are part of the service industry and are designed to provide multi-faceted comfort and service to guests frequently accustomed to, and willing to pay for, exclusive amenities, treatment and entertainment.

Among other energy efficiency measures, modifications and/or replacements of existing space conditioning systems, as well as installation of renewable energy systems, were most commonly reported by the respondents. Various energy consumption control methods including occupancy sensors for lighting control, master power cards and even computerized Building Management Systems, were also listed (Fig. 4).
5.2. Water Conservation

Among water conservation measures, the towel reuse programme is an already well-established practice in China, with more than 70 per cent of the respondents reporting involvement in such programmes (Fig. 5).

In China, this initiative saves not only water and electricity, but also reduces the use of detergents and prolongs the life of materials. In Xiamen city, an average 150-room hotel with an active towel and linen reuse issues can save 160 m³ water daily. Furthermore, this initiative has been well received by hoteliers.
customers worldwide. The installation of water-efficient fixtures may have a significant influence on the total quantity of water used. Hospitality industry businesses, primarily hotels and motels, use water for a variety of functions including laundry, preparation of food, cooling and heating, and landscaping. Typically, the largest percentage of water use occurs in guest rooms. Therefore, many of the water conservation approaches that have been successfully used to reduce water among residential customers are recommended for hotels and motels. Water-conserving fixtures are more common in China, where more than 70 per cent of the hotels in the investigated sample are equipped with such devices. It was also frequently commented that these types of fixtures are typically installed during the major refurbishment of the rooms, usually performed every 15–25 years. The use of environmentally safe detergents and commissioning of an external company for laundry services were also mentioned. Encouraging water conservation was found to be slightly less popular than the energy saving-oriented pamphlets.

5.3. Responsible waste management

As previously mentioned, in Xiamen city, significant attention is generally placed on waste sorting and recycling, which illustrates why many Chinese hotels implement this activity. Furthermore, as indicated by one of the respondents, there is often only one truck collecting refuse in the area, dumping sorted and unsorted waste into a common container and thus discouraging the locals to continue separating waste. Such barriers could, however, be relatively easily overcome by cooperation among hotels located in the same area. Textiles found in hotel rooms, such as carpets or draperies, should be changed every 5 years, while furniture and most other equipment every 10 years. Many of these items are still in fairly good conditions; therefore, the organization for responsible waste management is a common practice (Fig. 6).

In China, this initiative supports the sustainability concept since prolonging the active life of various items minimizes their environmental costs. The issue of food donation is a very controversial one and often prohibited by local sanitary law, which explains its low popularity. At least half of the respondents from both countries endorsed the purchase and utilization of bulk or reusable food and detergent
packaging instead of throw-away alternatives. The installation of soap and shampoo dispensers in guest bathrooms instead of individually packed toiletries was also periodically mentioned.

5.4. Other behaviors

Restaurant menus containing ecological, and often certified, were more commonly mentioned by Chinese respondents (46.2 per cent). The proper training and enforcement of behavioural changes among hotel personnel as well as regular facility performance monitoring are potentially significant saving options. Generally, these are also more economical solutions than most other technological measures (Fig. 7).

![Other behaviors](image)

Fig. 7 other behaviours

However, such activities were reported by a limited number of facilities and do not appear to be widely applied in the industry. This may be due to the lack of suitable training issues, as well as a common lack of belief in their effectiveness. The issue of the influence of behaviour on resource consumption is, nevertheless, gaining increased attention among hotel operators. Hoteliers also reported local purchasing of food and other materials aimed at decreasing transport distances, as well as aiming at bulk purchasing and deliveries. A number of respondents in Xiamen city claimed to go one step further with their ecological activities by aiming at involving their suppliers for hotel consumption, and by purchasing products with lower life-time environmental impact. This can provide significant environmental incentives within related businesses.

6. Conclusions

The study indicated that the geo-political, economic and socio-cultural context of Xiamen has an influence on the environmental attitudes of Chinese hotel operators, which were generally found to have higher environmental awareness, comprehensive knowledge relevant to environmental protection with the awareness and behaviour. Chinese hoteliers were found to be at the stage of recognizing the importance
of environmental concern and initiating various awareness and behaviour. The findings of this study provide a number of insights that may have significant relevance for the development of sustainable practices in the hospitality industry at large. Two major directions which should be pursued were identified by more and more managers of Chinese hospitality industry. First, environmentally responsible practices need to be incorporated into the Chinese hospitality industry. This should be accompanied by the demonstration of cost savings associated with these solutions. Hoteliers, sector associations and representatives of academia should cooperate in developing new and less expensive technologies, disseminating information about best practices and findings of cost–benefit analyses. The second line of action identified by this survey relates to the creation and enhancement of travellers’ environmental awareness in an attempt to initiate their demand for “green” practices. It is especially important in the light of these findings, which indicate that customers’ demand for more environmentally sound performance from the hospitality industry is likely to effect a significant change.

As a tourist city of China, Xiamen, the managers of the hospitality industry and other tourism enterprises can participate in the process by inviting guests to participate in pro-ecological activities. Tools of informal education, in the form of brochures, exhibitions, ecological corners, seminars and multimedia presentation kiosks, can also be used. This paper believes, however, that the recognition of benefits associated with managing environmentally sound hotel facilities will spread across the world, making it a common practice. It is also believed that the demand for “green” hotel operations will increase among customers. However, those pioneering in related environmental work and efforts are most likely to reap most of the early benefits from the awareness and behaviour in Chinese hospitality industry. Therefore, the awareness and behaviour in Chinese hospitality industry should be paid more attention to in future.

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References