

Assessing the Sustainability of Facility Management in the Food Sector in Kurdistan Region of Iraq

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Abstract—Sustainability today is attracting a large number of firms in today's business environment, especially in the food and restaurant sectors. Sustainability focuses on satisfying the needs of the current period without conceding the capability of future consumers to meet their desires. Yet, an inclusive adoption of sustainability is lagging in the restaurant and eatery industry in emerging market such as Kurdistan Region, Iraq. Therefore, this study focuses on the current practices of sustainable facilities in restaurants and lodging businesses in Kurdistan Region, Iraq. The researchers conducted an unstructured interview for the data collection from ten restaurateurs managing and working in five luxurious restaurants and five fast-food ones. The restaurants selected were categorized as luxurious restaurants and fast-food restaurants; the topics of the interviews were related to energy, waste, and water. The data were analyzed by using frequency. The main approach in data gathering was qualitative. The interview queries were taken from related articles and divided into three sections: awareness plan, strategic planning, and restaurants' criteria of sustainable facility management. A content analysis method was used to identify the trend from previously published literature. The result showed that luxurious restaurants do apply sustainability in their operations, while fast-food restaurants lag behind. Finally, recommendations of this study can be of help to all restaurants in Kurdistan area by introducing a proper practice of sustainability to improve and develop their businesses to meet customers' needs and gain competitive advantages ahead of their competitors).

Keywords—Sustainable facility, Waste management, Energy conservation, Sustainability, Food sector.

1. INTRODUCTION

The protection of the earth from pollution is of utmost importance due to the great effects that humans are causing on the planet (Massoudi et al., 2019). Environmental protection organizations have begun to identify the great danger that man causes and the result of industrial development including food industry that has been reflected negatively on the natural environment. Sustainability is a new concept that keep popping and presented itself to organizations all over the world, nonetheless what is the effect of applying sustainability in the restaurant industry? Sustainability means a restaurant fully operated on renewable energy, produce no waste, manage its water supply sensibly, gets its meats and vegetables from organic source. A report from the World Economic Forum 2017 showed that a third of the carbon in our planet was generated from the food we consume. Furthermore, Waste Research Company WRAP indicated that food waste, counting food, packaging, and other supplies made of harmful material, three million tons of waste every year. Half of the generated waste is being recycled. One million tons of the food thrown

away can be eaten or donated to charities. The rest comes from food service packaging such as plastic and one-use kitchen paper (Meager, 2019).

Recently, the term restaurant sustainability can be defined as the process of operating and managing a restaurant in a way that shields, protects, and conserves the environment. Also, it encourages the social well-being of the people, and can promote an economic wealth to everyone in the society (Prigge, 2017). Applying sustainable practices in the restaurants and hospitality sector can be very helpful in decreasing the operational cost and enhance the image of the business by protecting the environment. According to Hodges and Kriticos (2012), the sustainable facility management (SFM) is a process that integrates all processes in the restaurant operations to enhance the financial standing of the firm and increase the social benefit to all citizens.

In Kurdistan Region, restaurant industry is too slow in adopting sustainable amenity management (SFM) in its restaurants. The main reason is the Kurdish culture. For example, in many Kurdish restaurants, you will see a trash

bin at the side of every table. When you're done eating your meal that is most often too large for one person, all leftovers and plastic plates/cutlery are wiped into the bin. It is shameful to ask for to go bag, because it signals that you cannot afford to waste the food. That mentality is problematic, because there should be more shame in wasting perfectly fine food rather than saving it.

The objectives of this study are shedding light on Kurdistan Region restaurants in regard to sustainable practices. Also, a brief overview of sustainability management in the restaurant industry. Finally, we will give some recommendation to restaurateurs in the region to initiate the process of sustainable practices in their facilities.

II. LITERATURE REVIEW

A. SFM Awareness and Policy Preparation

SFM strategic planning is the first activity in initiating environmentally friendly restaurant. The strategic planning of SFM in a restaurant is process of interpreting its strategy, or path, and rating decisions by assigning the resources to pursue this strategy (Mintzberg and Quinn, 1996). Hitherto, the majority of family-owned restaurants have no sustainable plan, but for these restaurants, strategic planning is applied on *ad hoc* bases. For survival, strategic planning and policy implementation is a must to avoid failure and shot down. According to Melissen et al. (2016), sustainable policy can improve and influence SFM and help staff in doing their job efficiently and effectively. Furthermore, automatic identification system is considered as a mechanism for enabling various strategic tools in ascertaining different issues that prevail in the organizational structures (Al-Delawi and Ramo, 2020).

B. SFM Action Plan

Restaurants and food industry should expect that rules and regulations authorizing sustainable act can lead to knowledgeable and trained employees and can satisfy either internal or external stakeholders. Numerous studies that researched restaurants and food services showed that an organized SFM strategic plan in any business can result in evolving reputable collaboration among restaurants' staff which will lead to a successful enterprise in the long run (Alonso-Almeida et al., 2017). Nevertheless, sustainable modification in business environment requires the engagement of all staff to maintain effective workflow including the lowest ranking employees in the restaurant. Sustainable plan creates cohesive teamwork among staff and reinforces collaboration and progresses assembly. This indicates that restaurant's staff perform an essential role in SFM in restaurant running. A contemporary study in the restaurant industry designates that the issues related to sustainability are much of interest and concern of customers in particular and society as a whole (Zaiton et al., 2016). Currently, numerous restaurants around the world started to pledge a reply to sustainability in the restaurant industry.

C. SFM Criterion Implementation

Previous literatures have indicated that the main issues or criteria related to SFM in the restaurant business are water,

waste, and energy. The first criterion in the implementation of an environmental strategy involves time management and an investment expenditure to attain sustainability in the long run (Alonso-Almeida et al., 2017). The investment plan starts by applying water-saving features in faucets, dishwashing machines, and toilets. These activities may cost some money in the short run, but in the long run, it can result in reducing the water bill and water consumption. To decrease water consumption, restaurants can install a low-flow toilet, faucets, and dishwashers (Bruns-Smith et al., 2015). A study done by Bruns-Smith et al. (2015) showed that the installation of water-efficient toilets can save thousands of water gallons annually. Furthermore, low-flow faucets can save hundreds of dollars per month for each restaurant studied. In addition, the utilization of gray water for irrigation purposes can decrease the water usage by the third. Finally, educating customers to use water efficiently can help also in lowering the water expenditure.

The second criterion is waste. Food waste is associated with the restaurant industry. According to a study done by National Restaurant Association Report 2018, 48% of restaurants do not track their food waste, 22% donate their foods, and 14% compost their food waste. Waste can be reduced substantially if restaurants use recycling methods. Recycling can take many shapes including food, paper, plastics, oil, aluminum, and glass. Hitherto, the culture of recycling in Kurdistan restaurants is lagging behind. In their study, Bruns-Smith et al. (2015) found that a small number of restaurants endorse recycling in their facilities.

The final criterion is energy consumption. Energy saving in the restaurant business can save a large amount of money from the electric bill. Introducing sustainable equipment and technologies by restaurants can lower the cost of expenditures and expenses. The Brundtland International Institute for Sustainable Development 2017 stated in their report on sustainability that 3–5% of total operating expenses are related to energy and energy-efficient technologies in a restaurant may reduce energy cost by up to 20%. In the restaurant industry, Alonso-Almeida et al. (2017) had pointed out that SFM practices can help a restaurant to lower costs on waste, water, and energy consumption. The essential purpose of implementing SFM holistically in restaurants is to generate and distribute food and services with cost-efficiency along with decreased impact on the environment. Finally, this study focused on investigating the present practice of SFM implementation in restaurant industry in Kurdistan Region of Iraq. This study can contribute some recommendations to the Kurdistan Ministry of Tourism and other food sectors in the region with regard to implementing SFM in restaurants, thereby lessening the damage to the environment.

III. METHODOLOGY

The primary data of this study were collected direct observation of the study sample and also unstructured interview was done with ten restaurant managers in Erbil Governorate, Kurdistan Region of Iraq. The researcher chose

five fast-food restaurants and five luxurious restaurants (Table 1). Thus, the main approach in data gathering is qualitative. The interview queries were taken from related articles and divided into three sections: awareness plan, strategic planning, and restaurants' criteria of SFM. A content analysis method was used to identify the trend from previously published literature.

The population of this study are restaurants operating in Erbil area of Kurdistan Region which were registered under the Kurdistan Health Ministry. Londoño and Hernandez (2016) indicated that luxurious restaurants have considerable interest when asked about sustainability issues. Furthermore, the franchise name can inspire the restaurant's ability to adopt suitable sustainable practices. Thus, the study sample was divided into two categories, luxurious and fast-food restaurants. To clarify, the fast-food restaurants is a small restaurant, generally owned by one person and his staff operate alone without management interventions. On the other hand, luxurious restaurants are big enterprises with large cadre of employees who report directly to upper management. These centralized businesses have management support systems that aid the restaurant manager to be exposed to sustainable agendas (Kechiche and Soparnot, 2012). The list of the ten interviewed restaurants is shown in Table 1 including work experience for each manager.

As shown in Table 1, the respondents to the interviews are either general managers or owners with work experience ranging from 6 to 13 years. This indicates that all the respondents have full knowledge in the restaurant business. Thus, the interviews were attempted to understand the respondents' experience and views in regard to SFM. The restaurant types (luxurious and fast food) were taken into consideration to explore its sustainable operation while identifying their significant category on employing the sustainable efforts. This notion corresponded with Nicely (2018), the longer are the work experiences of the restaurant managers, the better are the decisions making process taken by managers to solve problems and avoid work conflicts. The respondent's backgrounds indicate an appropriate experience and knowledge. This plays a substantial role for managers and owners to better consider SFM practices. Therefore, this study aims to discover the existing practice of SFM in Kurdistan Region restaurant industry.

TABLE I
INTERVIEW RESPONDENTS

Type of Restaurant	Restaurant	Description	Work Experience
Fast-Food Restaurant	R1	ONYX/GM	7
	R2	Basilico/GM	10
	R3	Al Bustan/GM	6
	R4	Casper and Gambini's/GM	6
	R5	Naranj/GM	6
Luxurious Restaurant	R6	Pizza Hot/Manager	13
	R7	Windys/Manager	12
	R8	Kabab Najjar/Owner	10
	R9	Damasquino/Owner	7
	R10	KFC/Manager	9

Source: (Created by researchers)

IV. RESULTS AND DISCUSSION

The results of this paper are summarized in Table 2. The findings explained the following current practices: SFM awareness, planning for sustainability and SFM criteria, and the frequencies of its implementation in Kurdistan Region restaurants.

First, all of our respondents concurred that contemporary restaurant managers have to take sustainability practices in their restaurants into account. Based on the result, the different categories of restaurants in column (Table 2) show that luxurious restaurants have the high frequency in implementing SFM compared to fast-food restaurants. This show that luxurious restaurants have more positive attitude and participation concerning the SFM practice.

According to the results of Table 2, the following restaurants R8, R9, and R10 showed that none of the fast-food restaurant respondents have an outline policy regarding sustainability. Yet, these restaurants are conscious and aware of the current environmental issues that must be recognized in their future plans. However, the following restaurant respondents R1, R2, R3, R4, R5, and R6 from luxurious restaurant category had started the campaign for becoming sustainable restaurants and presented sustainable policy to be implemented shortly. Regardless of the differences in vision and mission of each restaurant, the aims of these restaurants are alike in striving for the reduction of the carbon footprint. In this case, it is expected that the luxurious restaurants are concern and encourage their managers to adopt SFM principles with outlined policy and awareness plan.

Moreover, all the restaurants showed that staff training in SFM modules was conducted as an education exposure and consciousness enhancement among these employees in managing SFM accurately within their daily scope of work. Based on owners' and managers' responses, tackling the employees by primarily disseminating the knowledge and understanding of SFM is significant within the restaurant management for them to appreciate the restaurant mission as the foremost priority in becoming sustainable. This means that the SFM awareness and strategic plans are essential in leading staff to work on improving sustainable programs. Although, it is contradicted with the fast-food restaurants where restaurants R8, R9, and R10 do not implement any training for the employees. With this intention, it showed that fast-food restaurants are indirectly discouraged the employees to understand the significant value of sustainable practice in this regard. Table 2 shows the implementation of SFM by Kurdistan Region restaurants.

In regard to SFM criterion implementation, all managers share the intention of reducing the three criteria: energy, waste, and water. The results are clearly stated in Table 2. First, in regard to the implementation of energy management, the majority of the restaurant's respondents tried to reduce energy consumption, for example, 9 out of 10 restaurants use energy-saving bulb and compact fluorescent lamp (CFL) lighting. The air condition is controlled by a thermostat where the temperature increases or decreases automatically. This action reduces energy consumption greatly. Furthermore,

TABLE II
SFM IMPLEMENTED IN KURDISH RESTAURANTS

Types of Restaurant	Luxurious Restaurants					Fast-Food Restaurants					FQ
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	
Respondent											
Current practice											
1. Awareness planning											
Sustainable policy	Π			Π	Π	Π	Π				5
Sustainability awareness	Π	Π	Π	Π	Π	Π	Π				7
2. SFM action plan											
Introduce awareness to staff	Π		Π	Π	Π	Π	Π			Π	7
Employees' training	Π	Π		Π	Π	Π	Π				6
3. SFM implementation											
(a) Energy management											0
Energy consumption	Π		Π	Π	Π	Π	Π	Π	Π	Π	9
Renewable solar power	Π										1
Energy-saving equipment				Π	Π	Π					3
Air conditioning thermostat	Π	Π	Π	Π	Π	Π	Π	Π	Π	Π	10
CFL lighting	Π	Π	Π	Π	Π	Π	Π			Π	8
Shutdown schedules for kitchen appliances	Π	Π	Π	Π	Π	Π	Π	Π	Π	Π	10
Programmable HVAC thermostats	Π	Π			Π						3
(b) Water management											
Faucet aerators	Π	Π	Π	Π		Π		Π			6
Rainwater collecting											0
Low-flush toilets	Π	Π	Π	Π	Π		Π				6
Water-saving friendly reminder (signs)	Π	Π	Π	Π	Π	Π				Π	7
Minimize change of table covers	Π	Π	Π	Π	Π	Π	Π	Π			8
(c) Waste management											
Cardboard or paper recycling	Π	Π	Π	Π	Π	Π				Π	7
Composting food waste											0
Recycle toiletries	Π	Π	Π	Π	Π						5
Refill toiletries	Π	Π	Π	Π	Π	Π	Π	Π	Π	Π	10
Recycling rigid plastic containers	Π	Π									2
Paperless technology											0
Biodegradable accessories											0
Frequency	18	14	13	16	16	14	11	6	4	8	

all respondents agreed to the idea of installing energy consumption monitoring technology in future. One notion showed that all respondents also agreed on the concept fire up and shut-down schedules for kitchen appliances. In regard to renewable solar power, only R1 uses renewable solar power and the rest were thinking of installing this technology on restaurants' roof.

Second, in regard to saving water usage by restaurant customers and staff, most luxurious restaurants save water by using many methods including low-flush toilets, faucet aerators, and water-saving friendly reminder (signs). We mentioned the idea of collecting rainwater for irrigation purposes; this idea was not desired and preferred by managers due to health issues and Ministry of Health regulations. Furthermore, the respondents indicated that it is hard to implement this practice since the installation requires the construction of a piping system that costs too much money.

Finally, in regard to waste management, the highest responsiveness can be seen in luxurious restaurants where the frequency of recycling programs is implemented, but none of the ten restaurants has an idea of composting food waste, the majority of these restaurants through the extra food in the trash bin. It is worthy to mention that the luxurious restaurants have eliminated plastic plates, forks, and other accessories entirely from their operation. On the other hand, fast-food restaurants depend entirely on plastic bags, plates, and spoons and forks. Furthermore, biodegradable accessories and paperless technology are not available completely in the Kurdistan Region restaurants.

V. CONCLUSION

The objective of this study was to discover SFM practices in Kurdish restaurant industry. This article has presented a three Sustainable Facilities Management common practices in fast-food and luxurious restaurants in Kurdistan Region of Iraq. The result showed that the luxurious restaurant category applied good SFM practices compared to fast-food restaurants. Luxurious restaurants did better job but not entirely; this was due to the connection between luxurious restaurants and international brand. These restaurants try to imitate big chain restaurants which have been working on sustainable policy in their facilities as part of their support to the global environmental issues. On the contrary, fast-food restaurants are very slow in adopting sustainable practices. This might be due to the ignorance and lack of knowledge of the concept of sustainable practices of SFM. Nevertheless, many restaurants are raising the issue and trying to achieve SFM in their operation to become environmentally friendly enterprises.

Although SFM is a new concept in Kurdistan Region, the researchers can offer the following recommendation that will help restaurants in the region to be environmentally friendly:

Presenting a recycling program can minimize waste. Furthermore, buying packaging/supplies with recycled or compostable content can increase sustainability. Similarly, manage food waste by donating leftover food and building composting facilities for composting food waste. Finally,

restaurants can focus on serving locally sourced food to support their local communities.

In addition, the researchers have found that the majority of Kurdish restaurants are aware of the SFM in general and SFM criteria in specific (reducing energy, waste, and water management). Although the participation of SFM practices was minimal in the restaurants mentioned above. Several managers claimed that the high financial cost of investing in SFM practices within the restaurants is preventing them from adopting these practices; basically, several restaurants cannot afford the high costs of construction and makeovers to become environmental-friendly restaurants. Nevertheless, we found numerous ways to apply sustainable practices without paying high amount of investment. For example, CFL lighting, energy-efficient light bulbs, eliminate plastic containers, recycling paper and cardboards, donate perishable food, and composting waste.

Adopting SFM key initiatives for the restaurant industry in Kurdistan Region can be a proposal for future study. This involves all restaurant categories. The data can be collected from a list of luxurious, chain, fast-food, and small restaurants that involved in SFM practices and who are registered in the Kurdish Ministry of Tourism and Ministry of Health.

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