The Factors Affecting Guests' Consumption Behaviors toward Open Buffets to Avoid Food Leftovers in Sharm El Sheikh Hotels

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Abstract

One of the biggest contemporary challenges of management in the food service sector is the highest consumer food leftovers which points to room for improvements in this area. Buffet leftovers are also a serious concern for hotels in the developing countries due to several negative consequences on the environment and food resources and security. Therefore, it is a focal point of interest in media, politics, research, and business. Guest behavior is claimed to be the main cause of food leftovers at the consumption stage. So, the research aims to explore factors affecting guests' consumption behaviors toward open buffets to avoid food leftovers in Sharm El Sheikh hotels.

The present study employs a quantitative method to achieve its aim. Data collection technique for the study is a structured questionnaire to collect data from 314 guests at five-star hotels in Sharm El Sheikh which counted 33 hotels to perceive their opinions about factors that lead to food waste in the hotel sector. Statistical analyses were performed using the Statistical Package for Social Sciences (SPSS version 22) software. Statistical results were considered significant at $p \leq 0.05$. The researchers selected a convenient sample of guests. Data collection was carried out during February 2018. The collection of data combined visual measurement of individual plate leftovers via photographs together with an online (smartphone optimized) questionnaire.

The study has tested six hypotheses of how these factors (subjective norms, demographic, personal beliefs, attitudes, food traits and internal and external environment motives) affecting the dependent variable (consumers' behavioral intention) and how intention affects actual buffet leftovers behavior. The study has revealed very useful results in the way it explored the perceptions of guests on factors lead to form their behavioral intention toward open buffet leftovers. Meanwhile, this mediator factor behavioral intention showed a significant positive effect on actual buffet leftovers behavior (dependent variables)

Keywords: Open Buffet, Leftovers, Hotels, Guest Behaviors, Egypt

Introduction

Egypt's Visitor Arrivals recorded 8,292,426 person in Dec 2017, compared with 5,399,453 person in the previous year. Egypt's Visitor Arrivals data is updated yearly, available from Dec 1982 to Dec 2017. The data reached an all-time high of 14,731,000 person in Dec 2010 and a record low of 1,311,500 person in Dec 1986. Financial Data & Economic Indicators (CEIC) calculates annual Visitors Arrivals from monthly Visitors Arrivals. The Ministry of Tourism provides Visitors Arrivals (CEIC, 2017).

South Sinai hotel room occupancy rate was reported at 43.50 % in Dec 2015. This records a decrease from the previous number of 61.70 % for Dec 2014. Egypt's Hotel Room Occupancy Rate: Average: South Sinai data is updated yearly, averaging 70.00 % from Dec 1995 to 2015, with 21 observations. The data reached an all-time high of 81.00 % in 1999 and a record low of 43.50 % in 2015 (CEIC, 2017).

Egypt's GDP: Tourism data was reported at 29,808.56 EGP mn in Mar 2018. This records an increase from the previous number of 29,054.75 EGP mn for Dec 2017. Egypt's GDP: Tourism data is updated quarterly, averaging 9,381.10 EGP mn from

Sep 2001 to Mar 2018, with 67 observations. The data reached an all-time high of 29,808.56 EGP mn in Mar 2018 and a record low of 992.20 EGP mn in Dec 2001 (CEIC, 2017).

Thematic Background
Silvennoinen et al. (2015) indicated that one of the biggest contemporary challenges of management in the food service sector is the highest consumer food waste which point to room for improvements in this area. Thyberg and Tonjes (2016) cleared that food systems' impact on natural resources such as water, land, climate and on the economy, as well as on ecosystems. So, it has become obvious that food leftovers are a focal point of interest in media, politics, research, and business (Buzbyet al, 2014). According to Aschemann-Witzel., (2015) roughly one-third of edible food is wasted by consumers globally every year, approximately 1.3 billion tons; much of this is wasted in hotels and restaurants (Gustavsson et al, 2011; Papargyropoulouet al, 2016). Farr-Wharton et al. (2014) emphasized that as a basic need, food consuming will continue to exist. However, it is also influenced by a lifestyle and culture (Onwezen et al, 2013; Kniazeva and Venkatesh, 2007). Different lifestyles and cultures lead to different types of food consuming behaviors (Bae et al, 2010 and Gilg et al, 2005). So, Mirosa et al. (2016) have noted that eating can tell us something about ourselves and about our place.
Charlebois et al. (2016) agreed with Stancu et al., (2016) that eating patterns worldwide have changed completely, including food choices and preparation. Food choice also plays an essential role in the symbolic, economic, and social aspects of life as it is a way to express preferences, identities, and cultural meanings (Sobal et al., 2006). Stancu et al. (2016) and Visschers et al., (2016) showed that many studies have focused on the number of food leftovers and not on the factors and reasons behind it. Melbye et al. (2016) explained that the illustrative framework of the dimensions of avoidable food leftovers is still missing. So, the aim of this research is to contribute to this research gap and explain the complex issue of food leftovers and the factors and reasons behind its generation in the foodservice sector. In general, food researchers agree that these factors can be classified into three broad categories Cultural and religious, the food, and the environment socio-demographic factors (Halloran et al, 2014; Principato et al, 2015; Setti et al, 2016; Stancu et al, 2016).

Literature Review
According to Buzby et al. (2014) and Neff et al. (2015) consumer food leftovers in food services relates to menu offerings, taste, portion sizes, and serving styles, In addition to consumers' consumption attitudes and subjective norms. Hence, various studies assumed that food leftovers originating from consumers in the hotel sector may depend on both service-related aspects and personal factors (Kim et al, 2009; and Melbye et al, 2016).
Lebersorger and Schneider (2011) defined food leftovers as "the edible part that is left in the plate after the meal, and the non-edible part such as food additives, flavorings, cooking oil, and bones are not counted in our measurement" (Mirosa et al, 2016). Parizeau et al. (2015) agreed with Stefan et al. (2013) that change in attitude and behavior among food consumers could lead to reduced food leftovers and a more sustainable lifestyle.

Motives of Buffet leftovers

Stancu et al (2016) stated that food leftovers are not dominated by a certain type of food but rather diverse. However, the main five types of food leftovers in hotel buffet are represented in starch such as potatoes, rice, and pasta; vegetables; sauce; desserts and meat and fish (Heikkilä et al, 2016). Sirieix et al (2017) showed that there are many reasons and causes for buffet leftovers in the hotel sector and effect on food consumption behaviors such as economical, personal, psychological, social, cultural and marketing factors that shape preferences and behaviors (Calvo-Porral et al, 2016). It is widely acknowledged that consumer decisions are derived from a complex process (Olsson, 2017). Ones' knowledge, beliefs, attitudes, and behavior are formed interdependently (Kiriakidis, 2015; Koster, 2009). So, Onwezen et al (2013) assured that food consumers must adopt environmentally friendly behaviors. Adoption of these behaviors is especially vital for the hotel sector, which has a responsibility to contribute to environmental conservation (Verain et al, 2015; Gilg et al, 2005; Peattie, 2010; Lea and Worsley, 2008).

The theory of planned behavior (TPB) and Determinants of buffet leftovers

Visschers et al. (2016) cleared that the main assumption of the TPB is that behavioral intention is the immediate precursor of behavior and combines three types of consideration attitude, subjective norms, and behavioral control. Melbye et al (2016) defined attitude as a generally positive or negative evaluation, which summarizes behavioral beliefs that people hold about the probable consequences of the behavior (Neff et al, 2015). Kiriakidis, (2015) summarized that subjective norms represented in people's beliefs about what other relevant people think they ought to do. Finally, Feber (2017) agreed with Heikkilä et al, (2016) that perceived behavioral control reflects people's beliefs about the potential factors that help or impede them from adopting the behavior.

Graham-Rowe et al (2015) indicated that TPB relies on the theory of planned behavior to investigate consumer food leftovers. To date, none study has applied the conceptual framework to open buffet in Egyptian hotel sector (Parizeau et al, 2015).

Many studies showed that a positive attitude toward open buffet service leads to the intention to try and choose the buffet food and to recommend it to others (Huang and Hsu, 2009; Lee, 2009). Kiriakidis, (2015) mentioned that consumers with the intention for effective buffet leftovers management and who perceive high behavioral control are more likely to have a more positive attitude towards the adoption of efficient and effective buffet leftovers management when compared to those who do not have the intention for effective and efficient food leftovers management or those who perceive low control over food leftovers (Melbye et al, 2016).

Chang et al. (2011) agreed with Desmet et al. (2008) that people generally prefer foods that they are familiar with as well as individual's past experience with a food contribute to the development of food memories which are associated with the sensory attributes of the food (Papargyropoulou et al, 2016; Chang et al,2011). Calvo-Porral et al. (2016) assured that hotel buffet decoration, music, lighting, and architecture play a focal role in consumers' food consumption, and are considered sensory issues perceived by consumers 'five senses and are accepted as a physical motivator (Kiriakidis, 2015).

H1: consumers' intention has a significant positive impact on the consumers' Consumption behaviors toward open Buffets.

H2: Attitude has a significant positive impact on consumers' intention.

Personal Culture and Beliefs Determinants

Cohen and Avieli (2004) cleared that culture and religion are major determinants affecting general food consumption. Sirieix et al. (2017) defined culture as a shared set of characteristics, attitudes, behaviors, and values that helps groups of people decide what to do and how to go about it (Kniazevaand Venkatesh, 2007; Visschers et al, 2016). Charlebois et al. (2016) indicted that culture further determines which foods and food qualities are acceptable in terms of its sensory properties (Prescott et al., 2002).

Chang et al. (2011) emphasized that religious beliefs have an effect on food consumption when certain foods are prohibited, particular preparation methods are mandated, or fasting or feasting practices are observed (Hassan et al 2003; Tse and Crotts, 2005; and Bon and Hussain, 2010). Parizeau et al. (2015) explained that moral norms play a pivotal role when it comes to consumer's food choice behavior, such as feeling guilty when wasting food (Quested et al., 2013). Also, Parizeau et al. (2015) found out that food consumers who care for the environment are more likely to waste less food (Pienaar et al, 2013). Food-related personality traits refer to individual characteristics that exert a pervasive influence on a broad range of food-related behaviors (Pliner and Salvy, 2006; Calvo-Porral et al, 2016; Akbay et al, 2007). Köster and Mojet (2009) emphasized that consumers traits have begun to be recognized as important psychological variables affecting food consumption (Yangui et al, 2013; Carroll and Ahuvia, 2006).

H3: Personal beliefs have a significant positive impact on consumers' intention.

Subjective Norms Determinants

Russell et al (2017) assured that subjective norms represent the perception of social pressures or relevant others' belief that one should or should not behave in a specific way, it has been shown to be interrelated with personal norms (Elliot et al., 2011). Williams and Soutar, (2009) stated that societal status prejudices and social norms hamper consumers from requesting takeaway boxes or doggy bags for buffet leftovers. Although the provision of takeaway boxes may simply shift the responsibility of managing buffet leftovers from hotel businesses to consumers, it is considered a feasible mitigation option if there are no alternatives available and given that a large share of buffet leftovers originates from consumer plates (Goldstein et al, 2008).

Subjective norms are noted to be important not only because it strongly predicts the intention of food consumers but also because it is related to their consumption behavior (Sigurðardóttir, 2017). Russell et al (2017) suggested that in order to make buffet consumers adopt the behavior of others, it is important to ensure that their subjective norm is increased (Aschemann-Witzel, 2016). This is because the subjective norm is associated with the way others feel or think about the behavior. Thus, when significant others feel or believe that the behavior is important, it is possible that an individual's attitude will change which may lead to a change in behavior (Williams and Soutar, 2009; Sigurðardóttir, 2017).

H4: Subjective norms have a significant positive impact on consumers' intention.

Socio-Demographic Determinants

Kim et al. (2009) cleared that Socio-demographic factors have some effect on food consumption behavior. Socio-demographic factors commonly include indicators such as age, gender, marital status, education level, occupation, and consumers' income (Chang et al, 2011; Brečićet al, 2014; Stenmarck et al, 2016). Thyberg and Tonjes,

(2016) found out that one of the important stylized facts about consumers' food consumption habits is that, as income increases, people initially shift their dietary preferences gradually from cereal-based diets to high food value enriched items, such as fish, meat, fruit and vegetables (Evans, 2011; Kearney, 2010). Whereas Parizeau et al., (2015) point out those consumers with higher incomes eat at restaurants and more often tend to also waste more food than those who eat rarely at restaurants. Parizeau et al. (2015) also found out that those who spend more money on restaurants tended to feel less guilty when wasting food (Charlebois et al, 2016; Price and Riis, 2012). In many food consumption research, socio-demographic factors are recognized to be important variables in explaining variations in food consumption in different contexts (Quested et al., 2013; Rozin, 2006; Tse and Crotts, 2005; Pingali, 2006).

H5: Socio-Demographic has a significant positive impact on the consumers' intention.

Open Buffet Traits
The food itself has some effect on food consumption behavior through its sensory attributes such as flavor, aroma, texture, appearance and portion sizes; whereas the environment presents cultural, social, economic and physical influences (Koivupuro et al., 2012; Feber, 2017). Freedman and Brochado (2010) also found that increased plate size leads to increased portions and causes a larger amount of food to be wasted. As for the individual, socio-cultural, and physiological factors are recognized to exert direct or indirect effects on food consumption behavior. Amongst these three broad categories, factors relating to' the consumers' culture and religious' are widely accepted to be extremely crucial in explaining the variations in food consumption (Sirieix et al, 2017; Visschers et al, 2016; Charlebois et al, 2016; Evans, 2011;Quested et al, 2013; Ajzen 2011).

H6: Open buffet traits have a significant positive impact on consumers' intention.

Research Method
The present study employs a quantitative method to achieve its aim. Data collection technique for the study is a structured questionnaire to collect data from the guests at five-star hotels in Sharm El Sheikh which counted 33 hotels (Egyptian Hotel Guide, 2017).

An investigation of guests' consumption behaviors towards open buffets in Sharm El Sheikh hotels was carried out using multiple sources of data, including a structured questionnaire, observations of the business environment, and a review of documentation. Statistical analyses were performed using the Statistical Package for Social Sciences (SPSS version 22) software. Statistical results were considered significant at $p \leq 0.05$.

The researchers selected a convenient sample of guests. Data collection was carried out during February 2018. The collection of data combined visual measurement of individual plate leftovers via photographs together with an online (smartphone optimized) questionnaire.

Data collection Methods Design
The questionnaire was organized into the following four parts: part 1: demographic information (such as gender, age, level of education); part 2: reasons to leave plate leftovers at the end of the buffet at the hotel; part 3: the most items to leave at the end of the meal; and part 4: the factors influence on guest food consumption behaviors towards open buffets leftovers.

The open buffet leftovers behavior section (part 4) included 9 close-ended questions with five possible answers, "strongly agree", "agree", "neutral", "disagree", and "strongly "disagree". This scale ranges between 1 and 5 points. The open buffet leftovers intention section of the questionnaire (part 4) aimed to understand the guest intention about food leftovers and contained 3 questions. In buffet, leftover attitudes section were evaluated and were assessed through 5 questions. We used the same criterion as that used for the other parts. In Subjective norms section containing 6 questions. The personal beliefs section (part 4) included 5 close-ended questions with five possible answers but the open buffet traits section (part 4) included 7 close-ended questions that required five levels of answers, "Strongly Agree", "Agree", "Neutral", "Disagree", and "Strongly "Disagree".

It composed of personal determinants (general beliefs) of food choice and eating, specific perceptions of food-related to the day of participation and socio-demographic characteristics. Accordingly, questions regarding behavioral intention, attitudes, and personal norms were asked prior to questions on subjective norms and perceived behavioral control.

Moreover, a picture of each participant's table with the individualized card was taken before the guests leave their tables (see Fig1). Overall, 223 pictures were taken during the fieldwork, of which 124 successfully could be matched to the questionnaire. Overall, the taken pictures were a proof to the open buffet leftovers in these hotels.

Pilot Test

It is essential that the instrument is carefully designed and tested before use in a given study. Pretesting procedures help to ascertain that the instrument for collecting data is free from any pitfalls and mistakes that would have surfaced in the main data collection process if the pretesting of the instrument had not been done. Pretesting was done to help point out any flaws or errors that might be committed during the construction of the instrument. The findings of the pre-test study were used to revise and refine the instrument questions to enhance the reliability and validity of the final instrument in this study.

The questionnaire was pre-tested by 9 respondents who work in food service and academic field and five guests to check its face validity. All experts were asked to complete the questionnaire and to identify concerns and suggestions. All suggestions were considered and used to revise the questionnaire before data collection.

Results and Discussion

The analysis of the next questions will be ranked according to the objectives of the study as follows:

Questionnaire Reliability Analysis

Reliability of the instruments used was tested by running Cronbach's alpha coefficient. The result outlines that the alpha coefficient value for all variables in the study was 71.45. So, the study measurements were acceptable and reliable, and this analysis showed a high degree of correlation among all variables.

Questionnaire Response Rate

The response rate reached 68% for five-star hotel guests'. As mentioned earlier, the study targeted guests of five-star hotels at Sharm Elshiekh; as the structured questionnaire was sent to a convenient sample of 460 guests. The authors' accessibility to some hotel managers helped to distribute most of the questionnaires.

Moreover, social media was another platform to collect customers' ideas towards open buffet leftovers in Sharm El Sheikh. A total of 314 usable were obtained, representing an effective response rate of 68 percent.

Questionnaire Analysis Results and Discussion
Demographic Characteristic of Sample
The descriptive statistics showed that 63.7% of the respondents are males while 36.3% of them are females. 41.1% of the respondents are between 21-30 years, 44.3% of them are between 15 and 31-40 years, 14.6% are between 41-50years. 80.6% had university level of education, 19.4% were med level. 61.1% of the respondents are married while 38.9% of them are single.

Table 1. Descriptive statistics of the respondents (n=314)

Description		Frequency	Percent
Gender:	Male	200	63.7
	Female	114	36.3
Age:	21-30 years	129	41.1
	31-40 years	139	44.3
	41-50 years	46	14.6
Nationality:	Egyptian	314	100%
Education level:	University education	253	80.6
	Med level	61	19.4
Marital status	Married	192	61.1
	Single	122	38.9

Table 2. The correlation matrix among research variables

			Demographic	Attitude	Sub Norms	Personal Beliefs	Open Buffet traits	Behaviors	Intention
Spearman's rho	Demographic	Correlation Coefficient	1	.167**	.214**	.186**	.198**	0.065	.167**
		Sig.	.	0.003	0	0.001	0	0.248	0.003
	Attitudes	Correlation Coefficient	.167**	1	.163**	-.263**	.739**	.448**	1.000**
		Sig.	0.003	.	0.004	0	0	0	.
	Sub Norms	Correlation Coefficient	.214**	.163**	1	-.154**	0.02	.332**	.163**
		Sig.	0	0.004	.	0.006	0.69	0	0.004
	Personal Beliefs	Correlation Coefficient	.186**	-.263**	-.154**	1	-.296**	-0.016	-.263**
		Sig.	0.001	0	0.006	.	0	0.778	0
	Open Buffet traits	Correlation Coefficient	.198**	.739**	0.023	-.296**	1	.404**	.739**
		Sig.	0	0	0.688	0	.	0	0
	Behaviors	Correlation Coefficient	0.065	.448**	.332**	-0.016	.404**	1	.448**
		Sig.	0.248	0	0	0.778	0	.	0
	Intention	Correlation Coefficient	.167**	1.000**	.163**	-.263**	.739**	.448**	1
		Sig.	0.003	.	0.004	0	0	0	.

Table 3. Reasons for buffet leftovers among surveyed guests in Sharm el Sheikh hotels

Buffet Leftovers Reasons	Mean	Std. Deviation	Attitude
You are full	5.00	.000	Strongly agree
Bad Consumers' mood	4.61	.488	Strongly agree
Many menu varieties offered.	3.95	.642	Agree
Big portion size.	3.51	1.105	Agree
Etiquette.	4.04	.207	Agree
Disgusting.	2.06	.708	Disagree
The food did not taste good and not appeal to you.	3.99	.423	Agree
Bad service and presentation.	2.05	.541	Disagree

For understanding reasons for buffet leftovers among guests in Sharm El Sheikh hotels, the results as shown in the table (4) revealed that there are top eight potential reasons which cause the highest rate of buffet leftovers as follows:
- Consumers are full (with Mean average 5.00 and Std. Deviation .000 and this value is more close to the strongly agree value).
- Bad Consumers' mood (with Mean average 4.61 and Std. Deviation .488 and this value is more close to the strongly agree value).
- Many buffet menu varieties offered Bad Consumers' mood (with Mean average 3.95 and Std. Deviation .642 and this value is more close to the agreed value).
- Big portion sizes (with Mean average 3.51 and Std. Deviation 1.105 and this value is more close to the agreed value).
- Etiquette (with Mean average 4.04 and Std. Deviation .207 and this value is more close to the agreed value).
- Disgusting (with Mean average 2.06 and Std. Deviation .708 and this value is more close to the disagree value).
- The food did not taste good and not appeal to consumers (with Mean average 3.99 and Std. Deviation .423 and this value is more close to the agreed value).
- Bad service and presentation (with Mean average 2.05 and Std. Deviation .541 and this value is more close to the disagree value). And that agrees with Buzby et al., (2014) and Neff et al., (2015) who mentioned that consumer food leftovers relate to menu offerings, taste, portion sizes and serving styles. Various studies also assumed that food leftover originating from consumers in the hotel sector may depend on both service-related aspects and personal factors (Melbye et al, 2016; Kim et al, 2009)

Table 4. The tems to leave at the end of the meal

Variables	Mean	Std. Deviation	Attitude
Starch (potatoes, rice, and pasta).	4.33	.389	leave
Meat.	1.35	.547	Don't leave
Sea food.	1.35	.546	Don't leave
Sauce.	4.86	.380	Strongly leave
Desserts	4.82	.546	Strongly leave

The obtained results as shown in the table (5) indicated that the most food items left at end of open buffet service and cause the highest rate of buffet leftovers among guests in Sharm El Sheikh hotels as follow:
- Starch such as potatoes, rice, and pasta (with Mean average 4.33 and Std. Deviation .389 and this value is more close to leaving value).
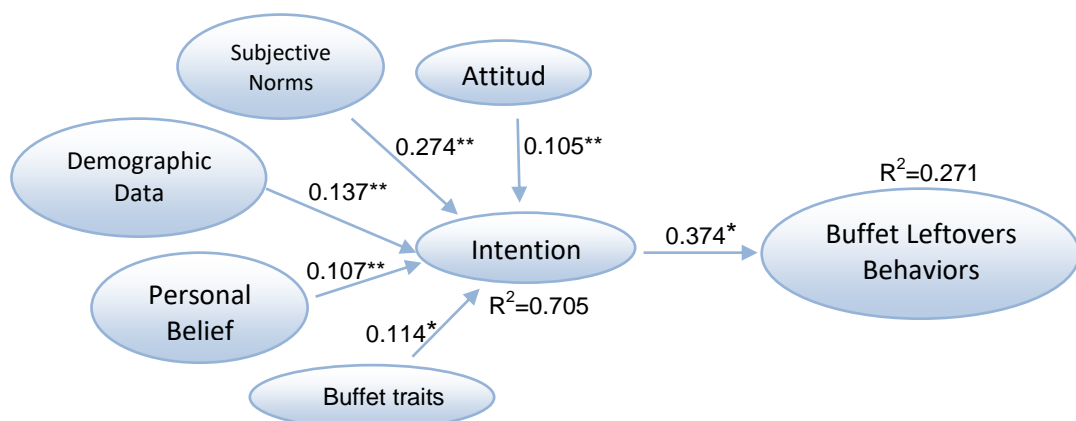
- Meat (with Mean average 1.35 and Std. Deviation .547 and this value is more close to the strongly don't leave value).
- Seafood (with Mean average 1.35 and Std. Deviation .546 and this value is more close to the strongly don't leave value).
- Sauce (with Mean average 4.86 and Std. Deviation .380 and this value is more close to the strongly leave value).
- Desserts (with Mean average 4.82 and Std. Deviation .546 and this value is more close to the strongly leave value). This agreed with that mentioned by Stancu et al, (2016) who stated that food leftovers are not dominated by a certain type of food but rather diverse. And determined five types of food leftovers in hotel buffets are represented in starch such as potatoes, rice, and pasta; vegetables; sauce; desserts and meat and fish (Heikkilä et al, 2016).

The structural model for open buffets food leftovers

Table 5. Factors affecting Guests' Consumption behaviors toward open Buffets to avoid food Leftover in Sharm El Sheikh hotels: Regression analysis

Model		Unstandardized Coefficients		t	Sig.	R^2	Dependent Variable
		B	Std. Error				
1	(Constant)	1.494	.249	6.005	.000	.374	Consumers' Intention
	Demographic Data	.137	.051	-2.694	.007		
	Attitude	.105	.023	4.629	.000		
	Subjective Norms	.274	.032	8.580	.000		
	Personal Beliefs	.107	.026	4.129	.000		
	Open Buffet traits	.114	.048	2.353	.019		
1	(Constant)	2.955	0.63	46.540	.000	0.271	Buffet Leftovers Behaviors
	Consumers' Intention	.147	.016	9.121	.000		

Figure 1. The research tested model

* Significant at 0.05   **Significant at 0.01

The study results as shown in the table (5) and figure (1) found that buffet leftovers in Sharm El Sheikh hotels are determined to relevant by consumers' behavior intention to eat the food served. This behavioral intention are also determined by many factors and motives which are considered the fundamental element in forming actual behavior of food consumers, these factors such as subjective norms, demographic,

personal beliefs, attitudes, food traits, and internal and external environment motives (independent variables) have a significant effect on buffet leftovers behavior within five-star hotels in Sharm El Sheikh.

The findings declared that the hypotheses measured in the study are supported and the factors involved in this study are significantly affecting the actual behvior of the hotel consumers. However, the factors have a different effect on consumers' behavioral intention of the hotel (mediator). Some factors were found direct positively affecting actual buffet leftovers behavior within hotels while some others were found indirect affecting it. The mediator factor behavioral intention showed a significant positive effect on actual buffet leftovers behavior (dependent variables) approved with (Melbye, 2016 and Feber, 2017).

Respondents perceive the five constructs of factors have a positive effect on the consumers' intention. Consumer attitude content is positively affecting the behavioral intention ($\beta=0.105$ and $p<0.01$) (H2). Furthermore, Personal beliefs are found positively affecting the consumers' intention ($\beta=0.107$ and $p<0.01$) (H3), and Subjective Norms ($\beta=0.274$ and $p<0.05$) (H4). The Socio-Demographic ($\beta= -.137$ and $p<0.05$) (H5). The Open buffet traits ($\beta=0.114$ and $p<0.05$) (H6). On the other hand, intention construct was perceived as a positive effect on actual consumers' behavior ($\beta=-0.147$ and $p<0.01$) (H1). Therefore, the six hypotheses are statistically supported and factors are significantly affecting the buffet leftovers behavior. These factors explain 70% of the variance in the effectiveness of hotel consumers' behavioral intention ($R2=0.705$).

Conclusion

The purpose of this study is to explore what factors affecting consumers' behavioral intention and the effect of behavioral intention on actual Guests' Consumption behaviors toward open buffets to avoid food leftover within five-star hotels in Sharm El Sheikh. The study has tested six hypotheses of how these factors (subjective norms, demographic, personal beliefs, attitudes, food traits and internal and external environment motives) affecting the dependent variable (consumers' behavioral intention) and how intention affects actual buffet leftovers behavior. This study has used a quantitative approach as a method to test the study hypotheses. The procedure for collecting data for this study used a questionnaire to collect exploratory data from 314 hotel guests to perceive their opinions on factors that lead to food leftovers in the hotel sector. Finally, the study has revealed very useful results in the way it explored the perceptions of guests on factors lead to form their behavioral intention toward open buffet leftovers. Meanwhile, this mediator factor behavioral intention showed a significant positive effect on actual buffet leftovers behavior (dependent variables) approved with (Melbye, 2016 and Feber, 2017).

Research limitations/implications

It must be admitted that this study has some limitations. One limitation is the need to conduct qualitative interviews to fully understand how these factors influence consumer's food leftovers behaviour toward open buffets to avoid food leftovers in Sharm El Sheikh hotels. Another limitation that hasn't been considered in this study is how effective marketing campaigns to reduce food leftovers are?

Future research studies will investigate the perceptions of hotel managers in addition to comparing two different samples, which could be managers' perceptions and customers' perceptions. The quantitative approach will be useful in future studies to fully understand the subject of the study.

This study examined what factors influence consumer's food leftovers behaviour in five-star hotels in Sharm El Sheikh, The research results identify actions that hotels' mangers and local governments could undertake to reduce consumer-related food leftovers such as environmental awareness campaign. Since personal culture, subjective norms, beliefs, socio-demographic and open buffet traits are the main predictors of food leftovers behaviour.

References

Ajzen, I. (2011),"The theory of planned behavior: reactions and reflections", Psychology and Health, 26, 1113 – 1127.

Akbay, C., Tiryaki, G.Y., and Gul, A. (2007), "Consumer characteristics influencing fast-food consumption in Turkey", Food Control, Vol. 18 No. 8, pp. 904-913.

Aschemann-Witzel, J., de Hooge, I., Amani, P., Bech-Larsen, T., and Oostindjer, M. (2015), "Consumer-related food waste: causes and potential for action", Sustainability, Vol. 7 No. 6, pp. 6457-6477.

Aschemann-Witzel, J. (2016), "Waste not, want not, emit less", Science, Vol. 352 No. 6284, pp. 408-409

Bae, H.J., Chae, M.J. and Ryu, K. (2010), "Consumer behaviors towards ready-to-eat foods based on food-related lifestyles in Korea", Nutrition Research and Practice (Nutr Res Pract), Vol. 4 No. 4, pp. 332-338.

Bon, M., and Hussain, M. (2010),"Halal food and tourism: prospects and challenges", In: Scott, N., Jafari, J. (Eds.), Tourism in the Muslim World: Bridging Tourism Theory and Practice, vol. 2. Emerald Group Publishing, Bingley, pp. 47–59.

Brečić, R., Gorton, M., and Barjolle, D. (2014), "Understanding variations in the consumption of functional foods–evidence from Croatia", British Food Journal, Vol. 116 No. 4, pp. 662-675.

Buzby, J.C., Wells H.F., and Hyman J. (2014), "The Estimated Amount, Value and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States", USDA Economic Research Service, Washington, DC, USA.

Calvo-Porral, C., Medín, A.F., and Losada-López. C. (2016), "Can marketing help in tackling food waste? Proposals in developed countries", Journal of Food Products Marketing, Vol. 23 No. 1, pp. 1-19.

Carroll, B.A., and Ahuvia, A.C. (2006),"Some antecedents and outcomes of brand love", Marketing Letter 17, 79–89.

Chang, R.C., Kivela, J., and Mak, A. N. (2010),"Food preferences of Chinese tourists", Annals of Tourism Research 37 (4), 989–1011.

Chang, R.C., Kivela, J., and Mak, A.N. (2011), "Attributes that influence the evaluation of travel dining experience: when East meets West", Tourism Management 32(2), 307–316.

Charlebois, S., Creedy, A., and Massow M.V. (2016), "Back of the house" – focused study on food waste in fine dining: the case of Delish restaurants. International Journal of Culture, Tourism and Hospitality Research, 9 (3), 278 – 291.

Cohen, E., and Avieli, N. (2004), "Food in tourism: attraction and impediment", Annals of Tourism Research 31 (4), 755–778.

Desmet, P.A., and Schifferstein, H.J. (2008), "Sources of positive and negative emotions in food experience", Appetite, Vol. 50, pp. 290-301.

Evans, D. (2011)," Blaming the consumer–once again: The social and material contexts of everyday food waste practices in some English households", Critical Public Health, 21(4), 429–440

Farr-Wharton, G., Foth, M., and Choi J.H. (2014), "Identifying factors that promote consumer behaviors causing expired domestic food waste", Journal of Consumer Behaviour. 13, 393– 402.

Feber. (2017), "Environmental aspects doe's impact food waste behavior", retrieved at http://feber.se/webb/art/350011/i_dag_lanserades_resq_i_sverig/, (Received 28 April 2017).

Freedman, M.R., and Brochado, C. (2010), "Reducing portion size reduces food intake and plate waste", Obesity, Vol. 18 No. 9, pp. 1864-1866.

Gilg, A., Barr, S., and Ford, N. (2005), "Green consumption or sustainable lifestyles? Identifying the sustainable consumer", Futures, Vol. 37 No. 6, pp. 481-504.

Goldstein, N. J., Cialdini, R. B., and Griskevicius, V. (2008), "Room with a viewpoint: Using social norms to motivate environmental conservation in hotels." Journal of Consumer Research 35 (3): 472–482.

Graham-Rowe, E., Jessop, D.C., Sparks, P. (2015), "Predicting household food waste reduction using an extended theory of planned behaviour", Resour. Conserv. Recycle.101, 194–202

Gustavsson, J., Cederberg, C., Sonesson, U., Otterdijk, R., and Meybeck, A., (2011), "Global Food Losses and Food Waste – extent causes and prevention", Food and Agriculture Organization, Rome, Italy.

Halloran, A., Clement, J., Kornum, N., Bucatariu, C. and Magid, J. (2014), "Addressing food waste reduction in Denmark", Food Policy, Vol. 49, pp. 294-301.

Hassan, M.W., Hall, C.M. (2003),"The demand for halal food among Muslim travelers in New Zealand", In: Hall, C.M., Sharples, L., Mitchell, R., Macionis, N., Cambourne, B. (Eds.), Food Tourism Around the World: Development, Management and Markets. Butterworth Heinemann, Oxford, pp. 81–101.

Heikkilä, L., Reinikainen, A., Katajajuuri, J-M., Silvennoinen, K., and Hartikainen, H. (2016), "Elements affecting food waste in food service sector", Waste Management, 56, 446 – 453.

Kearney, J. (2010), "Review of food consumption trends and drivers", Philosophical Transactions of the Royal Society, B, 365(1554), 2793e2807. Available from:
http://rstb.royalsocietypublishing.org/content/365/1554/2793.full.pdfþhtml.

Kim, Y.G., Eves, A., and Scarles, C. (2009), "Building a model of local food consumption on trips and holidays: a grounded theory approach", International Journal of Hospitality Management 28, 423–431.

Kiriakidis, S. (2015), "Theory of Planned Behavior: the Intention – Behavior Relationship and the Perceived Behavioral Control (PBC) Relationship with Intention and Behavior", International Journal of Strategic Innovative Marketing. 3, 40 – 51.

Kniazeva, M. and Venkatesh, A. (2007), "Food for thought: a study of food consumption in postmodern US culture", Journal of Consumer Behavior, Vol. 6 No. 6, pp. 419-435.

Koivupuro, H.K., Hartikainen, H., Silvennoinen, K., Katajajuuri, J.M., Heikintalo, N., Reinikainen, A. and Jalkanen, L. (2012),"Influence of socio-demographical, behavioral and attitudinal factors on the amount of avoidable food waste

generated in Finnish households", International Journal of Consumer Studies, Vol. 36 No. 2, pp. 183-191.

Koster, E.P. (2009), "Diversity in the determinants of food choice: a psychological perspective", Food Quality and Preference, Vol. 20 No. 2, pp. 70-82.

Lang, M., Stanton, J. and Qu, Y. (2014), "Consumers' evolving definition and expectations for local food", British Food Journal, Vol. 116 No. 11, pp. 1808-1820.

Lea, E. and Worsley, A. (2008), "Australian consumers' food-related environmental beliefs and behaviors", Appetite, Vol. 50 No. 2, pp. 207-214.

Lebersorger, S., and Schneider F. (2011), "Discussion on the methodology for determining food waste in household waste consumption studies", Waste Management, 31 (9/10), 1924 – 1933.

Melbye, E.L., Onozaka, Y. and Hansen, H. (2016), "Throwing it all away: exploring affluent consumers' attitudes toward wasting edible food", Journal of Food Products Marketing, Vol. 23 No. 4, pp. 1-14

Mirosa, M., Munro, H., Mangan-Walker, E., and Pearson, D. (2016), "Reducing waste of food left on plates: interventions based on means-end chain analysis of customers in foodservice sector", British Food Journal, Vol. 118 No. 9, pp. 2326-2343.

Neff, R.A., Spiker, M.L. and Truant, P.L. (2015), "Wasted food: US consumers' reported awareness, attitudes, and behaviors", PloS One, Vol. 10 No. 6, p. e0127881.

Olsson, L. (2017),"Rädda lunchen, I dubbel meaning", Göterborgs Posten, 10 April.

Onwezen, M.C., Antonides, G., Bartels, J. (2013), "The Norm Activation Model: An exploration of the functions of anticipated pride and guilt in pro-environmental behavior", Journal of Economic Psychology, 39, 141 – 153.

Papargyropoulou, E., Wright, N., Lozano, R., Steinberger, J., Padfield R., and Ujang Z. (2016), " Conceptual framework for the study of food waste generation and prevention in the hospitality sector", Waste Management, 49, 326 – 336.

Parizeau, K., Massow, M.V., Martin, R. (2015), "Household-level dynamics of food waste production and related beliefs, attitudes, and behaviors in Guelph, Ontario", Waste Management, 35, 207 – 217.

Peattie, K. (2010), "Green consumption: behavior and norms", Annual Review of Environment and Resources, Vol. 35 No. 1, pp. 195-228

Pienaar, E.F., Lew D.K., Wallmo K. (2013), "Are environmental attitudes influenced by survey context? An investigation of the context dependency of the New Ecological Paradigm (NEP) Scale. Social Science Research, 42, 1542 – 1554.

Pingali, P. (2006), "Westernization of Asian diets and the transformation of food systems: Implications for research and policy", Food Policy, 32, 281e298, 2006.

Pliner, P., Salvy, S.J. (2006), "Food neophobia in humans", In Shepherd, R., Raats, M.(Eds.), The Psychology of Food Choice. CABI, Oxford shire, pp. 75–92.

Prescott, J., Young, O., O'Neill, L., Yau, N.J.N., Stevens, R. (2002), "Motives for food choice: a comparison of consumers from Japan, Taiwan, Malaysia, and New Zealand", Food Quality and Preference 13, 489–495

Price, J., Riis, J. (2012), "Behavioral Economics and the Psychology of Fruit and Vegetable Consumption: A Scientific Overview", p. 2012

Principato, L., Secondi, L. and Pratesi, C.A. (2015), "Reducing food waste: an investigation on the behavior of Italian youths", British Food Journal, Vol. 117 No. 2, pp. 731-748.

Quested, T.E., Marsh, E., Stunell, D., and Parry A.D. (2013), "Spaghetti soup: The complex world of food waste behaviors", Resources, Conservation and Recycling, 79, 43-51.

Rozin, P. (2006), "The integration of biological, social, cultural and psychological influences on food choice", In Shepherd, R., Raats, M. (Eds.), The Psychology of Food Choice. CAB International, Oxfordshire, pp. 19–39.

Russell, S. V., Young, C. W., Unsworth, K. L., and Robinson, C. (2017). Bringing habits and emotions into food waste behaviour. Resources, Conservation and Recycling, 125,107–114.

Setti, M., Falasconi, L., Segrè, A., Cusano, I. and Vittuari, M. (2016), "Italian consumers' income and food waste behavior", British Food Journal, Vol. 118 No. 7, pp. 1731-1746.

Silvennoinen, K., Heikkilä, L., Katajajuuri, J-M., Reinikainen, A. (2015), "Food waste volume and origin: Case studies in the Finnish food service sector", Waste Management, 46, 140 – 145.

Sirieix, L., Lála, J., Kocmanová, K. (2017), "Understanding the antecedents of consumers' attitudes towards doggy bags in restaurants: Concern about food waste, culture, norms and emotions", Journal of Retailing and Consumer Services, 34, 153 – 158.

Sobal, J., Bisogni, C.A., Devine, C.M., and Nastran, M. (2006), "A conceptual model of the food choice process over the life course", In Shepherd, R., Raats, M. (Eds.), ThePsychology of Food Choice. CAB International, Oxfordshire, pp. 1–18.

Stancu, V., Haugaard, P. and Lähteenmäki, L. (2016), "Determinants of consumer food waste behavior: two routes to food waste", Appetite, Vol. 96, pp. 7-17.

Stefan, V., van Herpen, E., Tudoran, A.A., and Lähteenmäki, L. (2013), "Avoiding food waste by Romanian consumers: the importance of planning and shopping routines", Food Quality and Preference, 28 (1), 375-381.

Stenmarck, A., Jensen, C., Quested, T., Moates, G., Buksti, M., and Cseh, B. (2016), "Estimates of European food waste levels", IVL Swedish Environmental Research Institute

Thyberg, K.L., and Tonjes D.J. (2016), "Drivers of food waste and their implications for sustainable policy development", Resources, Conservation and Recycling, 106, 110–123.

Tse, P., and Crotts, J.C. (2005), "Antecedents of novelty seeking: international visitors' propensity to experiment across Hong Kong's culinary traditions", Tourism Management 26, 965–968.

Verain, M.C., Dagevos, H. and Antonides, G. (2015), "Sustainable food consumption. Product choice or curtailment?" Appetite, Vol. 91, August, pp. 375-384

Visschers, V.H.M., Wickli N., and Siegrist M. (2016), "Sorting out food waste behavior: A survey on the motivators and barriers of self-reported amounts of food waste in households", Journal of Environmental Psychology, 46, 66 – 78.

Yangui, A., Font, M.C. and Gil, J.M. (2013), "The effect of food-related personality traits and lifestyle orientation on consumer's behavior related to extra virgin olive oil: estimation of an extended hybrid choice model", presented at 4th

International Conference of the African Association of Agricultural Economists, September 22-25, Hammamet.

Figure 2. Exemplary photographs of observed food leftovers (original photographs in color and high resolution)