Employees' perceptions of food waste management in hotels

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Abstract

This study was designed to explain current food waste practices, specifically from the perspective of the staff in hotel kitchens. A case study of the perceptions of the staff involved in the food waste chain in a hotel group in Gauteng was undertaken, using a quantitative approach. The study objective was achieved using structured questionnaires that were administered to the relevant stakeholders involved in food waste generation. The findings revealed that the staff concerned generally had a positive perception of the environmental issues pertaining to food waste generation. With this positive foundation, the study recommends that general hotel initiatives should focus on the food waste policies and procedures that capitalise on the positive perceptions involved, by means of assisting staff to create greater balance between their beliefs and work practices. Initiatives such as specific training could assist the staff to better understand 'best food waste practice' in relation to such negotiated sustainability issues as "social, environmental and financial policies and procedures". The study proposes a conceptual framework that could be useful and applicable in the managing of food waste within hotels in the South African context. The study, further, offers insights into the current food waste strategies that are in place to reduce the amount of food waste within hotels and to further unpack the nature and patterns of food waste within specific hotels.

Keywords: food waste, hotels, South Africa, staff beliefs and attitudes

Introduction

The accommodation sector accounts for 21% of the carbon footprint from tourism (Sundt, 2012). Bruns-Smith, Choy, Chong and Verma (2015) concur, arguing that the hotel industry is known as the most environmentally harmful hospitality sector. Food waste is said to be one of the main contributors to the carbon emission of hotels (Remolador, 2011) and, hence, its management requires critical attention to be paid to greater hotel greening (Griffith, Jackson & Lues, 2017). Food waste is defined as organic waste that has its origin in food, or in inputs into food production (Food Wise Hong Kong Campaign, 2013). Food that is disposed of as waste can be divided into: (1) avoidable/edible food waste, such as slices of bread, cooked vegetables, or salads, or any kind of food that at some point was edible before disposal (Food Wise Hong Kong Campaign, 2013); and (2) unavoidable food waste, which is the food that is nonedible from preparation to consumption, such as egg shells or bones (Bruns-Smith *et al.*, 2015). Griffith *et al.* (2017) argue that food waste is associated with moral, environmental, economic and social challenges in society, and its effects are in both the hotels and the society. Food waste strategies are needed in the hotels as a measure to reduce costs and associated environmental impact.

Managing food waste leads to reduced costs for the businesses and for the environment (Radwan, Jones & Minoli, 2010). According to Griffith *et al.* (2017), this means that there would be a more efficient use of resources and saving of money. In addition, managing food waste helps reduce carbon footprint of the hotels, resulting in the achieving of the overall hotel greening objectives (Food Wise Hong Kong Campaign, 2013; Dias-Angelo, Jabbour & Calderaro, 2014). Further, managing food waste saves the hotel space in compactors and dumpsters, as well as saving on disposal costs (Remolador, 2011).

In the South African context, the country is perceived as being one of the most competitive tourist destinations in the world, consisting of ample hotels, restaurants, and food outlets (Rogerson & Sims, 2012). As a result, much food is consumed and wasted in the establishments (Griffith *et al.,* 2017), which raises a number of concerns relating to general environmental issues and their impact on global warming (Malgas, 2016). Malgas (2016) advances that South Africa lacks the capacity to track and manage food waste, despite the Southern African subcontinent being said to be warming faster than is the global average (Rogerson & Sims*,* 2012), due to the improper food waste and water management practices followed in hotels. Owing to the above concern, the current study's objective was to consider the hotel employees' perceptions, attitudes, and behavioural patterns towards food waste.
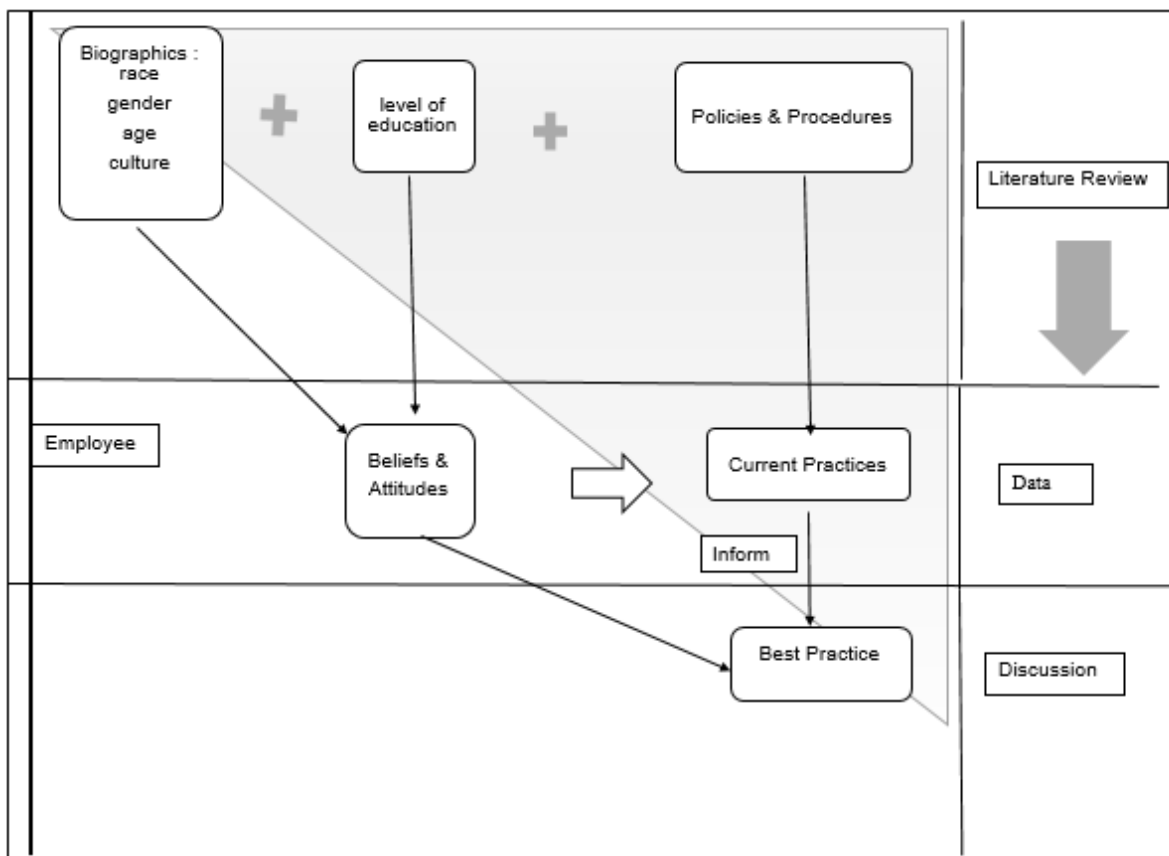

Figure 1: Proposed conceptual framework for understanding the relationship between current employee food waste practice and best employee food waste practice.

According to Kukanja (2013), individuals are primarily motivated by the attributes that meet their most important need. Hotel employees are tasked with the daily operations of the hotel, including food preparation, serving, and disposal. Speaking deductively, their perceptions and behavioural patterns regarding food waste policies and procedures could be considered as being pivotal in terms of the efforts involved in planning and strategising how to minimise the amount of food waste. To achieve the objective of this study, therefore, the current article is organised as follows: a literature review relevant to the study is presented immediately after the introduction, followed by the research methods employed, and by a discussion of the results. Further, the implications of the study are presented, as well as are its limitations, and future research is proposed.

Literature review

The importance of food waste management in hotels

According to the Hong Kong Environmental Bureau (2014:6) analysis of food waste, "large contributors of food waste are … individual households and the food industry". While some studies (see Goonan, Mirosa & Spence, 2014; Tielens & Candel, 2014) indicate that the food service, hospitality and tourism industries play an important role in economic development and job creation on a global scale, with sector growth having forced a greater degree of awareness by means of formalisation of the process of waste management. Other authors, like Lindgreen, Hingley, Walley, Custance, Orton and Parsons (2009), disagree with the making of such a positive assumption, with growth in the sector only being viewed in the light of a growing 'awareness lens'. They argue that the growth of such food and tourism industries has worsened the already existent waste problem. Lindgreen *et al.* (2009) claim that the growth in the sector has created a 'new' multiculturalism in terms of food consumption, which, in turn, has caused a shift to occur in demographic eating patterns. The researchers argue still further that the changes in food choices are directly linked to the changes in attitudes to consumption, thereby significantly increasing the amount of food waste involved.

Within the tourism and hospitality literature, a study by Silvennoinen, Heikkilä, Katajajuuri and Reinikainen (2015:142) identifies eight elements that are contributory factors to food waste, namely: society; the business concept; product development procurement; management; professional skills; diners; competitors; and communication. Regrettably, the research that provides insight into the practice of food waste within hotels has been somewhat neglected, especially in the sub-Saharan African context, where the desire to attract tourism arrivals has led to an increase in the extent of hotel development (Christie, Fernandes, Messerli & Twining-Ward, 2014). Most research on food waste has, in the past, tended to be conducted from an engineering and technological perspective (Papargyropoulou, Wright, Lozano, Steinberger, Padfield & Ujang, 2016). The current research turns the attention to food waste management within hotels, with specific focus on part of a hotel group in the Gauteng province, South Africa.

The policy and procedures related to food waste management

Golja and Nizic (2010) refer to policies and procedures as being the documented standard way of doing things in an organisation. Their purpose is to guide employees and employers in following the most effective way of completing tasks successfully. Furthermore, Brodbeck (2002:337) describes the policies and procedures concerned as a way of informing the employees involved about what they should do, or not do, in an organisation as "a matter of stipulated practice". According to Moule and Giavara (1995), policies and procedures are

created by way of best practices so as to increase the degree of efficiency, and so as to relay the organisational expectations to those employees who are involved with the operations concerned.

In terms of food waste, the Gauteng Provincial Integrated Waste Management Policy (GPIWMP) (Gauteng Provincial Government. Gauteng Department of Agriculture, Conservation and Environment, 2006:10) underscores the fact that hazardous industrial waste (including food waste) requires responsible handling, storage, transport, treatment, and proper disposal policies. The Department acknowledges the need for on-site hazardous waste management facilities and practices, citing affiliations with the media, businesses, labour organisations, the government, schools, and tertiary education institutions serving as potential key stakeholders in the creation of waste management awareness.

Furthermore, the GPIWMP (Gauteng Provincial Government. Gauteng Department of Agriculture, Conservation and Environment, 2006:12) recommends the "need to be creative incentives for organisations that follow best practices in respect of the waste hierarchy … and [which] create penalties for organisations who [have] disregarded waste management initiatives". According to the South African Department of Environmental Affairs and Tourism (2016), the issue of waste in general must be approached in terms of applying the waste hierarchy as part of the waste management strategy for all the industries concerned. Be this as it may, Fiehn and Ball (2005) found that a key issue facing South Africa with regard to waste management policy implementation is the lack of waste data held by all the waste-generating sectors concerned. Embedded within the National Pricing Strategy for Waste Management (NPSWM) (South Africa. Department of Environmental Affairs, 2016:14) framework, the South African government is in the process of implementing its "the polluter pays" policy, so that the higher an institution goes in the waste hierarchy, the more it is able to benefit from government incentives. This proposed policy, which is aimed at reducing the need for landfill space, has undoubted environmental benefits.

The behavioural patterns relating to, and the perceptions of, food waste in hotels

In terms of combating food waste in the hospitality sector for restaurants and other food service providers, the amount of food waste is determined, to a considerable extent, by the portion sizes offered. Thus, the adaptation of portion sizes to the customers' real needs should serve as a simple, but effective, approach to reducing the amount of food waste occurring in the hospitality sector (Sundt *et al.,* 2012). À la carte restaurants should offer a choice of portion sizes, with graded prices. To further refine the approach, restaurants could examine how much, and what types of, food tends to be left over on customers' plates, so that they can modify their dishes according to the insights gained by conducting such an examination (Lipinski, Hanson, Waite, Searchinger, Lomax & Kitinoja, 2013). Habit is likely to play an important role in the practices and behaviours relating to food waste in hotels/restaurants. As highlighted by Darnton (2008), both waste behaviours and food choice have a strong habitual element, given their frequency and automaticity. The habitual component of such practices implies that the associated behaviours are being performed with less conscious thought than they were in the past, and that they are, therefore, adding to waste management behaviour. The need to empower and to motivate the staff involved in food waste is, therefore, even more relevant than are the strategies that focus on their behaviour, which could significantly improve the extent to which best food waste practices are followed in terms of expanded awareness.

People, including guests, can be very impressionable when it comes to how much they choose to eat. The flexible range as to how much food an individual can eat (Herman & Polivy, 1984)

encompasses the potential often to eat more than was originally intended (Berry, Beatty & Klesges, 1985). Therefore, those who generally eat three portions of pasta for dinner might be quite content eating two to four portions of such, without feeling either too hungry or too full at the end of the meal (Wansink & Van Ittersum, 2013:332). Such insight into the unpredictability of guest consumption not only requires that the executive chef responsible for planning and procurement has a good understanding of the eating patterns of the guests (before they actually order their food), but is also flexible in terms of the planning and procurement involved. Failure to profile guests' eating patterns accurately could either compromise the levels of guest satisfaction obtained, or, conversely, result in over-ordering, increased food waste, and loss of profit. So as to assist with this function, Quested, Marsh, Stunell and Parry (2013) suggest the use of a range of research techniques to obtain an enhanced understanding of the sources of food waste involved. The techniques include compositional analysis of the waste, in terms of the conducting of questionnaire surveys, focus groups, diary research, and ethnographic studies, which could assist the managers with the accurate prediction of guest eating patterns, as well as the identifying of the staff roles in food waste generation under their control.

Given that the relationship between behaviour and the resulting food waste is not straightforward, and that behaviours have a strong habitual element, it is, perhaps, not surprising that the factors that tend to encourage people to reduce their amount of food waste are varied, and cover a range of themes and motivations (Quested *et al.*, 2013). In addition, guilt is also found to play an important part in food waste reduction, with the vast majority of people not liking to waste food, so that, when food is wasted, the wastage frequently leads to feelings of guilt (Quested *et al.*, 2013).The fact that environmental concerns, and the concerns that are associated with food shortages elsewhere in the rest of the world, tend to have relatively little weight placed on them indicates that the link between food waste and environmental impact is not firmly established in people's minds. Such is so even though the impact on the environment, including on the world's resources, is considerable (Quested *et al.*, 2013). The above suggests that solely engaging with the public's values associated with the environment, and other prosocial values, as is described in terms of the common cause, is likely to have limited impact as a single intervention measure, without the initial strengthening of the conceptual link between food waste and its environmental impact (Ross, 2014). The aforesaid link could be strengthened by means of increasing the public understanding of the fact that the environmental impact of food – rather than the environmental impact of food waste per se – is the focus of attention of such initiatives as Live Well and Cooking Up a Storm (Lazell, 2014). Further research into the link between different people's value systems would be beneficial, with it possibly presenting further opportunities for engaging the public on food waste and related issues (Quested *et al.*, 2013).

Methodology

In accordance with the objective of the current study, a quantitative research design was utilised. Mannay (2010) suggests that quantitative research aims to measure the quantity, or amount, of a specific phenomenon, and to compare it with past records. Such research tries to make projections into the future. In other words, quantitative research refers to the systematic empirical investigation of quantitative properties and phenomena, and their relationships. A traditional 5-point Likert-type scale (where 1=strongly disagree, 3=neutral, and 5=strongly agree) was used to measure the perceptions of 105 hotel employees. The sample population included 4- and 5-star graded hotels located in Gauteng that met the standard

grading criteria for formal accommodation and restaurants (Tourism Grading Council of South Africa [TGCSA], 2012). The focus on such categories of hotels was based on the fact that such hotels typically have facilities that include fully serviced restaurants (see Mhlanga & Tichaawa, 2017). Such hotel management was then approached to take part in the study. The researchers were able to secure permission from 12 hotels that met the predefined criteria and that were willing to allow their employees to take part in the study. The employees who were purposively selected were those who work with food, including service, food production and scullery staff, chefs, waste controllers, and procurement. Typically, such employees are engaged in food waste procedure within the hotel context.

A self-administered questionnaire was customised to address the objectives and setting of the study. The key variables measured in the survey included the respondent employees' background information relating to gender, age, monthly income, and level of education, as shown in Table 1. Twenty-four variable scale items (see Table 2) were designed, cognisant of the literature review. The main items sought to determine the perceptions, attitudes and behavioural patterns of the employees, in line with the recommendations made in related research on the phenomenon of food waste (Herman & Polivy, 1984; Darnton, 2008; Sundt, 2012; Quested *et al.*, 2013). However, the local South African context was similarly considered in developing the survey. Between June and August 2017, the researchers made an initial visit to each of the sites concerned before the data collection commenced, firstly to design a research strategy that could apply to all the sites, and, secondly, to observe the staff's working patterns during a shift, so as to ensure accessibility to real-time data and so as to decrease the possibility of interruption of workplace function. Thirdly, the initial visit was paid to identify the specific areas of food waste generation across all the sites surveyed, to help ensure consistency in data collection.

By the time that the data collection commenced, the researchers already had a clear operational understanding of each site, which served to streamline the self-administering of the questionnaires, by means of minimising the extent of disruption occurring within the fully operational sites. In addition, the personal observations technique was employed, by way of using a checklist during the visits that were paid to each site for the purpose of data collection. The checklist was used to ensure the consistency of data collection over the 3-month period, and to inform the context in terms of data analysis. The data collected were captured and analysed using the Statistical Package for Social Sciences (SPSS) Software, version 25. The key findings related to the hotel employees' perceptions of food waste management are presented below.

Results

Respondents' demographic profile

The demographic profile of the respondents is presented in Table 1 below, which indicates that the respondents were mostly men (66%), with the women forming only 34% of the total. Most of the respondents were African in origin (80%), with 37% being between 31 and 40 years old, 33% being between 21 and 30 years old, 17% being 41 years old or older, and 13% being between 18 and 20 years old. The researchers found out that the majority of the respondents had 3 years or more work experience, and that 65% had completed matric. Most of the respondents worked either in the restaurant (44%), or in the kitchen (55%).

Table 1: Respondents' demographic profile

Demographic profile	Item	n = (105, in %)
Gender	Male	66
	Female	34
Race	African	80
	White	10
	Coloured	7
	Indian/Asian	3
Age	18−20 years old	13
	21−30 years old	33
	31−40 years old	37
	41 years old and above	17
Years of employment in the food and beverage subsector	Less than a year	22
	1−2 years	24
	3 years and above	56
Level of education	Grade 11 / Matric completed	65
	Diploma/certificate	29
	Undergraduate/postgraduate	7
Department where employed	Restaurant (food/beverage)	44
	Kitchen (food production)	50
	Kitchen (scullery)	4
	Procurement	2

The portfolio established is strengthened by that determined by Christie *et al.* (2014), whose research, which focused on hotels in Africa, revealed that most of the employees working in hotels in South Africa were black workers in temporary and low-paying jobs. The results obtained present the respondents as being primarily of African descent, and over the age of 30 years old. The profile reaffirms Idang's 2015 claim that "[i]t is part of the African world-view to treat the environment in which he finds himself with respect: the African cooperates with nature and does not try to conquer it". Black culture can, thus, be inferred as inherently informing environmental beliefs positively.

Perceptions, attitudes and behavioural patterns regarding food waste management

In relation to the total number of 24 variable statements that were given, the researchers found, based on the responses given, that the respondents' perceptions were generally positive, with the lowest mean score being obtained for the response to the statement: "I think that what guests pay for their food covers the cost of what is thrown away" (M=3.10). In contrast, the highest mean score was obtained for the response to the statement:"I was raised to believe that food should not be wasted, and I still live according to the principle" (M=4.01). The score represents the fact that the respondents appeared to be positive, in terms of them positioning themselves in relation to the subject under discussion. The responses received

clearly distinguish between personal principles and workplace food waste policies and procedures, which did not tend to impact on the self-belief involved.

Table 2: Perceptions, attitudes and behavioural patterns regarding food waste management

Item	Variable statement	N	Mean	Std. dev.
	The intention to avoid food waste			
V1	I try not to waste food at work.	105	3.86	1.048
V2	I only take portions of food that I can consume.	105	3.83	0.966
V3	I try to produce very little food waste in my area.	105	3.82	1.009
	Personal beliefs regarding food waste			
V4	It is unnecessary to waste food, as it can always be used in some way.	105	3.74	1.047
V5	It is immoral to discard food while some others are starving.	105	3.81	1.007
V6	It upsets me when unused products end up in the waste bin.	105	3.90	0.990
V7	I feel that one person's food waste can have a negative impact on the environment.	105	3.73	1.059
	Beliefs regarding environmental sustainability			
V8	My understanding of environmental sustainability is excellent.	105	3.52	1.055
V9	Environmental sustainability is very important to me.	105	3.58	1.112
V10	I feel that one person's efforts to decrease their amount of food waste can assist in alleviating world hunger.	105	3.64	1.136
	Financial attitudes towards food waste			
V11	I think that wasting food wastes money.	105	3.81	1.082
V12	I think that what guests pay for their food covers the cost of what is thrown away.	105	3.10	1.246
V13	Saving my employers money does not motivate me to throw away less food.	105	3.32	1.164
V14	I rarely think about money when I discard food.	105	3.30	1.348
	Perceived behavioural control of food waste			
V15	The hotel trains staff to be conscious of not wasting food.	105	3.59	1.137
	Subjective norms relating to food waste			
V16	Colleagues find my attempts to reduce the amount of food wasted unnecessary.	105	3.43	1.063
	Personal norms regarding food waste			
V17	I feel bad when I throw food away.	105	3.93	1.003
V18	I feel obliged not to waste any food.	105	3.72	1.003
V19	Having to discard food is contrary to my principles.	105	3.56	1.007
V20	I was raised to believe that food should not be wasted, and I still live according to the principle.	105	4.01	0.970
	Knowledge of food storage			

V21	Fresh vegetables should be stored in the refrigerator.	105	3.51	1.170
V22	Leftovers from warm meals should be cooled down before they are put in the refrigerator or freezer.	105	3.74	1.097
	Efforts made to decrease the amount of food waste			
V23	I separate food waste from dry waste.	105	3.80	1.064
V24	All staff should receive basic food waste training during their orientation.	105	3.94	0.948
	Efforts made to decrease the amount of food waste			

Based on a 5-point Likert scale where 1=strongly agree and 5=strongly disagree.

Discussion and recommendations

The study covered in the present article was conducted to assess hotel employees' perceptions, attitudes, and behavioural patterns regarding food waste. Generally, the 105 respondents involved were found to be positive in relation to such issues. As portrayed in Table 2, hotel employees were very enthusiastic about the fact that food should not be wasted and live according to such a principle. Conversely, such employees were concerned about the idea that because food should be discarded considering that guests had already paid for it. The findings indicate that hotel employees believe that food waste is wrong, but they feel disempowered to affect change in the actual practices related to the generation of food waste, because of their understanding of hotel policies and procedures that inform food waste management.

Laškarin Ažić (2017) states that good relations in an organisation (which are often displayed through the organisational culture) are the main incentive for stimulating positive behaviour among the employees, implying that staff food waste practices generally improve when those concerned align their personal beliefs and attitudes with workplace practices. Similarly, Çakır and Akoğlan Kozak (2017) conclude in their study that hotel employees' perception of trust and justice has a significant effect on their organisational loyalty and volunteer behaviour. The positive perception that food waste is 'wrong' indicates that employees could come to support strategies that are aimed at reducing food waste through the implementation and maintenance of revised policies and procedures that would enable them to be more authentic in relation to their own beliefs.

Although the health and safety of guests and staff cannot be compromised, strategies that address the importance of reducing food waste among hotel employees, management and guests could result not only in the reduction of food waste generation, but also in the existence of a more positive work environment than before. The above is due to the staff involved coming to experience the strengthening of the alignment between their personal beliefs and attitudes and their workplace practices. Similarly, there is a disconnect between the personal belief 'that throwing good food away is socially, financially and (less so) environmentally wrong' and the belief that workplace food waste practices provide a valuable platform from which to view alternative frameworks.

Biographically, the sample of staff involved with food waste resolution, as surveyed in the current study, can generally be described as being over 30 years old, with an average of 10 years' experience in commercial kitchen production, service, or scullery duties. Furthermore, the employment data of those concerned indicate that the staff commuted daily from the surrounding townships (mainly Alexander). Although not an original aim of the study, the socio-

economic background of the staff concerned could be significant to future best practice interventions in the three ways outlined in the following paragraphs.

Across all sections within the hotel surveyed, the physical act of discarding 'good' food as a required practice can be seen as having created a level of discomfort for the staff involved. Such discomfort is clearly indicated in the data obtained, but when the negative perception is linked to the socio-economic biographical data available, the physical act of discarding food can be viewed as being even more significant than before. Kukanja (2013) indicates that understanding both demographic factors and their influence on motivational factors is required to motivate different groups of employees successfully.

The above can be extended to the sample of employees in the current study, in that they commute daily to work from their communities that possibly face competition for scarce resources, including access to food. Although the staff who participated in the study were employed, the probability exists, within the current South African economic context, that they supported unemployed family members, and that they potentially lived in communities with high levels of unemployment. Hence, the resulting disconnect between workplace food waste practice and personal belief could be perceived as being of even greater significance in the South African urban context.

While the physical practice of discarding 'good' food, in the context of personal social circumstances, could be contentious, the subconscious act of applying a monetary value to food waste further exacerbates the disconnect. When extended to a personal context, best food waste practice is undoubtedly difficult for staff to maintain. It would, therefore, be prudent that any initiatives that are undertaken to improve food waste practices could start with such a premise.

While the plate waste of guests was identified, by the present researchers' waste audit, as being one of the most significant generators of food waste in kitchens, a possible initiative that speaks both to staff discomfort and to a possible reduction in the amount of actual food waste, could be an initiative promoting the hotel's general commitment to generating a decreasing amount of food waste. Any initiative that focuses on branding a hotel as proactive in relation to issues of food waste could realise not only an actual decrease in the amount of plate waste through guest awareness, but also a lessening of the extent of staff discomfort involved, as the actual amount of plate waste could be minimised. The general culture of food waste consciousness could be investigated and monitored, with a subtle shift being made in the hospitality mantra that the 'guest is king' to one supporting a 'responsible guest culture' that promotes a decrease in the amount of plate waste, but neither in the quality of the food, or in the experience of dining, concerned.

Secondly, the negative impact resulting from the cost of food wasted, as witnessed by the staff on a daily basis, could also be managed through engaging in certain food waste awareness initiatives. The social responsibility initiatives, like the Bokashi compost project, that were already in place at the hotel surveyed could become part of the professional development of the staff involved. Taking the staff, as part of their professional development, to witness community projects benefiting from the composted food waste could decrease the levels of negativity associated with food waste practice. The first-hand experience of the communities that benefit from using the compost to produce vegetables could encourage positivity regarding food waste, which could help improve the best food waste practice of the staff.

Although repurposing food that is surplus, or which has not yet been produced or exposed to contamination through service, is not legally permitted in South Africa. However, the possibility exists that surplus pre-production and service food could be legally donated to charity as part of the social responsibility strategy of hotels going forward, if it is lobbied for by the hospitality sector. The repurposing of food for the benefit of vulnerable communities could also assist staff to overcome the disconnect between their daily community-related experiences and the hotel's food waste practice policy. Not only could social responsibility and conscious food waste practice attain tangible results through staff visiting the communities (like the Bokashi compost project) that benefit directly from the initiatives concerned, but a further opportunity to align staff belief with the related practice exists.

As stated previously, the current food waste literature identifies plate waste in hotels as the largest area in relation to the food waste contribution of hotels. Other strategies currently being investigated to empower staff as stakeholders in the food waste reduction process could mark a shift in policy that encourages non-staying guests to carry their leftovers home for storage to eat at a later stage. Service staff again would be at the forefront of such an initiative, as they would not only need to communicate the option to guests, while being culturally sensitive and professional about the matter. Specific food waste management training for staff would be required, but, again, it would not only be beneficial to the hotels to promote food waste management among their guests in an effort to reduce the amount of food of which the guests dispose, but also for the staff to play an active role in the process.

Employees should be encouraged to ensure that the food is stored at the proper control of stock level, under suitable conditions, and according to the appropriate approaches and procedures. Successive to the above, a FIFO (first-in-first-out) system should be implemented in relation to the stocked food, so as to ensure that it is not spoiled. Further, food must be properly handled and prepared under favourable conditions and procedures, such as at the right temperature, as well as in accordance with the appropriate pest control and personal hygiene measures. Apart from being responsible for proper handling in storage, hotel managers and employees might opt for donating or recycling food waste. The recommendation calls for the training and education of the employees in terms of food waste management.

As shown in the findings of the study, the respondents believe that training in food waste management enhances the ability of employees to understand and implement the related strategies. Therefore, employees should be trained to act in conformance with a food waste reduction culture and to maintain good practices in terms of food waste management. Further, the current study supports the Food Wise Hong Kong Campaign's (2013:8) proposal that hotel managers should monitor and audit food waste generation. The above can be done through: (1) assessing the food waste levels; and (2) identifying the main causes of food waste. The above-mentioned assessment and identification should be undertaken in an effort to formulate the appropriate strategies, so as to be able to reduce the amount of food waste. Hotel managers should also form partnerships with the relevant stakeholder groups, as well as with the relevant government and non-governmental organisations (NGOs) in an effort to create awareness and to promote food waste reduction.

The results obtained in the current study also showed that the hotel employees surveyed were sensitive to the financial consequences of food waste, as well as aware of the fact that food waste management is a major contributor to sustainability. Therefore, considering Rogerson & Sims' (2012) assertion that a large percentage of the South African population is living in poverty, the study recommends that hotels should implement a corporate and social

responsibility (CSR) programme that focuses on feeding the poor in the country. To do so, hotels could create food banks and distribute the food that might otherwise go to waste to the communities in need. The distribution concerned might also be performed using such public amenities as schools and hospitals, old age homes, orphanages, prisons, and mental facilities. In addition, hotels should donate surplus edible food to charitable organisations. The above-mentioned strategy could play a twofold role. On the one hand, feeding the poor in the community could help achieve social sustainability. On the other hand, by doing so, hotels will be reducing the financial consequences that could have been incurred had the food been wasted.

Further, the respondents in the present study expressed the belief that all the employees should receive basic training in food waste management practices during orientation. In the light of the above, the study recommends that hotel management must play a role in managing the catering operations and systems in an effort to reduce their food waste losses. A way of doing so is to advise the hotel employees to serve portions according to the needs of the guests, so as to ensure that they do not take more than they can consume. Most importantly, the researchers in the current study advise that hotels should know the difference between the treatment of food waste and its prevention, with them devising relevant strategies to address both concerns. Lastly, hotels are encouraged to create investment opportunities from the food that is disposed of as waste. For example, the investment might be in the form of developing composting and biogas plants, for which the food waste would serve as the primary resource.

Conclusion

The development of a food waste management policy with clear objectives, procedures and goals should cut across all areas of control, including environmental policy and social and financial responsibility. The employees concerned could then come to view best food waste practice more holistically, through such tangible results as a reduction in food waste generation, the composting of organic waste as an environmental initiative, or the redistributing of safe unserved food, as part of a social responsibility venture.

The separation of the control of various food waste procedures across different departments in a hotel not only impacts on consolidating the actual amount of food waste generated, but it also serves to dilute the extent of the issue for staff involved, as they are then likely only to be exposed to areas where food waste is generated through their practice. Merit lies in training staff not only to understand the impact of best food waste practice in their work area, but also to understand how each area contributes to the hotel's best practice, be it in terms of the financial or environmental aspects concerned, or by way of the adoption of social responsibility towards the wider society beyond the mere hotel environs.

The present study was limited to determining the hotel employees' perceptions and behavioural patterns regarding food waste. Future research could be conducted that seeks to determine the hotel managers' perceptions and behavioural patterns in the above regard. More interesting still than the above is the fact that the study sought to investigate the effectiveness of the available policies and strategies in terms of reducing the amount of food waste in hotels. Further investigation could still be conducted to assess the hotel guests' perceptions of, and behavioural patterns in relation to, food waste. The current study was limited to only a few selected hotels in the Gauteng province. However, considering that food waste in South African hotels is a major concern, with huge financial consequences for the

country's hospitality sector, the present study envisages that further research shall, in future, be undertaken into seeking to address the issue within the broader South African context.

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