



## An exploratory study of managerial approaches to food waste mitigation in coffee shops



Viachaslau Filimonau\*, Marija Krivcova, Frederica Pettit

Faculty of Management, Bournemouth University, Talbot Campus, Fern Barrow, Poole, Dorset, BH12 5BB, UK

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### ABSTRACT

The hospitality industry generates substantial amounts of food waste. Although the issue has been politically recognised, it remains under-researched. Studies are limited in number and restricted in sectoral and geographical coverage. They have attempted to quantify and characterise food waste in hospitality ventures while the managerial approaches to its reduction have not been scrutinised. The coffee shop sub-sector of the hospitality industry has been entirely excluded from analysis. This study examined food waste in UK coffee shops through the managerial lens. While food waste represents a significant challenge, the managerial approaches to its minimisation are conservative and focus on disposal, rather than prevention. Lack of governmental support, imperfect legislation, irresponsible consumer behaviour and restricted internal resources inhibit application of more advanced managerial approaches. To enhance the effectiveness of food waste management within the sub-sector, targeted policy interventions designed to strengthen corporate commitments and facilitate pro-environmental changes in consumer behaviour are necessary.

### 1. Introduction

Food waste is a major issue which is related to a set of further global environmental and socio-economic challenges (Segrè et al., 2014). Although there are substantial geographical and sectoral variations in its distribution, food waste is equally pronounced in developed and emerging economies, which underlines the political importance and highlights the urgency of its mitigation (Hodges et al., 2010). Despite the efforts undertaken to-date to combat food waste, the issue persists and calls for better scientific understanding, enhanced public recognition and reinforced political attention (WRAP, 2017).

Hospitality food waste represents an issue of particular concern (Pirani and Arafat, 2014). With its share of 12%, the hospitality industry is the third largest food waste generator in Europe, after households and food manufacturing and processing enterprises (FUSIONS, 2016). In the UK, hospitality businesses generate circa 0.9 million tonnes of food waste annually, which translates into 10% of the national food waste stream (WRAP, 2017). The issue is likely to intensify as the frequency of dining out is rising in both developed and emerging economies, implying growing demand for food (Mintel, 2016a). Importantly, up to 80% of UK hospitality food waste is avoidable (WRAP, 2017), but the issue occurs due to the deficiencies in business operations, poor managerial practices and reckless consumer behaviour (Engström and Carlsson-Kanyama, 2004). In the absence of

effective prevention and mitigation measures, the future hospitality industry is likely to generate substantial amounts of food waste, thus hampering its quest towards sustainability (Betz et al., 2015).

Despite its global importance, the issue of hospitality food waste remains under-researched (Papargyropoulou et al., 2016; Pirani and Arafat, 2016; Radwan et al., 2010). Although the number of studies that have set to address this issue has recently been growing (see, for instance, Charlebois et al., 2015; Heikkilä et al., 2016), both the scope and the scale of their analysis remain limited (Kim et al., 2017; Myung et al., 2012). Existing research has predominantly attempted to quantify and characterise the food waste streams in hospitality enterprises (Christ and Burritt, 2017), aiming to indicate the magnitude of food waste and establish the grounds for mitigation (see, for example, Eriksson et al., 2017; Juvan et al., 2018; Tatão et al., 2017). Existing research has primarily been concerned with hotels, hospitals alongside public (work canteens) and private (restaurants and public houses) catering enterprises, while other integral hospitality sectors, such as street food, coffee shops and cruises, have been overlooked (see, for example, FUSIONS 2014 for a sectoral review). Most importantly, however, is that existing studies on hospitality food waste, with a handful of notable exceptions (see, for instance, Derqui et al., 2016; Kasim, 2009; Radwan et al., 2012), have failed to investigate the managerial attitudes and approaches to food waste minimisation. This is a major shortcoming given that managerial commitment determines

\* Corresponding author.

E-mail address: [vfimonau@bournemouth.ac.uk](mailto:vfimonau@bournemouth.ac.uk) (V. Filimonau).

success of sustainability initiatives in hospitality enterprises (Chan, 2011).

This study contributes to knowledge by exploring the food waste management approaches adopted in UK coffee shops. It is the first known attempt to evaluate the magnitude of the food waste issue in coffee shops and examine how the issue is addressed by coffee shop managers, first-hand and on the ground. Given the topic of food waste management has never been investigated in the context of coffee shops, the study adopts a qualitative research paradigm to shed light on the issue. Ultimately, the study hopes to trigger future research on the topic of food waste management in coffee shops which would consider the issue from both qualitative and quantitative perspectives and in various political and socio-economic contexts. Importantly, while the study focuses on the UK, where the hospitality sub-sector of coffee shops is steadily growing, which accelerates the associated environmental footprint, the study's outcome can be used as a benchmark for a comparative analysis with other geographies, where the issue of hospitality food waste in general and the issue of food waste generated specifically in the hospitality sub-sector of coffee shops has been recognised, but remained academically unexplored.

## 2. Literature review

### 2.1. Coffee shops

Coffee shops (also known as coffeehouses in some countries) represent a global hospitality sub-sector which plays an increasingly important role in national economies and societal well-being. In the UK alone, coffee shops contributed with £3.4 billion in sales (or 8%) to the gross £41 billion value of the national hospitality industry in 2014 (British Hospitality Association, 2015; Mintel, 2016b). Further growth of the sub-sector is forecast with £4.4 billion sales predicted for 2021 (Mintel, 2016b). It is important to note that this figure is a rather conservative estimate as it applies to the branded coffee shops only. The sector is made up by three major categories of coffeehouses: branded or chain-affiliated (for example, Starbucks or Costa Coffee), independent (any coffee shop which is not chain-affiliated) and non-specialist (any business selling hot beverages, but not specialising in them, such as fast food restaurants, public houses, petrol stations and supermarket cafeterias) (Mintel, 2016b). Sales of hot beverages and related foodstuffs in all these coffee shop categories account for a total of £7.9 billion (Davidson, 2015), which suggests that the annual contribution of the sub-sector to the value of the UK hospitality industry can be as high as 19%. This makes coffee shops a key integral element of the hospitality industry, globally and in the UK. This is not surprising given that coffee is considered the world's second most exported commodity, which is a logical consequence of a steady growth in public demand (Reinecke et al., 2012).

The number of coffee shops is rapidly growing, globally and nationally (Allegra World Coffee Portal, 2015). In the UK, coffeehouses have become an essential part of the social life (Cowan, 2005) with estimated 65% of Britons regularly consuming hot beverages out-of-home (Mintel, 2016b). One in five people in the UK visits coffee shops on a daily basis (Allegra World Coffee Portal, 2015) with resultant 8 million drinks being sold every day (Cocoza, 2016). In Europe, the number of branded coffeehouses had increased by 10% in 2014 with the UK, Turkey and Germany holding over 60% of the market (Allegra World Coffee Portal, 2015). Substantial growth in coffee shops is attributed to the Asia Pacific region where all major brands strive to establish and solidify their presence (Chen and Hu, 2009; Lee and Yeu, 2010; Lin and Wang, 2010).

In terms of the sectoral market share, growth is recorded in all coffee shop categories (Mintel 2016b). However, in the UK context, due to the aggressive marketing and pricing strategies, non-specialist coffeehouses are slightly outperforming branded and independent outlets. In 2014, the share of non-specialist coffee shops increased to 39% of the

national market with 31% and 30% attributed to the branded and independent businesses, respectively (Davidson, 2015). Within branded and non-specialist coffeehouses, Starbucks is a major global player followed by McDonald's café (known as McCafé) and Costa Coffee (Statista, 2015). In the UK, Costa Coffee holds the largest market share followed by Starbucks and Caffè Nero (Mintel, 2016b). In total, these three brands account for circa 90% of the UK branded coffeehouse market (Allegra World Coffee Portal, 2015).

The on-going global success of coffee shops is attributed to a number of factors. First, consuming hot beverages out-of-home has become part of public's daily routine (Kanjanakom and Lee, 2017). Second, coffeehouses offer an opportunity to try hot beverages that are unique, of higher quality, and cannot be prepared at home, such as seasonal and flavoured drinks (Glazer, 2015). Third, coffee shops provide good quality customer service and experience (Aries and Eirene, 2015), which turns people into repeat customers and enhances consumer loyalty (Yu and Fang, 2009). Fourth, coffeehouses offer comfortable space for socialisation and business meetings (Maguire and Hu, 2013), which is facilitated by active uptake of technology, such as free Wi-Fi (Wu, 2017). Lastly, brand recognition and social status play an important role in the success of branded coffee shops, especially in the Asia Pacific, where consumers perceive visits to coffeehouses as a means of societal self-expression and brand loyalty (Kang et al., 2011).

Given the coffee shop sub-sector creates significant economic value, it is surprising that it has been under-researched, particularly in terms of its environmental performance. Aside from generic historical outlooks on the sector's origin and evolution (Cowan, 2005), existing studies on coffeehouses have focussed on consumer preferences, customer loyalty, brand perception and recognition (Tumanan and Lansangan, 2012). Research has also looked into how coffee shops address contemporary market trends in terms of market segmentation, changing patterns of coffeehouse use and technology adoption (Tan and Lo, 2008). As public demand for coffee shops intensifies, so are the environmental impacts of their operations. Although this indicates the importance of studying the sustainability initiatives applied within the sub-sector, limited research has attempted to investigate the environmental repercussions of coffee shop operations. This signifies a critical knowledge gap.

### 2.2. Sustainability management in coffee shops

Sustainability represents an issue of critical importance for the hospitality industry, which is due to the manifold negative impacts attributed to hospitality operations that require urgent mitigation (Legrand et al., 2016). In environmental terms, these impacts take the form of energy use with subsequent greenhouse gas (GHG) emissions (Filimonau et al., 2011), water consumption (Deng and Burnett, 2002) and solid waste generation (Radwan et al., 2010), to mention a few. The importance of integrating sustainability into corporate business strategies has been recognised by hospitality professionals (Jones et al., 2016) given its proven potential to reduce operational costs (Erdogan and Baris, 2007), gain competitive advantage (Graci and Dodds, 2008), aid in regulatory compliance (Kasim, 2009), address shareholders' expectations (Holcomb et al., 2007), improve employee productivity (Sourvinou and Filimonau, 2018) and build consumer loyalty (Mihalic et al., 2012). To support the industry commitment to sustainability, the research agenda on sustainability management in hospitality operations has been rapidly evolving (Myung et al., 2012).

Sustainability-related research agenda in the sector of coffee shops is however under-developed. It has been limited to the issues of ethical sourcing of coffee beans and responsible farming, where the bulk of studies has been concerned with consumer preferences, public perceptions and customer willingness-to-pay for the Fair Trade labelled coffee products (De Pelsmacker et al., 2006). Jang et al. (2015) have looked into the issue of emotional attachment and customer loyalty to the environmental management initiatives adopted in coffeehouses.

Technical feasibility studies on the use of spent coffee grounds with composting and energy generation purposes represent another established research stream (Liu and Price, 2011). No further sustainability related themes were identified in peer-reviewed research on coffee shops.

Paucity of studies on the environmental performance of coffeehouses can be attributed to the common vision of the sector as being sustainable. This is due to all major coffee shop brands sourcing Fair Trade coffee beans, thus providing fair wages to farmers (Van Loo et al., 2015). This suggests that the sector operates ethically although this can be questioned at closer analysis given the on-going critique of the Fair Trade standards (Taylor, 2005). Furthermore, the Fair Trade label does not always imply environmental sustainability (Raynolds, 2012). As a result, consumers remain unclear about the environmental credentials of coffeehouses due to the implicit messages they disseminate to the public (Turner, 2016).

To understand how sustainability is communicated to the public within the sector of coffee shops, content analysis of corporate websites and annual reports of major branded coffeehouses in the UK was conducted in this study. Content analysis confirmed that the environmental dimension of the UK coffee shop operations is not prioritised in corporate reporting (Table 1). For instance, Starbucks, Costa Coffee and Café Nero all fail to recognise the issue of food waste generation, which is alarming given the substantial magnitude of its occurrence in the UK hospitality context (Pirani and Arafat, 2016). Ethical sourcing of coffee beans, recycling and disposal of generic solid waste and composting of coffee grounds represent the only elements of environmental performance that are explicitly addressed in corporate communication materials of UK coffee shops. This is likely to be attributed to the recent public attention drawn to these issues by media (see, for example, Smedley, 2014). However, the recycling claims made by UK coffeehouses have been criticised (Turner, 2016). This is due to the problem of safe disposal of coffee cups that, until recently, have been portrayed by many coffee shops as being 100% recyclable which is untrue in reality (Häkkinen and Vares, 2010). This is also because food waste represents a critical issue for coffeehouses which suggests that ‘a zero waste’ policy is difficult to implement within the sector (Katajajuuri et al., 2014), and yet Costa Coffee and Café Nero claim they have successfully put it in place (Table 1).

Content analysis of corporate communication materials further revealed that very limited attention is paid by UK coffee shops to the problem of food waste (Table 1). The corporate strategies devised to minimise its occurrence remain undisclosed. Donation of unsold/excess food or food approaching its ‘use by’ date to charities with subsequent distribution to the people in need is increasingly recognised as a means of reducing food waste generation and fighting societal inequality in the UK hospitality and grocery retail industries (see, for instance, FareShare Project 2017; Felix Project, 2017; Filimonau and Gherbin, 2017). This is partially driven by recent laws in France and Italy that encourage the above sectors to donate unsold food (Kirschgaessner, 2016), which implies that similar legislative changes may soon be introduced in the UK (Bolton, 2016). However, the leading UK coffeehouses offer limited evidence on the food donation practices they currently operate. In fact, all major market players appear to have not integrated food donation in their corporate sustainability policies. In contrast, the two non-specialists (Greggs and Pret-a-Manger) that were included in content analysis (Table 1) with comparison purposes have put food donation in place. The limited uptake of food donation by major UK branded coffeehouses can make them unprepared if, following France and Italy, it becomes legally reinforced in the UK. Overall, given the substantial environmental and socio-economic implications of food waste for UK coffeehouses, it is argued that this issue should be better communicated in corporate reports. It also calls for more in-depth investigation to establish the sector benchmarks and identify ‘good business’ practice examples.

**Table 1**  
Sustainability initiatives as communicated by major UK branded coffeehouse chains and selected non-specialists (in italics). Market share data are from Allegra World Coffee Portal (2015). NB Greggs and Pret-a-Manger are non-specialists but have been added for comparison purposes.

Chain	Ethical sourcing of coffee beans	Sustainable farming	Composting of coffee grounds	Zero waste policy?	Cup recycling initiatives	In store recycling	Unsold food donation	Market share, %
Costa Coffee	All coffee beans are procured from Rainforest Alliance certified farms	Supports British farmers through protecting animal welfare and ensuring safety	Coffee grounds are available to customers for free collection	Yes	2000+ stores recover and recycle used paper coffee cups. Discount of £0.25 is given for any drink when using a reusable cup	Many stores recycle organic waste and coffee grounds	No	47
Starbucks	99% of coffee was ethically sourced in 2015	Work with 4500 small farmers worldwide to provide a fair wage and access to schools and healthcare	Coffee grounds are offered to customers for composting	No	Discount of £0.25 is given for any drink when using a reusable cup; £1 reusable cups are available to purchase	Invested into developing flexible recycling programmes to increase the amount of waste recycled in-store	Not currently in the UK. Pastries are donated to charities in USA	25
Café Nero	Sourced from clearly identifiable and traceable sources	Farmers and locals are rewarded for following brand standards	Recycled in London stores, diverted from landfills	In London stores only	Reusable cups are available to purchase	70% of waste is recycled and 30% of waste is recovered (in London only). 60% of waste is recycled nationwide	No	18
Coffee 1	Regionally sourced Fairtrade and organic	Use farming standards that allow products to be traced back to the ethical practices of producers	Recycled and offered to customers for composting	No	Reusable cups that are biodegradable with compostable lids	Use of up-cycled materials in cup sleeves	No	-1
Greggs	100% Fairtrade certified	Provide a secure income for the farmers	Diverted from landfills	No, but 99.6% of waste is diverted from landfills	None	All waste streams are processed using sustainable routes	Yes, regular donations to community groups and local charities	-
Pret-a-Manger	Only use organic coffee	Organic farming methods, natural diet and grazing in fields for animals	No	No	None	Offer unsold food to staff and charities	Yes, unsold food is given to local charities	-

### 3. Research design

Given that no research has attempted to investigate the environmental sustainability initiatives adopted by UK coffeehouses, let alone the managerial approaches to food waste mitigation within the sector, this study adopted the qualitative research paradigm for primary data collection and analysis. The exploratory value of qualitative research in studying the social phenomena whose knowledge is insufficient and/or fragmented is recognised, and so its applicability to examine the populations that are characterised by restricted access (Silverman, 2000), such as managers of hospitality ventures (Filimonau and Krivcova, 2017). By providing first outlook on a previously under-studied topic (such as food waste management in coffee shops), qualitative research enables identification of the core issues (themes) within that topic that can become an object of subsequent investigation through the application of quantitative research tools, thus allowing for better generalisability and representativeness of results (Silverman, 2000).

Within the portfolio of qualitative research methods, conventional content analysis (Hsieh and Shannon, 2005) of corporate websites and annual reports published by the major UK branded coffee shops and selected non-specialists was first conducted and its outcome is presented in Table 1 and discussed in Section 2.2. Content analysis aimed to establish the baseline for subsequent investigation, inform an interview schedule and derive initial coding categories for thematic analysis after interviews have been conducted. In-depth, semi-structured interviews were consequently employed. These enable flexibility in exploratory analysis, thus providing scope for in-depth investigation of specific topical trajectories (Veal, 2006). Focus groups were considered but rejected due to the organisational difficulties.

The project was undertaken in Bournemouth (Dorset), a popular seaside resort in the UK with a large number of hospitality enterprises, including coffee shops. Participants were recruited via convenience sampling which is, despite being biased, appropriate when reaching for the population limited in number and access (Adams et al., 2007), such as managers of busy coffeehouses. For better representativeness, it was ensured that the sample reflected the current structure of the sector (see Section 2.1) and embraced the breadth of managerial experiences (Table 2). The size of the sample ( $n = 21$ ) was determined by the saturation effect. The saturation effect suggests that interviewing should draw to a close when no new themes are identified in the process of iterative data analysis (Morse 1995 cited by Guest et al., 2006). Thomson (2010 cited by Marshall et al., 2013) argues that saturation is achieved with 10–30 interviews which this study's sample fits into. Recruitment of the willing participants was therefore stopped after no new themes were emerging from the data collected.

Interviews were conducted in different locations across Bournemouth in October–December 2016 and then in January 2018. They lasted between 30 and 60 min. Interviews were digitally recorded and not incentivised.

Interview schedule was developed based on the major themes emerged from content analysis and the literature review (Table 3). Interviews were transcribed and the material was coded in the process of thematic analysis (Braun and Clarke, 2006). Thematic analysis was employed as it is recognised as the most established and broadly used method in qualitative research (Jankowicz, 2005). NVivo software was used to facilitate thematic analysis given its proven potential to aid in the process of deriving and visualising codes (Sotiriadou et al., 2014). Fig. 1 presents the sample coding structure derived. When writing up, verbatim quotations were utilised to support the analysis.

### 4. Findings and discussion

#### 4.1. Food waste in UK coffee shops

There was an almost equal split in managerial opinions on the magnitude of food waste in coffee shops (Fig. 1). While half admitted

that the problem was substantial, another half described it as 'manageable'. Yet, within this latter group of managers, all agreed that the issue of food waste would intensify and could become significant in the summer, when public demand for food and beverages grows while temperatures escalate. In these circumstances stock estimates become difficult to make while the spoilage probability rises (Wang et al., 2013).

The main contributors to food waste in coffeehouses are fresh fruits and vegetables, alongside bakery items; these were mentioned by over 60% of managers (Fig. 1). This is in line with major food waste categories as identified for the grocery retail sector, globally (FAO 2011 cited in Eriksson, 2015) and in the UK (Filimonau and Gherbin, 2017; Mena et al., 2010), thus demonstrating the uniqueness of the hospitality sub-sector of coffee shops that combine features of hospitality businesses and grocery retail enterprises. Sandwiches hold another important share in food waste in coffee shops (Fig. 1), but they are not as critical as fresh fruits and vegetables and bakery items in terms of the amounts wasted given their small production volumes.

The outlet size determines the amount of food waste generated (Christ and Burritt, 2017; Radwan et al., 2012; Wang et al., 2017) with smaller, usually independent, coffee shops wasting less food. This is attributed to the limited food stock and more predictable demand given that independent coffeehouses cater for the established customer base. The business size was found to affect the magnitude of food waste generation in UK grocery retail (Mena et al., 2010) and hotels (Radwan et al., 2010), thus highlighting a major factor to consider when designing managerial mitigation interventions. Overall, it was found that the food waste problem in individual UK coffeehouses is not as pronounced as in major UK grocery retailers (Filimonau and Gherbin, 2017), which is due to lower stock levels and the prevalence of food items on sale that have extended shelf life. However, as there are more than 5000<sup>1</sup> coffeehouses in the UK (Mintel, 2016b), they may cumulatively generate higher volumes of food waste compared to British supermarkets, which calls for its minimisation.

#### 4.2. Managerial attitudes and approaches to food waste mitigation

Interviews revealed a number of managerial approaches to food waste mitigation (Fig. 1). These were however dominated by conventional waste separation on-site with subsequent collection and disposal by specialist or communal refuse companies, which is in line with findings reported for UK grocery retail (Filimonau and Gherbin, 2017) and tourist accommodation sector (Radwan et al., 2012). Disposal is the last step in the waste management hierarchy and should only be employed when other, prevention-orientated, measures are unavailable (Papargyropoulou et al., 2014). This indicates that the UK coffeehouses should utilise more pro-active approaches to food waste minimisation. These should target the upstream of the food system by adjusting the corporate vision and architecting public attitudes and behaviours that lead to food waste occurrence (Thyberg and Tonjes, 2016). Accurate stock forecasting represents an example of such a preventive approach (Wang et al., 2013) and yet it was pinpointed by only a third of managers, where all were represented by chain-affiliated coffee shops and non-specialists (Fig. 1). These businesses possess better financial resources and are therefore more likely to invest in advanced revenue management and forecasting models (Chan, 2008), thus having an advantage over independent coffee shops whose resources are severely restricted. Overall, however, food stock in the hospitality industry is hard to predict (Darlington and Rahimifard, 2007) and managers tend to 'play it safe' by ordering larger than required quantities of food given that under-prediction can lead to consumer dissatisfaction (Gruber et al., 2016). This underlines the importance of food waste disposal in

<sup>1</sup> This figure represents branded UK coffeehouses only and does not include independent or non-specialist outlets.

**Table 2**  
Interview participants (n = 21).

Pseudonym	Gender	Age	Coffee shop category	Managerial role	Work experience in a managerial role + = Limited (1–3 years) + + = Intermediate (3–5 years) + + + = Extensive (5+ years)	
Interviewee 1	Male	30–40	Independent coffee shop	Manager/Barista	+	
Interviewee 2	Male	40–50		Head Chef/Manager	+ +	
Interviewee 3	Female	20–30		Assistant manager/Head Chef/Barista	+	
Interviewee 4	Male	30–40	Chain-affiliated branded coffee shop	Owner/General manager	+ +	
Interviewee 5	Female	30–40		General manager/Barista	+	
Interviewee 6	Male	20–30		Manager/Barista	+	
Interviewee 7	Male	20–30		Assistant manager	+ +	
Interviewee 8	Female	30–40		Manager/Barista	+ +	
Interviewee 9	Male	40–50		Owner/General manager	+ + +	
Interviewee 10	Male	20–30		Manager	+	
Interviewee 11	Female	20–30		Assistant manager	+	
Interviewee 12	Male	30–40		Assistant manager	+	
Interviewee 13	Female	20–30		Manager	+ +	
Interviewee 14	Male	30–40		Manager	+ + +	
Interviewee 15	Female	20–30		Non-specialist coffee shop	Assistant manager	+
Interviewee 16	Female	30–40			General manager	+ +
Interviewee 17	Male	50–60			General manager	+ +
Interviewee 18	Male	30–40			General manager/Barista	+ +
Interviewee 19	Female	20–30			Assistant manager/Head Chef	+
Interviewee 20	Female	20–30			General manager	+ +
Interviewee 21	Male	30–40			Manager	+ + +

**Table 3**  
Themes (and their major underpinning sources) utilised when developing interview schedule.

Theme/Sub-theme	Rationale	Underpinning source
Magnitude of the food waste problem	To establish the magnitude of the issue given it has been under-studied	Papargyropoulou et al. (2016); Pirani and Arafat (2016); Radwan et al. (2012); WRAP (2017)
Managerial approaches to food waste mitigation, including <i>Recycling and off-site disposal</i> <i>Stock prediction and rotation</i> <i>Donation</i>	To identify key mitigation measures	Papargyropoulou et al. (2016) Papargyropoulou et al. (2016); Content analysis Papargyropoulou et al. (2016); Pirani and Arafat (2016) Kirschgaessner (2016); Content analysis
Facilitators and inhibitors of employing more effective food waste management approaches <i>Money</i> <i>Legislation</i> <i>Corporate policies</i> <i>Consumers</i>	To evaluate potential for more effective minimisation	Filimonau and Gherbin (2017); Papargyropoulou et al. (2016); Pirani and Arafat (2016); Radwan et al. (2012); WRAP (2017)

the UK coffee shop sector, and yet it should aim at diverting food which is suitable for human consumption from landfills. Next to food being given to staff, price reductions and stock rotation (Fig. 1), food donations can aid in this (Eriksson et al., 2015). Surprisingly, only a small number of managers claimed they were donating food and hence the main barriers to donation were explored next.

Food donation has long been considered a tool to reduce food waste and fight societal inequality (Schneider, 2013). However, it was not until recently that food donation started to grow in popularity as a result of latest legal interventions in France and Italy (Mourad, 2016). The UK grocery retail sector has reacted promptly by engaging in various food donation schemes, such as the Fareshare and the Neighbourly (Butler, 2015a,b). The national hospitality sector is lagging behind with limited participation recorded in a handful of, what can be described as largely localised and ad-hoc, food donation initiatives, such as the Solidarity Fridge project in Somerset (Hall, 2016). This calls for a change given that all coffee shop managers expressed positive attitudes towards food donation and confirmed its business feasibility as a means of minimising the environmental footprint of operations, obtaining reputational gains and enhancing the well-being of local communities.

This was further confirmed when managerial attitudes to the recent legal reinforcements on food donation in France and Italy alongside the Solidarity Fridge project in Somerset, as highlighted above, were sought. While managerial awareness of these initiatives varied, all

agreed that it would be something their businesses could engage in, subject to governmental support and corporate approval. As shown by the example of the hospitality sector in Poland and Sweden, governmental support is paramount in facilitating food donations in hospitality ventures (Bohdanowicz, 2006) and every effort should be made to achieve it in the UK. The critical role of reliable local charities and food banks was also highlighted as these were seen instrumental in collecting unsold food from coffee shops and distributing it to the people in need, thus taking care of administrative burdens and reducing pressure on coffeehouse staff. However, charities and food banks do not always possess the necessary resources to handle food donations in the UK (Caplan, 2016). They may further refrain from engaging in food donations because of health and safety considerations (Swinburne, 2014). The engagement of charities and food banks in donating unsold food from coffee shops should therefore be facilitated by targeted policy interventions alongside corporate and consumer support measures which is in line with the outcome of studies on food waste management in UK grocery retail (Filimonau and Gherbin, 2017) and the hospitality industry in Switzerland (Betz et al., 2015):

*‘I think it’s a lot down to liability and legislation that should be relaxed. If we do something like that [food donation], then we’ll have to be responsible for what we do and there’s a large risk for the business. If, in turn, there’d be a reliable charity in the town where we operate, who’d be*

-Magnitude of the food waste problem	Substantial	11 or 52%	
	Manageable	10 or 48%	
-Major contributors	Fruits & Vegetables	15 or 71%	
	Bakery items	13 or 62%	
	Sandwiches	7 or 33%	
	Coffee grounds	4 or 19%	
	Salads	4 or 19%	
-Food waste management approaches	Off-site disposal	17 or 81%	
	Giving to staff	10 or 48%	
	Price reductions	10 or 48%	
	Careful forecasting	7 or 33%	
	Stock rotation	7 or 33%	
	Donation	3 or 14%	
	Portion control	2 or 10%	
	-Major <i>facilitators</i> and <i>inhibitors</i> of employing more effective food waste management practices		
<i>Cost reduction</i>	21 or 100%	<i>Reckless consumers</i>	14 or 67%
<i>'It is the right thing to do'</i>	16 or 76%	<i>Internal resources</i>	12 or 57%
<i>Reputational gains</i>	6 or 29%	<i>Budgetary constraints</i>	11 or 52%
<i>Societal impact</i>	6 or 29%	<i>Poor in-house expertise</i>	7 or 33%
		<i>Corporate policies</i>	5 or 24%
-Barriers to food donation	Health & Safety	20 or 95%	
	Imperfect laws	17 or 81%	
	Corporate policies	5 or 24%	

Fig. 1. Thematic analysis of interviews. The figures inside the boxes represent the number of text passages identified in interview transcripts for each code, alongside the proportion of participants who contributed to this code.

*responsible for coming to our place, collecting the food that is just about to be wasted, and giving it to people, then we'd really be likely to join such a scheme on the first day of it. I think that in the UK it'll come into being very soon, but businesses will need to do a lot of work to make it work, but it definitely is not impossible'* (Interviewee 3)

#### 4.3. Facilitators and inhibitors of food waste mitigation

Health and safety considerations represent a major off-putting factor for coffee shops to engage in food donation (Fig. 1). Indeed, managers are unwilling to deal with alleged food poisoning if the consumer of donated food falls sick as these accusations are costly to rectify and entail substantial reputational damage (Smithers, 2012). This is often reflected in corporate policies that prescribe coffeehouse managers against donating unsold food (Fig. 1). This is further attributed to imperfect legislation in the UK which prevents businesses from donating food approaching its 'use-by' date (Filimonau and Gherbin, 2017) (Fig. 1). As demonstrated by Hermsdorf et al. (2017) and Sakaguchi et al. (2018), fear of the legal liability for food donations by

hospitality and grocery retail enterprises persists outside the UK, thus demonstrating its 'universal' character and calling for the harmonization of associated policies across borders.

Aside from health and safety liability, the food donation value cannot be deducted from corporate tax in the UK (Deloitte, 2014), which disincentivises managers from donating as the re-distribution of unsold food becomes more expensive than its disposal (House of Lords, 2014). This suggests that regulatory interventions, similar to those recently implemented in continental Europe, are necessary to facilitate food donation practices in UK coffeehouses (Smithers, 2012). These should foremost aim at minimizing the risk of liability for food donors and charities involved in re-distributing food donations to those in need. Meanwhile, coffee shops can only rely on informal tools of shifting liability for food poisoning, such as written notice disclaimers. For example, businesses donate excess food to the Solidarity Fridge in Somerset assuming it can be consumed by recipients at their own risk (Hall, 2016). The challenge of food donations is effectively summarised by Interviewee 10:

*'We're reluctant to give food to staff or donate. There was a story a while*

*ago when someone got a sandwich from someone and that sandwich was packed by Tesco and that person got food poisoning because of that sandwich. In the end, the person who fell sick actually sued the Tesco. Anyone can potentially be in the same situation and we'll always need to take care about such situations if we do decide to donate'* (Interviewee 10)

Aside from the need for regulatory interventions to facilitate food donation, lack of internal resources (money, time and staff) and irresponsible consumer behaviour were seen as barriers to adopting more effective food waste management practices in UK coffeehouses (Fig. 1), which is in line with research findings representative of other hospitality sub-sectors, such as public houses (Collison and Colwill, 1987), restaurants (Ge et al., 2018) and hotels (Radwan et al., 2010). Although clear long-term financial savings (WRAP, 2013), reputational gains (Thyberg and Tonjes, 2016) and customer loyalty benefits (Kasim and Ismail, 2012) are commonly assigned to food waste minimisation in the hospitality industry, short-term budgetary constraints and staff disengagement often prevent managers from engaging in food waste mitigation more actively (Charlebois et al., 2015). The hospitality sector is made up by small and medium-sized businesses whose busy work schedules and limited staffing resources have been recognised as a significant barrier towards the adoption of sustainability initiatives (Chan, 2008; Chou et al., 2012; Hillary, 2004). This is further supported by Interviewee 11 below:

*'In our case it's definitely lack of resources as well as lack of knowledge. Sometimes when you have a busy service, you simply don't have time to recycle the food waste and simply need to concentrate on making money for the business as well as making customers happy, and in order to do that, all your staff is usually fully engaged in a busy service. There is simply no time for the staff to do it... Lack of knowledge is another problem—believe me or not, but I think that there're not a lot of people who know about correct food waste management and, as a result of it, people simply don't know what to do. I think it's really a global problem'* (Interviewee 11)

The majority of participants stated that irresponsible consumer behaviour was a significant contributor to the occurrence of food waste in their enterprises (Fig. 1). Although consumer awareness of the negative socio-economic and environmental implications of hospitality food waste is growing (WRAP, 2013), customers fail to engage in food waste minimization in the out-of-home settings while the UK government does little to change this negative behavioural pattern, see the quote from Interviewee 15 below. Indeed, the public often perceives visits to coffee shops as an opportunity to socialise, relax and unwind (Kanjanakom and Lee, 2017), rather than to think about the impact of their consumption choice on the environment. It is therefore important to change this public viewpoint in pursuit of long-term sustainability goals in the coffeehouse sector. For example, recent evidence from the restaurant sub-sector demonstrates that pro-active food waste management techniques, when applied with care and actively promoted to consumers, can actually improve customer's value perception (Ge et al., 2018) building loyalty (Jang et al., 2015) and triggering 'greener' behaviour (Wang, 2016), thus indicating a critical area for managerial interventions.

Importantly, while for some coffeehouses reckless customer attitudes may indeed represent a major barrier towards the adoption of more effective food waste management practices, some may just utilise it as an excuse to avoid mitigation actions and shift responsibility (Gössling and Peeters, 2007). In either case, the industry should more actively engage in consumer choice architecture. Indeed, pro-environmental customer 'nudging' in hospitality enterprises can be feasible from the perspective of both the business and the consumer (Filimonau et al., 2017; Kallbekken and Sælen, 2013; Lehner et al., 2016). This underlines its importance, especially given that voluntary behavioural changes towards more responsible consumption patterns in the tourism

and hospitality context can be difficult to achieve if applied on their own and without adequate support from policy-makers and industry professionals (Cohen and Higham, 2011):

*'Customer awareness is a big problem. Before I started to work in catering business I had no idea how much food waste is produced every day! For example, even discounts on food do not work. We had discounted prices for cakes during the Christmas period last year. What we found is that people bought a lot of them, tried each of them and simply put them in the bin—which is a shame! People definitely need to be educated on it [food waste], whether it'd be documentaries, tutorials, TV adverts or anything else—everything will be a good start and the government should take an active role in it!'* (Interviewee 15)

The desire to see the national institutions of power being more closely and pro-actively engaged in food waste management in the sub-sector of coffee shops was a resonant theme across all interviews. The national government was attributed the two key roles to play. The first was seen in optimising the food waste regulatory framework in the UK, especially in terms of health and safety standards applied to food donations. The second was in the design of educational and public awareness raising campaigns. Such integrated governmental support was viewed paramount for businesses to more effectively tackle the issue of food waste generation within UK coffeehouses, as effectively summarized by Interviewee 9 below. This is in line with studies from the UK grocery retail sector where deeper governmental involvement has been identified as a major success factor for better public recognition of environmental claims made on food packaging (Gadema and Oglethorpe, 2011) and campaigns to minimise food waste (Filimonau and Gherbin, 2017; Mena et al., 2010). This is also in agreement with a bulk of research on the issues of sustainability management in the tourism and hospitality context where policy-making interventions have been recognised as being critical to raising public awareness of the detrimental environmental effect of consumption choices and facilitating positive, pro-environmental changes in consumer behaviour (Gössling et al., 2016). Although this may again indicate an attempt of the industry to shift responsibility towards the government instead of tackling the issue of food waste mitigation pro-actively, better involvement of the national institutions of power in hospitality and grocery retail food waste mitigation in the UK was also called for in Deloitte (2014):

*'Lack of government support in general is a big thing—if the government was stricter about food waste and provided support for it, for example, some sort of financial or business benefits, then businesses would definitely think about managing food waste better. There's no clear legislation on how you'd do it and it's a problem for many businesses. Also, I'd say that the largest proportion of the problems in this country is really due to consumer behaviour. The public needs education on food control, food waste management and it'd not hurt if the government could be more actively involved, such as through the targeted campaigns, to motivate them [customers]'* (Interviewee 9).

## 5. Conclusions

Food waste represents a major challenge for the hospitality industry, globally and in the UK. Surprisingly, the issue has been understudied which hampers its effective management. Although some efforts have been paid to the characterisation and quantification of food waste streams in hospitality enterprises, the managerial approaches to food waste mitigation have not been researched. This applies to the hospitality industry in general, but also to its specific sectors and geographical markets.

This study contributed to knowledge by evaluating the managerial approaches to food waste mitigation in the UK coffee shop sector. It was established that food waste represented an issue of managerial concern, and yet it was not seen as a managerial priority. This was reflected in

the adoption of food waste management approaches that could be described as extensive. More advanced and preventive approaches were rare. This is in line with previous studies conducted in the context of UK hospitality (Radwan et al., 2010, 2012) and grocery retail (Filimonau and Gherbin, 2017) enterprises where similar conclusions were reached.

While UK coffeehouses would be prepared to adopt more effective approaches to food waste management, governmental support is necessary to facilitate this change. The role of the government was seen as being critical in streamlining national food waste legislation, particularly in terms of health and safety requirements. Governmental support was also called for to raise consumer awareness of hospitality food waste which is in line with previous studies (Mena et al., 2010).

Targeted governmental interventions could lead to the revision of corporate policies in the UK coffeehouse sector that would enable managers to engage with local charities and donate excess food to the people in need more actively. Broader engagement with charities would reduce the pressure on internal resources in coffee shops that were identified as another barrier towards the application of more effective food waste management practices, which is similar to the obstacles identified for the UK grocery retail sector (Filimonau and Gherbin, 2017). This would also commit coffeehouses to more actively partake in consumer choice architecture projects, thus creating a 'win-win' situation.

The study has a number of limitations. Qualitative research offers limited generalisability, so the outcome of this project should be considered exploratory, not conclusive. The study was further restricted to a specific geography. Extending the geographical scope of the project would enable more diversified analysis. Lastly, social desirability bias represents a well-established limitation of managerial interviews which describes the tendency of participants to respond to interview questions in a 'socially acceptable' way (King and Bruner, 2000). The risk of social desirability bias to impact this study's outcome is acknowledged.

The study disclosed a number of promising research avenues. First, a large-scale survey of UK coffee shop managers based on the outcome of this exploratory study would enable better representativeness and generalisability of this project's results. Second, given the substantial variations in resource availability between chain-affiliated and independent coffeehouses, future research should focus on the managerial approaches to food waste mitigation as adopted in these different outlet categories. Third, given that charities were named instrumental in facilitating food donations, future research should focus on charity shop managers. Fourth, future research could look at coffeehouse suppliers and examine the opportunities for food waste minimisation that appear 'higher' in the food chain. Here, engagement of suppliers with food manufacturers and transportation providers with a view to reduce food waste represents an interesting research object. Fifth, existing bulk of research on food donation studied the phenomenon from the perspective of food donors. The perception of recipients, especially their willingness to accept donated food, remains under-examined, and yet there is anecdotal evidence that people have the tendency to assist, rather than to accept social assistance. Sixth, management of hospitality food waste within various geographical contexts offers a research opportunity. There is evidence suggesting that consumer cultural background may play a role in food waste generation. Here, a comparative study of the coffeehouse sector in the UK and the Asia Pacific holds potential, given the growth of coffee shops in the latter region. Lastly, content analysis identified non-recyclability of coffee cups as an issue of critical importance for long-term sustainability of coffee shops in the UK. Future research should therefore attempt to investigate the measures that can be put in place to reduce the amount of coffee cups used, both from the perspective of coffee shop managers and consumers.

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