Restaurant menu design and more responsible consumer food choice: an exploratory study of managerial perceptions

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Abstract

The restaurant sector imposes substantial impacts on the environment and society. A large share of the sector's negative impacts is attributed to irresponsible consumer choice. To enhance sustainability of food service provision, consumer choice ought to be architected to make it more responsible. Restaurant menu can be (re-)designed to inform customers about the environmental and societal implications of their choice and thus 'nudge' selection of more benign food options. This study explores managerial opinions on the role of menu design in shaping more responsible consumer choice. It finds that while restaurateurs acknowledge rising customer awareness about the ramifications of their food choice on personal health and the environment, they are sceptical about the use of menu design as a means to positively affect consumer choice. The lack of internal resources to implement and maintain the required menu changes, inconstant customer demand, organisational and operational complexities represent the key barriers.

Keywords

Private food service provision, consumer choice, menu design, carbon footprint, public health, managerial perspective, UK

Highlights

- Restaurant managers speak about the role of menu design in consumer choice architecture
- Food provenance, nutrition and calories can all drive consumer choice in restaurants
- Compiling this information is important but impractical to display it on a menu
- Operational and organisational complexities, inconstant consumer demand are the key barriers

1. Introduction

Globally, the sector of food service provision (also known as catering in some countries) is growing steadily (British Hospitality Association 2015). Although the recent financial downturn had negatively affected consumer demand for dining out, this effect was short-lived and overcome promptly (Mintel 2010). To-date, eating out has become a habitual activity; it is considered an integral element of modern societies which shapes high public opinion on subjective well-being and quality of life (Mintel 2015a). As a result, on a global scale and in the UK specifically, the frequency of dining out is rising and the sector of food service provision has reacted accordingly by extending and diversifying its product portfolio (British Hospitality Association 2015; PwC 2013).

While food service provision impacts positively on local economy and society, it concurrently imposes a broad range of negative effects. The significant contribution of the sector to the problem of climate change is recognised (Gössling *et al.* 2011; Katajajuuri *et al.* 2014) and so is its accelerated input into people's health with the subsequent pressures imposed on the public health system (Burton *et al.* 2006; Glanz *et al.* 2007). The need for food service provision to address these challenges, thus becoming more sustainable from the environmental and societal viewpoints, has been acknowledged, and effective policy-making and managerial interventions have been repeatedly called for to enable the progress of the sector towards this goal (Baldwin *et al.* 2011; Goggins and Rau 2016).

Although a substantial number of environmental and society-related issues that prevail within the sector of food service provision are attributed to the organisational and operational (production) inefficiencies of its business ventures, there are a set of challenges that have emerged from the consumption side (Chou *et al.* 2012; Kasim and Ismail 2012). Indeed, consumer choice often complements or even drives operational inefficiencies and thus hampers overall sustainability of the sector (Pirani and Arafat 2014). For example, food

waste generation represents a major environmental problem within catering and there is growing evidence indicating that it often occurs due to consumers, rather than providers (Holden *et al.* 2015; Kallbekken and Sælen 2013; Mirosa *et al.* 2016). Likewise, although there are strong public concerns about the negative role played by the sector in intensifying the cases of overweight and obesity in modern society, it can be argued that it is largely consumers who make irresponsible food choice while catering enterprises just respond to consumer demand (Lusk and Ellison 2013).

It is broadly recognised that the transition of food service provision towards the goal of sustainability can only be facilitated via joint efforts applied by all sector's stakeholders, including catering operators themselves (Melissen 2013). There is an opportunity for food service providers to improve its societal reputation alongside environmental performance by demonstrating the pathways towards a more responsible food choice to its customers (Campbell-Arvai *et al.* 2014). This can be achieved via informing the public about the environmental and personal health implications of the decisions they make when dining out with the purpose to encourage or 'nudge' more beneficial food choice (Lehner *et al.* 2016).

Although, in theory, there are a number of approaches that food service providers can adopt to positively impact on consumer behaviour, the operational feasibility and the economic viability of many of these approaches is constrained (Saulais 2015). Given the sector is highly competitive, any intervention in food service provision should be applied with caution to ensure it does not detrimentally affect consumer demand and endanger business success (Johnson *et al.* 2012). Menu (re-)design represents one of the approaches that can be implemented by catering operators with limited disruption for consumer choice (Wansink *et al.* 2001). Menu cards are a key 'provider-to-consumer' communication medium within food service provision and it is paramount to fully utilise the potential they offer to not

only trigger consumer choice, but also to architect this choice so that it becomes more environment-friendly and society-benign (Kang *et al.* 2015; Wansink and Love 2014).

For menu (re-)design to succeed, managerial commitment is crucial to secure. This is because managers are the 'gate-keepers' who are in charge of approving any changes made to restaurant business operations. When considering (re-)design of a restaurant menu, managers will have to carefully evaluate the potential effect of this intervention on business success, customer satisfaction and consumer loyalty (Raab and Mayer 2007). Little research has sought managerial opinions on the role played by menu (re-)design in shaping more responsible consumer food choice when eating out (Ozdemir and Caliskan 2014); furthermore, the geographical scale and the operational scope of existing managerial studies have been limited to non-European countries and the sub-sector of public catering (Glanz *et al.* 2007). This drawback ought to be rectified because industry professionals possess first-hand knowledge on what determines consumer food choice when dining out in various geographical markets and catering contexts and this knowledge should be capitalised upon when developing and applying strategies for customer 'nudging' in restaurants worldwide. This study contributes to knowledge by exploring managerial perspectives within the sector of UK casual dining on menu (re-)design as a facilitator of more environment-friendly and society-benign consumer food choice.

2. Literature review

2.1. Consumer choice when dining out

Consumer choice when dining out has for a prolonged period of time been an established object of research scrutiny and a large number of studies have investigated the factors that determine customer preferences in restaurants. There is a general consensus in literature that consumer food choice is difficult to predict as it represents a product of a complex decision-making process where both rational (for instance, available budget and

personal health issues) and irrational (for example, food aesthetics and its presentation on a menu) factors play a role (Auty 1992; Johns and Pine 2002; Myung *et al.* 2008). Culture adds further complexity to consumer choice when eating out (Chang *et al.* 2010) and so does the growing effect of media (Ramsden 2014). Recently, the on-going rise of the 'experience economy' in developed countries has also had its influence (Quadri-Felitti and Fiore 2012). The need for more in-depth research into determinant factors of food choice in restaurants as applied in different geographies and to various political, socio-economic and cultural contexts has been recognised (Monin and Szczurek 2014).

Among determinants of consumer choice in restaurants, price is the most evident factor to consider. Recently, its effect has faded away and been replaced with a subjective notion of 'perceived value for money' which customers apply to evaluate the quality of both, product (for example, food freshness, its taste and size of portions) and service (for instance, restaurant ambience, attentiveness of the waiting staff and food presentation), offer in restaurants (Iglesias and Guillén 2004; Price *et al.* 2016). To survive in a highly competitive catering market, restaurateurs ought to demonstrate the 'value for money' to each customer and differentiate themselves from the competition (Yim *et al.* 2014). This is achieved via the adoption of various revenue and quality management techniques that incorporate smart pricing strategies, quality guarantee campaigns and aggressive marketing approaches, among others (Raab *et al.* 2009).

The rise and rapid penetration of the 'experience economy' constructs in the sector of food service provision has made a dramatic effect on consumer choice (Oh *et al.* 2007). While the 'experience economy' is primarily concerned with increased consumer expectations of service quality provision in tourism and hospitality business ventures (Andersson 2007), it has also affected customer attitudes to the impacts made by food choice on their personal health, subjective well-being and the environment (Hall and Gössling 2013).

As a result, consumers have started paying more attention to the nutritional, calorific and environmental qualities of food when dining out (Gallicano *et al.* 2012; Kang *et al.* 2015; Price *et al.* 2016). This has in turn given rise to the diets that are considered balanced, healthier and more environment-friendly, such as organic, vegetarian, fat-free, sugar-free and paleo diets (Magee 2014; Moore 2016). To partially respond to this trend, a number of major UK food service providers, including McDonald's and JD Wetherspoon, have implemented changes to their menus by putting food calorie information on display (Roberts 2015). In some US states, this practice has become legally reinforced (Krieger *et al.* 2013).

The 'experience economy' has made the modern restaurant customer more conscious about food authenticity and its freshness (Sims 2009). The recent food scares as reported across the world and whose effect has been multiplied by media have added to this determinant of consumer choice when dining out (Alexander 2015; Premanandh 2013). Interesting is that the public often associate 'fresh food' with 'local food' assuming that shorter travel time and distance from the place of production to consumption contribute positively to food freshness and taste (Spiller 2012). The public have therefore become more concerned about the food origin (provenance) which is reflected in their food choice when eating out (Goggins and Rau 2016). Fresh/Local food has gained its appeal and there is a growing tendency within the sector of food service provision to emphasise such attributes of the food served as its seasonality and local origin (Kühn 2012; Sims 2010).

Local food is traditionally associated with having low carbon footprint. Although there are specific foodstuffs where the overseas production appears more climate-friendly when a holistic, life-cycle perspective is applied to their carbon footprint analysis (Coley *et al.* 2009), in many cases the local food has more pronounced socio-economic and environmental advantages over the food imported (Gössling *et al.* 2011). Given the growing public concern about the health and environmental implications of food consumption, the carbon intensity of

foodstuffs may affect consumer choice when dining out (Pulkkinen *et al.* 2016). A few experiments have recently been carried out by restaurateurs in continental Europe to investigate this effect with both, positive and negative, outcome reported (see Gössling 2011; Pulkkinen *et al.* 2016; Spaargaren *et al.* 2013). The need for more research into the role of food carbon footprint in consumer choice when dining out has been acknowledged (Gössling 2011).

The food production methods represent another determinant of consumer choice in restaurants. They play a particularly important role for customers from certain religious backgrounds, such as Islam, Judaism and Hinduism (Bonne *et al.* 2007). They can also appeal to those concerned with the personal health and environmental ramifications of their food choice (Price *et al.* 2016). As a result, market research points at the rise of organic food consumption in developed countries, both at home and when dining out (Mintel 2015b). Within this context, animal welfare represents another crucial factor driving consumer food choice (Harper and Makatouni 2002). There is evidence showing its increasing importance for food service provision where the effect of the 'experience economy' can be detected (Swinnen *et al.* 2012).

Lastly, allergens and food intolerance are often factored into consumer choice when eating out (Thomas and Mills 2006). In many countries this factor has been legally reinforced which made it mandatory for food service providers to inform customers about the allergic implications of the food served (Borchgrevik *et al.* 2009).

2.2.The role of menu design

Menu design is another established research avenue within the subject area of food service provision. The original studies on this topic date back to the early 1980s when the position and the presentation of items on restaurant menus were first carefully explored from the profitability and cost optimisation perspective (Morrison 1996; Raab and Mayer 2007).

More recently, the overweight and obesity concerns among restaurant customers alongside subsequent public health regulatory interventions in food service provision have facilitated dedicated research streams on the role of menu (re-)design in shaping more societally responsible consumer choice when dining out. These have closely looked into the impact of nutritional (see, for instance, Hwang and Lorenzen 2008; Josiam and Foster 2009; Thomas and Mills 2006) and calorific (see Kiszko *et al.* 2014 for an up-to-date, comprehensive literature review) menu labelling. They have also investigated the role of displaying food origin (provenance), production methods and allergen information on the menu (see, for instance, Dupuis *et al.* 2016; Hartwell and Edwards 2009) although these latter menu items have been researched less extensively.

Existing studies on the role of presenting nutritional and calorific values of food on restaurant menus in consumer choice when dining out have generated a range of common and contradictory results. While some studies have revealed positive correlation between these variables (see, for example, Howlett *et al.* 2009; Yamamoto *et al.* 2005), some have reported the opposite (see, for instance, Cowburn and Stockley 2005; Josiam and Foster 2009). Given the discrepancy in research outcome, there is a need for more in-depth investigation of this subject area enabling systematisation and better generalisability.

More research on menu (re-)design and its role in consumer food choice in restaurants is also required because the scope of analysis conducted in peer-reviewed literature to-date has been limited. First, most research took place outside Europe, most notably in North America. This is partially because of the recent legal reinforcement in some US jurisdictions which requires restaurants to display nutritional and calorific information on menus (Krieger *et al.* 2013). Second, due to sampling convenience, the focus has largely been on food service provision within the public sector (i.e. school, university and work canteens) which imposes limitations due to a specific nature of the audiences this type of business ventures caters for

(Ellison *et al.* 2014; Price *et al.* 2016). Third, not all food qualities have been thoroughly looked into; the carbon intensity of menu items, for instance, has been investigated only sporadically (Pulkkinen *et al.* 2016). Fourth, existing research has primarily examined *consumer attitudes* to the display of various food attributes on the menu. *Managerial perspectives* have been studied to a much lesser extent which is a major omission given that managers are in the forefront of the 'restaurant-to-customer' interaction and should therefore know consumer expectations and preferences better (Glanz *et al.* 2007).

The lack of studies on managerial opinions concerning menu (re-)design as a medium to affect consumer choice when dining out can be partially explained by the challenges in finding and recruiting willing participants (Poulston and Yiu 2010). While this is a substantial barrier which can be difficult, if not impossible, to overcome, it is paramount to seek managerial outlook on the determinants of consumer food choice in restaurants. This is largely because the majority of consumer research studies suffer from their inability to address a so-called 'attitude-behaviour gap' (Juvan and Dolnicar 2014). This gap articulates the difference between consumer attitudes ('what they say they would do') and behaviour ('what they actually do/did') and it is well pronounced in various tourism and hospitality contexts where food service provision is no exception (Hibbert *et al.* 2013). Here, the discrepancy between consumer attitudes and their purchasing decisions can be particularly significant (Padel and Foster 2005). The partial effect of the gap can be observed in the diversity of results shown by studies into the role of nutritional and calorific menu labelling in consumer choice when dining out (see above). Most of these studies have investigated what consumers *thought* about the value of presenting nutrition and calorie information on a menu, rather than if they actually *took it into account* when placing food orders.

Research on managerial perspectives of consumer food choice in restaurants can help address the above 'attitude-behaviour gap'. This is because restaurant managers are capable

of observing and reporting on actual consumer behaviour, rather than customer purchasing intentions and attitudes when dining out, thus reducing the magnitude of the gap or completely preventing it from occurrence. This is where the contribution of this study rests. It explores the determinants of consumer food choice when eating out through the lens of UK private sector restaurant managers and analyses the role of menu (re-)design in making this choice more responsible from the environmental and societal viewpoints.

3. Research design

Given the scant nature and the limited scope of research on managerial perspectives on menu design as a facilitator of more responsible consumer choice in restaurants, and due to the difficulties in recruiting willing industry professionals as highlighted by previous studies (Poulston and Yiu 2010; Williams and Schaefer 2013), this project chose to employ an interpretive, qualitative method of primary data collection and analysis (semi-structured interviews). Qualitative inquiry is exploratory by nature which limits the empirical generalisability of its findings and yet it enables in-depth evaluation and conceptualisation of people's opinions whose outcome can subsequently be tested in quantitative analysis (Braun and Clark 2006).

The focus was on managers of casual dining restaurants given it is the most popular and rapidly developing segment of the UK food service provision sector (PwC 2013). Participants were sampled from a list of casual dining restaurants in Bournemouth (Dorset, UK) compiled from free-to-access, online and offline business directories. While the choice of the destination for analysis was largely opportunistic, Bournemouth is one of the most popular seaside resorts in the UK. As part of the UK's South West region, it hosts the largest restaurant sector in the country in terms of employment and gross value (Smith 2010). Hence, Bournemouth is deemed to be representative of the UK catering market and yet, such a narrow, regional focus employed in this study is acknowledged as a limitation.

To enable diversity of managerial perspectives and better data representativeness of the local private catering market, selection was carefully made accounting for: restaurant category (chain-affiliated versus independent), size (large-medium-small) and cuisine type (British-European/International-Italian-Chinese-Indian). To cover a range of managerial experiences, this element was also integrated into participant sampling/selection (Table 1). Selected restaurants were initially approached by email; this was followed up with an on-site visit which aimed to better explain the project rationale and secure interview consent. Those unwilling to participate at that stage were replaced with another restaurant from the list which would fulfil the criteria set above. Restaurant managers were chosen over restaurant owners for interviewing because of the 'first hand' experience they possess on consumer food preferences and choice when dining out.

[Insert Table 1 here]

In total, 15 restaurant managers were interviewed within the three-week period in April-May 2016 (Table 1). The recruitment process was laborious and confirmed substantial difficulties in finding willing participants as previously highlighted in literature. The response rate was rather poor at circa 20%. Time constraints was the most frequently cited reason for managers to decline an invitation to partake in interviews. Data saturation dictated the exact number of participants and interviews were brought to a close when no new concepts emerged from the material collected. On average, each interview lasted 25-30 minutes. Interviews were digitally recorded and transcribed. No incentives were offered for participation.

Data analysis was on-going and iterative; data were coded and organised into themes that emerged from literature and initial interview findings (Braun and Clark 2006). The coding structure is presented in Figures 1-4 where the numbers in rectangular boxes on the right indicate the number of text passages from interview transcripts attributed to each

code/sub-code. Verbatim quotations were employed to support the validity of the arguments developed in the process of thematic analysis.

For better visualisation of how displaying information on various environmental and societal qualities of food on a menu might look like in real-life settings, a sample menu card was designed by a restaurant professional. The menu contained information which literature review has identified as possible determinants in consumer choice when eating out: price; list of ingredients; provenance of ingredients; allergens; nutritional; calorific; and carbon intensity values of food (Figure 5). To ensure simplicity and better customer appeal, nutritional information was presented on a sample menu card in the form of 'traffic lights' that employ a colour coding scheme to demonstrate more (green) and less (amber and red) beneficial foodstuffs from the personal health and societal standpoint (Wansink and Love 2014). At the close of each interview, managers were presented with a sample menu card and their feedback on its contents was sought.

4. Findings and discussion

4.1.Determinants of consumer choice when dining out

It was a majority opinion that the modern casual dining restaurant visitor's choice is driven by the three primary attributes: quality of food served, quality of service provided and perceived value for money (Figure 1). Similar to previous studies conducted in comparable settings (Iglesias and Guillén 2004; Yim *et al.* 2014), price was not found to represent a major driver of consumer choice as customers were prepared to compromise upon it/pay a higher price for the food with perceived greater quality. It was further acknowledged by managers that the notion of 'food quality' was rather multidimensional and had a variety of interpretations among consumers. As demonstrated by Ryan below, many customers would associate 'quality' not only with great-tasting food, but also with positive impacts of this food on personal health and the environment. Lastly, quality of food and quality of service

provision were often considered as complementary to one another, which signifies the growing role of the 'experience economy' in consumer choice when eating out (Quan and Wang 2004).

'It is no longer about price and portion size. It is about taste, but also a lot of people now are tending to eat a lot of healthier food, less calories, more local. A lot of people are watching closely what they are eating these days, they want decent nutrition food, not just a cheap big burger' (Ryan)

[Insert Figure 1 here]

4.2.Types of food-related information to be presented on a menu

The 'experience economy' has substantially transformed the information needs of the modern restaurant customer in aiding their decision-making on what food to order (Josiam and Foster 2009) and this was acknowledged by all managers. Consumers are increasingly willing to know more about the societal and environmental implications of their food choice; they also prefer this information to be presented in more detailed formats (Hoefkens *et al.* 2012). Catering establishments should foresee and address this emerging knowledge demand in order to become more competitive, improve customer satisfaction and enhance public appeal:

'These days many people want to be aware about what they eat, they like to know what they have on their plate. So, I think as much information as possible about their food should be given to them really. I think that it's necessary or has to happen to be honest with you, as a lot of people are speaking about obesity, sugar content, you know, people need to know what's in there, you know, level of fat or sugars in dishes or so (Mike)

These emerging consumer demands fit well into the customer 'nudging' agenda as providing comprehensive information on food served may not just appeal to the custom, but might also enable more responsible food choice when eating out:

'I think from business point of view the more information about your food you give to customers, then the more they'll feel like you care about them, not about them, about their well-being and the environment. I think the calorific, nutritional values definitely will do [appeal to customers]' (Ron)

Provenance represents the information bit that has a primary appeal to restaurant customers (Figure 2). First, provenance implies authenticity and may play a particularly important role for visitors to ethnic restaurants as a means to demonstrate that the cooking ingredients and food preparation procedures used are genuine. This was previously highlighted in literature (Tsai and Lu 2012) and further confirmed by Alison:

'*It's a good idea to know when you go to eat somewhere where the product came from, where it was made, from which kind of area, definitely, so you can prove you're authentic. In our case, for example, we're Italian, we do use Italian products, so it's definitely a good idea. Or Dorset cured meat that's nice to know and we also do it on our menu, we say where our products come from'* (Alison)

[Insert Figure 2 here]

Second, and arguably more important, the 'local' attribute is particularly valued in the context of provenance as it is associated with fresh and unprocessed food (Price *et al.* 2016). Local food is further considered healthier and more beneficial for the environment and local communities (Spiller 2012). Given these important attributes, some managers referred to 'local' as having such a substantial appeal to consumers that it enables restaurants to charge a premium for genuinely local food:

'I suppose many customers want to know where stuff comes from. Local tells them it's fresh, it's what it says. If people knew the asparagus was not from Dorset, but actually was flying on a plane across Europe, it may actually change their behaviour and their purchasing priority, so it'd help people possibly modify their purchasing behaviour and we'd go back to

the local economy as well, it makes more attractive experience for the customer, because they will think that money benefits some locals. If they could choose on a menu, this fish was caught in a Dorset lake or whenever, you know, or in the sea, or this fish came from China, even if they have to pay £2 more, they'll do, as long as they can afford it' (Amanda)

Managers considered nutrients and calories as second and third most influential determinants of consumer choice when dining out, respectively (Figure 2). This was assigned to the rise in public health awareness in the UK and increased people's understanding of the role played by food choice in personal health and subjective well-being. It was also partially attributed to the success of displaying nutritional and calorific information on packaging of grocery items, the initiative that has gained significant public recognition among Britons (Campbell 2013):

'I think showing nutrients and calories isn't a bad idea, because I mean with a current situation, with all people with obesity problems and all that, I don't think this is a bad idea, a lot of people are interested in knowing how nutritious and calorific their food is. I mean there's a lot of work to sort it out, but I don't think it is going to harm a menu, I mean some people will find this interesting, they'll want to read about it, you know, they'd find it interesting' (James)

Presentation of the carbon footprint values on a menu was seen as novel and yet most managers disbelieved it would have a sufficient appeal to drive consumer choice when eating out. The lack of public understanding of and, possibly, the lack of public interest in what the carbon footprint values imply in the context of food service provision was referred to as a primary obstacle. This information was deemed excessive and its presentation on a menu was considered as unnecessary overload which could lead to customer dissatisfaction, rather than aid in consumer choice. Similar findings have been reported within the context of grocery retail (Hartikainen *et al.* 2014; Upham *et al.* 2011) which highlights the necessity for policy

intervention aiming to enhance public awareness of the climate ramifications of consumer food choice when dining out and when cooking at home:

'Actually, I haven't heard about that [carbon footprint values on a menu] previously. Sounds like I'm not really aware of that. Personally, I'd say no, it'd not be something that would benefit a customer. I'd not imagine that people will change their mind depending on this factor, I just do not think they know enough what these figures stand for. Yeah, I also think you can kind of overload your customers with too much information when they don't really want to know it, yeah, you care your customers may want to know it but still I think you cannot overload them with information when they just want to go out and enjoy a food, enjoy that wine and have a good evening' (Jason)

4.3.Constraints to utilise menu (re-)design as a means to 'nudge' consumer choice

While all managers agreed that displaying information about certain societal and environmental qualities of food served could appeal to their custom and might harness business competitiveness and secure consumer loyalty in long term, a number of obstacles were identified when discussing the possibility of its adoption on a restaurant menu card (Figure 3). Limited resource availability in-house represents a primary barrier to capitalise upon menu (re-)design as a tool of consumer choice architecture when eating out. Given that public catering is traditionally made up by small and medium enterprises, finances are critical within the sector. This is closely linked to the lack of necessary expertise, labour and time and it was acknowledged that, while the provenance, nutritional, calorific and carbon intensity values are available in supplier inventories and public food databases, their retrieval would be a laborious and costly project for many restaurants to undertake. This is in line with literature which reports that resource availability prevents many hospitality enterprises from more active engagement into sustainability-related initiatives (Coles *et al.* 2016):

'I'd say for small companies it's massive to change the menu. For small companies it's a really, really big change and it'd cost them a lot of money and staff time to change it. It's much easier if you're a big company, like Starbucks or McDonald's' (Amanda)

[Insert Figure 3 here]

This implies that larger restaurants and restaurant chains should take the lead in consumer choice architecture. Given they have access to a more significant pool of resources, these restaurants are best placed to become role models and trial the menu (re-)design projects. Smaller catering enterprises will mirror these initiatives once the success has been seen (Chan *et al.* 2015).

While customers have become generally well aware about the ramifications of their food choice on personal health, local economies and the environment, many still consider dining out as an 'occasional treat' experience. Therefore, according to some managers, a menu card displaying detailed information on various societal and environmental food qualities may appear to be rather unconventional for some consumers. There is evidence showing that management within hospitality industry in general, and its catering sector in particular, tends to be conservative and often unwilling to implement sustainability-related innovations unless these are driven by internal (for example, decisions of shareholders) and external (for instance, consumer demand) pressures (Chan *et al.* 2015; Gonzales and Leon 2001). Some managers were therefore concerned about adopting such unconventional menu design given the lack of steady consumer demand. They would therefore prefer to 'play it safe' and wait until such projects have been applied elsewhere (and preferably by larger catering operators where there is more scope for mistakes, see above) and proven to be successful. And yet it was acknowledged by some managers that menu (re-)design represents an example of forward-thinking and sustainability innovation in the catering sector which can positively differentiate its early adopters from competitors:

'I know it can be difficult for restaurants to have all that information on a menu, but I think within the society we're now, you need to have it and give the customer more information about what they're putting in a mouth, what are the sources, what are the impacts. I think that's what you'll have to go with really, I think the society will demand this anyway, sooner or later, but there'll be demand. And I'm sure in 5 year time all menus are going to have all this, probably it becomes of legislation I would've thought' (Mike)

According to Peter below, the success of presenting nutritional and calorific information on a menu may depend on restaurant location. This is because these food qualities are more likely to appeal to elderly customers who have higher health concerns and may therefore be more interested in the personal health ramifications of their food choice compared to other demographics. Hence, displaying nutrition and calories on a menu may be particularly important for restaurants located in small towns, rural and remote locations as these are largely populated by elderly residents. In contrast, restaurants located in city centers may not fully benefit from presenting this information on their menus as youngsters constitute their key clientele. Young people visit restaurants primarily for a quick, hunger-quenching bite where there may be little scope for personal health and environmental considerations. On another hand, as articulated by Anna below, this may not necessarily be the case as city centers are often populated by working millennials who are generally well-educated and tend to look after their health (Brown and Vergragt 2016). They may therefore be interested in seeing nutritional, calorific and carbon footprint values on a menu to make healthier and more environment-benign food choice. Further research should explore this emerged contradiction by looking into the determinants of consumer food choice for various demographic categories among clientele of casual dining restaurants located in urban, semi-urban and rural locations:

'Well, it depends on where you're I guess, in what area you're in. If you're in the city, then you'll probably get away with it [menu (re-)design], but if you're somewhere in a small town or small village area I think you'll struggle. City people are more into it and they'll understand it. On another hand, there are old people living in villages. They may like to see this [nutrition and calories] on the menu as they'll want to know if it's good for them. Well, I'm now thinking, it's contradictory what I'm saying, isn't? (Peter)*'*

'If you google all millennials, profile of millennials, yes, they care about nutrition, calories and the environment, so if you talk to them it'll probably… they're probably going to be amazed with it and if you talk with my elderly parents they'll say what I've said, fish is fish, we're not interested in where it's from, so it's a different market, but I believe it could be attractive' (Anna)

Type of restaurant business can further determine the success of adoption of menu (re-)design as a means to affect consumer choice when dining out. Interestingly, managers expressed somewhat contradictory views on the role of the above factor. Some claimed that chain-affiliated restaurants might find it easier to retrieve and display various, environment- and society-related food qualities on their menus. This is because they have streamlined sourcing and cooking procedures in place and there is better resource availability as a result of access to corporate funding, as discussed above. This is partially confirmed by existing evidence of presenting calorific information on restaurant menus in the UK where such projects have been run by large restaurant chains, such as JD Wetherspoon (Roberts 2015). On another hand, some managers stated that chain-affiliated restaurants would be obliged to follow corporate strategies and policies which provide little room for independent manoeuvring. In practice this means that even if a manager of a particular restaurant wanted to (re-)design a menu card to enhance its appeal to the custom, they would not be able to

implement this project because of the restrictions imposed by contractual agreements and centralised decision-making process:

'Yeah, I think it's a good idea [to display various food-related qualities on a menu] but it can be quite difficult to manage. For someone like Weatherspoons it's a lot of easier because they have it done by their Head Office. More independent people like ourselves, it's more difficult to manage because we have often changing our menus and it's all done by our Head Chef alone so it's quite difficult to manage, however I do see benefits for it. So it's time and cost constrains to be doing that for us' (Julie)

The cooking method and the menu variety were seen as further limitations that are closely linked to the issue of business size and type. It is not unusual for some restaurants to offer complex menus in the hope to account for the diversity in consumer choice, differentiate themselves from the competition, and thus win customer loyalty. While this approach is useful from the revenue management and public reputation building perspective, extensive variety diminishes the value and hinders the practicality of displaying nutritional, calorific and environmental information on restaurants menus as it entails high costs associated with data retrieval. Likewise, many restaurants cook from scratch and utilise rather 'loose' recipes; they can further modify meals at short customer request to accommodate individual demands. Any amendments made to the original menu will require subsequent changes in terms of re-calculating the nutritional and calorific values of the food served. Reporting on these changes will be costly and time-ineffective. Managers argued that menu (re-)design would therefore be easier to implement for restaurants with a limited/set menu offer that, in turn, is characterised by infrequent and insignificant variations, which is typical for chain-affiliated catering establishments, such as JD Wetherspoon:

'People care about health but some people like making changes to different [menu] items. To make those variations in items on the menu would be very hard to implement as

we'd need to keep track and change how much calories, how much sugar or salt are going in, how many new, different ingredients are going in that product. People may want burger without cheese, some will have extra cheese, you know, it's quite hard to monitor each item, so it's not very practical' (Tom)

'For me, unless you're a big corporate company that can pre-pack the food and pre-make the food, it's impossible to actually say, well this food has got, you know, 1.2g of salt, because you don't measure these things when you're cooking, you just sort of pinch of salt and a pinch of pepper and whatever, so it all depends on your Chef I suppose, but you never can be exact, so to me actually to say, well, yeah, this is exactly what it has got within what it says on the package, I don't think that's possible, unless you're big corporate company and you pre-make your food, so you measure everything, you put them in and then cook it and then you can actually say, yes, this has got that much calories, that much salt, that much sugar, that much you know whatever it is' (Andrew)

Difficulties in managing suppliers represent another limitation which is closely linked to the issue of restaurant business size/type. Smaller catering enterprises have shorter supply chains and often establish more trustworthy relationships with them. This suggests that suppliers are easier to manage and obtain more accurate information on various societal and environmental qualities of foodstuffs. Concurrently, larger restaurants have extensive supply chains and this implies subsequent challenges in their management and information retrieval.

4.4.How to inform customers about the environmental and societal qualities of food?

All managers agreed that it would be paramount to aid customers in having access to the information on the societal and environmental qualities of the food served. Yet, there was no agreement on how this information should be presented to consumers effectively. There was a split in opinions as while some managers would welcome this information on a menu, there were some who would prefer storing this information separately.

Among those managers who opted for food information to be displayed on a menu card, the dominant view was that it should be presented in a concise and succinct form where the 'traffic lights'-like colour coding scheme could be utilised for better visualisation and menu appeal. This scheme could be combined with the use of smart pie diagrams (Figure 4). Furthermore, while the use of 'traffic lights' on a menu card was generally appreciated, concerns were expressed with regard to how these are understood by the custom. The need for raising consumer awareness about how to interpret and make best use of the information presented was highlighted. This is in line with literature on grocery retail which states that, despite the 'traffic lights' labels, the public do not always understand how to balance the consumption of nutrients and calories in their diet (Balcombe *et al.* 2010). Below, Emma elaborates on this challenge and proposes how it could be addressed:

'I think for basic understanding it [traffic lights] would be ok to read, however I would not be satisfied with this because I learnt it all depends on situation. I know students here checking sandwiches and if all was high red they wouldn't eat it, but I'd like to see more information in terms of percentage maybe, in terms that putting percentage to your daily intake, because as it's 40% of sugar I think it's your daily intake, but I didn't eat anything sweet, that actually is good for me to have some sugar, because your sugar in blood will go down, so I guess yeah, I'd look for more, I'd not be satisfied just with colours unless colours are together with percentage, then yeah' (Emma)

[Insert Figure 4 here]

There was a strong desire among managers for a separate menu label which would emphasise the local origin of food served. The label would apply to *major* ingredients employed when preparing a dish as opposed to *all* ingredients. Informing consumers about provenance of *all* ingredients was deemed ineffective as well as impractical, largely due to the unnecessary high level of detail and the laborious nature of data retrieval. The label ought

to be simple and easy to understand for the public; the appropriateness of its use should be regularly monitored by responsible regulatory bodies given recent evidence of false 'local food' claims made in the UK private catering sector (BBC News 2011):

'Telling them [customers] where food comes from, it's brilliant because customers do love that. You can get this in the Sainsbury, you know, where the smoked salmon comes from, which particular loch from Scotland, for example, and if you know the area that's amazing information, it's very powerful. Also, telling them it's local is very important, but would I not be eating if I knew the salt and pepper came from Vietnam, I don't know. I think this'd be the last thing [to consider]. I think for me all key things are sourced locally, this particular pig or salmon, you know, comes from that area, I think that's what I would like to see' (Adam)

There were about half of managers who would like information on nutritional, calorific and environmental qualities of food to be stored separately and made available upon request only. Separate, detailed manuals and menu handbooks could be employed for this purpose as emphasised by John:

'The menu should be simple, maybe use colour code or something, in some way without detracting from the menus. If you're putting all this information on the menu which is so big, A4 format or something, like that, so then you may have less dishes and less choice, because you have such information and customers when they sit in restaurant they don't want to read a manual on every dish, they want to go for a title what is the dish what comes within, how much does it cost. Maybe, in my personal opinion, some kind of a supplementary card per dish which your waiting stuff can then hand out which tend to be specific, yeah, break down for each dish. Yeah, otherwise your menu can be very cluttered with all this calorific values and everything else, fat content and everything else' (John)

The information could also be stored online and accessed via Quick Response (QR) codes posted on menus. These would connect customers to a restaurant website or a

smartphone app where further details on the qualities of the food served could be found. This supports a growing chunk of research on electronic/e-menus that enable restaurants to provide information to consumers in a more comprehensive, visually appealing, user-friendly and, ultimately, more effective format (Beldona *et al.* 2014; Hartwell *et al.* 2016):

'I think the way how the menu should be distributed can be improved. Paper format is quite difficult because it's kind of a static medium. I think this needs to be more of social media centrally accessed, web-based or app based information rather than traditional paper. If this'd be an app and you could click onto that and it gives option for detailed ingredients or provenance, it would be much better, it's difficult to do it on A4 format, so you probably just need to have more IT savvy solutions, where you have got a couple of layers. It could be QR code on the page where you can scan to your smartphone and it takes you into menus to get this detail, because I think otherwise you have information overload' (Ron)

Lastly, when feedback was sought on a sample menu (Figure 5), the majority of managers agreed that while all information displayed was relevant, could aid in consumer decision-making on what food to order, and might appeal to various customer categories, a sample menu card was seen as over-loaded with quantitative data. It was a majority opinion that all nutrition, calorie and carbon footprint related information should be compiled and stored by restaurants on file. However, this information should be made available to customers either upon request or delivered to them in a more user-friendly form/via a more visually appealing format, such as, for example, smart diagrams or dedicated smartphone apps:

'I think emm all the dots and everything are… I think they take my focus away from the menu emm I think I tend to stare at them instead of reading what I'm ordering, I tend to read everything else, first each colour thing on the menu, and I'll oh what's that and read all of them firstly, I think personally I'd not have all of these on the menu, I'd have them in

somewhere sort of separately, so I can concentrate what I'm ordering, emm then having your like your fats and everything else eem in different formats, I don't know, I just think it's just going through my eyes too much' (Ryan)

5. [Insert Figure 5 here]**Conclusions**

Consumer choice often defines the magnitude of the environmental and societal impacts attributed to food service provision. Consumer choice ought to be architected to make it more responsible, thus facilitating progress of the hospitality industry in general, and its catering sector in particular, towards sustainability. Restaurants should play a more pro-active role in consumer choice architecture by 'nudging' more benign purchasing decisions through menu design. The success of this 'nudging' intervention depends on the managerial commitment which should be investigated to better understand the feasibility of implementing such projects in the future. Little research has tackled this subject area within the context of UK private catering and this study set out to rectify this knowledge gap.

The study found that, according to restaurateurs, the food information needs of the modern consumer have changed. Customers have become more interested in the impact of their food choice on personal health, the environment and the local economy. This outlines opportunities for 'nudging' interventions that should be designed to reinforce this interest. When implementing these interventions, it is paramount to ensure they impose little disruption on consumer choice. In this study, contrary to initial expectations, a menu card was not identified as the best medium to 'nudge' customers towards more responsible food choice. The information on the societal and environmental qualities of foodstuffs served in restaurants should be collated and kept on file but made available upon request only. Increased technology adoption by hospitality ventures suggests it can be an effective platform to communicate this information to consumers in a more visually-appealing and comprehensive manner.

The study outlined a number of promising avenues for future research. First of all, the representativeness and robustness of its findings could be further enhanced, should managerial opinions on the topic in question be sought via application of a large-scale, quantitative survey. This survey could be deployed across the UK, rather than covering a limited geographical area, such as the South West of England.

Secondly, given the restaurant type, size and location were all highlighted as prospective barriers towards displaying society- and environment-relevant information on a menu due to its varied appeal to the different client categories, more research is necessary into the determinants of consumer choice in the above catering contexts. For instance, a similar study but with managers of fast food restaurants is called for, given the negative image they are often portrayed with. Menu (re-)design can be utilised here as a means to improve the reputation of fast food catering outlets and demonstrate their intention to become a 'good corporate citizen'.

Thirdly, the role of e-menus in consumer choice architecture should be examined in more detail. While technology can disrupt the dining out experience, it encompasses opportunities that should be better studied and capitalised upon. The capability of e-menus to store substantial volumes of food-related information and present these data to consumers in a more effective way deserves further in-depth investigation, possibly with the involvement of real-life experiments.

Lastly, this study indicated the need for more research into the role of food-related information as presented on menus of 'ethnic' restaurants and to the representatives of different cultural backgrounds. Visitors to 'ethnic' restaurants may dine out purely because of the 'ethnic' appeal these restaurants hold and, hence, the environmental and societal considerations may not necessarily determine their food choice. Likewise, there is anecdotal evidence showing that certain Asian cultures are less concerned about the nutritional and

calorific attributes of their food when eating out while valuing other food qualities, such as authenticity, instead; this underlines the necessity to explore this topic in more detail.

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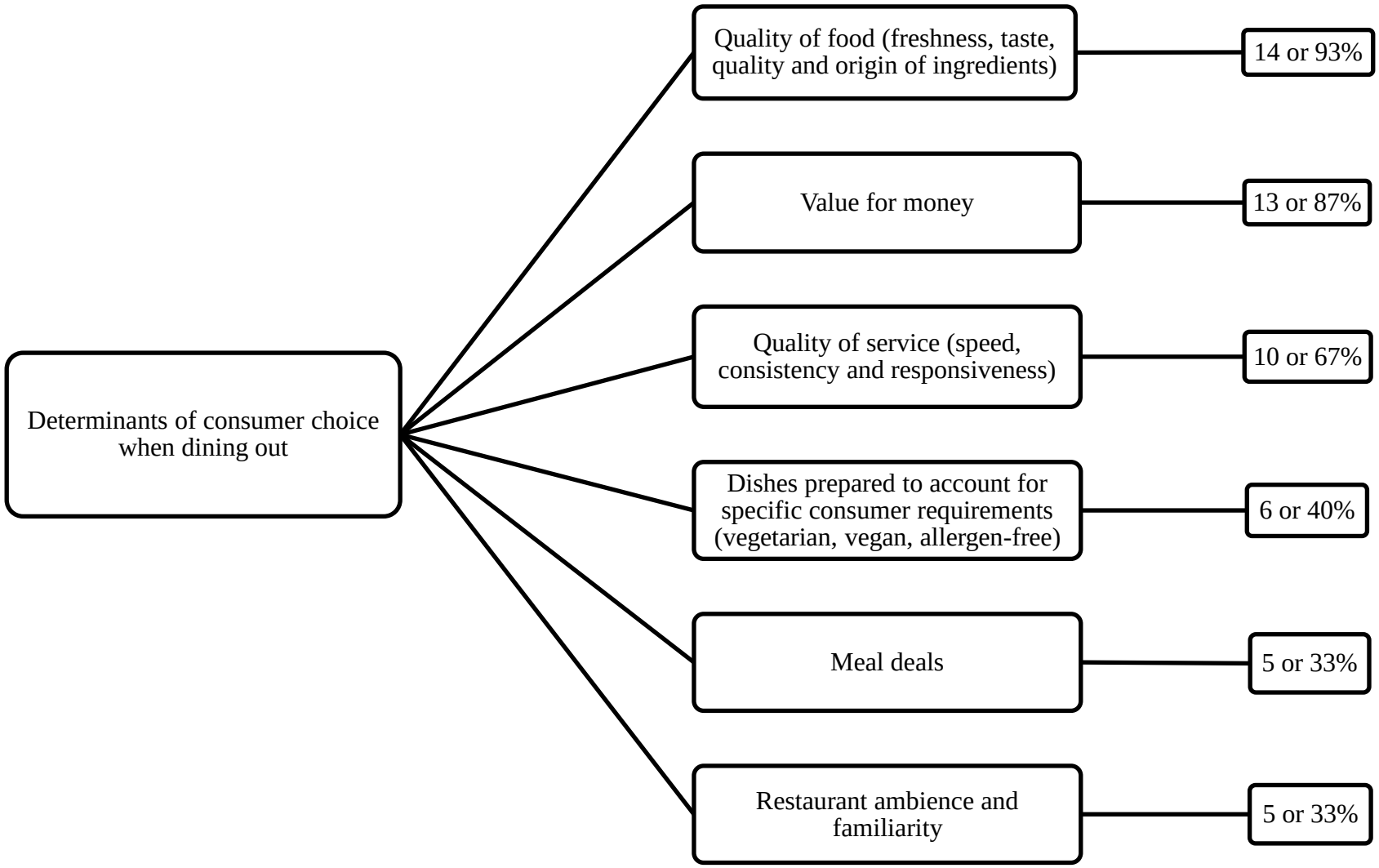

Figure 1. Determinants of consumer choice when dining out.

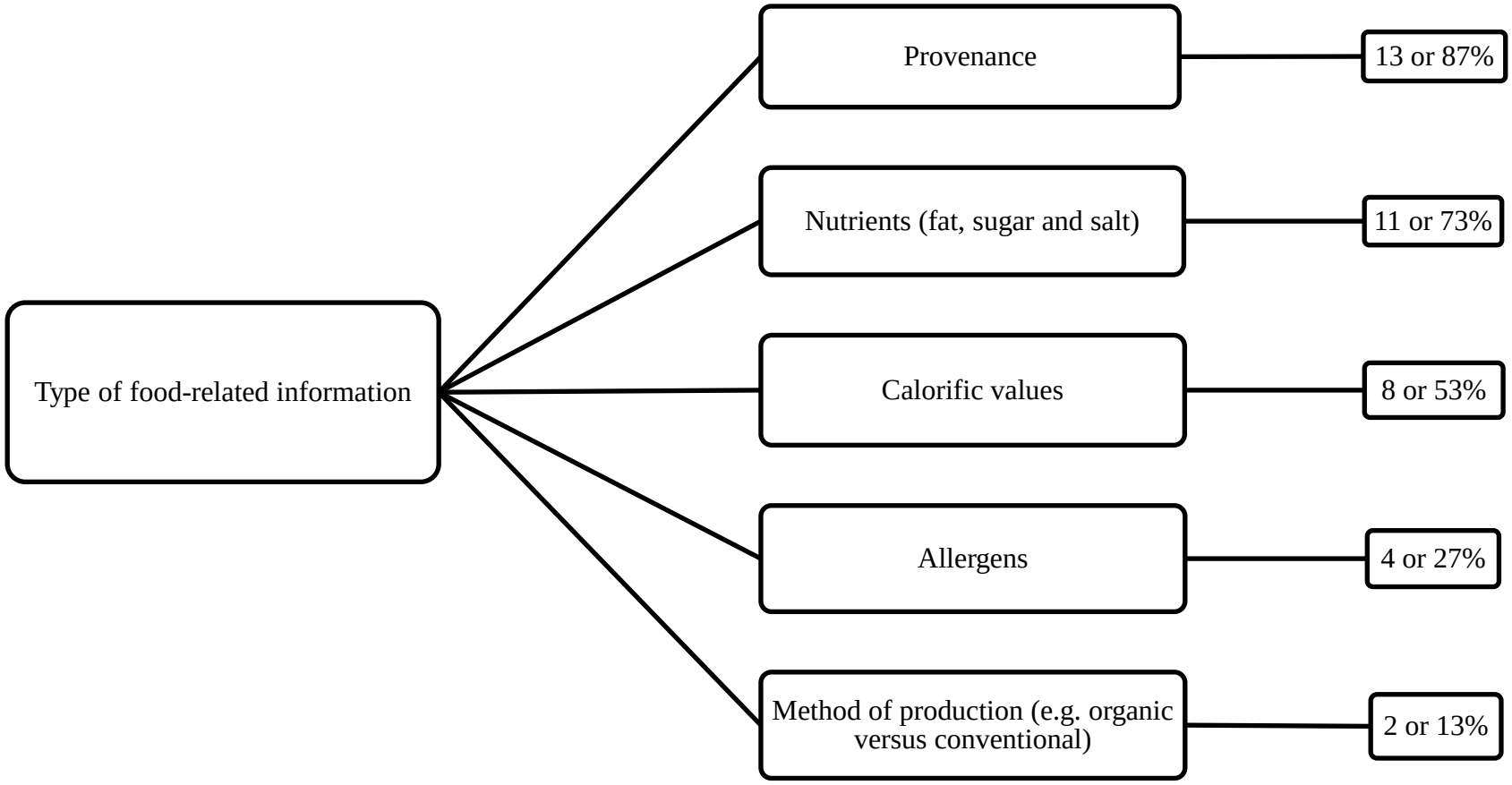

Figure 2. Type of food-related information a restaurant menu may contain to enhance the food appeal to consumers.

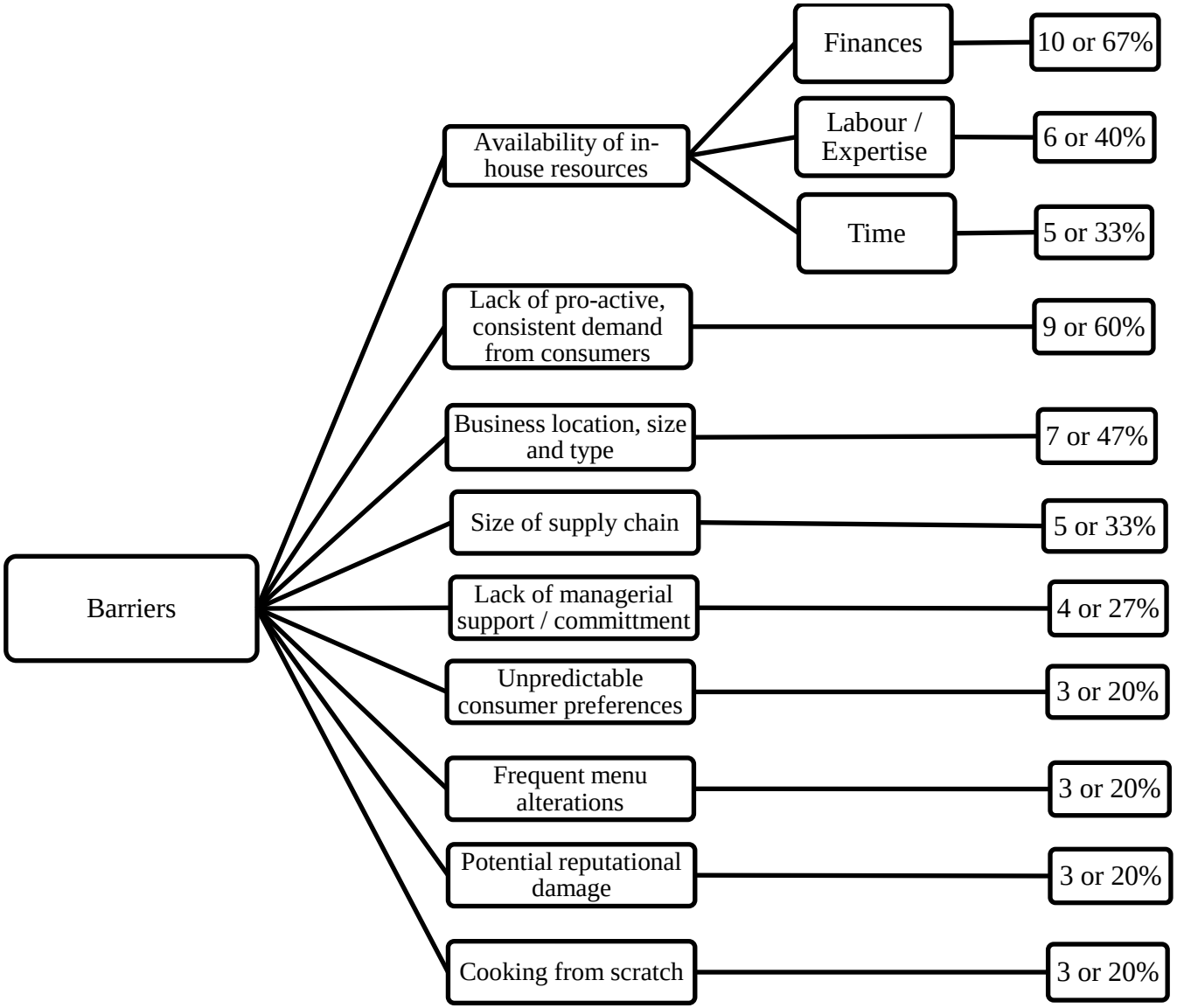
Barriers
Availability of in-house resources
Finances
10 or 67%
Labour / Expertise
6 or 40%
Time
5 or 33%
Lack of pro-active, consistent demand from consumers
9 or 60%
Business location, size and type
7 or 47%
Size of supply chain
5 or 33%
Lack of managerial support / committment
4 or 27%
Unpredictable consumer preferences
3 or 20%
Frequent menu alterations
3 or 20%
Potential reputational damage
3 or 20%
Cooking from scratch
3 or 20%

Figure 3. Barriers towards presenting information on the environmental and societal qualities of food on a restaurant menu.

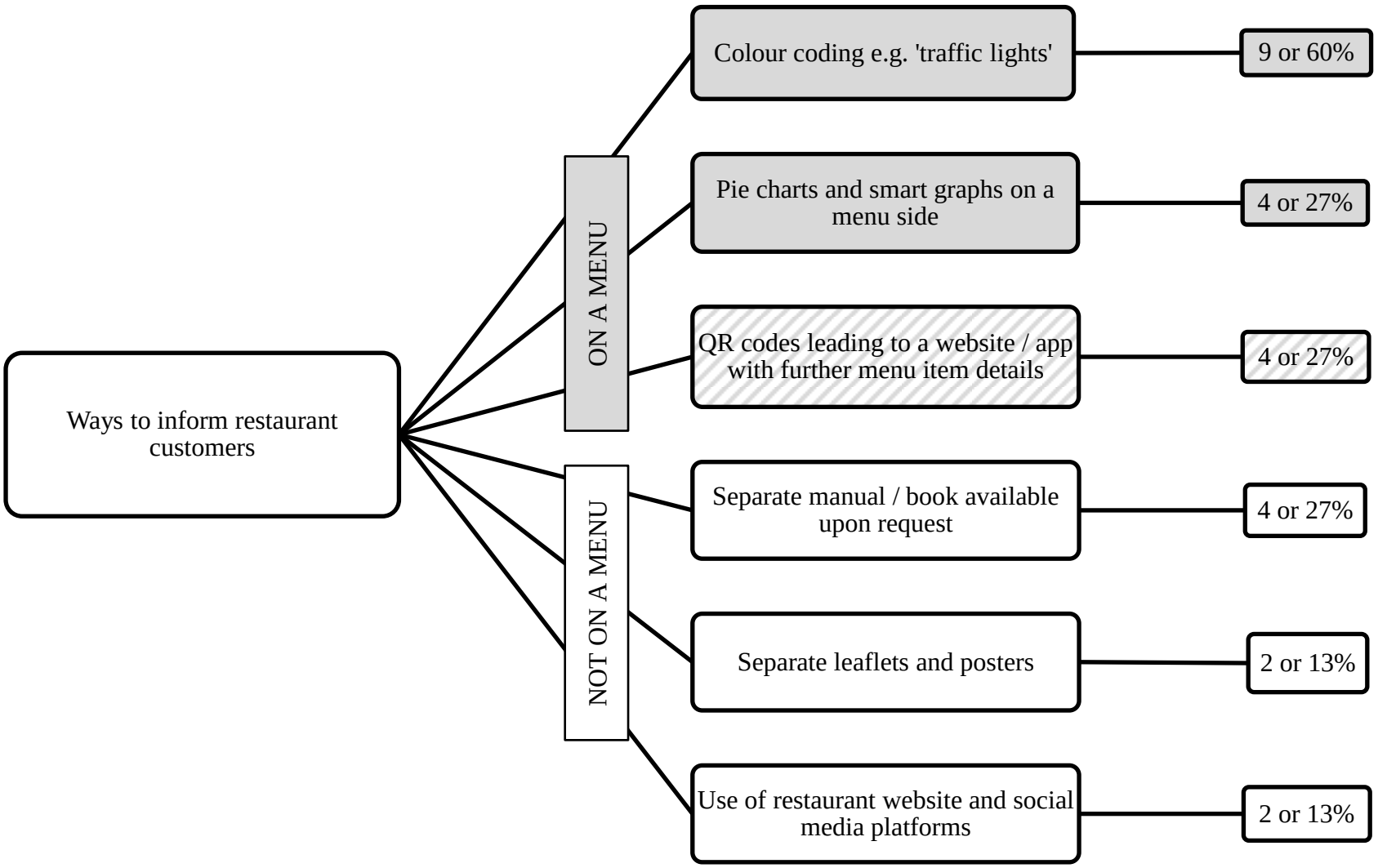

Figure 4. Ways to inform restaurant customers about the environmental and health qualities of food.

Potato and Leek Soup £1.50

Potato, Leek, Onion, **Vegetable Stock** (Celery), Rapeseed Oil, Thyme, Parsley, Bay Leaf, Salt and Pepper

Energy Kcal 100.88 kJ 423.45 Fat 4.33 Saturated Fats 0.29g Sugar 0.95g Salt 196mg

Carbon intensity value, Kg CO2-equivalent per portion 0.1

Brie Fritters with Rocket, Pear and Almond Salad £2.80

Brie (Milk), **Breadcrumbs** (Wheat), **Flour** (Wheat), **Egg**, Rocket, Pear, **Almonds** (Nuts), Rapeseed Oil, Salt and Pepper

Energy Kcal 242.35 kJ 1007.87 Fat 18.22g Saturated Fats 8.03g Sugar 2.75g Salt 305mg

Carbon intensity value, Kg CO2-equivalent per portion 1.1

Gourmet Beef Burger £4.30

Beef Burger, Hash Cake, **Burger Bap** (Wheat), Bacon, Lettuce, Tomato, Cucumber, red Onion, **Mayonnaise** (Mustard), French Fries, Salt and Pepper

Energy Kcal 255.09 kJ 1061.63 Fat 17.67g Saturated Fats 6.81g Sugar 1.18g Salt 307mg

Carbon intensity value, Kg CO2-equivalent per portion 6.95

Honey and Soya marinated Pork Belly 4.30

Pork Belly, Honey, **Soya** (Soya), Demerara Sugar, Cinnamon, Chilli Sauce, **Noodles** (Wheat), Spring Onion, Parsley, Red Peppers, Salt and Pepper

Energy Kcal 288.54 kJ 1205.65 Fat 16.50g Saturated Fats 4.89g Sugar 8.93g Salt 122mg

Carbon intensity value, Kg CO2-equivalent per portion 1.01

Potato and Leek Soup

Provenance

Potato (**Herefordshire**), Leek (**Somerset**), Onion (**Dorset**), Vegetable Stock (**France**), Rapeseed Oil (**Norfolk**), Thyme (**Hampshire**), Parsley (**Hampshire**), Bay Leaf (**France**), Salt (**China**) and Pepper (**Vietnam**)

Brie Fritters with Rocket, Pear and Almond Salad

Provenance

Brie (**Somerset**), Breadcrumbs (**Berkshire**), Flour (**Buckinghamshire**), Egg (**Wiltshire**), Rocket (**Spain**), Pear (**Herefordshire**), Almonds (**Iran**), Rapeseed Oil (**Norfolk**), Salt (**China**) and Pepper (**Vietnam**)

Gourmet Beef Burger

Beef Burger (**Dorset**), Hash Cake (**Belgium**), Burger Bap (**Berkshire**), Bacon (**Holland**), Lettuce (**Lincolnshire**), Tomato (**Holland**), Cucumber (**France**), red Onion (**Dorset**), Mayonnaise (**Ireland**), French Fries (**Gloucestershire**), Salt (**China**) and Pepper (**Vietnam**)

Honey and Soya marinated Pork Belly

Provenance

Pork Belly (**Wiltshire**), Honey (**Mexico**), Soya (**China**), Demerara Sugar (**Brazil**), Cinnamon (**Indonesia**), Chilli Sauce (**Hong Kong, China**), Noodles (**China**), Spring Onion (**Hampshire**), Parsley (**Hampshire**), Red Peppers (**Holland**), Salt (**China**) and Pepper (**Vietnam**)

Figure 5. Sample menu card.

Table 1. Interview participants (n=15).

Pseudonym	**Gender**	**Age**	**Restaurant type / Type of cuisine**	**Restaurant size** Small=0-50 seats Medium=51-100 seats Large=100+ seats	**Role**	**Work experience in a managerial role** +=Limited (1-3 years) ++=Intermediate (3-5 years) +++=Extensive (5+ year)
Adam	Male	50-60	Traditional British restaurant / pub*	Medium	General manager	+
Ryan	Male	40-50	Traditional British restaurant / pub*	Large	Owner / General manager	+++
Alison	Female	20-30	Italian restaurant	Medium	General manager	++
Anna	Female	40-50	Traditional restaurant with British and international cuisine	Small	Owner / General manager	+
John	Male	40-50	Traditional British restaurant / pub	Medium	Operations manager	+++
Amanda	Female	30-40	A chain of casual dining catering outlets*	Large	Operations manager	++
Andrew	Male	40-50	Italian restaurant	Medium	Owner / General manager	+++
Julie	Female	20-30	Traditional British restaurant / pub	Medium	General manager	++
Ron	Male	40-50	A chain of casual dining catering outlets*	Large	General manager	+++
Jason	Male	30-40	Traditional British restaurant / pub*	Large	General manager	+++
Emma	Female	20-30	Traditional restaurant with British and international cuisine	Small	General manager	+
James	Male	30-40	Indian restaurant	Medium	General manager	++
Mike	Male	30-40	Chinese restaurant	Medium	General manager	++
Peter	Male	40-50	Traditional British restaurant / pub*	Large	Owner / General manager	+++
Tom	Male	30-40	Traditional restaurant with British and international cuisine*	Small	General manager	+

*denotes chain-affiliated catering establishments