

Sustainable restaurants: A research agenda

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There is growing emphasis on sustainability within the hospitality industry. For restaurants, which are often small businesses, that emphasis is poorly structured and rarely based on scientific evidence. Research is needed into what factors could promote sustainability in restaurants. We propose three distinct fields within that research. The first field concerns the restaurant as a product supplier. What factors promote or obstruct restaurant owners in coming up with a sustainable menu? Within this field, it is essential to look at the motivation, opportunities and abilities that they possess, both internally and externally. The second field is about demand. What is the role of sustainability in a guest's choice of restaurant and satisfaction with the menu? Existing research models for looking at consumer behaviour can be useful for this. The third field concerns the product itself: how sustainable is the restaurant's offering? This question can be answered with a simplified and adapted life cycle assessment (LCA). Research into these fields should help strengthen the hospitality industry and make its products more sustainable.

Keywords: sustainability, life cycle assessment, motivation, opportunity, ability

Introduction

There is growing emphasis on sustainability within the hospitality industry in the Netherlands. This is reflected in the number of Green Key-certified hospitality businesses in the Netherlands having grown to more than 600 in 2015, which is almost double the number in 2011 (Green Key, 2015). It is striking to observe that only seven of these are restaurants.

The Netherlands trade association for the hotel and catering industry, Koninklijke Horeca Nederland (KHN), supports the transition to more sustainable hotel and catering businesses. For example, it does this by asking its members to sign up with the sustainable food website www.duurzamereten.nl. It also launched the chefs' manifesto to tackle food waste (Koninklijke Horeca Nederland, 2015).

KHN has also commissioned several studies that have either been completed or are still being carried out by students of the Hotel Management School, Maastricht.

In contrast to the vast amount of research into sustainability of tourism and hospitality in general, there has been scarcely any academic literature into the sustainability of food served in restaurants, specifically. There are studies on the sustainability of food in general, but hardly any on how these foods are used in restaurants. Legrand et al. (2010) put forward seven indicators of a sustainable restaurant. Cavagnaro (2015) discussed several concepts for sustainable restaurants. Teng, Wu and Huang (2014) present the results of a study into what the determining factors are in a guest's intention to go to a green restaurant, and Baldwin, Wilberforce, and Kapur (2009) did research into which is the most influential part of the restaurant process for the environmental credentials of products. See below for conclusions from these studies.

In order to make the transition towards a more sustainable restaurant sector, it is worthwhile to carry out research into

what aspects can be decisive in the success of such a process. Restaurants and industry bodies such as the KHN can draw on research results to tackle sustainability projects in the future with greater success. These could include recommendations and incentive measures for business owners, marketing tools aimed at potential guests and methodologies for effectively making the product more sustainable whilst doing so in a visible way.

In terms of the structure of the study, we distinguish between three elements (Figure 1) which each represent one field of research. These elements together determine the outcome of the process of transition towards more sustainable restaurants. It incorporates "supply" embodied by the restaurant owner, the "demand" embodied by the guest, and, logically linking them together, the "product": the menu. If a sustainable outcome is to be achieved, the following conditions must be met: the restaurant owner must be willing and able to make the product. In other words: he must be motivated and capable of producing it sustainably.

The guest has to choose a sustainable restaurant and a sustainable menu. And, of course, the product and the menu have to actually be sustainable. A motivated restaurant owner who mistakenly believes he/she is making sustainable dishes, and/or a guest who mistakenly believes he/she is enjoying a sustainable menu: neither of these delivers any effective increase in sustainability. Whether or not a restaurant owner is capable of providing a sustainable menu or the guest is willing to choose it is therefore partly determined by whether or not the menu in question is in fact sustainable.

The elements can be represented as shown in Figure 1.

Restaurant owner → Menu → Guest
Motivated? Capable? *Sustainable?* *Willing to choose?*

Figure 1: Conditions for the sustainable dining process

The research agenda

As has been argued above, research into the factors that are important to making restaurants more sustainable is divided into three fields of research: the restaurant owner, the guest and the menu. In this section we shall make some suggestions for research into these three fields.

The restaurant owner

Restaurants are virtually exclusively small and medium-sized businesses. Our scope is not on restaurants that are part of a chain or on restaurants that are part of a larger organisation. In these situations it is likely that higher management has a vision on sustainability that is imposed on the organisation. Research shows that small and medium-sized businesses are limited in their capacity to be innovative in terms of increasing sustainability scores. Owners of these businesses are often highly value-driven (Garay & Font, 2012; Tzschentke, Kirk, & Lynch, 2008), and these businesses have simple structures (Klewitz & Hansen, 2013, Walker et al., 2008). Both these features are conducive to the transition towards increased sustainability. At the same time, however, they often have a knowledge deficit (Oxborrow & Brindley, 2013; Jacobs, 2008). Likewise, their lack of formalised planning and shortage of financial resources are obstacles to organising such a transition (Klewitz & Hansen, 2013).

The features of small and medium-sized businesses mentioned are likely to also apply in the restaurant sector, but specific literature to this effect is thin on the ground. Research by Kasim and Ismail (2012) has shown that the restaurant sector in Malaysia scores badly in terms of implementing environmental measures. Post and Mikkola (2012) studied the views on sustainability of managers in the catering sector in the countries of Scandinavia. One of the observations that was established is that more support and tools are required to make inroads towards increased sustainability.

We are calling for further research into the specific factors that promote or obstruct restaurants in developing themselves to be more sustainable.

The MOA model could be highly useful in this regard. This model was developed by MacInnis, Moorman, & Jaworski (1991) when devising an advertising campaign and was modified by Rothschild (1999) in order to establish what key elements can be utilised for the management of public health and social problems. Jacobs (2008) used the model to determine which factors could explain why so few businesses in the Limburg tourism and recreation industry had sustainability certification.

MOA is an acronym for motivation, opportunity and ability. Individuals are motivated to behave in a certain way when they believe that behaving in that way is in their interest. This motivation component in the model can be seen as a simplified version of the theory of reasoned action by Ajzen and Fishbein (in Jackson, 2005). Personal beliefs and social influences are examples of factors that are included within the motivation part of the MOA model.

There is a lack of "opportunity" when individuals, despite having "motivation", cannot behave in the desired way because there are obstacles in their external surroundings. In other words: "opportunity" means that external opportunities are present (Stern, cited in Jackson, 2005).

Food safety legislation is an example of a factor restricting the "opportunity" to use sustainable products.

"Ability" refers to personal capabilities. These can be seen as internal opportunities. Cramer, Jacobs and Jonker (2005) use the familiar concept of "ability to implement". A knowledge deficit, mentioned above as a key feature of small to medium-sized businesses, is a factor restricting "ability" to produce sustainably.

The authors of this article have started applying the MOA model to a qualitative study of restaurant owners into the factors that promote or obstruct the introduction of sustainability to their restaurant and more specifically to the dishes and menu they serve.

Students of the Hotel Management School, Maastricht, are using the MOA model in a case study they are performing into the key factors that determine what measures can make the Teaching Hotel restaurant more sustainable.

What makes the MOA model so desirable in this context is that, when the Rothschild (1999) system is used, specific policy recommendations can be derived from the research results, which can be useful for organisations such as KHN and its members.

The guest

More sustainable foodstuffs are being sold (Monitor Duurzaam Voedsel, 2013). The existence and growth of retailers such as Marqt (www.marqt.com) is evidence of the demand for sustainable food. These developments also indicate that research results into willingness to buy sustainable food should probably be treated as snapshots in time and that continuous research should be carried out into changes in that willingness.

Extensive research exists into the factors behind demand for sustainable food. Noteworthy examples include studies by Newman, Gorlin, and Dhar, (2014) and Van Doorn and Verhoef (2011), which demonstrate that foodstuffs explicitly positioned as sustainable are perceived by consumers as being of lesser quality. They also found that consumers are not willing to pay more for hedonistic foodstuffs (which they refer to as "vice products"). If we consider going to a restaurant as hedonistic, and if we assume that a sustainable dish costs more than an ordinary dish, then the question is: what does this mean for guests' willingness to pay for sustainable restaurant products?

Scarcely any research has been done into the motives behind the restaurant behaviour of people in the Netherlands. Concerning restaurants in Taiwan, Teng et al. (2014) found that personal values and general attitudes have a positive influence on the guest's intention to go to green restaurants. For this they used the value-attitude-behaviour model.

As part of a study in Maastricht, students of the Zuyd University of Applied Sciences (Aben et al., 2014) found that whilst on the one hand some 20% of respondents said they took the restaurant's sustainability into consideration when choosing a restaurant, at the same time the presence of sustainable dishes on the menu only mattered to around 5% of them.

Further research is needed into the behaviour of people going to restaurants and the factors behind that behaviour in the context of the Netherlands. For this, it is necessary to carry out both a survey of the factors behind decision-making behaviour and an experimental study of the influence that

claims of sustainability have on the appreciation of the guests. A study like this is being set up for the Teaching Restaurant at the Hotel Management School, Maastricht.

The menu

In this article we are concentrating on the restaurant's primary product: its menu. In other words: of the seven indicators of a sustainable restaurant that Legrand et al. (2010) mention, we are focusing on the food and beverage indicator. Firstly, this is because it prominently involves the guest and because sustainability of this indicator is probably more important to the guest than the sustainability of Legrand's other indicators such as the building construction. Another major reason for us to focus on the sustainability of the menu comes from research by Baldwin et al. (2009) which demonstrates that "food purchased by the operation is the predominant source of environmental impact of restaurants and food services".

Establishing the sustainability of a dish is not straightforward. We shall discuss some of the related problems below. First there is marking out the concept of sustainability in relation to food. What components or categories of sustainability are or are not included? Next, there is measuring of the importance of each of the distinct categories of sustainability and finally, the practicality of the instrumentation used to establish their respective scores.

Which components are included in the concept of sustainability?

In non-academic publications and in restaurants' own communications, it is mostly local produce and organic crops that are presented as being synonyms for sustainability. For example, students of HSHM developed a Food Zone Model. We also previously mentioned the publication by Legrand et al. (2010) which ranks these two characteristics as numbers 1 and 2 in the list of sustainability indicators. They play a part in Green Key certification, too, despite the fact that Green Key (2015) recognises that bringing organic produce from long distances presents a dilemma.

However, Beer (2015), Desrochers and Shimizu (2012) and DEFRA (2005) were critical of the concept of food miles and consequently the environmental importance of local produce. Furthermore, Seufert, Ramankutty, and Foley (2012) and Fresco (2012) also include in their discussions the fact that organic produce uses more land, which entails negative effects on biodiversity.

The concept of local and organic produce are not entirely adequate as objective indicators of the sustainability of a dish. Whereas above the definition of sustainability was narrowed down, others in contrast implicitly assume a very broad definition of it. Varied and often contradictory categories such as a human health, animal welfare and regional economic development are put under the banner of sustainability.

In our view, when a claim of sustainability is made, it should at least be made transparent on what definition it is based, and which categories it takes into account.

How are the different categories measured? If these categories are selected in a transparent way, then we face the problem of weighing the performance of the respective categories. This is illustrated by the well-known example of large-scale farming of chickens in bio-industry: free-range chickens may well have a better life, but cut-price chicken

probably has better environmental performance per kg of meat. So what is the result of these two contradictory scores?

We believe it is preferable to score the performance of each subcategory separately. It is then up to the restaurant owner and/or guest to choose. This is the way in which King and Backus (2011) developed a methodology for the food retail sector to make sustainability performance transparent. For this, they distinguished between categories such as the environment, fair trade and animal welfare.

The question is then: what methodology is used to determine the score of each subcategory?

If we restrict ourselves just to the "environment" category, there are approved methodologies for determining scores. The LCA (life cycle assessment) methodology is widely used with the environmental effect scores of commonly used raw materials in foods. However, it may also be possible to apply the same methodology to establish the environmental score of a dish as a whole. We are calling for research into how this could be possible. It would obviously not be possible to ascertain the environmental score of every dish and every individual restaurant. However, it certainly would be feasible to show the environmental scores of various ingredient choices. Baldwin et al. (2009) showed that the methodology can be used for restaurants, albeit on a higher level of aggregation than the individual dish. And Tyszler, Kramer, and Blonk (2014) used the LCA methodology to perform an environmental comparison of two or more diets.

Clearer choices on the questions above should deliver a clear profile of the sustainability profile of a dish. Restaurant owners can then take this profile to gain insights into the points where they have further room for improvement. It could also play a part in informing the guest. Finally, it can be used to better establish performance in the context of a certification process, such as that of Green Key. The aforementioned study by Baldwin et al. (2009) was very influential in a certificate that is used in the USA: the Green Seal's Standard for Restaurants and Food Services.

As individual restaurants lack the time and resources to run such studies themselves, we see there being a major role reserved for industry organisations such as KHN in the Netherlands and Green Key.

Conclusion

It can be hypothesised that the growing emphasis on sustainability is going to increase the demand amongst people going to restaurants for sustainable menus. Consequently, it would be advisable for restaurant owners to become motivated and capable of offering such sustainable menus. The hypothesis is that restaurants that are good at that will function better because they may benefit from increased demand from guests. In doing so, they need to be supported with programmes based on up-to-date, industry-specific research.

We propose a research strategy for three fields of research.

First of all, the field of the *restaurant owner*. What factors promote or obstruct their will and ability to make a sustainable menu? Research based on the MOA model, which analyses the decisive factors for motivation, opportunities and abilities, can make it clearer what components could be targeted with measures.

The *second field* is about the guest. What factors determine a guest's choice of restaurant and what is the role played by whether or not its menu is sustainable? Existing consumer research methods can be applied to people going to restaurants. Conclusions from research of that kind can be useful for the marketing strategies of restaurants.

The *third field* concerns the menu itself. How sustainable are the dishes and the ingredients used? And how can this be worked out and made transparent? Existing methodologies such as life cycle assessment can be helpful for this. Its conclusions can be useful for restaurant owners when shaping their sustainability policies and can also help guests in their choice of restaurant.

With extensive participation from various different research groups, studies such as these can offer enough breadth and depth to deliver significant results. We call on industry organisations and certifying bodies to provide active support for these studies to be carried out.

References

- Aben, N., Salden, S., Thunissen, M., Valen, D., & Verstraten, S. (2014). *Onderzoeksrapport Duurzaam Maastricht Culinaire*. Maastricht: Zuyd Hogeschool.
- Baldwin, C., Wilberforce, N., & Kapur, A. (2009). Restaurant and food service life cycle assessment and development of a sustainability standard. *International Journal of Life Cycle Assessment*, 13(1), 1–10.
- Beer, S. (2015). Does the pursuit of local food destroy our environment? Questions of authenticity and sustainability. In P. Sloan, W. Legrand, and C. Hindley (Eds.), *The Routledge handbook of sustainable food and gastronomy* (pp. 47–56). London, New York: Routledge.
- Cavagnaro, E. (2015). Sustainable restaurant concepts, focus on F&B. In P. Sloan, W. Legrand, and C. Hindley (Eds.), *The Routledge handbook of sustainable food and gastronomy* (pp. 245–252). London, New York: Routledge.
- Cramer, J., Jacobs, M., & Jonker, J. (2005). *Ondernemen met meer waarde: Een overzicht van de praktische resultaten van het Nationale Onderzoeksprogramma Maatschappelijk Verantwoord Ondernemen*. 's-Gravenhage: Ministerie van Economische Zaken.
- DEFRA. (2005). *The validity of food miles as an indicator of sustainable development*. <http://foodsecurecanada.org/sites/default/files/final.pdf>.
- Desrochers, P., & Shimizu, H. (2012). *The locavore's dilemma: In praise of the 10 000-mile diet*. New York: Public Affairs.
- Van Doorn, J., & Verhoef, P. C. (2011). Willingness to pay for organic products: Differences between virtue and vice foods. *International Journal of Research in Marketing*, 28(3): 167–180. doi:10.1016/j.ijresmar.2011.02.005.
- Garay, L., & Font, X. (2012). Doing good to do well? Corporate social responsibility reasons, practices and impacts in small and medium accommodation enterprises. *International Journal of Hospitality Management*, 31(2), 329–337. doi:10.1016/j.ijhm.2011.04.013.
- Green Key. (2015). *Handleiding Restaurants*. <http://www.greenkey.nl/criteria>.
- Jackson, T. (2005). *Motivating sustainable consumption: a review of evidence on consumer behaviour and behavioural change. A report to the Sustainable Development Research Network*. Surrey: Centre for Environmental Strategy.
- Jacobs, G. (2008). *Duurzaam ondernemen in toerisme en recreatie: factoren achter ondernemersgedrag in Zuid-Limburg*. Heerlen: Zuyd Hogeschool.
- Kasim, A., & Ismail, A. (2012). Environmentally friendly practices among restaurants: Drivers and barriers to change. *Journal of Sustainable Tourism*, 20(4): 551–570. doi:10.1080/09669582.2011.621540.
- King, R., & Backus, G. (2011). *De rol van standaarden in het bevorderen van een duurzaam voedselsysteem*. Lei-Wageningen UR. <http://www.wageningenur.nl/nl/Publicatie-details.htm?publicationId=publication-way-343036303039>.
- Koninklijke Horeca Nederland. (2015). *Chefs strijden tegen voedselverspilling*. <http://www.khn.nl/nieuwsberichten/2015/06/chefs-strijden-tegen-voedselverspilling>
- Klewitz, J., & Hansen, E. G. (2014). Sustainability-oriented innovation of SMEs: A systematic review. *Journal of Cleaner Production*, 65, 57–75. doi:10.1016/j.jclepro.2013.07.017.
- Legrand, W., Sloan, P., Simons-Kaufmann, C., & Fleischer, C. (2010). A review of restaurant sustainable indicators. *Advances in Hospitality and Leisure*, 6, 167–183. doi:10.1108/S1745-3542(2010)0000006013.
- MacInnis, D. J., Moorman, C., & Jaworski, B. J. (1991). Enhancing and measuring consumers' motivation, opportunity, and ability to process brand information from ads. *Journal of Marketing*, 55(4): 32–35. doi:10.2307/1251955.
- Monitor Duurzaam Voedsel. (2013). *Consumentenbestedingen aan duurzaam gelabelde producten*. <http://www.monitorduurzaamvoedsel.nl/TotaalResultaat.aspx>
- Newman, G. E., Gorlin, M., & Dhar, R. (2014). When going green backfires: How firm intentions shape the evaluation of socially beneficial product enhancements. *Journal of Consumer Research*. <http://faculty.som.yale.edu/ravidhar/Documents/WhenGoingGreenBackfires2014.pdf>.
- Oxborrow, L., & Brindley, C. (2013). Adoption of "eco-advantage" by SMEs: Emerging opportunities and constraints. *European Journal of Innovation Management*, 16(3): 355–375. doi:10.1108/EJIM-09-2011-0079.
- Post, A., & Mikkola, M. (2012). Nordic stakeholders in catering for sustainability. Chasm between ideology and practice? *British Food Journal*, 114(5), 743–761. doi:10.1108/00070701211230015.
- Rothschild, M. L. (1999). Carrots, sticks, and promises: A conceptual framework for the management of public health and social issue behaviors. *Journal of Marketing*, 63(4), 24–37. doi:10.2307/1251972.
- Seufert, V., Ramankutty, N., & Foley, J. A. (2012). Comparing the yields of organic and conventional agriculture. *Nature* 485(7397), 229–232. doi:10.1038/nature11069.
- Fresco, L. (2012). *Hamburgers in het paradijs: Voedsel in tijden van schaarste en overvloed*. Amsterdam: Bert Bakker.
- Teng, Y. M., Wu, K. S., & Huang, D. M. (2014). The influence of green restaurant decision formation using the VAB model: The effect of environmental concerns upon intent to visit. *Sustainability*, 6, 8736–8755.
- Tzschentke, N., Kirk, D., & Lynch, P. (2008). Going green: Decisional factors in small hospitality operations. *International Journal of Hospitality Management*, 27(1), 126–133. doi:10.1016/j.ijhm.2007.07.010.
- Tyszler, M., Kramer, G., & Blonk, H. (2014). Comparing apples with oranges: On the functional equivalence of food products for comparative LCAs. *International Journal of Life Cycle Assessment*, 19(8), 1482–1487. doi:10.1007/s11367-014-0762-x.
- Walker, E. A., Redmond, J. L., Sheridan, C., Wang, C., & Goefit, U. (2008). *Small and medium enterprises and the environment: barriers, drivers, innovation and best practice: A review of the literature*. Perth: Small and Medium Enterprise Research Centre, Edith Cowan University.