

# Unpacking opportunity recognition for sustainable entrepreneurship



**Margo P. M. Enthoven**

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university of  
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# Unpacking opportunity recognition for sustainable entrepreneurship

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## List of abbreviations

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AIHR	Academy of International Hospitality Research
AOM	Academy of Management
BCERC	Babson College Entrepreneurship Research Conference
CFA	Confirmatory Factor Analysis
ERSA	European Regional Science Association
HTSF	High-Tech Small Firms
IECER	Interdisciplinary European Conference on Entrepreneurship Research
ISIRC	International Social Innovation Research Conference
OLS	Ordinary Least Squares
RENT	Research in Entrepreneurship and Small Business
LISA	Landelijk Informatiesysteem van Arbeidsplaatsen
SEM	Structural Equation Modelling
SME	Small- and Medium-sized Enterprise

## Chapter 1

### Introduction

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*“All revolutions start in the stomach.”* (Pastafabriek, Groningen)

## 1.1. Introduction

Entrepreneurs can create innovative solutions that address the grand challenges that humankind faces (Markman et al., 2019; Schaefer et al., 2015). These grand challenges include problems such as pollution, injustice, and poverty. As such, entrepreneurs can play a central role in the transition to a more sustainable society. However, society has become increasingly critical of business practices, and specifically of the businesses' pursuit of economic growth regardless of potential societal and environmental costs. Critics point to the correlation between economic growth and environmental degradation (Fischer-Kowalski and Swilling, 2011; OECD, 2002), and to the regular failure of markets to account for the true costs of social and environmental degradation (Austin et al., 2006; Cohen and Winn, 2007). Therefore, the view that business needs to become more sustainable is now accepted among policy makers, management scholars, and entrepreneurs alike (Markman et al., 2019). While it has become increasingly recognized that entrepreneurs can play a central role in the transition to a more sustainable society, how such a transition might be realised is still the topic of ongoing debate (Markman et al., 2019; Schaefer et al., 2015).

In response to this situation, this dissertation addresses how and why entrepreneurs start a business with the aim to create sustainable change. Entrepreneurs cannot start a business without first recognizing an entrepreneurial opportunity (Short et al., 2010), which is essentially a combination of a need in the market and resources or skills that the entrepreneur possesses, brought together by an entrepreneur to create a product or service (Ardichvili et al., 2003). This results in the introduction of products or services with superior value for customers. Those entrepreneurs who focus on the recognition, development and exploitation of opportunities in response to grand challenges are considered *sustainable entrepreneurs* (Belz and Binder,

2017). Their discovery, development and exploitation of new opportunities is necessary to transform ‘business as usual’ into ‘sustainable business’ (Emas, 2015). Because opportunity recognition is central to the creation of new sustainable businesses, this dissertation focuses on the following question: *where, how and why do entrepreneurs recognize business opportunities for sustainable business?*

This first chapter provides an overview of the main theories, assumptions, problem statements and research questions of this doctoral dissertation. It also provides an outline of the remainder of the doctoral dissertation. The central concepts of this dissertation are sustainable entrepreneurship, opportunity recognition, problem recognition, and values and identities. The following sections provide an overview of the literature and position this dissertation within the main discussions of the literature. First, however, I discuss why I address sustainability in this dissertation.

## **1.2. Grand challenges for sustainable change**

Increasingly, scholars are being called upon to investigate the ways in which entrepreneurs can address the grand challenges<sup>1</sup> that humankind faces (George et al., 2016; Markman et al., 2019). These grand challenges are: *“formulations of global problems that can be plausibly addressed through coordinated and collaborative effort”* (George et al., 2016, p. 1880). This stream of research was fuelled by the introduction of the concept of sustainable development in 1987, which introduced society to the notion that social and environmental problems could be addressed through economic development and entrepreneurship (Brundtland, 1987). Since then, sustainability has been increasingly pursued

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<sup>1</sup> Some of these grand challenges represent problems that highly complex, global, and prone to contestation. These challenged are termed “wicked problems” and describe a particular type of grand challenge. In chapter 4, I discuss sustainable entrepreneurship particularly in relation to wicked problems.



through entrepreneurship. Sustainable entrepreneurship has the potential to contribute to the grand challenges that humankind faces, by introducing new solutions to the social and environmental problems that constitute these grand challenges (Pacheco et al., 2010a). While research on sustainable entrepreneurship is gaining traction, there is still much uncertainty about how entrepreneurs can successfully pursue sustainable business practice. In this dissertation, I aim to research sustainable entrepreneurship in a manner that allows for insights that could benefit all entrepreneurs who want to help contribute to a more sustainable society. The quote at the beginning of this chapter relates to this goal in two ways.

The quote refers to the role of good food for change. It illustrates the relationship between social issues and environmental issues: we cannot fight for environmental and social change with empty stomachs, and neither can we expect others to. Many people still live in (extreme) poverty and suffer from hunger. Moreover, these are also the people who are most severely affected by environmental problems such as the extreme weather events that are a result of climate change. Therefore, social and environmental goals are both equally relevant in the transition to a more sustainable society and I consider entrepreneurs who pursue either of these goals through business as sustainable entrepreneurs.

The concept that “all revolutions start in the stomach” is also relevant because I consider change in the food industry to be a central grand challenge. First, around 77 billion animals are slaughtered yearly for human food production – excluding fish and sea-dwelling animals (FAO, 2018a). Due to the ever-increasing scale of the livestock industry and its implications for animal welfare, the notion that we should care for the interests of non-human animals is becoming more widespread, yet it is rarely included in the sustainability literature. Given that this notion is becoming more prominent, an increasing number of scholars have called for the inclusion of the interests of non-human animals in human decision making (Joy,

2011; Singer, 2009; van den Berg, 2013). This is based on the realization that non-human animals and humans are not so different, because animals can experience pain and emotional suffering similarly to humans (Singer, 2009). Considering that the scale of the livestock industry is so large, animals have now become the earth's single largest group of exploited victims. Thus, in a world where we no longer need to eat or wear animals to be healthy, it is no longer morally justifiable to cause their suffering and death.

Second, the meat and dairy industry is the cause of many environmental and social problems that relate strongly to the grand challenges, because this industry has become inherently inefficient: the nutritional value of its output (meat and dairy) is less than that of its input (fodder). Animals are inefficient producers of food, requiring large amounts of food to produce just a little bit of nutrition, while much of their food can also be eaten directly by humans. For instance, only 3% of the calories and 5% of the protein in the fodder that a cow eats ends up in her meat – and this fodder is made of crops that humans can also eat directly, such as corn, soy, wheat and other grains (Cassidy et al., 2013). The resulting waste pollutes land, fresh water sources and seas (FAO, 2018b). This inefficiency, and the growing global demand for meat has led to an increase in the demand for land, fertilizers and water, which in turn leads to increasing deforestation and desertification in areas where the livelihood of the population depends on the fertility of their environment (IPCC, 2019). Taking all this into account, moving to a diet without animal products on a global level would substantially contribute to a more sustainable society. Such a change in consumption patterns would reduce the total emissions of greenhouse gases from global food production – including plant-based food production – by 50%, and its estimated total land use by 73% (Poore and Nemecek, 2018).

Taking the above into account, chapters two, four and five of this dissertation focus on entrepreneurs who aim to tackle sustainability issues in the food and livestock industries. Specifically, I include sustainable entrepreneurs who explore and recognize opportunities that aim to facilitate a more plant-based diet. Chapter three offers a more global approach to the study of sustainable entrepreneurship and analyses sustainable entrepreneurship across different industries. The next section describes in more detail what is meant by sustainable entrepreneurship.

### **1.3. Sustainable entrepreneurship**

Before going into the specifics of opportunity recognition, it is important to know what sustainable entrepreneurship is. A growing stream of research has focussed on entrepreneurs who address numerous grand challenges. For instance, literature on social issues and entrepreneurship has discussed the alleviation of poverty through entrepreneurship (Mair and Marti, 2009), and the role of entrepreneurship as a means to aid victims of natural disasters (Gawell, 2013). The literature on environmental issues and entrepreneurship includes examples from sustainable fashion (DiVito and Bohnsack, 2017), green building construction (Jones et al., 2019), and clean energy (Sine and David, 2003). These examples represent just a small portion of the growing literature on entrepreneurship in response to grand challenges.

Entrepreneurs with social and/or environmental goals have been given many names, and many definitions have been created to explain this phenomenon. Within the literature on entrepreneurship and the natural environment, entrepreneurs who address environmental challenges have been called green entrepreneurs (Silajdžić et al., 2015), ecopreneurs (Affolderbach and Krueger, 2017), and environmental entrepreneurs (Anderson, 1998). What these types of

entrepreneurs have in common is their focus on addressing environmental issues through entrepreneurship. Typically, these types of entrepreneurs are described as having a strong focus on earning money and scaling up their business (Schaltegger and Wagner, 2011). Entrepreneurs who address social issues however, have been described as not focussing on earning money, but rather as using money as an instrument to achieve their social goals. While they act in an entrepreneurial manner to secure this funding, they often do not have economic goals, or they are limited (Santos, 2012). These entrepreneurs have been called humane entrepreneurs (Parente et al., 2018), ethical entrepreneurs (Markman et al., 2016) and social entrepreneurs (Mair and Martí, 2006). While there are differences in their goals and their orientation towards money, what the two types of entrepreneurs have in common is that they address grand challenges through entrepreneurship. While the term sustainable entrepreneur was initially coined to describe those entrepreneurs who address both social and environmental issues through business, scholars have called for a term that encompasses all entrepreneurs who aim to tackle a grand challenge, whether only through social or environmental goals or through both (Markman et al., 2019). Therefore, I consider all entrepreneurs to be sustainable entrepreneurs if they address social or environmental issues, or both, through business.

Capturing all the different definitions of entrepreneurs who address social or environmental goals under the large umbrella of sustainable entrepreneurship allows me to analyse the ways in which sustainable opportunities are discovered, evaluated and created. What these entrepreneurs have in common is that they all address a grand challenge in some minor or major way, and that they are involved in opportunity recognition, regardless of whether they have a strong focus on monetary gain. Therefore, sustainable entrepreneurship is considered as “*the recognition, development and exploitation of opportunities by individuals to bring*

*into existence future goods and services with economic, social and/or ecological gains.*” (Belz and Binder, 2017, p. 2).

Through opportunity, sustainable entrepreneurs can provide innovative solutions in response to grand challenges (Boons and Lüdeke-Freund, 2013), and translate sustainability problems into problems that can be addressed through a business (Gras et al., 2020; Günzel-Jensen et al., 2020; Markman et al., 2019). Sustainable entrepreneurs have the creativity and flexibility to introduce solutions that they believe may solve a grand challenge to the market. Unlike government actors, they are not constrained by politics or by regulations for public organizations, but instead experience market constraints (Fligstein, 1996). Despite market constraints, entrepreneurs are capable of creatively and innovatively addressing sustainability problems without experiencing some of the constraints that other actors have. Specifically, entrepreneurs can start businesses that present small, local solutions that may eventually lead to radical and global change for sustainability, despite the complex nature of grand challenges (Hockerts and Wüstenhagen, 2010; Plowman et al., 2007). To understand how they do so, however, we need to unpack the concept of sustainable opportunity recognition.

#### **1.4. Unpacking sustainable opportunity recognition**

To address grand challenges through business, sustainable entrepreneurs first need to recognize an entrepreneurial opportunity. This is no surprise, because the opportunity construct is so central to the field of entrepreneurship, that “*without an opportunity, there is no entrepreneurship*” (Short et al., 2010, p. 40). In this section, I aim to unpack the opportunity construct in the context of sustainable entrepreneurship. Therefore, I first discuss what opportunity recognition is, and then consider how opportunity recognition relates to grand challenges. Finally, I

examine which cognitive frames enable sustainable entrepreneurs to recognize opportunities in relation to grand challenges.

An entrepreneur recognizes an opportunity by creating a fit between a market need, interest, or want, and resources in the form of a new venture idea (Ardichvili et al., 2003; Davidsson, 2015). This fit is an opportunity if it creates new or superior value for customers. Opportunities exist in the interaction between the entrepreneur and their environment - partially in the entrepreneur's mind and partially in the existence of an enabler in the environment of the entrepreneur. Whether an opportunity can be recognized and exploited by an entrepreneur is dependent on the entrepreneur's skills and confidence (Davidsson, 2015). Therefore, the entrepreneurship field revolves around the individuals and processes that lead to the discovery, evaluation, and exploitation of opportunities, and the effects of these efforts (Shane and Venkataraman, 2000). Additionally, the entrepreneurship literature emphasizes that opportunities may be recognized in relation to problems, but that this is not necessarily always the case (Vogel, 2017). Instead, opportunities based on problems represent only one of multiple types of opportunity (Chandler et al., 2003). As such, opportunities in relation to grand challenges represent a specific type of opportunity, because they exist in relation to one or more problems that constitute a grand challenge. The sustainable entrepreneurship literature therefore emphasizes that a sustainable entrepreneur need first recognize a social or environmental problem before recognizing an opportunity (Belz and Binder, 2017; Eller et al., 2020; Santos, 2012).

Thus, to understand how sustainable entrepreneurs recognize opportunities based on sustainability problems, it is important to understand what a problem is, how it is recognized, and why some entrepreneurs recognize sustainability problems while others do not. A problem refers to a significantly undesirable situation, which may be solvable by someone, although probably with some difficulty (Smith, 1989).

When an individual recognizes a problem, they become uncomfortable, because the problem signals that reality is not as they would like it to be (Baer et al., 2013; Jonassen, 2000). The result is that the individual will devote attention to the problem, and put effort into looking for solutions (Cowan, 1986; Pedersen, 2009). The following example illustrates how problems are recognized: when an individual watches the news and sees that a drought in a poor region leads to hunger and infant mortality, the individual is aware of the situation and the children's need for food and water. However, this situation only becomes a recognized problem once the individual considers the children's suffering to be undesirable. If the individual does not care, decides to ignore the information, or does not receive the message, then it is unlikely that they recognize a problem (Pedersen, 2009; Tversky and Kahneman, 1981).

In the previous example, a judgment on the desirability of a situation needed to be made by the individual to recognize a problem. Hence, what defines problem recognition is a judgment on an external situation (Cowan, 1986; Pedersen, 2009). How individuals judge situations based on desirability has been a crucial topic in management and economics since the very genesis of these fields (Smith, 1776, 1759). Two dominant assumptions on individuals' judgments of situations that still inform the current literature on entrepreneurship are grounded in economic sociology and neoclassical economics, which both assert that behaviour is motivated by a central goal. In neoclassical economics, this goal is utility, whereas in economic sociology the goal is power (Fligstein, 2001). Although these assumptions are valid and helpful to the literatures from which they originate, one of the key features of (sustainable) entrepreneurship is the presence of multiple, oftentimes conflicting, goals (Harmeling et al., 2009; Mitzinneck and Besharov, 2019; Sarasvathy and Ramesh, 2018). While motivations of power or utility may be present, and sometimes even central to the behaviour of sustainable

entrepreneurs, sustainable entrepreneurs have a range of motivations that are not exclusively related to power or utility.

Particularly in the recognition of problems and opportunities, entrepreneurs' motivations depend on their values and their identity, which provide a cognitive framework for entrepreneurs' judgments on the undesirability of problems and the favourability of opportunities (Mathias and Williams, 2017; Stern, 2000). Values exist on both an aggregated cultural level and on an individual level, which are both of crucial importance to opportunity recognition (Davidsson and Wiklund, 1997; Hofstede, 1980; Hoogendoorn, 2016; Schwartz and Bilsky, 1990). In considering *where* opportunities are recognized, it is crucial to thus discuss values on an aggregated, cultural level, whereas in answering the question of *why* or *how* opportunities are recognition, it is more appropriate to discuss values on the individual level. On either level, values can be referred to as beliefs or concepts that refer to specific desirable end states and behaviours. On an individual level, values guide behaviour and the evaluation of situations, and they are ordered by relative importance (Schwartz and Bilsky, 1990). Values transcend specific situations, determine which situations are worth attending to, and how an individual should behave in response to a certain situation (Schwartz, 1977; Schwartz and Bilsky, 1990). Grounded in values is an individual's self-concept, or their identity (Hitlin, 2003). An identity is a person's link to the social world and refers to their sense of self. This sense of self is built up over time as a person pursues projects and goals that are not those of their society or their community, but rather of themselves (Hitlin, 2003). In this process of building a sense of self, individuals anchor their identity between their values and the expectations and norms of society, and thereby determine their place in society (Gecas, 2000).

Entrepreneurs endorse a number of values and have several different identities, which can have conflicting influences on the opportunity recognition process of



sustainable entrepreneurs. Typical entrepreneurial values include egoistic values (caring about money and status) (Kirkley, 2016), while green and altruistic values, which are related to caring about sustainability, can also be held by entrepreneurs (Hanohov and Baldacchino, 2017; Kirkwood and Walton, 2010; Ploum et al., 2018a; Vuorio et al., 2018). The combination of these values creates much potential for tension, while the values that sustainable and traditional entrepreneurs endorse also differ based on the values they endorse highly and the tensions that they experience between these values (Dorado, 2006). Typically, sustainable entrepreneurs experience tension between values that transcend their self-interests (green and altruistic values) and values that enhance their self-interests (values that relate to status, money, pleasure and comfort) (Hahn et al., 2015). Additionally, values also determine which identity is activated, because the different identities that entrepreneurs hold are activated based on the relative importance of certain values, and on the situation the entrepreneur encounters. Notably, sustainable entrepreneurs have entrepreneurial identities, pro-social identities and environmental identities, which can conflict or align dependent on the situation (Mathias and Williams, 2017; Wry and York, 2017; York et al., 2016). Thus, I argue that, while traditional and sustainable entrepreneurs share a number of values and identities, the differences between them cause sustainable entrepreneurs to evaluate their environment differently, which influences their opportunity recognition process.

Because values and identities guide behaviour and the evaluation of situations, they determine entrepreneurs' recognition of problems and opportunities. Both problems and opportunities require an evaluation, or judgment, but while the values and identities underlying an entrepreneur's judgments are the same, the situations are different. Whereas problems are situations that are judged as undesirable, opportunities are situations that are judged as favourable. Despite

these different types of judgment, the opportunity recognition literature has largely neglected the differences between these concepts, and oftentimes even considers problem recognition as a part of opportunity recognition (Santos et al., 2015; Vogel, 2017). In contrast, other literatures recognize problem recognition as a distinct concept, and discuss problem recognition as the starting point for a range of behaviours and judgments, including activism, moral decision making, strategic decision making, and sustainable consumerism (Baer et al., 2013; Pedersen, 2009; Steg et al., 2014a; Stern, 2000). This lack of clarity on the distinctiveness of problem recognition, and on the relationship between problem and opportunity recognition, confuses the relationships between problems, opportunities, values and identities. Considering the evidence that problem recognition is a crucial and distinct concept which requires a different judgment to opportunity recognition, the investigation of the relationship between problem and opportunity recognition is of crucial importance to understanding how sustainable entrepreneurs recognize opportunities. Therefore, the relationships between values, identity, problem recognition, and opportunity recognition for sustainability represent the core of my dissertation. The following section discusses which research problems need to be addressed to provide insight into these relationships.

### **1.5. Problem statement**

Entrepreneurship scholars have a long tradition of debating whether opportunities are discovered or created (Wood and McKinley, 2020). The question these scholars are trying to answer is whether opportunities exist independently in the environment of entrepreneur and can be discovered by entrepreneurs with the right information, or whether the opportunity is the result of the entrepreneur's creative cognitive processes, and thus created by the entrepreneur (McBride and Wuebker, 2020). Meanwhile, the opportunity concept is also considered to be ambiguous,

abstract, backward-oriented, and embedded with an element of favourability (Davidsson, 2015; Wood, 2017). For instance, Davidsson (2015) considers the element of favourability to be particularly problematic, due to the fact that an opportunity refers to both an element in the environment of the entrepreneur that is evaluated, and a favourable evaluation of this element. This means that the concept of opportunity incorporates both a situation in the environment of the entrepreneur (a contextual factor) and its evaluation (Davidsson, 2015). As a result, it is unclear whether an opportunity still exists when the entrepreneur changes their mind about its favourability, which means that construct clarity is lacking (Suddaby, 2010).

Due to the contestation that surrounds the opportunity debates, a number of scholars have called for the dismantlement of the concept of opportunity, and some have proposed alternative constructs (Davidsson, 2015; Ding, 2018; Foss and Klein, 2017; Kitching and Rouse, 2017). For instance, Foss and Klein (2017) propose that opportunity recognition is a case of entrepreneurial judgment rather than a distinct entrepreneurial process. Other scholars have argued for the continued use of the concept of opportunity (McBride and Wuebker, 2020; Wood and McKinley, 2020), because both entrepreneurs and scholars have an understanding of what opportunity means, and can use it to communicate effectively across their respective fields. Also, much useful and relevant knowledge has been created in relation to the concept of opportunity. Some scholars have therefore argued for keeping the opportunity construct as an umbrella construct, which would cover the range of activities that represent the base on which new ventures are formed. However, these scholars believe that the challenges surrounding the opportunity construct should be addressed (Wood, 2017; Wood and McKinley, 2020).

In this dissertation I answer the call to reduce the challenges surrounding the opportunity construct, (Wood and McKinley, 2020; Wood, 2017) by analysing a

specific type of opportunity: the problem-based opportunity. Specifying this as a type of opportunity enables me to more clearly demarcate its boundaries, and thus reduce its ambiguity and its degree of abstraction (Suddaby, 2010; Tversky and Kahneman, 1981). Meanwhile, this type of opportunity remains understudied, as it is still unclear which characteristics of sustainable entrepreneurs allow them to recognize sustainability problems, and how they recognize these problems. I aim to shed light on the opportunity recognition processes in response to sustainability problems by studying the following three research problems.

First, the relationship between problem and opportunity is understudied, because problem recognition has only recently been proposed as a key variable in the sustainable opportunity recognition process (Belz and Binder, 2017). The relationship between problem and opportunity recognition is usually treated as an assumption or a proposition, (Belz and Binder, 2017; Santos, 2012), or it is entirely neglected by scholars (Santos, 2012; Vogel, 2017). Additionally, it has not been empirically proven yet that such a relationship indeed exists. It is therefore crucial to unpack the concept of problem-based opportunity. Additionally, knowing how the recognition of problems relates to the recognition of opportunities can aid in the establishment of problem-based opportunity as a sub-type within the umbrella of opportunity (Wood and McKinley, 2020). This research problem is addressed in chapters three, four and five.

Second, another effort to provide insight into the opportunity recognition process revolves around the question of what enables entrepreneurs to recognize opportunities in response to grand challenges. There is limited knowledge about this, and about how sustainable opportunity recognition is distinct from the recognition of other opportunities (Belz and Binder, 2017; Ploum et al., 2018a). Because sustainable entrepreneurs have different values and identities than other entrepreneurs, it can be assumed that these distinct values and identities also

influence sustainable entrepreneurs' processes of problem and opportunity recognition. How values and identities do this, however, remains largely unexplored. This research problem is addressed in chapters three and four.

Third, the social situatedness of opportunity recognition remains understudied. This means that, while entrepreneurs' values and identities are influenced by the cultural values of their community and social network, it remains unclear how this translates into differences in problem and opportunity recognition across locations (Davidsson and Wiklund, 1997; Mckeever et al., 2015). Due to local differences in culture, there are local differences between entrepreneurs' values and identities. This then leads to different proportions of sustainable entrepreneurs compared to the general population of entrepreneurs (Hoogendoorn, 2016). As such, the proportion of individuals with the 'right' identity and values to recognize sustainable opportunities differs across geographical locations. Additionally, sustainable entrepreneurs have distinct preferences for certain places, because different locations offer different types of support (Davidsson and Wiklund, 1997; Sunny and Shu, 2019). As a result, sustainable entrepreneurs may situate themselves in different places than other entrepreneurs. Knowing where sustainable entrepreneurs recognize or pursue opportunities can advance knowledge about which economic contexts are favourable for sustainable entrepreneurs. This research problem is addressed in chapters two and five.

The methodology of this dissertation depends in part on the three research problems, and in part on the complexity of the relationships between the core concepts in this study, and the diverse and oftentimes conflicting motivations of sustainable entrepreneurs. Arguably, adopting a singular methodology would be ineffective for addressing all the different reasons why, how, and where entrepreneurs recognize opportunities in response to grand challenges. To allow for the most reasonable explanation of these phenomena to persevere, I adopt

flexibility in relation to methodology. Adopting numerous methods to study a phenomenon allows for triangulation, which is the ability to confirm a similar explanation of a phenomenon with the use of multiple different methods. This increases the reliability of the findings (Shepherd et al., 2015). Therefore, I adopt a mixed methods approach in this dissertation. The following section provides an outline of the empirical chapters of this thesis and discusses the research sub questions that they address.

## 1.6. Outline of the dissertation

The aim of this dissertation is to provide insight into why sustainable entrepreneurs recognize sustainable opportunities, which locations provide beneficial conditions for the recognition of sustainable opportunities, and how sustainable entrepreneurs can create and/or discover opportunities in response to grand challenges. This contributes to the entrepreneurship literature in three ways: (1) by helping to reduce the ambiguity surrounding the opportunity recognition process, (2) to understand what enables entrepreneurs to recognize opportunities in response to grand challenges, and (3) to provide insight into the pathways sustainable entrepreneurs choose in their efforts to influence unsustainable markets. The central research question at the heart of this dissertation is: *where, how, and why do entrepreneurs recognize business opportunities for sustainable business?* In the following paragraphs, each chapter is briefly summarized.

To answer the central question, and to address the aims of this dissertation, four sub questions are presented here that are discussed in the empirical chapters. First, it needs to be clear *where* sustainable entrepreneurs recognize sustainable opportunities, so that contextual factors for sustainable entrepreneurship can be determined. The first sub question therefore is: *to what extent do sustainable*

*entrepreneurs in the Netherlands cluster?* To address this question, chapter 2 analyses the geography of sustainable entrepreneurship, by first mapping the locations in which sustainable entrepreneurs cluster, and subsequently by explaining why this clustering takes place. The chapter provides an overview of where opportunities for sustainable business are exploited in the Netherlands. It gives insight into the patterns of opportunities for sustainable business in relation to the existing economic structures, and into the most favourable locations for sustainable entrepreneurs.

Second, I analyse *why* and *how* sustainable entrepreneurs discover opportunities. Therefore, I focus on the different motivations that are central to the sustainable entrepreneurship process, and specifically, I look at the role of values and identities through two separate sub questions. The following research question is my second sub question: *to what extent does sustainability problem recognition mediate the relationship between values and sustainable opportunity recognition?* Chapter 3 focuses on this question and uses value theory to explain why some individuals are more likely to recognize sustainable entrepreneurial opportunities. It provides proof that opportunity recognition and problem recognition are two different constructs, and that opportunity recognition for sustainable entrepreneurship is dependent on the recognition of social and environmental problems and an individual's values.

Another key determinant of motivations, a factor that addresses *why* and *how* entrepreneurs recognize sustainable opportunities is the entrepreneur's identity. This dissertation engages with this topic by posing the third sub question: *how does identity influence opportunity recognition in relation to a wicked problem?* Chapter 4 analyses how identities shape the sustainable opportunity recognition process. The individual entrepreneur is central in this chapter, and the differences it reveals between prosocial and entrepreneurial identities indicate that most opportunities have both an element of discovery and creation. Additionally, I specify an identity-

based model of opportunity recognition in response to sustainability problems in the environment of the entrepreneur.

Third, I analyse *how* sustainable entrepreneurs create opportunities by changing unfavourable conditions into opportunities that are favourable for sustainable entrepreneurship. Thus, the fourth sub question is: *how do entrepreneurs and activists in a moral market niche attempt to change consumer culture?* Chapter 5 reveals that by shaping market niches, sustainable entrepreneurs and activists change their context, with the result that entrepreneurs can more successfully exploit opportunities for sustainable business. I find that entrepreneurs and activists conjointly shape moral market niches, without collaborating explicitly. Activists predominantly push consumers out of what they consider immoral markets, while entrepreneurs pull consumers into the new moral market niche. Thus, the entrepreneurs in this study need to create an opportunity by creating demand for their products or services by influencing the market.

This dissertation consists of a collection of individual research chapters within the theme of sustainable entrepreneurship and opportunity recognition. The chapters can be read independently as papers, or chronologically as a book. Because the chapters are interrelated theoretically and conceptually, they have minor overlaps. These overlaps are intended to improve the readability of the chapters as individual papers, and the readability of the dissertation in general. Besides the empirical chapters, this dissertation includes a discussion and conclusion chapter, a Dutch summary and a list of references and appendices.





## Chapter 2

### Investigating the spatial concentration of sustainable restaurants: it is all about good food!<sup>2</sup>

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This chapter addresses the role of sustainable demand and psychological and cultural factors in the spatial concentration of sustainable SMEs. We analyse the spatial concentration of sustainable SMEs in the restaurant sector in the Netherlands and argue that traditional agglomeration theories can partially explain their spatial concentration but are not sufficient to explain the sub-sector concentration of sustainable entrepreneurs. Instead, demand as well as psychological and cultural factors could explain the sub-sector concentration of sustainable restaurants. We use sustainable entrepreneurship theory to explain this difference. We analyse the spatial concentration of sustainable SMEs in three ways. First, we investigate spatial concentration based on individual locations of sustainable restaurants with an average nearest neighbour analysis. Second, we analyse spatial autocorrelation with the use of the Moran's I statistic. Finally, we calculate the percentage of sustainable restaurants in a region, out of all restaurants in that region. We then analyse and map the clustering of sustainable restaurants with a Getis-Ord  $G_i^*$  analysis. While controlling for conventional clustering, we find a single large cluster of sustainable restaurants. Arguably, this clustering is caused by spatial variation in demand and individual psychological traits of sustainable entrepreneurs, which together represent a regional culture of sustainable entrepreneurship.

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<sup>2</sup> This paper was presented at Research in Entrepreneurship and Small Business (RENT), Lund, Sweden 2017, and European Regional Science Association (ERSA), Groningen, the Netherlands, 2017.

This paper appeared in the *Annals of Regional Science* as: Enthoven, M. P. M. and Brouwer, A. E. (2020) "Investigating spatial concentration of sustainable restaurants: It is all about good food!", *The Annals of Regional Science*, 64(3), 575–594. <https://doi.org/10.1007/s00168-019-00955-6>

## 2.1 Introduction

*“Just as people cannot live without eating, so a business cannot live without profits. But most people don’t live to eat, and neither must businesses live just to make profits.”* John Mackey (2015 p. 250).

Businesses can be drivers of sustainable economic growth. However, they are also the main driver of the greenhouse effect (CDP, 2017), air pollution (EuroStat, 2019) and deforestation (WWF, 2016). A change towards more sustainability from within the business world could have a phenomenal positive effect on our future. When it comes to the tourism and hospitality industry, this is one of the least sustainable economic sectors in the world. Furthermore, the negative effect of restaurants on the environment becomes a public concern (Gössling et al., 2009) and consumers become more and more environmentally conscious. As a consequence, the demand for sustainable products and services is growing. As such, in the restaurant industry more effort is being made to become more environmentally friendly (Xu and Jeong, 2019). In addition, Raab et al (2018) find that in particular, serving sustainable food as a core product attracts niche customers, whereas other, more ancillary, green practices have no influence on customer segmentation.

In this paper, we research the nature and location of sustainability specialization within an established sector; the restaurant sector, analysing the within-industry sustainability specialization of restaurants in the Netherlands. Our research analyses the occurrence of within-industry sustainability specialization, so that we can unravel the spatial factors of sustainable entrepreneurship. We show that sustainable entrepreneurship is not spatially blind and that locality needs to be

taken into account by sustainable entrepreneurs and policy makers. Our results provide key insights for those who seek to fuel a transition towards sustainable business practices.

In this chapter, we explain how and to what extent the sustainability orientation of businesses leads to sub-sector clustering. Previous research in economic geography has focused mostly on the spatial concentration of industrial sectors and agglomerations, while concentration at the sub-sectoral level is not explained. In research on sustainable entrepreneurship the role of place is largely neglected (McKeever et al., 2015): especially, previous research does not address the role of established clusters on sustainable entrepreneurship. Furthermore, research on the context of sustainable entrepreneurship has focused mostly on institutions, while the level of embeddedness within and interactions with geophysical space, social systems and territories have been overlooked (Muñoz and Cohen, 2018). Existing research is mostly qualitative or conceptual, and focuses on the cultural and social embeddedness of sustainable entrepreneurship (Anderson and Obeng, 2017; Kibler et al., 2015; Shrivastava and Kennelly, 2013). The role of existing economic structures has been discussed in an urban context (Cohen and Muñoz, 2015), but there is little evidence on the role of the urban environment on sustainable entrepreneurship. One study analyses the geographical factors behind organizations that promote the clustering of sustainable organizations (Sunny and Shu, 2019), but assumes that clustering exists in relation to these organizations, rather than analysing the significance and the extent of this clustering: the authors do not consider the locations of individual businesses. However, a focus on the location of individual businesses is key in advancing our knowledge on the spatial behaviour of sustainable businesses. Such a focus can show how individual businesses are influenced by their economic surroundings, and answers the call for more research on the embeddedness of sustainable entrepreneurship within its context (Muñoz

and Cohen, 2018). Our study uses location data from the entire population of restaurants in the Netherlands and therefore assesses spatial concentration based on a complete national dataset.

Our contribution to the literature is twofold. Firstly, we contribute to the field of sustainable entrepreneurship by providing insight into the nature of the spatial concentration of sustainable entrepreneurs. We do this by analysing the role of the spatial concentration of a specific sector on sustainable entrepreneurship within that sector. Secondly, we contribute to the economic geography literature. We do so by analysing the occurrence of sub-sector spatial concentration, adding to central place theory (Christaller, 1966; Gaspar, 2018; Plane, 2016) by discussing sub-sector clustering as part of industry clustering. Additionally, a focus on sub-sectoral concentration is key to questions relating to the spatial nature of sub-sectors focusing on, for instance, luxury goods, ethnic specializations and sustainability specializations.

Furthermore, our insights could be of importance to policy makers. We recommend that sustainable entrepreneurship should be stimulated within large specialized industrial clusters. Galkina and Hultman (2016) find that sustainable entrepreneurial initiatives, even if these occupy small-scale niches, can lead to collective progress towards more sustainable practices in politics and governance. Thus, we believe that sustainability initiatives should be supported for each industry, within that industry. Based on our research, we propose that the sub-sectors of an industry experience concentration in the largest clusters of that industry, while the measure of sub-sector clustering within an established sector is larger than that of the associated industry.

## 2.2 Theory

This chapter focuses on sustainable restaurants and their spatial patterns from the perspective of sustainable entrepreneurship theory. The presence of opportunities together with entrepreneurial persons creates entrepreneurship (Shane, 2003). These opportunities exist in the daily environment of the entrepreneur, while the capacity to identify opportunities is an individual trait. Opportunity thus exists at the nexus between entrepreneur and environment, and as such is dependent on individual factors and factors in the entrepreneur's environment (Shane and Venkataraman, 2000). Our theoretical endeavours revolve around the interaction between entrepreneur and environment, and focuses on those spatial factors that enable an entrepreneur's capacity to identify opportunities. We discuss the literature on business clusters and sustainable entrepreneurship to explain why differences in sustainable sub-sectors can arise within the sector as a whole. Section 2.1 discusses differences between sustainable and conventional SMEs. Section 2.2 discusses spatial concentration in the restaurant sector.

### *2.2.1 Sustainable entrepreneurship versus conventional entrepreneurship*

We argue that sustainable SMEs are different from conventional SMEs and provide a description of their differences based on the sustainable entrepreneurship literature. Sustainable entrepreneurs are those entrepreneurs who are both environmentally and socially friendly and are competitive on the market (Johnsen et al., 2018; Muñoz and Cohen, 2018). Galkina and Baldacchino (2018) describe sustainable entrepreneurship as the act of making a profit in the most sustainable manner.

In the hospitality sector, the sustainable entrepreneur's main goals are achieving societal transformation towards more sustainability, encouraging more sustainable

behaviour in both restaurateurs and consumers, and at the same time making a profit (Hall et al., 2010). Sustainable entrepreneurs see the need for social and ecological solutions as ‘an opportunity’ (Johnsen et al., 2018). A focus on ethical goals indicates that sustainable entrepreneurs are different from conventional entrepreneurs, who can also act sustainably, but are motivated by other reasons. Conventional entrepreneurs can adopt sustainability goals in aid of cost reduction, as a marketing strategy, because of strict legislation, or due to pressure from institutions such as NGOs (Galkina and Hultman, 2016; Hart and Milstein, 1999; Isaak, 2002; Schick et al., 2002). The lack of commitment to sustainability goals in these businesses once a green identity has been established, is expected to lead to a minimal effort in greening (Galkina and Hultman, 2016). Existing firms adopting corporate social responsibility goals or environmental goals are thus not considered sustainable entrepreneurs. Sustainable entrepreneurs are characterized by their pursuit of sustainability goals from the start of their business, and thus the sustainability issue is seen as an opportunity for new entrants (Johnsen et al., 2018).

The psychological approach to sustainable entrepreneurship research has found that individual values, attitudes, motivations and goals are key in determining sustainable entrepreneurship. Kuckertz and Wagner (2010) indicate that a sustainable orientation is an important determinant for sustainable entrepreneurship, through the mediating influence of entrepreneurial intentions. Hanohov and Baldacchino (2018) also suggest that the importance of altruism; the motivation to produce gains for others. Besides orientations, another key factor for sustainable entrepreneurship concerns the entrepreneur’s sustainability values (Gast et al., 2017; Muñoz and Cohen, 2018; Patzelt and Shepherd, 2011; Spence et al., 2011). Values are the beliefs and principles that guide an individual’s behaviour (Schwartz and Bilsky, 1990) and individual values appear to be a stable

factor in determining sustainable entrepreneurship across countries (Muñoz and Cohen, 2018; Spence et al., 2011). Other psychological factors that determine sustainable entrepreneurship are sustainable identity (York et al., 2016), orientation (Kuckertz and Wagner, 2010; Muñoz and Dimov, 2015), motivations (Simon et al., 2013) and attitudes (Krueger, 1998). Other factors include social factors; perceived social and business support, perceived social norms, perceived desirability and concern about social pressure are considered social drivers or restrictors for sustainable entrepreneurship (Krueger, 1998; Muñoz and Cohen, 2018; Muñoz and Dimov, 2015). Furthermore, a perceived threat to the (individual) environment can trigger sustainable entrepreneurship (Patzelt and Shepherd, 2011). Muñoz and Cohen (2018b) consider such a threat as a the chance for individuals who are concerned with sustainability issues to develop entrepreneurial skills that aid them in the pursuit of sustainability goals through entrepreneurship.

Other individual factors that determine an individuals' successful pursuit of sustainable entrepreneurship are sustainability skills and competences. Differences between conventional and sustainable entrepreneurial skills exist due to the even greater importance of foresighted thinking for sustainable entrepreneurship (Lans et al., 2014). Other competences that determine the success of sustainable entrepreneurship are the willingness to embrace diversity, and systems thinking competences (Ploum et al., 2018b). Besides skills and competences, sustainable entrepreneurs need communal and environmental knowledge (Gast et al., 2017). To summarize, we find that some sustainable entrepreneurs may experience social pressure for sustainability, all have sustainability-specific motivations, and all require specific sustainability competences. As such, they differ from conventional entrepreneurs. However, the differences between sustainable and conventional entrepreneurs are not absolute, but are a question of degree rather than kind.



### *2.2.2 Spatial concentration in the restaurant sector*

Neoclassical theories of clustering have been widely used to explain the spatial concentration of entrepreneurs (Brülhart and Mathys, 2008; Schiff, 2015; Tran and Santarelli, 2017; van Oort, 2007). Based on these theories, we assert that sustainable entrepreneurs tend to cluster. The MAR (Marshall, Arrow, Romer) theory on spatial concentration posits that sector-specific knowledge fosters regional economic development and growth (Romer, 1986). Porter takes a sector-specific approach and argues that regional growth is fuelled by same-industry, local competition (Delgado et al., 2010; Porter, 1990). Jacobs (1969) takes a cross-sector approach and argues that regional growth is fuelled by cross-industry shared ideas. Finally, sector-specific effects are likely to occur for the restaurant sector, because restaurants<sup>3</sup> need to ensure maximum exposure and grouping can maximize consumer interest (de Groot et al., 2016). Although these theories support the notion that sustainable entrepreneurs tend to cluster, we argue that neoclassical approaches to spatial concentration do not fully explain the spatial concentration of sustainable entrepreneurship. Sustainable entrepreneurship occurs across economic sectors it, and is a specialization within a sector rather than its own sector - it is a sub-sector. Therefore, approaches based on industry knowledge sharing, such as the MAR and Porter agglomeration economies might be appropriate to partially explain the spatial concentration of sustainable SMEs, but are insufficient to explain the differences between a concentration of SMEs within a sector and the concentration of SMEs within a subsector, such as sustainable entrepreneurship. Besides industry-specific knowledge, sustainability knowledge, skills and the shared values of sustainable entrepreneurs also influence sustainable

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<sup>3</sup> For restaurants, we consider the following subsectors: restaurants and hotel-restaurants (NACE groups 55.3 and 55.5 and SBI groups 55101, 5610 and 56101).

entrepreneurship. These additional factors may be found in a different location to industry knowledge, and therefore give rise to different spatial patterns of sustainable entrepreneurship. Jacob's (1969) cross-industry focus and her emphasis on cross-industry shared knowledge could be applicable to a spatial concentration of sustainable entrepreneurs, even one that is cross-industry. However, it does not explain why some places should have higher proportions of sustainable entrepreneurs as opposed to conventional entrepreneurs. We do not reject the value of the traditional agglomeration theories; however, we argue that additional explanations are needed to explain the clustering phenomenon of sustainable entrepreneurship. Therefore, we analyse sustainable entrepreneurship clustering within a single sector, as a subsector. The next section explores how we, based on the previously mentioned theories, can explain the spatial concentration of sustainable entrepreneurship as a subsector concentration. Thereby, we explore known psychological, social, and cultural and demand differences between sustainable and conventional entrepreneurs and link these to existing knowledge on clustering.

Psychological explanations for clustering focus on the individual behaviour of the entrepreneur in relationship to their environment. Huggins and Thompson (2017) propose a framework in which psychology, culture and institutions influence human behaviour and agency. Human behaviour and agency consequently lead to urban and regional development; culture, they propose, is socio-spatial. There is an interaction between culture and psychology. A culture's values, norms and beliefs influence the individual's values, norms and beliefs, while the shared values, norms and beliefs of many individuals comprise a culture (Huggins and Thompson, 2017). Therefore, a shared culture of sustainability could have a positive influence on the number of sustainable entrepreneurs in a region and therefore give rise to a concentration of sustainable entrepreneurs.

The importance of social networks for entrepreneurship is highlighted by Saxenian (1996), who indicates that the face-to-face social interactions among and within firms and local institutions determine entrepreneurship. An entrepreneur's social environment is key to the decision to start a firm (Sternberg and Litzenberger, 2004), because entrepreneurs gain knowledge from other actors through processes of information sharing in a social network. This happens when a network facilitates trust, and network actors have similar norms and values (Durlauf and Fafchamps, 2004; Huber, 2009). When levels of trust are high and norms and values similar, social networks create social capital. Social capital is defined as a source of social control (Portes, 2000). It plays a major role in establishing a group identity, and leads to the modification of behaviour: 'Herding' effects have a converging effect on group members' behaviour. Herding occurs when all members of a social group start following the social norms of the group and start to act in a more similar manner. Through the herding process, social capital produces group behaviour that can be different from the individual's initial intention (Durlauf and Fafchamps, 2004). This herding effect engenders an entrepreneurial group culture, which in turn can lead to more individuals with entrepreneurial values and hence more entrepreneurs (Uhlener and Thurik, 2007). Among the effects of such a culture is the transmission of entrepreneurial spirit thanks to members' exposure to role models (Laspita et al., 2012). Multiple studies have found positive effects of both weak and strong ties within the personal network and on the local and the national level on sustainable and social entrepreneurship (Bosma et al., 2016; de Lange, 2016; Estrin et al., 2016).

Besides the positive effects of social capital on entrepreneurship, social capital also comes with its downsides. There is a risk of conformity bias in tight groups, which restricts radical ideas. De Vaan (2011) notes that the more social capital there is present in a region, the less likely entrepreneurs are to start businesses in industries

that remain unexploited in that region. Due to value convergence and social norm creation in social networks, some types of business are considered illegitimate. If sustainable entrepreneurship is considered to be in conflict with the social norm, this could impede its development. A sustainable entrepreneur could, for instance, not be welcome in a network where classical business values are dominant. In such a way, differences in social capital between regions can generate differences in regional rates of sustainable entrepreneurship and thus, potentially create sustainable clusters.

Another factor that can drive sustainable entrepreneurship is customer demand. This drives supply, especially so in the service industry (Xu and Jeong, 2019). Customers purchase goods and services to satisfy their desires and needs, and according to customer demand theory, the demand for specific goods changes over time. Businesses therefore need to supply new products or new versions of existing products to stimulate new demand (Larsson and Bowen, 1989). Customers are not homogenous in their demand, but all have specific preferences: Hence demand for specific products and services fluctuate (Thomson, 1998). In other words, it is the customer who determines what they want to buy and where they want to buy it (Baltas, 2003). As such, businesses tend to adapt their product in line with consumer preferences in specific regions and locations (Etdgar and Rachman-Moore, 2010). Furthermore, consumers are not evenly spread by demographic characteristics (e.g. age, gender, education level, income) over all locations within a country. For example, urban areas tend to have a higher share of young adults than rural areas. Consequently, customer demand differs between regions, and as such potential customers create the product differentiation as offered by the supplier (Phillips and Peterson, 2001) and influence which places become places of production (Zukin, 1995).

Boterman (2018) studies the location of haute cuisine businesses in the Netherlands and finds an over representation of haute cuisine in the major urban centres of the Netherlands. He argues that:

*“This largely overlaps with the general pattern of most consumption spaces in Amsterdam, which are also predominantly concentrated in the central parts of the city. This area is also frequented by the majority of tourists and visitors who also are typically cultural consumers”* (p.166)

and explains this by

*“two interrelated trends: (i) the general re-emergence of larger cities exemplified by their demographic and economic growth; and (ii) the rise of an urban middle class, often manifesting itself through processes of gentrification.”* (p.168).

Similar trends may shape the location patterns of sustainable restaurants from a consumer's' demand perspective.

Entrepreneurship culture can be understood as an informal institution that comprises norms, values and codes of conduct (Andersson and Larsson, 2016; Kibler et al., 2014). Some of these values are independence, individualism and achievement (Uhlaner and Thurik, 2007). Generally, we view culture as the values, beliefs and expected behaviours that are sufficiently common across people within a given geographical region so that they are considered as shared (Hofstede, 2001). The entrepreneurial culture is seen as a collective programming of the mind in which the underlying value system is oriented towards entrepreneurial behaviour (Beugelsdijk, 2007). There is some evidence that social entrepreneurship is influenced differently by culture than conventional entrepreneurship (Hechavarría, 2016). For instance, countries with traditional values have higher levels of commercial entrepreneurship, whereas countries with secular-rational values have higher social entrepreneurship rates. Cohen (2006) argues that culture is crucial to

facilitating the creation of clusters of sustainability initiatives and innovations. For instance, local knowledge and practices influence a community's sustainability agenda, while the quality and quantity of outdoor recreation can also develop a community that cares for the environment.

Furthermore, the pre-existence of sustainable peers in a locale is likely to have effects on new sustainable business. Following the notion that role models can pass on entrepreneurial spirit (Laspita et al., 2012), they can also pass on a spirit of sustainability. Because sustainable entrepreneurs have different values, beliefs and competences than conventional entrepreneurs (see section 2.2.1.), they need different peers to learn from. Also, social networks that include sustainability professionals could generate spill overs of knowledge that could lead to the start-up of new sustainable ventures (Acs et al., 2009). Consequently, the presence of peers and social networks with specific knowledge, competences, beliefs and values on sustainability can inspire and educate new sustainable entrepreneurs. Wherever such peers and social networks are located, they could give rise to a sustainable entrepreneurship culture on a higher spatial scale.

Lita et al. (2014) find that customers are increasingly willing to pay extra for receiving environmentally friendly products and that consumers with higher incomes and education levels were more likely to frequent sustainable restaurants. Research by Raab et al. (2018) suggests that even though only 40% of people know about the negative environmental impact of restaurants, 78% are willing to pay a premium to eat in a sustainable restaurant. From this population, more women tend to pay an additional fee, but men are willing to pay a higher fee than women once they agree to pay an additional fee. Regarding the relationship between higher education levels and the frequentation of sustainable restaurants, interestingly, it is the youngest age group, and consequently the group with the lowest income of the

highly educated, that is most willing to pay the sustainability premium compared to other age groups of highly educated people. Sarmiento and Hanandeh (2018) describe patrons of sustainable restaurants as typically people who have green lifestyles, earn a mid-income and are young and female.

In conclusion, the psychological traits, social networks, and cultural context of sustainable entrepreneurs and customer demand have an impact on sustainable entrepreneurs and their spatial concentration. The social and cultural levels of entrepreneurship are in part made up of the sum of psychological factors of individuals who are or may become entrepreneurs, but in turn, they also influence the individual entrepreneur. This can lead to spatially bound behaviour change and, possibly, sustainable entrepreneurship. Therefore, we argue that individual psychological traits, through social groups and culture, create regional differences in entrepreneurship, where sustainable entrepreneurs may exhibit other behavioural patterns than conventional entrepreneurs. We believe that sustainable entrepreneurship clusters can arise due to the interplay of customer demand and the psychological traits, social networks, and cultural context of aspiring entrepreneurs.

We propose:

*H2.1: Sustainable SMEs in the restaurant sector are spatially concentrated.*

*H2.2: Sustainable SMEs in the restaurant sector are concentrated in different locations to conventional SMEs in the restaurant sector.*

### **2.3. Data and method**

This exploratory research uses secondary spatial data to assess the spatial concentration of sustainable SMEs. We used multiple spatial estimates to test the spatial concentration of sustainable and conventional restaurants. First, the spatial concentration of sustainable SMEs is tested based on point data. Conventional

SMEs and control factors are not included in this analysis. Second, the spatial concentration of sustainable SMEs as a percentage of conventional SMEs per region is analysed. If spatial concentration is found in the first two analyses we can confirm that there is a different pattern of spatial concentration between sustainable and conventional restaurants in the Netherlands. Consequently, we map spatial concentration to find where it occurs in the Netherlands and which factors could potentially explain this. The following section discusses the research context, the sample and the design used to determine the spatial concentration of sustainable restaurants.

### *2.3.1 Research context*

The focus of this research is on SMEs in the restaurant sector. Sustainable restaurants cater to a number of sustainable diets with different rationales. We base our guidelines for sustainable food on the dominant consumer perception of sustainable food and research on sustainable diets, as illustrated by the sustainable food guidelines of the Voedingscentrum (Centre for Nutrition) and Milieu Centraal (Environment Central) in the Netherlands (Milieucentraal, 2018; Voedingscentrum, 2018). Our characterization is based on scientific evidence from food studies and on recent sustainable food trends (FAO, 2006; Garnett, 2013; Milieucentraal, 2018; Morawicki, 2012; Voedingscentrum, 2018). Local, seasonal, vegetarian or vegan diets are more sustainable than the average western diet in terms of greenhouse gas emissions, overfishing, deforestation, desertification, over-fertilization and the accompanying ocean acidification, ocean dead zones and biodiversity loss (FAO, 2006; Garnett, 2013; Morawicki, 2012). Organic food is produced without synthetic fertilizers helps sustain diversity of species contributing to a food system that is less sensitive to pests and other shocks (Hole et al., 2005). This is socially sustainable, because in extreme cases such shocks can result in famine. Furthermore, local, seasonal and organic food production promotes crop variety,



which makes the global food system less susceptible to shocks, thus bolstering food security. Plant-based diets such as vegan and vegetarian diets promote social sustainability by using fewer resources for fodder (Morawicki, 2012) and thereby freeing up arable land for use in the battle against world hunger.

We consider vegan, organic, local and seasonal diets to be more socially and environmentally sustainable than the conventional Western diet. Restaurants serving local, organic, seasonal, vegan and/or vegetarian food are therefore considered more sustainable than conventional restaurants in this research. The locations of restaurants serving mainly (over 50%) vegan, vegetarian, seasonal, local or organic food are selected to determine the spatial concentration of sustainable entrepreneurs in the restaurant sector. We chose to use 50% as a cut-off point, since this is the percentage of organic food a restaurant in the Netherlands has to serve for a silver organic certification (Eko-Keurmerk Foundation, 2018).

### *2.3.2. Sample*

The data used in this research consists of the locations of all restaurants in the Netherlands, including sustainable restaurants. These locations are part of the Dutch Chamber of Commerce LISA-dataset, which contains all businesses registered in the Netherlands in 2013. Of all the food- and beverage outlets in the Netherlands, we include restaurants and hotel-restaurants and exclude café's, catering services, canteens, ice-cream parlours and fast-food restaurants. To identify sustainable restaurants, we manually browsed the largest restaurant booking and listing websites in the Netherlands. If a restaurant was listed as a local, seasonal, organic, sustainable, vegetarian, or vegan restaurant, we visited their

website to investigate their menu<sup>4</sup>. We considered those restaurants serving at least 50% vegan, vegetarian and organic food as sustainable restaurants. The final manual selection of sustainable restaurants in the Netherlands consists of 591 out of 15081 restaurants (4%).

### 2.3.3. Analysis

The spatial analyses in this paper test whether sustainable entrepreneurship clusters differently than conventional entrepreneurship. We execute three clustering estimates on our spatial data. The spatial analysis consists of three steps for which we use the ArcMap software.

The first step of the analysis consists of an average nearest neighbour analysis to determine whether the location of restaurants to their nearest neighbour is significantly shorter than expected, given the size of the database and the surface area of the Netherlands (Altman, 1992):

$$ANN = \frac{\bar{D}_O}{\bar{D}_E} \quad (1)$$

Where  $\bar{D}_O$  is the observed mean distance between each feature and its nearest neighbour:

$$\bar{D}_O = \frac{\sum_{i=1}^n d_i}{n} \quad (2)$$

and  $\bar{D}_E$  is the expected mean distance for the features given in a random pattern:

$$\bar{D}_E = \frac{0.5}{\sqrt{n/A}} \quad (3)$$

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<sup>4</sup> These websites include: [www.thefork.nl](http://www.thefork.nl) (previously, [www.iens.nl](http://www.iens.nl)), [www.bewustbiologisch.nl](http://www.bewustbiologisch.nl), [www.happycow.com](http://www.happycow.com), [www.friesstreekproduct.nl](http://www.friesstreekproduct.nl), [www.lokaalenlekker.nl](http://www.lokaalenlekker.nl), [www.foodlabzeeland.nl](http://www.foodlabzeeland.nl), [www.eetnu.nl](http://www.eetnu.nl) (does not exist anymore), [www.eko-horeca.nl](http://www.eko-horeca.nl) and [www.ecolage.nl](http://www.ecolage.nl).

In the above equations,  $d_i$  equals the distance between feature  $i$  and its nearest neighbouring feature,  $n$  corresponds to the number of features, and  $A$  is the area of a minimum enclosing rectangle around all features, or its user-specified area value. The average neighbour  $z$ -score for the statistic is calculated as:

$$z = \frac{\bar{D}_O - \bar{D}_E}{SE} \quad (4)$$

where:

$$SE = \frac{0.26136}{\sqrt{n^2/A}} \quad (5)$$

The null hypothesis of this analysis states that there is no spatial association between the realization of a variable on a location and its neighbours. The point data of the individual restaurants in the dataset are used for this analysis. We perform this analysis separately on the LISA data and the selection of sustainable restaurants.

Second, we aggregate the point data on a grid of so-called fishnet polygons, because polygon data is required for the following step. A grid in the shape of a fishnet is used to create square-shaped areas for the Netherlands, so that the regions we analyse all have the same shape and size. We calculate the share of sustainable restaurants in the polygon by dividing the number of sustainable restaurants by the total number of restaurants. After aggregating our point data to polygons, we calculate a global Moran's  $I$  estimate of spatial autocorrelation:

$$I = \frac{n}{s_0} \frac{\sum_{i=1}^n \sum_{j=1}^n w_{ij} z_i z_j}{\sum_{i=1}^n z_i^2} \quad (6)$$

where  $z_i$  is the deviation of an attribute for feature  $i$  from its mean ( $x_i - \bar{X}$ ),  $w_{i,j}$  is the spatial weight between feature  $i$  and  $j$ ,  $n$  is equal to the total number of features, and  $S_0$  is the aggregate of all spatial weights:

$$S_0 = \sum_{i=1}^n \sum_{j=1}^n w_{i,j} \quad (7)$$

The  $Z_I$ -score for the statistic is computed as:

$$z_I = \frac{I - E[I]}{\sqrt{V[I]}} \quad (8)$$

where:

$$E[I] = -1/(n - 1) \quad (3.2.4)$$

$$V[I] = E[I^2] - E[I]^2 \quad (3.2.5)$$

This statistic determines whether the spatial data is randomly or non-randomly distributed by means of a Z-score (Moran, 1950). Thus, it statistically determines the relatedness of a feature to its neighbours. A non-random distribution is an indication of dispersion or clustering. The null hypothesis for this statistic is that the features are randomly distributed. The statistic requires a defined distance to determine the distance at which features are considered neighbours. Around each feature, a distance band determines which other features are neighbours and which are not. We perform this analysis 30 times with different distance bands, to determine which distance band is most suitable for our data and our next analysis. For whichever distance the z-score is highest, that is where spatial processes promoting clustering are most pronounced. We use these peak distances as spatial weights in the final step.

For the third and final step, we use the Getis-Ord  $G_i^*$  hot spot analysis to determine where hotspots of sustainable restaurants are located in the Netherlands (Getis and Ord, 1992)

The Getis-Ord local statistic is given as:

$$G_i^* = \frac{\sum_{j=1}^n w_{i,j} x_j - \bar{X} \sum_{j=1}^n w_{i,j}}{S \sqrt{\frac{n \sum_{j=1}^n w_{i,j}^2 - (\sum_{j=1}^n w_{i,j})^2}{n-1}}} \quad (9)$$

where  $x_j$  is the attribute value for feature  $j$ ,  $w_{i,j}$  is the spatial weight between feature  $i$  and  $j$ ,  $n$  is equal to the total number of features and:

$$\bar{X} = \frac{\sum_{j=1}^n x_j}{n} \quad (10)$$

$$S = \sqrt{\frac{\sum_{j=1}^n x_j^2}{n} - (\bar{X})^2} \quad (11)$$

The Getis-Ord  $G_i^*$  statistic is a z-score. Again, we use the share of sustainable restaurants of total restaurants in a region. This statistic considers each feature in the context of its neighbour. It determines hot and cold spots: areas of spatial concentration and spatial dispersion. Hot and cold spots are determined based on the sum of a feature and its neighbours. It determines whether the value of a feature and those of its neighbours are significantly low or high in relation to the sum of all features in the dataset. A hot spot is found when multiple neighbouring features are found to have high values. A cold spot is found when multiple neighbouring features have low values. The statistic requires a spatial weight, which is determined by the values of a feature's neighbours. We determine which features are neighbours on the global Moran's I statistic in step two. The distance at which the z-statistic of the Moran's I peaks is a suitable indicator of spatial weights. All features within the given distance band are included in the spatial weight. To

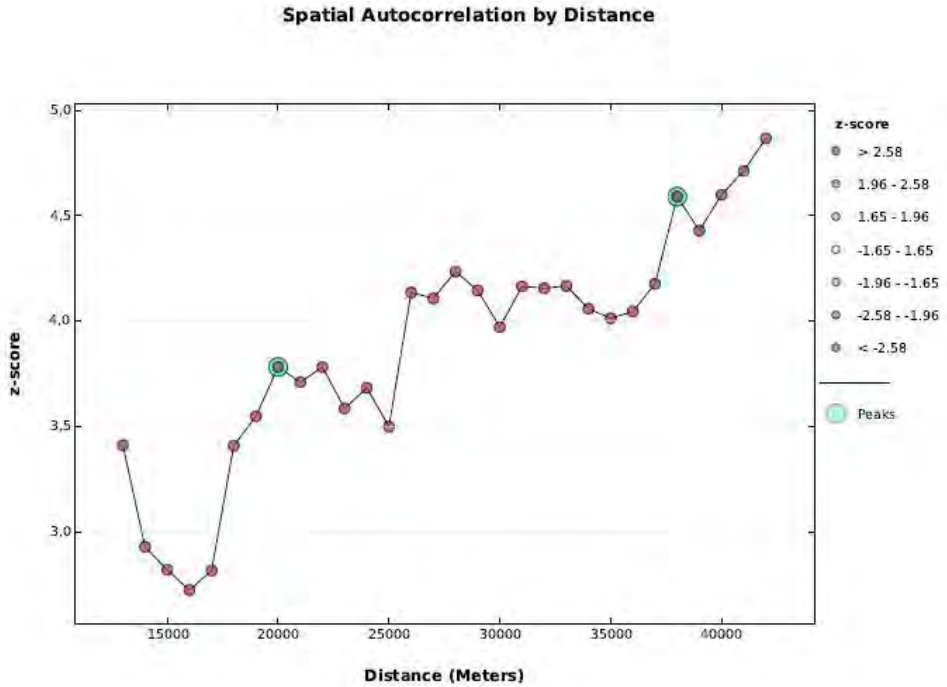
control for the spatial dependency of features, we correct our analysis for a potential false discovery rate (FDR). Based on a false positivity estimate, the features with the weakest p-values are eliminated from the results (Caldas de Castro and Singer, 2006).

By using the Moran's I and Getis-Ord  $G_i^*$  statistic in conjunction, we use both global and local statistics. This allows us to detect spatial dependency on global and local levels, which verifies our result on multiple scales. Whereas the Moran's I detects clustering in the sample as a whole, the Getis-Ord  $G_i^*$  statistic allows us to find local pockets of concentration (Getis and Ord, 1992). Due to the nature of the point data analysis, it is not possible to directly control for population and agglomeration effects. The Getis-Ord  $G_i^*$  analysis is instead controlled for agglomeration effects and for localization effects from the conventional restaurant sector indirectly, by analysing the number of sustainable restaurants as a percentage of the number of conventional restaurants in a region. Thus, we assume that the restaurant data is influenced by these forces and since we aim to analyse the spatial concentration of a subsector, the agglomeration effects that apply to the restaurant sector also apply to the subsector. By analysing the percentage of sustainable restaurants out of the total amount of restaurants, we control for the effects of agglomeration on the restaurant sector as a whole. Unfortunately, this does not allow us to differentiate between the effects of agglomeration on all restaurants versus the effects of agglomeration on sustainable restaurants.

## 2.4 Results

The LISA data is highly concentrated the population in a region is not corrected for. The nearest neighbour analysis on the LISA dataset indicates spatial concentration,  $p < .001$ . The sustainable restaurant selection also shows a pattern of

concentration  $p < .001$ . Based on this analysis, we assume a spatial association between the features in the dataset. Therefore, hypothesis 2.1 is supported.



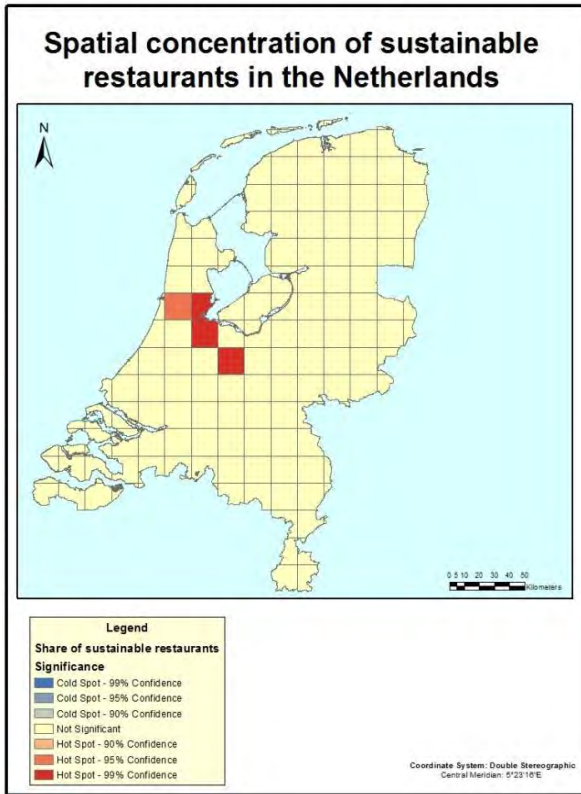
**Figure 2.1** Incremental spatial autocorrelation of sustainable restaurants

We use the Moran's I spatial autocorrelation analysis to indicate peaks in spatial concentration (see figure 2.1). We find a peak at 20 kilometres and a peak at 38 kilometres. Furthermore, we find that the z-score declines from the beginning point of 13 kilometres and increases again after 16 kilometres. We find that the z-score increases with distance, which is generally expected in a sample with spatial concentration. The peak distances are characteristic of the economic geography of the Netherlands as illustrated by Van Oort (2007). The distances we found are in line with evidence for Jacobs' (1969) externalities in the Netherlands, in which

inter-industrial externalities and competitiveness promote economic activity in agglomerations (van Oort, 2007). The peaks at 20 and 38 kilometres are illustrative of centre-periphery distances in the Netherlands, with the peak of 20 kilometres illustrative of the most urbanized provinces, and the peak of 38 kilometres illustrative of the least urbanized provinces in the Netherlands.

Based on the results of the Moran's I spatial autocorrelation analysis (see figure 2.1), we perform the hotspot analysis with two distance bands. The distances of 20 and 38 km displayed peaks where the spatial processes promoting clustering are most pronounced. The first distance band includes all neighbours within a radius of 20 kilometres, and the second distance band includes all neighbours within 38 kilometres. The hotspot analysis finds a cluster of restaurants in the west of the Netherlands (see figure 2.2 and figure 2.3). Figures 2.2 and 2.3 reflect the differences in the distance band, as the cluster with a distance band of 38 kilometres is more expanded. However, the same areas are at the heart of both clusters. Our two analyses report the same cluster with different boundaries based on the scope of the area included in the analysis. The cluster is located in one of the most densely populated parts of the Netherlands, which is also the largest agglomeration of the Netherlands. These results could reflect a more general diversity of restaurants in the largest urban centres of the Netherlands (Schiff, 2015). However, the differences in population size between the city of Amsterdam, where our cluster is found, and Rotterdam and The Hague, which are not covered by our cluster, is small: these cities have around 790.110, 616.260 and 502.055 inhabitants, respectively. A higher diversity in types of restaurants can be expected in urban areas (Schiff, 2015). Thus, the urban areas of the Netherlands could have higher shares of sustainable restaurants as a result of this diversity. However, we find that this is only the case for one of the larger urban centres: Amsterdam. Furthermore, we find that part of the cluster is located, in the Gooi en Vecht area.





**Figure 2.2** Spatial concentrations of restaurants in the Netherlands (FDR corrected, distance band 20 kilometres)

According to Boterman (2018), food consumption and the rise of haute cuisine in the Netherlands is a consequence of the rise of an urban middle-class. Sustainable consumption is also most prevalent among the urban middle class (Sarmiento and El Hanandeh, 2018). This is in line with what we find for Amsterdam. The Gooi en Vecht area, however, is less urban than the other cluster areas and is famous for being an upper-class residential district. Therefore, the concentration there is not in line with Boterman's (2018) findings of haute cuisine locations. We believe that the concentration we found in Gooi en Vecht might be explained by the high income of the inhabitants and a potential desire of upper-class individuals to eat

healthy or trendy foods. We believe the inhabitants of this area might be more susceptible to lifestyle trends, which could influence their food consumption pattern. This is in line with the research by Lita et al. (2014), who finds that consumers with higher incomes are more likely to buy sustainable food. Because we find hotspots of spatial concentration of sustainable restaurants as a share of conventional restaurants our second hypothesis is supported.



**Figure 2.3** Spatial concentrations of restaurants in the Netherlands (FDR corrected, distance band 38 kilometres)

Interestingly, we do not find any cold spots for either of the distance bands. Within the centre of the cluster, the regions have a percentage of sustainable restaurants

between three and seven. The average percentage of sustainable restaurants, however, is 0,9%. In relation to this low average percentage, low values are more common than high values. Therefore, it is less likely that we find cold spots.

## **2.5 Discussion and conclusion**

This paper considers whether sustainable restaurants have a different spatial pattern than conventional restaurants, and as such, investigates whether sub sectors cluster within larger clusters of the larger industry. Our results show that there is a spatial concentration of sustainable SMEs and could indicate a difference in entrepreneurship culture in different areas of the Netherlands. The main contribution of this paper is the finding that sustainable entrepreneurs are influenced by the existing economic structures. We contribute to the literature on spatial concentration by showing that sub-sector clustering occurs for sustainable restaurants. This is in line with central place theory (Christaller 1966; Plane 2016; Gaspar 2018) and has implications for sustainable sub-sectors and other sub-sectors, such as luxury or ethnic subsectors. We find evidence to support the idea of sub-sector sustainability clustering. Thus, in places with a large-scale pre-existing concentration of conventional restaurants, sustainable restaurants are also likely to be concentrated. Within the largest industry cluster, sustainability clustering occurs, while for smaller industry clusters, there is no sustainability clustering. Thus, we argue that large agglomerations are the most likely hub for the occurrence for sub-sector concentration. The largest agglomeration has the most diverse products and services and acts as a hub for the surrounding area (Christaller 1966). This includes the occurrence of sustainable businesses as a sub sector. We specifically discuss how entrepreneurs with a focus on sustainability differ from conventional entrepreneurs, and how this could give rise to specific spatial patterns. Other sub-sectors that exhibit differences in the psychology of the

entrepreneurs, the demand of the customer or the culture compared to the larger sector could potentially exhibit sub-sector clustering.

The sustainable cluster that we found contains Amsterdam and one of the wealthiest residential areas of the Netherlands, the Gooi en Vecht area (CBS 2015). Clustering does not occur in other large urban centres in the Netherlands. Thus, our results do not seem to suggest diversification based on city size, as was found by Schiff (2015). Our findings are partially in line with Boterman (2018), who studies the location of Haute Cuisine in the Netherlands and finds similar location patterns, with an over-representation of haute cuisine in the major urban centres of the Netherlands. We believe that the cluster we found could be the effect of a regional entrepreneurial culture that includes sustainability. Spatial variances in demand and in social capital are potential explanations for this spatial concentration of sustainable entrepreneurship (Bosma et al., 2016). Other explanations could be differences in entrepreneurial culture (Huggins and Thompson, 2017) and entrepreneurial ecosystems (Cohen, 2006). Businesses which focus on sustainability should be considered as influenced by the economic structure of their sector, while displaying sustainability-specific spatial behaviour.

Our results imply that sustainable initiatives are best stimulated within already large clusters of that industry. Policy makers could use this result when aiming to encourage more sustainable behaviour on the part of entrepreneurs. In our case, the largest agglomeration and the largest industry cluster overlap. Larger agglomerations in particular can stimulate sustainability initiatives, because they serve as a market for all kinds of specializations. Thus, sustainability specializations are more likely to find a market in the largest agglomeration. For industries that benefit less from agglomeration economies, specializations, including sustainability specializations, are most likely to be found in the largest

industry cluster (Jacobs, 1969). Although the analysis is limited due to the small number of the sustainable restaurants in the dataset, it is a suitable sector for an analysis on sustainable SMEs, because larger sample sizes of sustainable entrepreneurs will likely not occur in other sectors. Furthermore, the findings from this research could be transferable to other types of sub-sector clustering. Additionally, survivor bias could be present due to a possible difference in survival rates of sustainable and conventional restaurants. Uncertainty concerning survival rates leaves it unclear whether some areas have a more successful sustainable start-up scene or whether sustainable entrepreneurs have higher survival rates in some areas. It would be interesting for future research to determine whether the spatial concentration of sustainable SMEs is due to psychological, social cultural or demand effects. We believe that in-depth qualitative research and place-sensitive survey research could provide insights into restaurateurs' perceptions of their behavioural, social, and cultural environment.

## Chapter 6

### General discussion and conclusions

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## 6.1 A recap of the research aim and research questions

Entrepreneurs have the potential to act as change agents for sustainability by introducing creative solutions in response to grand challenges, but to do so, they first must recognize an opportunity. However, it remains unclear exactly how, why and where sustainable entrepreneurs recognize opportunities (McBride and Wuebker, 2020; Wood and McKinley, 2020). This dissertation has provided new insights into the opportunity recognition process of sustainable entrepreneurs. It has focussed especially on the relationship between social and environmental problems, the recognition of these problems, and subsequent sustainable opportunity recognition.

Notably, the aim of this dissertation is threefold, to provide insight into: (1) why sustainable entrepreneurs recognize sustainable opportunities, (2) which locations provide beneficial conditions for the recognition of sustainable opportunities, and (3) how sustainable entrepreneurs can create and/or discover opportunities for sustainable business. The question at the heart of this dissertation is: *where, how and why do entrepreneurs recognize business opportunities for sustainable business?*

To address the main research question, four sub-questions were developed. Each of these questions contributes to answering the main research question and leads to a better understanding of one of the research aims:

1. To what extent do sustainable entrepreneurs in the Netherlands cluster?
2. To what extent does sustainability problem recognition mediate the relationship between values and sustainable opportunity recognition?
3. How does identity influence opportunity recognition in relation to a wicked problem?

4. How do entrepreneurs and activists in a moral market niche attempt to change consumer culture?

This final chapter discusses the findings of the previous chapters in relation to the main research question of the dissertation and offers a summary of the findings and subsequent main conclusions. Additionally, it reflects on the theoretical implications of the findings, and discusses the study's limitations and potential avenues for future research. It then turns to a discussion of implications for practitioners. Finally, the chapter ends with a conclusion.

## 6.2 Summary of the findings

To address the main research question, I started by answering the first sub question, which asks *where* sustainable entrepreneurs recognize opportunities. Chapter two serves to contextualize the other studies by showing which environments facilitate opportunity recognition for sustainable entrepreneurship, before going into specific questions of how and why. The sub-question "*to what extent do sustainable entrepreneurs in the Netherlands cluster?*" was analysed using an inclusive sample of all legally registered restaurants in the Netherlands in 2013, meaning that location data was known for all restaurants in that year. This data was matched to listings of sustainable restaurants. I calculated the percentage of sustainable restaurants relative to all restaurants in a region and subsequently analysed which regions had significantly high occurrences of sustainable restaurants. I found that there is a disproportionately high number of sustainable restaurants in areas which already have the highest densities of restaurants in the Netherlands. This supports the notion of sub-sector clustering for sustainable entrepreneurship, on the basis of two potential explanations. Either opportunities for sustainable entrepreneurship arise more often in areas that already have a high



density of industry-specific entrepreneurs, or such opportunities are more successfully recognized and exploited in these kinds of geographical areas.

The second sub-question, *“to what extent does sustainability problem recognition mediate the relationship between values and sustainable opportunity recognition?”* is also addressed using a quantitative methodology in chapter three. A cross-sectional survey was used to collect data from entrepreneurs on crowdfunding platforms. First, I analysed the relationship between entrepreneurs’ values, sustainability problem recognition and sustainable opportunity recognition and I found that problem and opportunity recognition can be measured as separate constructs, rather than as parts of one single construct. The first analysis also showed that biospheric values have a positive influence on the recognition of sustainability problems, that egoistic values have a negative influence on the recognition of sustainability problems, and that sustainability problem recognition has a positive influence on sustainable opportunity recognition. Interestingly, altruistic values were revealed to have no influence on sustainability problem recognition. This indicates that caring about nature and the environment has a significant influence on sustainability problem recognition and, indirectly, on sustainable opportunity recognition, whereas caring about others is less relevant. Second, a subsample of sustainable entrepreneurs was created to identify mediation effects between values, sustainability problem recognition, and sustainable opportunity recognition that are specific for sustainable entrepreneurs. Sustainability problem recognition is shown to fully and positively mediate the relationship between biospheric values and sustainable opportunity recognition. In this sub-sample, altruistic values also have a positive and fully mediated effect. This shows that altruistic values are important motivators for sustainable opportunity recognition, yet as these values are strongly correlated with biospheric values, their effect might remain undetected in analyses where both types of values

are used together. To summarize, in chapter 3 the findings showed that values, problem recognition, and opportunity recognition are related, with values being directly related to problem recognition, and problem recognition being directly related to opportunity recognition. I partially answer the question why sustainable entrepreneurs recognize sustainable opportunities: because they ascribe importance to altruistic and biospheric values, and because they recognize sustainability problems.

In chapter four, the third sub-question is addressed with a qualitative research design. I analysed the question: *how does identity influence opportunity recognition in relation to a wicked problem?* I interviewed 26 social entrepreneurs in 25 interviews. All social entrepreneurs in the sample act in response to the wicked problem posed by animal welfare and environmental concerns in animal industries. They problematize the use of animals for food, clothing, cosmetics and entertainment for social, environmental, health and moral reasons. Based on an analysis of the interviews, I find that identity plays a crucial role in the recognition of opportunities for social change. I find that the opportunity recognition process for social change from an identity perspective consists of four stages: (1) recognising a wicked problem, (2) reinforcing a prosocial identity, (3) narrowing the wicked problem down into a specific problem, and (4) recognizing an opportunity: connecting the specific problem to a (previous) occupational role identity. Additionally, the third and fourth stages of the opportunity recognition process may occur in succession, or simultaneously, and opportunity recognition may be political, commercial or hybrid. These findings provide insight into the reasons why entrepreneurs recognize opportunities in response to grand challenges and how they do so. The answers to these questions are intertwined with the concept of identity: a self-reinforcing prosocial identity process provides social entrepreneurs both with a reason to pursue sustainability goals (because they are

prosocial individuals), and a way to do it (by strengthening their prosocial identity, and consequently connecting it to a specific problem and occupational identity).

Finally, in chapter five I analyse the way in which social entrepreneurs and activists try to influence consumer culture, to uncover how they can create opportunities in response to grand challenges. The question I attempt to answer is *“how do entrepreneurs and activists in a moral market niche attempt to change consumer culture?”* I use interviews with 26 entrepreneurs and activists associated with the animal ethics and animal-environmental movements to research their strategies for consumer culture change. Based on the interviews, I find a synergistic push-pull effect of entrepreneurial and activist strategies. A push strategy focuses on trying to structurally push consumers out of what our interviewees consider immoral or unsustainable behaviours, while a pull strategy focuses on trying to structurally pull consumers into those new behaviours that our interviewees consider moral. Push and pull strategies have an iterative, strengthening effect. Interviewees expect that those consumers who have been exposed to pushing strategies are more likely to positively respond to pulling strategies, and vice versa. Based on these broad strategies, I identify lower-level tactics that (1) connect activists and entrepreneurs to the consumer by showing why moral consumer culture is aligned with their values, (2) provide controversial information to them, (3) extend moral consumerism to form links with other consumer values, and (4) create a radical innovation that facilitates moral consumerism. While the connecting and the broadening tactics can be used in both push and pull strategies, the innovation tactic is predominantly used in pull strategies, and the controversial tactic is predominantly used in push strategies.

### 6.3 Main conclusion

The sub-questions discussed in the previous section all play a part in answering the main research question: “*where, how and why do entrepreneurs recognize business opportunities for sustainable business?*” My research shows that (1) sustainable business opportunities are recognized within same-industry clusters in the Netherlands, (2) that identity, values and the recognition of problems provide an explanation as to why entrepreneurs recognize sustainable opportunities, (3) that sustainable entrepreneurs recognize opportunities through identity processes and by translating wicked problems into specific problems, and (4) that they create opportunities by shaping moral market niches through sustainable consumer culture. These findings provide insights into the concept of opportunity in relation to sustainability and help to reduce the ambiguity surrounding the opportunity construct by showing which cognitive and contextual factors influence opportunity recognition for sustainable business. Additionally, this dissertation adds to knowledge on how opportunities are recognized in relation to a specific enabler (Davidsson et al., 2018) that applies to many entrepreneurs - a social or environmental problem (Gras et al., 2020).

### 6.4 Reflections on the theoretical implications of the results

In this section, I reflect on the general theoretical implications of the results of this dissertation, while the specific reflections on the theoretical implications of each individual research project are presented in each of the chapters. In this dissertation I set out to address some of the problems of the opportunity construct, which suffers from definitional fragmentation, an abstract nature, a backward-looking orientation, ambiguity and embedded favourability (Davidsson, 2015; McBride and Wuebker, 2020; Wood, 2017; Wood and McKinley, 2020). I was able to bring

more clarity to the opportunity construct in three ways, which are discussed as the first three contributions below. Additionally, this dissertation adds to the knowledge of sustainable opportunity recognition, which is discussed as a fourth contribution to the literature on opportunity recognition. Finally, I discuss a fifth contribution, which evolves around how this dissertation adds knowledge on opportunity structures.

First, this dissertation addresses the issue that problem recognition is often considered as an element of the concept of opportunity recognition. This view is problematic for two reasons. First, problem recognition is not a unique predictor of opportunity recognition. It is a predictor for many different beliefs, cognitive processes and behaviours beyond those of entrepreneurs, yet scholars in these literatures do not consider it to be a part, but rather an antecedent to them (Camillus, 2008; Steg et al., 2014a; Stern, 2000). Considering problem and opportunity recognition as a single construct therefore contrasts with the position of problem recognition in other literatures, including the strategy and social psychology literatures (Camillus, 2008; Steg et al., 2014a). Second, problem recognition implies a negative judgment of a situation, whereas opportunity recognition refers to a positive judgement of a situation (Davidsson, 2015; Smith, 1989). In fact, problem recognition is closer to being the opposite of opportunity recognition than it is to being a constituent of opportunity recognition. Thus, discussing problem recognition and opportunity recognition as a single construct renders the concept of opportunity recognition ambiguous.

This dissertation has addressed the issue of the ambiguity surrounding problem recognition and opportunity recognition by verifying that problem and opportunity recognition are two distinct concepts. Problem recognition is indeed distinct from opportunity recognition and is an antecedent of it. Second, I have shown that problem recognition does not occur at a single moment in time, because problem

recognition in itself is a process - one that is of crucial importance to sustainable opportunity recognition. It typically does not occur at a single moment in time, because complex sustainability problems need to be translated into more specific problems before they can be addressed through opportunity. This translation takes time. Moreover, by teasing out the distinctiveness of the opportunity and problem constructs, and by showing how these constructs are related to one another, this study has helped to clarify some of the ambiguity surrounding the concept of opportunity recognition (Davidsson, 2015; Wood and McKinley, 2020).

As a related and second contribution of this dissertation, this dissertation helps to clarify definitional fragmentation, by specifying a sub-type of opportunity that falls under the opportunity umbrella: the problem-based opportunity. This sub-type can be found in many managerial contexts, because managers and entrepreneurs also need to solve a multitude of other problems, which are not necessarily sustainability problems (Camillus, 2008). The additional specification that problem-solving poses to the definition of a sustainable opportunity helps to recognize it as one of many ways to recognize opportunities. This specific, yet generalizable view of opportunity as a problem-solving entity clears up the ambiguity surrounding this type of opportunity by clearly delimiting construct boundaries. By presenting problem-based opportunity as a specific type of opportunity, I also make clear which cases are not opportunity-as-problem-solving. This definitional specificity helps to more clearly delineate the opportunity construct.

Third, in this dissertation I take position in the discussion on the nature of opportunities, specifically, whether they are discovered or created. Within this discussion, I accept Wood & McKinley's (2020) notion of opportunity as an umbrella term, and McBride & Wuebker's (2020) view that opportunities can both be subjectively and objectively viewed. As such, opportunities can be in part

created and in part discovered (Renko et al., 2012), rather than being either discovered or created. Accepting that both might (partially) occur allows researchers to clearly reflect on the views of entrepreneurs on opportunity recognition, whether these entrepreneurs believe that opportunities are created, discovered, or both. Additionally, it enables researchers to build theory directly from data, by letting the data speak for itself, instead of becoming caught up in definitional debates. Some entrepreneurs may view opportunity as objective, and some as subjective (McBride and Wuebker, 2020), while many entrepreneurs refer to both subjective and objective elements of opportunity. Therefore, I have enabled the perspectives of entrepreneurs to come to the fore in this research, and accordingly, I have determined my perspective of opportunity as both created and recognized based on their views. The key take-away from this dissertation with respect to the nature of opportunity is the long-recognized notion that opportunity exists on the nexus between the individual and the context (Gaglio, 1997; Shane, 2003), a fact which both the discovery and the creation views recognize (McBride and Wuebker, 2020). I emphasize that the question of creation versus discovery is a matter of degree rather than kind, as some opportunities are more subjectively created than discovered, and some opportunities are more objectively discovered than created. There tends to be an element of both in opportunity recognition processes (Renko et al., 2012). While the view that opportunity can be both discovered and created may be paradoxical, it can also serve to successfully embrace the diverse experiences of entrepreneurs (McBride and Wuebker, 2020).

As a fourth contribution, this dissertation adds to the specific knowledge on opportunity recognition for sustainable entrepreneurship. Since the start of this PhD project in 2016, problem recognition has increasingly found its way into the academic discussion on sustainable entrepreneurship (Belz and Binder, 2017; Gras et al., 2020). To add to this growing literature, this dissertation supplements Belz &

Binder's (2017) notion that opportunities for sustainable entrepreneurship are recognized in relation to sustainability problems in three ways. First and most importantly, I show that the process of opportunity recognition for sustainable entrepreneurship has additional variables. Belz & Binder (2017) referred to problem recognition as a singular variable, which directly influences opportunity recognition, yet my findings show that this is not the case. First, problem recognition is not singular, but knows different stages that occur at different moments in time, and second, crucial events such as the strengthening of a prosocial identity occur in between the recognition of a sustainability problem and the recognition of a sustainable opportunity. Specifically, a wicked problem is first recognized, after which a prosocial identity is reinforced, and then it is cognitively processed into a lower level of abstraction, which I call a specific problem. Only after these three distinct steps is an opportunity recognized. Second, I show how important identity is in the opportunity recognition process of sustainable entrepreneurs. Identity is not just an antecedent of this process, but it shapes the way in which entrepreneurs recognize opportunities and which opportunities are recognized. Vice versa, my findings show that opportunity also shapes identity processes. Third, this dissertation shows the importance of a number of other cognitive variables for sustainable opportunity recognition, including values and self-efficacy. Notably, I found that altruistic and biospheric values influence opportunity recognition through the mediating variable of sustainability problem recognition. Self-efficacy influences sustainable opportunity directly. This knowledge helps to understand what enables some entrepreneurs to recognize sustainable opportunities, while others do not.

Finally, this dissertation adds to the work on the contextual factors that enable opportunity recognition. Chapters two and five, reveal additional knowledge about which contexts are favourable for sustainable opportunity recognition. I show that



contextual factors, including social and environmental problems, an active social movement and an established cluster of conventional, sector-specific entrepreneurs facilitate sustainable opportunity recognition. First, social and environmental problems are a given in relation to opportunity recognition for sustainable entrepreneurship (Belz and Binder, 2017). However, they need to be visible and accessible for (aspiring) sustainable entrepreneurs. Thus, I argue that a context in which knowledge on social and environmental problems is available enables opportunity recognition for sustainable entrepreneurship. Laws that ensure transparent behaviour of companies and governments, the availability of information on sustainability problems, and a culture which promotes openness to new information are examples of environments that enable sustainable opportunity recognition. Second, an active social movement can aid sustainable entrepreneurs in the recognition of opportunities by criticising alternative, less sustainable practices (Hiatt et al., 2009). When movements contest the practices of incumbents, they mobilize consumers to consume differently. This opens up space for entrepreneurs to recognize new opportunities and to enter or create new markets. Third, I found that clusters of sustainable entrepreneurship arise in places that already have sector-specific clusters. This adds to the clustering literature by presenting the clustering of sustainable entrepreneurship as sub-sectoral clustering (Christaller, 1966; Gaspar, 2018). Other sub-sectors, such as luxury sub-sectors, may also take on this form of clustering (e.g., luxury automotive industry and the fashion industry). The sub-sector clustering of sustainable entrepreneurship arises because entrepreneurs can benefit from the presence of sectoral knowledge, practices, culture and regulations (Delgado et al., 2010; Porter, 1990). Thus, I argue that sustainable opportunities are most often recognized or created within an industry cluster. When it comes to the topic of opportunity structures, it has been seen that sustainable entrepreneurs also try to alter opportunity structures themselves. In chapter five I found that entrepreneurs actively try to influence

consumer culture, with the goal of changing consumer culture for good. Thereby, they also create new demand for their sustainable products and services (Georgallis and Lee, 2020).

## **6.5 Limitations and future research**

The studies in this PhD dissertation used a range of methodologies, all with their own benefits and limitations. Additionally, the theoretical approaches adopted also give rise to some limitations. This section thus discusses the limitations of this dissertation and potential avenues for future research.

First, this dissertation uses the Netherlands as a research context in three out of four chapters. Considering that the context of sustainable entrepreneurs is crucial for sustainable opportunity recognition, our choice of the Netherlands as a study area may omit findings that are relevant for different contexts, such as developing countries or countries that are less urbanized. For instance, the highly urbanized context of the Netherlands creates a unique environment in which the relative distance between agglomerations is low and the rural-urban divide is less strong than in other countries, like the United States or Sweden (Hans and Koster, 2018; van Oort, 2007). This implies that the geographical clustering of sustainable entrepreneurs as described in chapter two may manifest itself differently in other countries. For instance, because population density is lower in a country such as Sweden, the distance between clusters, and the distance between entrepreneurs within a cluster may be larger. Yet, clustering of sustainable entrepreneurs could still occur according to the principles of sub-sector clustering but would be more stretched out due to the size of the country. Additionally, I study entrepreneurial tactics for consumer culture in moral market niches in the Netherlands, which may differ in other countries due to these countries' distinct institutional contexts. Thus,

the tactics for consumer culture change in the Netherlands, as described in chapter five, result from the Dutch institutional context, and should be adapted to the specific local settings of other contexts. Considering that the start-up rates and tactics of sustainable entrepreneurs differ across locations and we do not yet fully know why such variations exist (Bosma et al., 2008; Spigel, 2017), future research might look at the reasons why tactics and start-up rates differ across contexts. Additionally, more research is needed to understand which locations facilitate sustainable entrepreneurship and whether the identified clusters also materialize in other contexts.

Second, the chosen methods provide limitations for this dissertation, as I include data collection methods that did not allow for the collection of data over a long time-frame, and there is some potential for bias in the chosen method. The data collection in the research projects occurs at a single point in time, or over relatively short periods of time. This implies that time and its dynamics cannot be fully taken into account. It is therefore uncertain whether the results reported in this dissertation remain stable or are susceptible to change over time (Lévesque and Stephan, 2020). Additionally, for some studies this means that causalities between concepts are inferred from theory and not from the (cross-sectional) data. This specifically applies to chapters two and three. Thus, I recommend that future research might look at the relationships between problem recognition, opportunity recognition and their antecedents over a longer time. This might uncover new findings in relation to the contributions of this dissertation. Besides a bias in relation to time, the studies in this dissertation may include recollection bias, in which the participant does not remember all past events in detail (Roese and Vohs, 2012), and social desirability bias, when respondents offer answers they perceive will be well-received (Nederhof, 1985). Therefore, this dissertation included well-known safeguards for such types of bias, including specific survey design and

testing, the critical incident method for its qualitative studies, the inclusion of multiple researchers in the data analysis, and statistical tests and methods to address bias. Additionally, the qualitative findings of this research may be studied by future research in a quantitative fashion, to verify these results in a larger sample of entrepreneurs.

Third, while I study opportunity recognition, I do not measure the outcomes of the opportunity recognition process explicitly. In other words, I evaluate successful opportunity recognition, but it is outside the scope of this thesis to consider whether these opportunities eventually materialize in successful economic exploitation or positive social and environmental effects. Instead, I use the space in this dissertation to discuss the crucial process of opportunity recognition (Short et al., 2010). This opens avenues for future researchers to focus on how, why and where certain opportunities are successfully developed and exploited, whereas others are not. Considering the role of problem recognition as discussed in this dissertation, it is particularly relevant to further uncover the role of problems in opportunity recognition, for instance by discussing which problems give rise to more successfully exploitable opportunities. Additionally, future research could consider which methods entrepreneurs can utilize to recognize the most successful opportunities based on (sustainability) problems.

Additionally, in this dissertation I set out to analyse how sustainable entrepreneurs recognize opportunities based on sustainability problems, and I have focused on the entrepreneur's cognition in relation to these problems. I find that sustainability problems give rise to opportunity recognition, yet much uncertainty remains about the types of problems that exist, and how these give rise to different opportunities. This points to fruitful areas for future research, as learning about the characteristics of these problems also teaches us how they can be addressed and could enable (nascent) entrepreneurs to change their problem responses to the specific features

of sustainability problems. Thus, more research should be done into the different types of problems that exist, and how these stimulate opportunity recognition, both for the more specific types of sustainability problems, and for other types of problems in management.

Finally, this dissertation addresses the ways in which entrepreneurs recognize opportunities based on sustainability problems, yet there is some distance still between this dissertation and the application of its ideas in practice. However, the findings of this research provide input for nascent entrepreneurs and entrepreneurship students who want to recognize opportunities for sustainable entrepreneurship. Therefore, there is a need for studies that translate the findings of this dissertation on how opportunities for sustainable entrepreneurship are recognized into teaching approaches for aspiring entrepreneurs. Additionally, this research has uncovered that commercial and political opportunities are recognized in a similar way. Thus, future research could study the recognition of opportunities for political and commercial change, and how entrepreneurs can achieve both through entrepreneurial practices. The concept of political opportunity recognition is under-researched in entrepreneurship research, yet it is important for entrepreneurs who aim to change institutions in order to successfully pursue sustainable entrepreneurship (Rao and Giorgi, 2006; Woolthuis et al., 2013).

## **6.6 Reflections on the practical implications of the dissertation**

In this section, I discuss the practical implications of this dissertation for (aspiring) sustainable entrepreneurs, for educators and for policy makers. Sustainable entrepreneurs, or those who aspire to become sustainable entrepreneurs, can benefit from this research in four ways. First, (aspiring) sustainable entrepreneurs who want to pursue new opportunities for sustainable entrepreneurship could benefit

from a problem-focused approach. Gathering information on sustainability problems and making sustainability a more central part of their identity could help (aspiring) sustainable entrepreneurs to acquire the knowledge necessary for successful sustainable opportunity recognition. Additionally, cultivating a sustainable identity could help them to connect to the knowledge, skills and networks that enable them to recognize opportunities for sustainable entrepreneurship. For instance, in chapter four, I illustrated how sustainable entrepreneurs recognized opportunities for consumer products because they became sustainable consumers. Specifically, they faced challenges trying to be a sustainable consumer and decided to address these as a sustainable entrepreneur.

Second, this dissertation offers additional insights into how to translate sustainability problems into sustainable opportunities. Specifically, sustainability problems are usually problems with a high level of abstraction, meaning that to a greater or lesser extent, they are ‘umbrella’ problems that overarch smaller problems. I find that sustainable entrepreneurs manage to translate these abstract problems into more specific problems. For instance, one of the interviewees was concerned about the environment. More specifically, he was concerned about climate change and even more specifically, he was concerned about the greenhouse gas emissions from beef production. Thus, he embarked on a mission to pursue an alternative for beef through a business. The problem “beef production emits a large amount of greenhouse gasses” is much more specific than the problem of climate change. It is specific to a sector and even to a product. The translation of abstract problems to lower levels of abstraction –to a more specific problem – enables the recognition of opportunities. Abstract problems can be translated into sector-specific, product-specific, stakeholder-specific, or location-specific problems. Perceiving problems at different levels of abstraction can help the thinker to find a level of abstraction at which the problem is solvable. As such, (aspiring)

entrepreneurs could benefit from practice exercises which train them to translate abstract problems into specific problems.

Third, aspiring sustainable entrepreneurs searching for favourable locations to start a sustainable business may want to evaluate location choices based on proximity to same-sector businesses and social movement activities, as these can provide opportunities for (nascent) sustainable entrepreneurs. Social movement activities can facilitate the creation of a market for moral products by contesting their alternatives, and by promoting moral products. Same-sector concentration enables diversity and sustainability specialization due to its concentration of sector-specific knowledge. Additionally, when markets are local rather than global, there may be benefits to starting a sustainable business in the largest or most central agglomeration of a country. This is where markets are typically most diversified, and therefore attract customers who travel large distances (Christaller, 1966; Jacobs, 1969). As such, there is a larger customer base to support a new sustainable business.

Finally, sustainable entrepreneurs who are entering, legitimizing or growing markets for moral products could benefit from reaching out to consumers. In chapter five, I find three main ways for entrepreneurs to reach out to consumers and facilitate a sustainable consumer practice or culture: by connecting to moral values that consumers already have, by connecting to other, non-morally charged values, or by conveying negative information symbolically or through art. When entrepreneurs connect to values that consumers already have, they connect to those values that are already aligned with moral consumption, such as benevolence, non-violence, justice and caring about nature and/or animals. Connecting non-morally charged values to moral consumption helps sustainable entrepreneurs to keep their message positive, and it also does not put the consumer in the difficult situation of evaluating a moral situation. For example, entrepreneurs connect moral

consumption to health benefits, to the idea of a ‘natural’ product, or to a concept of luxury. Finally, negative information provision seems to have counterproductive effects for entrepreneurs. Hence, entrepreneurs may be advised not to copy activist tactics when informing consumers about the unsustainable features of alternative products. This may result in a negative association with the venture. Alternatively, they may convey negative information through symbolic or artistic tactics. For instance, one entrepreneur made a plant-based sausage that was 16 times longer than a meat sausage, to illustrate 16 times more plant-based protein than animal-based protein can be grown on the same land area.

In addition to implications for entrepreneurs, this dissertation offers various implications for policymakers, for whom especially chapter two is of particular interest. Chapter two reveals in which types of locations sustainable entrepreneurship occurs. This can help policymakers to decide where and how to stimulate sustainable entrepreneurship. Chapter two shows that sustainable entrepreneurship is prevalent in those locations that already have a concentration of same-sector entrepreneurs. Thus, it is useful to stimulate sustainable entrepreneurship especially in those locations that already have a relatively high concentration of same-sector entrepreneurs, for instance by becoming a launching customer, by organizing start/up competitions, or by establishing incubators. Additionally, it can be argued that sustainability is a specialization, which means that it would benefit most from economically diverse environments, which are environments with a high variety of sectors and specializations (Jacobs, 1969). The most economically diverse environments are usually in the most urbanized areas of a country. In the Netherlands, there is significant clustering in Amsterdam, which has a diverse economy.

Finally, in addition to implications for policy makers, this dissertation offers various implications for educators. Chapter four shows that the recognition process



of political and commercial opportunities for sustainable entrepreneurship is similar. Among others, the chapter promotes a more inclusive view of sustainable change agents, rather than just looking at sustainable entrepreneurs. For instance, non-profit and social movement actors recognize opportunities in similar ways as entrepreneurs do. Thus, educators might benefit from the adoption of a more inclusive view of change agents for sustainability, rather than just focusing on sustainable entrepreneurs. Consequently, leadership courses could include opportunity recognition and strategies to reach out to consumers for all change agents, rather than just for (nascent) entrepreneurs.

Additionally, the problem-based approach that this dissertation recommends to sustainable entrepreneurs could also help teachers and professional trainers. These educators could develop a teaching method based on problem-based opportunity recognition principles. Especially the acquisition of sustainability knowledge, and the ability to alternate between different levels of abstraction of sustainability problems could help students to learn how to recognize sustainable opportunities. Additionally, students can be encouraged to start by taking small steps when addressing sustainability problems, for instance, by consuming more sustainably. This helps to cultivate sustainability knowledge, to perceive sustainability problems on different levels of abstraction, and to foster a sense of personal effectiveness (Markman and Baron, 2003; Tversky, 1977).

## **6.7 Concluding remarks**

This dissertation aims to better understand those people who address the world's most challenging and wicked sustainability problems. Especially for sustainable entrepreneurs, addressing sustainability problems seems like a paradox, because entrepreneurs are conventionally seen as acting in their own self-interest, yet they

need to move beyond their self-interest in order to be able to address the world's most wicked sustainability problems. This dissertation addressed this paradox by assuming that entrepreneurs do not only act out of economic motivations but based on a range of diverse and often conflicting motivations. Chapter four reveals how for many sustainable entrepreneurs, sustainability is a dominant motivation, while their business and the resulting profits are often only tools that serve their sustainability goals. As such, I now consider sustainable entrepreneurs as change agents for sustainability first, and economic actors second. Hopefully, this dissertation can help numerous change agents to understand where new opportunities for sustainable actions come from, and how they can be identified. With this dissertation I aim to inspire scholars to continue to question the assumptions underlying (sustainable) entrepreneurship by means of new academic research, and I challenge future research to continue to address why and how sustainable entrepreneurs can successfully address the world's most wicked problems.

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## Nederlandse samenvatting

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Duurzame ondernemers zijn in staat om oplossingen te vinden voor de grootste uitdagingen die de mensheid kent, de zogenaamde “ grand challenges”. Zo kunnen ze duurzaamheidsproblemen aanpakken door een nieuw bedrijf te beginnen, maar om dit te kunnen doen, moeten ze eerst een zakelijke kans herkennen. Daarom onderzoek ik in dit proefschrift de volgende hoofdvraag: *hoe, waar en waarom herkennen ondernemers zakelijke kansen met duurzaamheidsdoelen?*

Het herkennen van een zakelijke kans is cruciaal voor ondernemers, want zonder zakelijke kans is er geen ondernemerschap. Ook al weten we al erg veel over hoe zakelijke kansen worden herkend, deze kansherkenning is anders voor duurzame ondernemers. Duurzame ondernemers moeten namelijk eerst een duurzaamheidsprobleem herkennen voordat ze een duurzame zakelijke kans kunnen herkennen.

Kansherkenning is in essentie een match van middelen waar de ondernemer toegang tot heeft en een behoefte, interesse of wens in de markt, wat de ondernemer combineert in een idee en een plan voor een nieuwe onderneming. Dit hoeft in het algemeen niet in relatie tot een probleem te zijn, behalve voor duurzame ondernemers. Omdat zij duurzaamheidsproblemen aanpakken, zullen ze zulke problemen eerst moeten herkennen. Waar een zakelijke kans een situatie is die positief wordt beoordeeld, is een probleem een situatie die negatief wordt beoordeeld. Probleemherkenning is dus het proces waarin iemand bepaalt welke situaties die persoon ongewenst en ongunstig vindt. Voor zowel kans- als probleemherkenning zijn vooral de waarden en de identiteit van een ondernemer van belang

Waarden zijn overtuigingen en concepten die belangrijk zijn voor een individu. Ze zijn relatief stabiel en bepalen de manier waarop iemand een situatie evalueert en een plan maakt voor het eigen gedrag. Ze bepalen ook welke situaties iemand emotioneel maken, wat iemand van zichzelf verwacht en wanneer een individu zich geroepen voelt om anderen of het milieu te hulp te schieten. Daarnaast is iemands identiteit geaard in de waarden van die persoon. Een identiteit is de link van die persoon met de sociale wereld en wordt door de tijd heen opgebouwd, wanneer iemand projecten en doelen nastreeft die die persoon zelf belangrijk vindt. In dit proces neemt het individu zowel de eigen waarden als de normen en verwachtingen van de maatschappij mee. Daarnaast zijn waarden en identiteiten deels bepaald door de normen en verwachtingen van de gemeenschap en het sociale netwerk waarin iemand zich bevindt. Daarom zijn ze ook deels afhankelijk van de plaats waar iemand is opgegroeid of woont. Elke persoon heeft meerdere waarden en identiteiten en moet afwegingen maken tussen deze waarden en identiteiten in het geval van een conflict. Dit doet zich bijvoorbeeld voor als iemand zowel het milieu als geld belangrijk vindt, maar moet kiezen tussen deze twee in een bepaalde situatie. In zo'n geval bepalen de op dat moment dominante waarden en identiteit de beoordeling van de situatie en het gedrag van het individu.

Om de relatie tussen waarden, identiteiten, probleem herkenning en kansherkenning te onderzoeken stel ik vier sub-vragen, die elk onderzocht worden in een empirisch hoofdstuk:

- *Tot in hoeverre concentreren duurzame ondernemers in Nederland zich, geografisch gezien?*
- *Tot in hoeverre bemiddelt duurzame probleemherkenning de relatie tussen waarden en duurzame, zakelijke kansen?*
- *Hoe beïnvloedt identiteit de herkenning van duurzame, zakelijke kansen in relatie tot complexe problemen?*

- *Hoe proberen ondernemers in een morele marktische consumentencultuur te veranderen?*

Elk van deze vragen stelt bij aan het beantwoorden van de hoofdvraag. De vier hoofdstukken die deze vier vragen onderzoeken vat ik hieronder kort samen.

In hoofdstuk 2 onderzoek ik in hoeverre duurzaam ondernemerschap geconcentreerd is in een bepaalde locatie. Omdat waarden en identiteiten deels bepaald worden door iemands (lokale) gemeenschap en sociale netwerk, zou het kunnen dat sommige plaatsen netwerken en gemeenschappen hebben die een faciliterende rol kunnen spelen, terwijl andere plaatsen dit minder hebben. Daarom bekijk ik of er op sommige plaatsen meer duurzame ondernemers zitten dan op andere plaatsen. Ik stel daarom de volgende onderzoeksvraag: *tot in hoeverre concentreren duurzame ondernemers in Nederland zich, geografisch gezien?* Ik analyseer deze onderzoeksvraag in de context van de horeca in Nederland. Ik heb een dataset met alle restaurants in Nederland en in die dataset heb ik een aparte selectie gemaakt van duurzame restaurants, op basis van duurzame keurmerken en andere indicatoren. De bevindingen laten zien dat er clusters zijn van zowel restaurants in het algemeen alsook specifiek van duurzame restaurants. Ik vind slechts één cluster van duurzame restaurants in Nederland precies op dezelfde plek waar ook het grootste algemene cluster van restaurants is. Daaruit concludeer ik dat duurzame ondernemers vooral kansen herkennen op plekken waar al veel bedrijven uit diezelfde sector zijn gevestigd. Dit onderzoek laat daarbij zien dat het belangrijk is om duurzaam ondernemerschap te stimuleren op plekken waar de specifieke sector van de duurzame ondernemers in kwestie al sterk vertegenwoordigd is.

Hoofdstuk drie gaat over de relatie tussen duurzame probleemherkenning, duurzame kansherkenning en waarden. In dit hoofdstuk beschrijf ik hoe

probleemherkenning nodig is voor kansherkenning in de context van duurzaam ondernemerschap en leg ik ook uit dat waarden belangrijk zijn voor kansherkenning, maar hier geen directe invloed op hebben. De invloed zou indirect zijn, omdat ondernemers eerst problemen herkennen op basis van hun waarden en daarna kansen herkennen op basis van de herkende problemen. Daarom stel ik de volgende onderzoeksvraag: *Tot in hoeverre beïnvloedt duurzame probleemherkenning de relatie tussen waarden en duurzame zakelijke kansen?* Ik probeer deze vraag te beantwoorden door een dataset van duurzame ondernemers te analyseren, die ik met een enquête heb samengesteld. Ik hield deze enquête via het crowdfunding platform Kickstarter, waar ondernemers financiering voor hun ideeën proberen te werven. De bevindingen laten ten eerste zien dat duurzame probleemherkenning en duurzame kansherkenning aparte concepten zijn en dat ze niet beiden onder de noemer ‘zakelijke kans’ vallen, wat wetenschappers wel soms aannemen. Ten tweede laten mijn bevindingen zien dat waarden duurzame probleemherkenning beïnvloeden en dat duurzame probleemherkenning inderdaad een positieve en significante invloed heeft op duurzame kansherkenning. Specifiek twee van de waarden die ik onderzoek, groene en egoïstische waarden, hebben een significante invloed op probleemherkenning, waarvan groene waarden (die gaan over het belang van het milieu) positief en egoïstische waarden (die gaan over het belang van status en geld) negatief. De bevindingen laten ten derde zien dat duurzame probleemherkenning inderdaad een bemiddelende functie heeft tussen waarden en duurzame kansen en dat waarden duurzame kansherkenning dus via probleemverkenning beïnvloeden. Dit onderzoek laat daarmee zien hoe belangrijk duurzame probleemherkenning is voor duurzame kansherkenning.

In hoofdstuk vier bekijk ik hoe identiteit het proces van duurzame kansherkenning beïnvloedt. Het is al bekend dat identiteit dit proces beïnvloedt, maar precies hoe, en hoe dit gaat in de context van een complex duurzaam probleem is nog niet

bekend. Complexe problemen zijn erg lastig op te lossen om drie redenen. Ten eerste, omdat er vaak meerdere belanghebbende groepen zijn die een aandeel hebben in het probleem, ten tweede omdat ze abstract zijn en ten derde omdat potentiële oplossingen het probleem zouden kunnen verergeren. Veel duurzaamheidsproblemen zijn echter complex en daarom is het belangrijk om te onderzoeken hoe duurzame ondernemers kansen kunnen herkennen op basis van deze complexe problemen. Daarom probeer ik de volgende hoofdvraag te beantwoorden: *Hoe beïnvloedt identiteit de herkenning van duurzame zakelijke kansen in relatie tot complexe problemen?* Ik probeer deze vraag te beantwoorden in de context van het complexe probleem van duurzaamheid en dier-ethiek in de veehouderij sector. In deze sector staan de belanghebbenden, vooral activisten en boeren, lijnrecht tegenover elkaar qua mening. Dit maakt het probleem moeilijk op te lossen. In deze context interview ik 26 ondernemende activisten (of activistische ondernemers) om te kijken hoe ze kansen herkennen. De bevindingen laten zien dat voor het proces van duurzame kansherkenning er vijf stappen zijn: (1) de herkenning van een complex probleem, (2) het versterken van een duurzame identiteit, (3) het vertalen van een complex naar een specifiek probleem, (4) het verbinden van dit specifieke probleem met de identiteit en (5) het verzinnen van een nieuw idee voor een onderneming. Deze bevindingen laten zien dat identiteit een belangrijke rol speelt in het proces van duurzame kansherkenning en ook dat er niet één soort probleemherkenning is. Vooral in de context van complexe problemen kan een probleem te groot lijken om aan te pakken. Daarom is het belangrijk om met een klein, specifiek sub-probleem van dit complexe probleem te beginnen. Deze bevindingen bieden (toekomstige) duurzame ondernemers een methode voor het omgaan met complexe problemen en deze te vertalen in kansen.

Het vijfde hoofdstuk van dit proefschrift focust zich op de manier waarop ondernemers en activisten een marktniche kunnen creëren voor duurzame

producten. Als zo'n marktniche er nog niet is, dan is er ook geen zakelijke kans. Daarom is het belangrijk om te onderzoeken hoe zo'n marktniche gecreëerd wordt en hoe duurzame ondernemers, eventueel samen met activisten, ook zakelijke kansen voor zichzelf kunnen creëren. Specifiek door het beïnvloeden van consumentencultuur kunnen ze het gedrag van consumenten structureel veranderen en daarmee een aanhoudende markt vraag creëren. Daarom onderzoek ik de volgende vraag: *hoe proberen ondernemers in een morele marktniche consumentencultuur te veranderen?* Ik analyseer deze vraag in de context van de marktniche voor plantaardige producten in Nederland. Veel ondernemers, activisten én consumenten in deze niche opereren vanuit morele gronden, en daarom noemen we dit een morele marktniche. De bevindingen laten zien dat er een wisselwerking optreedt tussen de strategieën van activisten en ondernemers, waarin activisten de consumenten vooral het in hun ogen onduurzame gedrag proberen te duwen, terwijl de ondernemers de consumenten in nieuw, in hun ogen duurzamer gedrag proberen te trekken. Op een lager niveau zijn er vier specifieke tactieken, te weten (1) choqueren, (2) verbinden, (3) verbreden en (4) vervangen. Tactiek één wordt vrijwel alleen door activisten gebruikt terwijl tactiek vier alleen door ondernemers wordt gebruikt. De andere twee kunnen gebruikt worden voor zowel duw- als trekstrategieën. Het belangrijkste punt van deze studie is dat activisten en ondernemers die hetzelfde probleem herkennen, met verschillende oplossingen een gezamenlijk effect hebben. Het is daarom belangrijk voor activisten en ondernemers om elkaar te faciliteren binnen een sociale beweging.

Om te concluderen laat deze thesis zien dat probleemherkenning cruciaal is in het herkennen van een duurzame kans, ook al wordt probleemherkenning in de vakliteratuur vaak genegeerd, onderschat, of als aanname gezien. Echter, de precieze rol van probleemherkenning was onbekend. Daarom is het verklaren van probleemherkenning en de relatie van probleemherkenning met kansherkenning

voor duurzaamheid een belangrijk onderdeel van deze thesis. Daarbij laat ik specifiek zien hoe kansherkenning in de context van duurzaam ondernemerschap werkt, waarom duurzame ondernemers kansen herkennen en hoe ze dat doen. Ook laat ik zien hoe ondernemers samen met activisten kansen kunnen creëren als deze nog niet bestaan. De besproken sub-vragen van de vier empirische hoofdstukken komen allemaal samen in de hoofdvraag: *hoe, waar en waarom herkennen ondernemers zakelijke kansen met duurzaamheidsdoelen?*

In beantwoording op deze vraag laat mijn onderzoek zien dat: (1) duurzame ondernemers zakelijke kansen herkennen op plekken in Nederland waar al een concentratie van ondernemers in dezelfde sector aanwezig is, (2) dat identiteit, waarden en probleemherkenning tezamen uitleggen waarom ondernemers duurzame kansen herkennen (3) dat duurzame ondernemers kansen herkennen door identiteitsprocessen en het vertalen van complexe naar specifieke problemen en (4) dat ze kansen creëren door in morele marktniches een duurzame consumentencultuur te creëren. Deze bevindingen hebben geholpen om het concept van duurzame kansherkenning uit te pakken en te inspecteren. De bevindingen van deze onderzoeken kunnen (aspirant) ondernemers helpen om nieuwe kansen te herkennen voor duurzaam ondernemerschap, onderwijzers helpen om studenten te leren om kansen voor duurzaam ondernemerschap te herkennen en beleidsmakers helpen om gebieden te vinden waar duurzaam ondernemerschap het beste gestimuleerd kan worden en hoe ze dit het beste kunnen doen. Daarnaast voeg ik kennis toe aan de vakliteratuur over kansherkenning in het algemeen en in de specifieke context van duurzaam ondernemerschap.





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2014- 2016: Research MSc in Regional Studies  
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2013- 2014: Erasmus Minor  
 University of Cracow

2012- 2014: Bachelor Honours College  
 University of Groningen

2011- 2014: BSc Human Geography & Socio-Spatial Planning  
 University of Groningen

### PUBLISHED PAPERS AND WORKING PAPERS

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Enthoven, M. P. M. and Brouwer, A. E. (2020) “Investigating spatial concentration of sustainable restaurants : It is all about good food!”, *The Annals of Regional Science*, 64(3), 575–594. <https://doi.org/10.1007/s00168-019-00955-6>

Enthoven, M. P. M. & Brouwer, A.E. (2019) “What fires up my cooking? The choice for a sustainable cuisine: passion and self-transcendence in the restaurant business”, *Research in Hospitality Management*, 9(1), 69-76.  
<https://doi.org/10.1080/22243534.2019.1653587>

Enthoven, M.P.M., de Jong, G. & Ünal, A.B. “Opportunity recognition for sustainable entrepreneurship: the role of values and problem recognition”, *Working paper*. Included in the *Academy of Management Annual Proceedings* as: Entrepreneurial Opportunities as Solutions for Sustainable Development.  
<https://doi.org/10.5465/AMBPP.2019.14907abstract>

Enthoven, M.P.M. & Thelken, H.N. “Challenging markets: activists’ and entrepreneurs’ approaches to establishing a moral consumer culture”, *Under review: Business Strategy and the Environment*.

Thelken, H.N. & Enthoven, M.P.M. “Cognitive Strategies to Resolve Paradoxical Tensions in Sustainable Enterprises”, *Working paper*.

Enthoven, M.P.M. “Becoming an agent for change: the role of identity in the opportunity recognition process of social entrepreneurs in the face of wicked problems”, *Working Paper*.

Enthoven, M.P.M., Trell, E.M. & Nunes, R.J. “Organizational hybridity and sustainable change: the role of responsibility and power dynamics”, *Working Paper*.

#### CONFERENCE PRESENTATIONS

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Enthoven, M.P.M. “Opportunity recognition for social innovation: the role of activist and entrepreneurial identities.”

Presented at:

ISIRC: *International Social Innovation Research Conference, Sheffield, UK, 2020*

Enthoven, M.P.M. & Thelken, H.N. “Roads to Rome: Activists’ and Entrepreneurs’ Diverging Pathways for Moral Consumer Culture Change”

Presented at:

BCERC: *Babson College Entrepreneurship Research Conference, Knoxville, TN, 2020*

Conference cancelled due to Coronavirus

Enthoven, M.P.M. “Institutional entrepreneurship within a social movement: Bottom-up approaches to sustainable change.”

Presented at:

HTSF: *High-Tech Small Firms, Enschede, the Netherlands, 2019*  
IECER: *Interdisciplinary European Conference on Entrepreneurship Research, Utrecht, the Netherlands, 2019*

Enthoven, M.P.M., de Jong, G. & Ünal, A.B. “Entrepreneurial opportunities as sustainable solutions: the relationship between problem identification and opportunity recognition.”

Presented at:

RENT: *Research in Entrepreneurship and Small Business, Toledo, Spain, 2018*  
HTSF: *High-Tech Small Firms, Enschede, the Netherlands, 2019*  
AOM: *Academy of Management Annual Meeting, Boston, MA, USA 2019*

Enthoven, M.P.M. & Brouwer, A.E. “The choice for a sustainable cuisine: passion and self-transcendence in the restaurant business.”

Presented at:

AIHR: *Academy of International Hospitality Research, Leeuwarden, the Netherlands, 2019*

Enthoven, M.P.M. & Brouwer, A.E. “Sustainable entrepreneurship: values, social networks and spatial concentration.”

Presented at:

RENT: *Research in Entrepreneurship and Small Business, Lund, Sweden 2017*  
ERSA: *European Regional Science Association, Groningen, the Netherlands, 2017*

## GRANTS AND AWARDS

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Best PhD paper award ISIRC conference, Sheffield, 2020: Enthoven, M.P.M. & Folmer, E.C. “*Becoming an agent for change: The role of identity in the opportunity recognition process of social entrepreneurs.*”

Best paper award HTSF conference, Enschede, NL, 2019: Enthoven, M.P.M., de Jong, G. & Ünal, A.B. “*Entrepreneurial opportunities as sustainable solutions: the relationship between problem identification and opportunity recognition.*”

Groningen University Fund for outstanding master students, 2015. Grant (€1200) obtained for the Research project “*Organizational hybridity and change: the role of responsibility and power dynamics*” in collaboration with the University of Reading.

## OUTREACH PUBLICATIONS

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M.P.M. Enthoven, (2018). “Sustainable entrepreneurship as a solution to present-day problems.” Blog for *Campus Fryslân: A Different View*. <https://bit.ly/2TjvDs4>

M.P.M. Enthoven & G. de Jong, (2017). “Zoeken duurzame ondernemers elkaar op?” (Do sustainable entrepreneurs seek each other out?) *TGTHR Magazine 2017(2)*

M.P.M. Enthoven, (2017). “Duurzame ketens: lessen van een koploper in de circulaire economie.” (Sustainable chains: Lessons from a circular economy leader.) Blog for *Campus Fryslân: A Different View*. <https://bit.ly/2EApXSp>

M.P.M. Enthoven, (2017). “Duurzame ondernemers: zitten ze op sommige plaatsen meer dan op andere plaatsen?” (Sustainable entrepreneurs: Do we find them more often in some places than in others?) Blog for *Campus Fryslân: A Different View*. <https://bit.ly/2NwEGkf>



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