



university of  
 groningen

campus fryslân

**The Role of Prior Knowledge and Motivation  
in Shaping Opportunity Recognition in Sustainable Entrepreneurship**

**Sustainable Entrepreneurship Project**

Msc Sustainable Entrepreneurship

University of Groningen, Campus Fryslân

Celia Indriana  
S4770986

Supervisor: Dr Emma Folmer  
Co-Assessor: Dr Arianna Rotulo

June, 4th 2023

**ABSTRACT**

The manufacturing industry is a significant contributor to the Indonesian economy. Yet, this area of industrialization has been primarily concerned with production and maximization of profits, which has caused several issues in nature and society. Sustainable entrepreneurship has been recognized as one of the solutions to these environmental and social problems since it focuses on the triple bottom line. However, only some are aware of the opportunity of developing a sustainable business. Guided by the theory of third-person opportunity belief, we explore how prior knowledge and motivation shape opportunity recognition in sustainable entrepreneurship. A qualitative study using interviews was carried out on Indonesian sustainable entrepreneurship in the manufacturing industry. This interview resulted in the development of a framework for understanding how entrepreneurial knowledge, sustainability knowledge, personal motivation, and social and environmental motivation shape sustainable entrepreneurs in recognizing opportunity.

## INTRODUCTION

The manufacturing industry significantly contributes to the Indonesian economy, accounting for 18% of the gross domestic product (1). This area of industrialization has been primarily concerned with production and maximization of profits, which has caused several issues in other aspects. For example, natural resource depletion, unfair income distribution, and unpleasant working conditions may eventually contribute to an unsustainable consumption pattern in terms of the environment, the economy, and even society (2).

Sustainable entrepreneurship has been recognized as one of the solutions to these environmental and social problems (3,4). Sustainable entrepreneurship is a part of sustainable development that can be defined as the continued commitment of a company to act ethically and contribute to economic progress while enhancing the quality of life of its employees, society, and future generations (5). This is sometimes called the triple bottom line, which stands for people, profit, and planet (6).

Before establishing a company, entrepreneurs must first realize that there is an entrepreneurial opportunity they can pursue. Entrepreneurial opportunities frequently arise from changes in information, technology, or market demands (7), but they do not exist unless recognized or produced by an individual (8). Opportunity recognition is divided into two sub-phases. First, individuals must believe that an entrepreneurial opportunity exists for someone (third-person opportunity belief) and then decide whether or not to pursue this opportunity (first-person opportunity belief) (9). The first phase concerns perceived levels of uncertainty and typically separates people who choose to act entrepreneurially from those who do not based on knowledge gaps and personal motivation. The second phase emphasizes the ability to bear the

perceived uncertainty and often contends that individuals who choose to behave entrepreneurially may be distinguished from those who do not, based on their assessment of the payoff (9).

Why do certain people recognize sustainable entrepreneurship opportunities while others do not? This study investigates how prior knowledge and motivation focus people's attention on the first stage of opportunity recognition in sustainable entrepreneurship and intends to address the following research question:

*How do acquired knowledge and motivation shape opportunity recognition in sustainable entrepreneurship?*

This study will explore the type of entrepreneurial and sustainability knowledge needed, the source of this knowledge, as well as how it encourages sustainable entrepreneurs to recognize opportunities. Aside from that, different types of motivation driving sustainable entrepreneurs to recognize opportunities will be identified.

This study makes three significant contributions. First, a comprehensive framework for understanding how entrepreneurs' motivation and knowledge are related to recognizing new sustainable entrepreneur ideas. This study will further the theoretical understanding of sustainable entrepreneurial opportunity recognition by investigating theoretical assumptions previously rarely measured for sustainable entrepreneurs (10–13).

Second, this study distinguishes between entrepreneurial knowledge and sustainability knowledge on opportunity identification and analyzes the sources of this knowledge. The inclusion of sustainability knowledge sets it apart from conventional research, which exclusively evaluates the significance of entrepreneurial knowledge (14–18). By knowing the sources of

entrepreneurial and sustainability knowledge, individuals can improve their knowledge of these resources. Understanding the market and the sustainability problem will increase the likelihood of recognizing opportunities for sustainable entrepreneurship.

Third, the role of individual motivation and motivation for others in recognizing sustainable entrepreneurship opportunities was investigated, expanding the understanding of the role of motivation in entrepreneurship. Understanding the motives allows organizations and governments to establish initiatives that accomplish these motivations and foster sustainable entrepreneurship. For example, environmentally and socially responsible businesses can be directly rewarded for meeting specific environmental and social goals, such as lowering carbon dioxide emissions through participation in carbon markets. With this reward, sustainable businesses may enhance their economic performance and image, encouraging more entrepreneurs to participate in sustainable development (19).

This study is structured as follows. First, the literature review on recognising sustainable entrepreneurship opportunities is based on motivation, knowledge, and how entrepreneurs acquire this knowledge. Then followed by a discussion of the methodological aspects of the research: the research participants, data collection, and the methodology used to analyze the data. The results are then presented and followed by a discussion. Last is the research conclusion with the contribution, practical implications, study limitations, and future research directions.

## THEORY

### **Opportunity Recognition in Sustainable Entrepreneurship**

One of the most important aspects of the entrepreneurial process has been regarded as opportunity recognition (10). The process of recognizing opportunities can be defined as an effort to interpret signs of change and decide whether taking action to address these signals would result in net benefits (20). According to McMullen and Shepherd (9), the process of opportunity recognition is divided into two sub-phases. The first stage occurs when an opportunity appears, and an individual recognizes it, regardless of one's capacity to pursue it or is known as third-person opportunity belief. The second is an assessment of one's competence and motivation to pursue the chance, known as the first-person opportunity belief. In this study, a model for sustainable entrepreneurship was built based on the first stage of McMullen and Shepherd's (9) theory of entrepreneurial recognition, the third-person opportunity.

An opportunity arises from changes in the information, technology, or market demands (7) but not all individuals are aware of it. To raise awareness, specific knowledge is required. This knowledge can lessen perceived uncertainty and encourage people to see entrepreneurial opportunities (9). In addition to knowledge, motivation explains why some people are willing to bear uncertainty and decide to act entrepreneurially (9). Motivation refers to an individual's needs, values, wants, goals, intentions, and benefits that impact these systems (21). The benefits referred to in sustainable entrepreneurship might include advantages for oneself, the environment, and society (13). Motivation may encourage people to bear uncertainty to achieve their goals, and this is what draws attention to entrepreneurial opportunities (12).

Combining knowledge and motivation will form a belief regarding opportunity arising from a change, whereas those without the necessary knowledge and motivation will not be aware of it (9). This study suggests that individuals' prior knowledge and motivation encourage sustainable entrepreneurship opportunity recognition. Sustainable entrepreneurship focuses on people, profit, and the planet. Therefore, this study incorporates entrepreneurial knowledge, sustainability knowledge, self-motivation, and social and environmental motivation.

### **Prior Knowledge**

Individuals become aware that the opportunity for action exists when they have a particular level of specific knowledge (9). It is suggested that everyone builds a unique knowledge base throughout their lives, and as a result, some people are more likely to recognize opportunities than others (15). Prior knowledge is the result of education, personal experience, professional experiences, or a mix of these (22). Sustainable entrepreneurs aim to create economic value while preserving the environment and the local community (23). Therefore, knowledge of sustainability and entrepreneurship is critical to recognize opportunities for sustainable entrepreneurship (12).

### ***Entrepreneurial Knowledge***

Entrepreneurial knowledge is an individual level of knowledge needed to launch and run a business, including expertise in identifying and seizing business opportunities and practical knowledge (24). According to Shane (15), there are three forms of entrepreneurial knowledge that drive entrepreneurship opportunity recognition: prior knowledge of markets, prior knowledge of ways to serve markets, and prior knowledge of customer problems.

First, prior knowledge about markets includes supplier relationships and capital equipment requirements that vary between markets. For example, a person who had previously worked in a market could already know how new technology might affect a market that is not generally known. This past knowledge helps him to recognize an opportunity where the new technology may be used (25). Second, prior knowledge of serving markets enables entrepreneurs to examine and build the skills needed for market entry. It comprises information about how products are developed, distributed, priced, and how to engage customers (15) —finally, prior knowledge about customer problems. Market knowledge appears to be always accompanied by a knowledge of customer problems (22). To recognize a potential opportunity, an entrepreneur must know about a specific industry and customer problems in that market (22). Individuals are thus more likely to offer new products and services that meet customers' needs and are accepted by the market (13).

People may enhance their entrepreneurial knowledge through formal education, such as a university degree, and informal education, such as job experience (26). Formal education can facilitate the acquisition of analytical skills and the capacity to identify market needs, which are prerequisites for identifying entrepreneurial opportunities (27). Formal education helps students develop their entrepreneurial qualities and skills by providing courses and programs related to business creation (28).

Apart from formal education, job experience has been demonstrated to be essential in enhancing entrepreneurs' capacity to identify entrepreneurial opportunities (15). For instance, someone with experience working in a market as a manufacturer, supplier, or client may already know how new technology may affect that market. They can identify a use case for the latest technology due to their past knowledge (15). Moreover, job experience exposes individuals to

exclusive insights into consumer issues, potential markets, product accessibility, and competitor resources, impacting their capacity to spot flaws or inefficiencies in existing practices. These realizations may inspire concepts for new or improved customer and market-serving strategies (26).

### ***Sustainability Knowledge***

Sustainability knowledge is a comprehension of how to conserve the environment and improve communal life with an ecologically conscious mentality and the use of critical social resources (29). Understanding the resources and threats of the natural environment and the characteristics of the cultures, people, and locations that form the community improves one's capacity to recognize entrepreneurial opportunities (10). For instance, understanding indigenous group cultures has highlighted opportunities to preserve those cultures, and knowledge of vulnerable places has shown the potential to create types of tourism to protect these places (13). A deep awareness of social or environmental challenges and the obstacles that hampered prior attempts to solve them strengthens personal knowledge. It inspires them to develop their business models to provide problem-solving solutions (10).

Sustainability knowledge can be obtained from various sources. One way is through socialization, which includes involvement in sustainability movements that aim to improve society and/or the environment and exposure to environmental damage due to human actions from the media. As people are continuously exposed to problems like plastic, oceans, and glaciers through the news, they will be more aware of the need to address this issue (12). Moreover, environmental and social knowledge may be acquired through formal and informal learning, such as interdisciplinary knowledge from institutions and training (30). By creating a



suitable curriculum, environment-focused education shapes students' perspectives on ecological values, leading them to environmental commitment (31) and becoming better at spotting sustainable possibilities (29). Thus, prior knowledge of community and natural environmental issues is crucial in identifying opportunities for sustainable entrepreneurship (13).

## **Motivation**

Motivation refers to an individual's needs, values, wants, goals, intentions, and benefits that impact these systems (21). Motivation distinguishes an individual's willingness to bear with uncertainty and decide to act entrepreneurially compared to others who do not (9). This motivation can be divided into two categories: motivation for personal gain and motivation to create gains for others. Both of these motivation categories are essential in spotting opportunities for sustainable entrepreneurship (12).

### ***Personal Motivation***

Motivation to gain personal benefits for oneself increases the likelihood that one may recognize a potential for sustainable entrepreneurship (12). With this motivation, individuals will be inclined towards opportunities that can satisfy their desires (9). The term benefit refers to economic and non-economic values (32). Individuals are often motivated by financial benefits in the form of profit (33). They may be required to view profit positively in the context of their own holistic goals, such as financial security, paying debt or setting aside money for retirement (34).

Apart from profit, individuals can also have non-economic motivations encouraging them to recognize sustainable opportunities. According to Shane et al. (35), there are eight entrepreneurial motivations: the need for achievement (nAch), the locus of control, the vision, the desire for independence, the passion, the drive, the goal setting, and the self-efficacy.

First, the need for achievement is the desire to perform actions quicker, better, or more skillfully than others or one's previous accomplishment (36). Second, locus of control refers to how much people feel their behaviours or other personal traits impact outcomes (35) and that their choices directly impact an event's result (37). Third, independence means taking responsibility for one's own life rather than relying on the efforts of others (38). Fourth, drives which is the willingness to put out effort, both in terms of thinking and in making one's ideas a reality. Ambition, objectives, energy and stamina, and persistence are the four components of the drive (35). Fifth, egoistic passion indicates that a rational egoist is passionate about their profession and enjoys the process of developing an organization and making it profitable. They are driven to accomplish what is best for themselves and to go to any length (35). Sixth, vision is the determination to create something new and to turn opportunities into reality (39). Seventh is self-efficacy. Self-efficacy is the belief in one's capacity to use one's resources, abilities, and competencies to reach a specific level of success (40). Eight is goal setting which is the ability to set achievable goals (39).

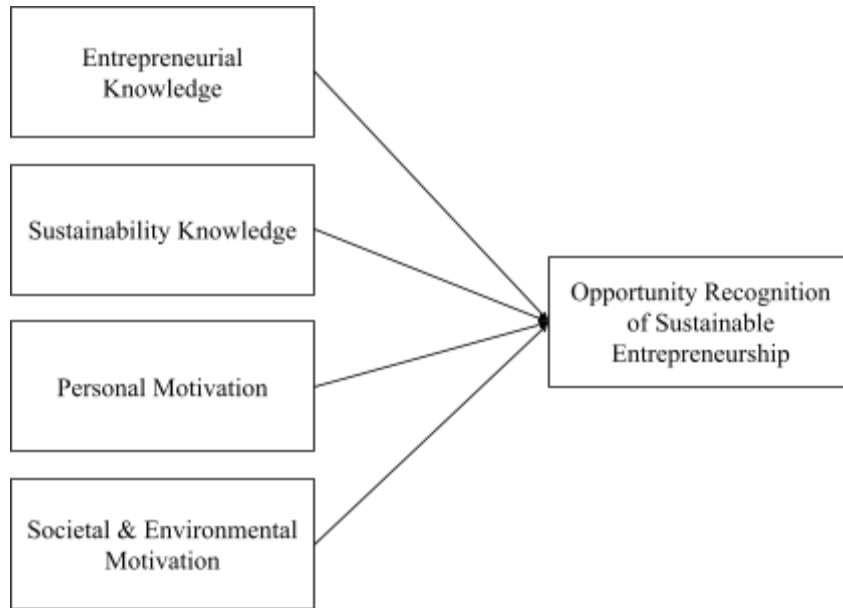
### ***Social and Environmental Motivation***

People have diverse motives for providing "economic, environmental, and social rewards for others" based on their levels of altruism, which makes it more likely that people will recognize opportunities for sustainable entrepreneurship (12). Altruism is described as the desire to improve the well-being of others. Altruistic people see sustainability as an appropriate objective and connect their decisions, attitudes, and actions to prosocial and pro-environmental goals (41). Altruism can be divided into pure altruism and impure altruism (42). Pure altruism implies that a person's acts benefit solely other people, whereas impure altruism means that a person's actions benefit others and themselves.

Emotions play a vital role in the emergence of altruistic motivation. People develop an altruistic motive when they feel sympathy and empathy for others (13). People with sympathy imagine how they might think or feel in similar circumstances to another person (43). Those who have sympathy for impoverished people may relate to their concerns about the nutrition and health of children, therefore inspiring them to help those in need. Individuals sympathising with others will be inspired to help them and seize opportunities to better their circumstances (13).

Those who are empathic can focus on experience rather than position. They possess the capacity to think, feel, and go through emotions that are identical to those felt by others (43). For instance, the greater individuals can empathize with people in poor countries and feel other people's sufferings, the more they are attentive to chances that would offset the negative emotional experiences. These people are motivated to pursue chances for sustainable development that enhance the lives of the impoverished since doing so would elevate their emotional condition (13).

An integrated framework was developed to describe the interaction between prior knowledge and motivation in recognizing sustainable entrepreneurial opportunities.



**Figure 1.** Theoretical framework

## **METHODS**

### **Research Design**

McMullen and Shepherd's (9) model about knowledge and motivation effects in opportunity recognition was adopted. Therefore a deductive approach was chosen to know how this model applied to sustainable entrepreneurship (44). This study analyses the mechanisms through which knowledge and motivation influence sustainable entrepreneurship opportunity identification. Qualitative research is the best way to answer this topic (45). Since the link between motivation and knowledge to opportunity recognition was examined without taking into account their specific context, cross-sectional research is the most suited research design (46).

## Research Participants

The sample comprises eight founders from Indonesian sustainable entrepreneurship engaged in the manufacturing industry. Founders may give insight into motivation and knowledge roles in recognizing opportunities for their entrepreneurs. The manufacturing industry sector was chosen due to its highest contribution to Indonesia's gross domestic product (47,48). Participants were selected using purposive sampling to ensure they were willing to provide the information by experience and could reflectively communicate their experiences (49). To be included in the sample, participants must have a business based on people, profit, and planet that has been established for over three years. The fact that the chosen business owners have been operating for more than three years suggests that they have effectively recognized opportunities and developed sustainable entrepreneurship (12). The participants were discovered through research on the internet with the keywords sustainable entrepreneurship in Indonesia. The company's website and social media profiles were examined before they were contacted through email, Instagram, and WhatsApp. Several companies were contacted, but not all responded, so the sample selected was determined by the ability to reach the businesses. The participant's list has been provided in Table 1.

<b>Enterprise</b>	<b>Sector</b>	<b>Line of Business</b>
Imaji Studio (IS)	Textile	Textiles made from natural materials
Tricycle (TR)	Textile	Recycled and upcycled apparel
MYCL (MC)	Textile	Mycelium leather
Studio Dapur (SD)	Household appliances	Bamboo kitchen supplies
Mortier (MO)	Household appliances	Plastic recycled home decorations

Robries (RO)	Household appliances	Plastic recycled furniture and home decorations
Hom Lab (HL)	Home decoration	Bio fabricated home decorations
Plepah (PL)	Packaging	Biodegradable packaging from agricultural waste

Table 1. Research participants

**Data Collection**

Primary data was collected using the interview. Interviews allow researchers to focus more on exploring a particular issue, emphasize participants' knowledge (45) and examine respondents' interpretations of the factors that cause them to identify opportunities for sustainable entrepreneurship (12). Recognizing opportunities is a different experience for everyone, so narrative approaches are needed to address the meaning from a different perspective (45,50). Semi-structured interviews are conducted as it allows the interviewee the ability to discuss and explain issues in detail (51). The semi-structured interviews consisted of four sections: (1) founder's education background and professional experience; (2) entrepreneurial and sustainability knowledge; (3) motivation to start a sustainable business; (4) opportunity recognition of sustainable entrepreneurship development.

Each participant signed a consent form which was given out to address ethical concerns, which can be found in this [link](#). The interviews were conducted online, considering the location of the interviewer in the Netherlands and the interviewees in Indonesia. The interviews were conducted in April 2023 with the help of a Google Meeting platform, which typically lasts for 25-55 minutes. Interviews were performed in Bahasa to ensure interviewee proficiency in expressing the process they were going through.

## **Data Analysis**

All interviews were digitally recorded, transcribed using Trankriptor.com, translated into English using Google Translate, and thoroughly examined to ensure correctness. The initial phase in data analysis was to find quotes with meaning according to the four aggregate dimensions (entrepreneurial knowledge, sustainability knowledge, personal motivation, and social and environmental motivation). After grouping the quotations, open coding in Excel was used to get the first-order codes for each type of aggregate dimension. The quotes were examined to identify different concepts and topics for categorisation. The purpose of open coding is to develop themes from the quotes (52).

Once the first order codes had been generated, axial coding was performed. Axial coding is done by determining the connections between open codes (52). Major codes develop as an aggregation of the most closely connected open codes. This axial coding resulted in second-order codes that define the links between themes. The analysis is continued by integrating the first- and second-order codes formed into the coding tree. The coding process, which contains the coding table and coding tree, can be seen in Appendix A & B.

## **FINDINGS**

### **Entrepreneurial Knowledge**

The interviews with the study's respondents indicated that they possessed entrepreneurial knowledge before they recognized opportunities and this information may have had some influence on how opportunities were identified. Entrepreneurial knowledge refers to the degree of knowledge necessary to establish and manage a business, including expertise in identifying

and seizing business opportunities and practical knowledge (24). In this research, previous knowledge might take the form of prior knowledge of markets, prior knowledge of ways to serve markets, prior knowledge of customer problems, or a combination of these three. This entrepreneurial knowledge is obtained through formal education, prior jobs, and business incubators.

### ***Prior knowledge of markets***

Entrepreneurs began to realize that there are sustainable opportunities after obtaining prior knowledge of markets acquired through education and work experience. Seven respondents claimed that the products they are currently selling are based on the product knowledge they have obtained from their degrees. RO's founder is a product designer graduate. From then, the founder sought to produce goods from recycled plastic, which eventually became the current business. The same holds for IS, where the co-founders are Media and Cultural Studies and Arts in Graphic Design graduates. IS integrated Indonesian culture into their fabric by combining natural colour batik patterns with more modern designs, which they learned in college.

This study respondent's awareness of recognizing entrepreneurship opportunities is increased by familiarity with the product and the market. By understanding a material characteristic, people may turn a material into a unique product. The founders of MO and MC have well conveyed this idea:

Okay, so my bachelor's was in civil engineering. My master, I'm also still in touch with civil engineering. So actually it's not really directly related to things that contain sustainability but maybe it still intersects in the material part. Of course, even though what was learned in the major was only 3 main materials, steel, wood, concrete, they pretty much give an idea of the characteristics of a material like that. (MO)



So my background is in architecture, the co-founder is a biotech engineer. We try to see the function or application of mushrooms beyond just food. So the first thing we do is develop it as a building material. (MC)

Aside from formal education, market knowledge can also be acquired from prior job experience. By knowing the benefits of a product, people become aware of the product's business potential. The founder of HL stated that, besides having an undergraduate degree as an interior designer, the founder discovered business prospects for bio-fabricated home decorations from his prior jobs.

So now we are developing biomaterials for us to use in furniture, so J is an interior designer, so we try to use them in furniture. Then we want to apply the eggshells for countertop tables or furniture. (HL)

The same is true for the prior job experience earned via business ownership. The MC founder stated that owning a mushroom company for consumption inspired the founder to create leather from mushrooms.

In addition to formal education and prior jobs, two participants acquired their market knowledge from other sources: product inspiration from travelling abroad, national research, and journal reading.

### ***Prior knowledge of ways to serve markets***

Five respondents had an in-depth understanding of how to serve the markets before recognizing the sustainable entrepreneurship opportunity. It is worth mentioning that most entrepreneurs in this research typically learn how to serve markets after initially learning about the market through their education. Only the TR founder claimed to have formal business education. Four other founders participated in business incubators after finishing their formal

degrees. In this incubation program, founders of RO and SD from non-business backgrounds learned how to launch a firm.

I used to join a business incubator. The business incubator at BCE is called the Bali Creative Industry Center, which is a program from the Ministry of Industry. I was there for like 4 or 5 months discussing the business concept, but that was mostly from a design standpoint. So it's a business design. How do you do it at the beginning of the year, how do designers become entrepreneurs,... But because I have a product design background, I don't really know how to set up a business like that, so I learned there. (SD)

Similarly, MC founder recounted how the business incubator assisted the founder in becoming an entrepreneur by teaching how to pitch and form alliances.

So, one that can top up my knowledge is by joining this incubator. Usually, when I join a boot camp, this boot camp has mentoring in the form of webinars that are quite intensive or even one on one... So that's where I learn too. Learn how to pitch, learn how to make partnerships. I got it all from there. (MC)

### ***Prior knowledge of customer problems***

Only one of the respondents claimed that awareness of customer problems in the market has an impact on opportunity recognition. The founder of IS saw an opportunity when local brands at the time were only selling street-style or traditional apparel. Customers had trouble finding apparel with cultural elements, such as batik for everyday wear, and the idea to create IS arose from this. The other seven entrepreneurs have no knowledge of consumer problems. They launch a product they are familiar with rather than a new product in response to client needs.

### **Sustainability Knowledge**

One's ability to spot entrepreneurial opportunities is enhanced by knowledge of the natural environment's resources and risks and the traits of the cultures, people, and locations that

comprise the community (10). The interviews showed that the entrepreneurs in this study were impacted by their knowledge of environmentally destructive activities, environmental preservation, and the sustainability concept as they recognized opportunities for sustainable entrepreneurship. This sustainability knowledge was acquired through engagement in the sustainability community, socialization, formal education, and prior job or project.

### ***Environmentally destructive activities***

Five entrepreneurs in this study showed that they were influenced by knowledge about negative environmental trends as they recognized opportunities for sustainable entrepreneurship. The founder of IS stated that the news about chemical dyes that contaminate rivers in Indonesia, especially in Java, raised awareness about the opportunities for using natural dyes in textiles. Meanwhile, the founder of MO stated that the founder realized the opportunity to make plastic recycled home decorations without cement after hearing a seminar about the amount of CO<sub>2</sub> produced by using cement.

The PL's founder, who saw an opportunity to manufacture sustainable food packaging from agricultural waste, stated the following statement:

Maybe in high school, it was about production, why does it have to be efficient, so it doesn't produce waste. Try to reduce waste because waste is an issue. Not only environmental issues but also financial ones. Don't waste money like that. Because there are materials that are not utilized or the production system is less efficient, it's not good... So like back again towards environmental issues became very important to me.  
(PL)

The founder of SD expressed a similar statement about how waste produced by product designers had come up in class discussions while the founder was a student. Thus, a desire to reduce waste developed, and conceived of a concept to create products with the least amount of

waste. The founder of HL discovered food waste via social media and from personal experience. Since the founder's parents produced ice cream, many eggshells were created daily, and this is where the idea for creating home decor out of biowaste came from.

### ***The significance of environmental protection***

Not only the understanding of environmental damage but knowledge regarding how to preserve the environment also push the potential entrepreneur to act. Four participants developed their awareness of sustainable opportunities by learning the value of environmental protection. The founder of MO claimed that since high school, the founder had been educated about the dangers of global warming and, therefore, it is essential to protect the environment and to dispose of rubbish properly. This experience has indirectly raised the MO founder's knowledge of environmental conservation. The PL founder had a similar experience. The founder took the community and social studies classes at school, where a concern for the environment was developed. This class also taught the importance of material sources because choosing the wrong material would result in waste. Inspired by the idea of vital material selection, the founder developed packaging using the sheath from an areca palm. Due to the attendance at a green school, the founder of TR was also aware of the advantages of reconnecting with the environment. From there, the founder became interested in and started learning more about the environment, influencing the decision to create impactful businesses.

The founder of SD recognized the importance of bamboo gardens for ensuring water purity and safeguarding nearby communities from landslides in addition to its economic potential, as the founder stated:

Because during those 4 months living together side by side with the artisans, I became more open about the benefits of this bamboo were not only economic but also environmental. How can this bamboo garden protect the village from landslides? That's a lot. (SD)

With this knowledge, the founder of SD recognized a chance to preserve the village's bamboo garden while using bamboo to make high-quality products.

### ***Positive trends of sustainability concept***

Positive trends in sustainability concepts influence entrepreneurs in identifying sustainable opportunities. Two respondents experienced sustainability development in Indonesia and were encouraged to adopt this concept. According to the founder of SD, sustainability awareness emerged after completing an internship at a business that utilizes bamboo, a sustainable resource that also benefits the environment. The idea of sustainability was uncommon in the industry, and SD's founders were motivated to create one. The founder of MC was likewise inspired by sustainability while doing an internship in Flores. The founder lived in the area and discovered that the Indonesians had indeed applied the ideas of sustainability and circularity. The founder stated that the local sustainability concept was the inspiration to create sustainable products:

I was inspired enough when I did my internship as an architect...Then after we finished, I learned a lot and what became an insight or life-changing experience was that sustainability actually existed in Indonesia for a long time, the proof is the way people live in the middle of the forest and they build traditional houses that use local resources too. They tried to adapt the design. Yes, it is anti-earthquake and anti-hurricane, right with the knowledge that is there. And that's all, even the circular principles have all been applied there. (MC)

## **Personal Motivation**

### ***Locus of control***

The four entrepreneurs believe that their actions directly affect the environment. They pointed out that human activities cause the current amount of waste, and therefore they were encouraged to start a business that could decrease current waste. They are convinced that by becoming a sustainable business, they will be able to control outcomes that positively impact the environment. This motive encourages them to see entrepreneurship opportunities for producing waste-derived goods.

The MC founder described how creating a sustainable firm in the sector might have a more significant beneficial effect on the environment. Building a mycelium leather company is a way to have a positive impact on nature:

And this is my vehicle. Vehicles also give value to me, for example, I'm trying to reduce environmental impact, and the best I can do is not use plastic, and stop littering. But that's a very small impact. The biggest impact is in the industry, right? So yeah it's a vehicle. (MC)

### ***Need for achievement***

The need for achievement is considered an essential motivation for six entrepreneurs. The three founders said they were compelled to create products that were better than those offered by the current market. The founder of IS and HL claimed that they take great delight in the fact that sustainable products go through a long process but are more environmentally friendly. The founders of RO argue that the recycled products now available on the market lack attractiveness since they still look like waste. That was the motivation to create recycled products that are aesthetically pleasing:

All this time, recycled items are like shopping bags, which look really trashy, and not everyone wants to use them. That's why he, as a product designer, is trying to make things out of recycled plastic like that at first, that's why we tried it for RO. (RO)

Being a sustainable business means having significant responsibility for the PL founder since the founder must ensure that the farmers who partner with PL have a decent life. However, realizing that PL is useful for other people also makes the founder feels good:

Yes, there is also pride in being able to support other people. Before, the farmers, these stems were considered trash, they weren't useful, but if we buy materials from them, they still get a small contribution. So, it's stressful for sure because the responsibility is big, right? Supervise many of these people. But at the same time, it feels good that you're useful to other people. (PL)

The founder continued by saying that becoming a sustainable business also provides satisfaction when knowing that people use their product.

The founder of SD was prompted to get involved in the bamboo business after knowing the fact that no bamboo firm has succeeded in persuading young people to become bamboo artists. With SD, this activity has become a profession that young people are proud of. The SD founder is pleased to be the one who promoted this profession. For the founder of TR, being able to inspire people was the motivation to become a sustainable entrepreneur.

### ***Desire to be self employed***

Two founders claimed they started their own businesses because of a personal desire. The founder of RO has always wished to be an entrepreneur since it seems cool. The founder can also get a lot of knowledge and a broad viewpoint by being an entrepreneur.

My motivation is that I want to learn a lot, so it's like learning by seeing things from different points of view. Because if I become an entrepreneur, let alone I become a cofounder, so you can see, oh, not only my division. So I can see from finance, in sales, and so on. From the market's point of view, from the client's point of view... (RO)

In addition, the founder mentioned that being an entrepreneur means having more flexible working hours.

The creator of HL stated a different self-employed motivation. Having an interest in design, the founder of HL saw entrepreneurial opportunities. The founder now creates bio-waste-based house decorations and may pursue this business as a hobby.

### ***Fulfilling a purposeful life***

Two founders claimed that a life focused on material possessions was unsatisfying for them. The desire for a meaningful life motivates them to a sustainable enterprise focusing on environmental welfare. To the MC founder, it was essential to have a purposeful life that is not only about making a profit as a goal. This was the motivation to create a firm that positively influences the environment. Meanwhile, for the PL founder, the life goal is to impact the surroundings positively; through PL, the founder can share the positive effects.

### **Social and Environmental Motivation**

The motivation to develop gains for others enhances sustainable opportunity identification (13). People who participated in the study were concerned about the advantages their business could offer to society and the environment. They were driven by a desire to restore environmental harm and work toward improving employees' and communities' lives.



### *The desire to preserve the environment as a result of witnessing environmental damage*

Seven respondents stated that environmental degradation is the main driver for them to become sustainable entrepreneurs. Their desire to reduce the existing degree of environmental damage made them more conscious of sustainable options. MO and RO, businesses that offer products manufactured from recycled plastic, expressed their concern about Indonesia's high landfill trash levels. They aim to lessen the amount of waste that ends up in landfills. While the creator of PL said that the inspiration for creating biodegradable packaging came from seeing how much trash there is in the oceans and the desire to lessen it:

Meanwhile, at that time there was work in Wakatobi, we spent months there seeing that the waste issue was really bad. So every day there was trash in the sea. The residents also still threw garbage carelessly. There was no TPA (landfill) so it's like wow this is a plastic issue, packaging issues, it was real. So, we felt the real meaning of waste in the sea. (PL)

The MC founder saw the significant pollution generated during cowhide production and realised there was a need for environmentally friendly leather material. This worry prompted the founder to discover a business opportunity in producing leather using mushroom mycelium, which is far greener than cowhide. IS's founders realized a similar insight. They asserted that artificial dye polluted Indonesian waterways, particularly in Java. This concern has encouraged IS founders to use environmentally friendly products such as natural colours and techniques for their fabrics.

Then from natural coloring, we avoid using chemical dyes, because in 2015 there was rampant contamination of artificial or synthetic dyes in rivers in Indonesia, especially in Java. So that's actually the main reason and also like what I told you earlier because there is a big concern about synthetic dyes which

pollute a lot of Indonesia, so we also seem to elevate the value of our products, namely using natural dyes and Indonesian weaves. (IS)

### ***Striving for improvements for workers and community***

The intention to improve another person's welfare was the motivation for four respondents, encouraging them to recognize sustainable development opportunities. The SD founder was aware that the current pricing of bamboo goods is extremely low and does not reflect the cost of the material, the labour-intensive manufacturing method, or the efforts of the artisans. As a result, SD's founder intended to raise the pay of these bamboo artisans:

That's why we made this SD as if we were making bamboo crafts more relevant to today's times, so the products can be used by people now, the quality is increased so that the income of the bamboo craftsmen is also increasing. (SD)

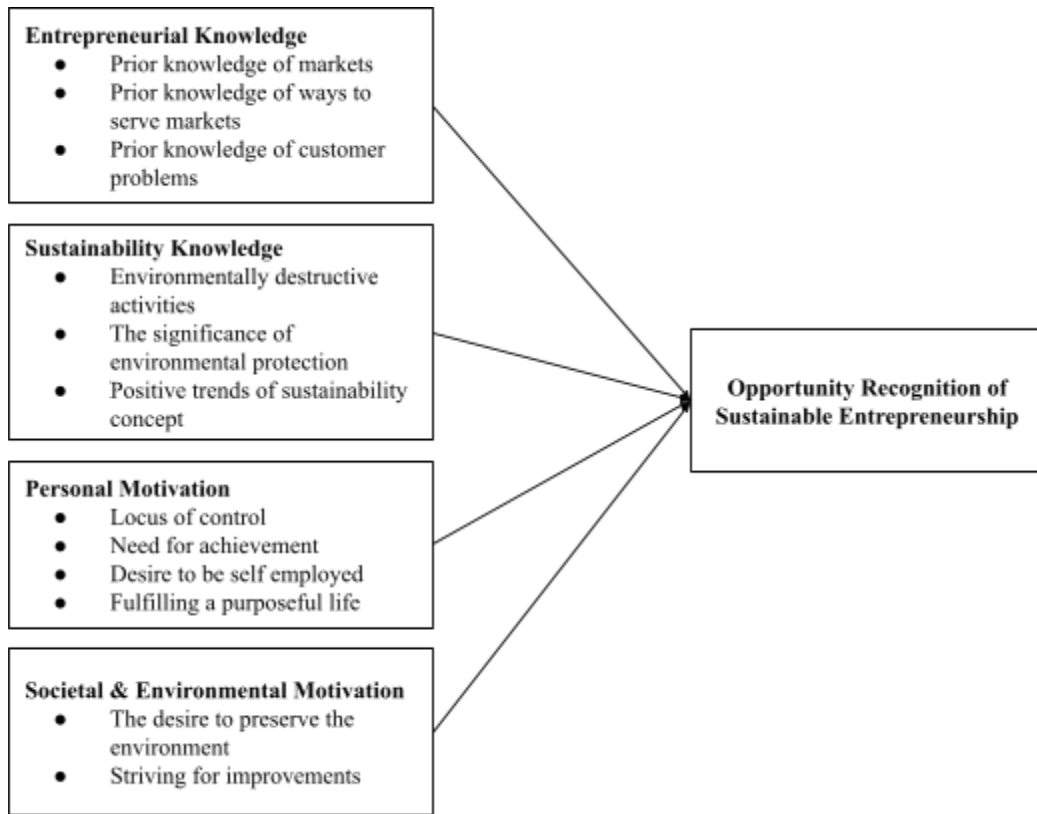
For IS, MO, and RO, their business must offer benefits to their staff. They ensure every employee has a respectable wage and a pleasant workplace. The statement of the MO founder, which serves as a clear illustration of this, is as follows:

Then they also have a healthy work environment, healthy, meaning the pay is enough, they don't work overtime, and the work ethic is also good, so that's what we want to make, MO should be that healthy. Sustainable, friendly for the environment should not only be for the environment, but for the workers too. (MO)

## **DISCUSSION**

This study aimed to improve the understanding of how acquired knowledge and motivation affects opportunity recognition in sustainable entrepreneurship. This research

approach is based on McMullen and Shepherd's idea (9) of third-person opportunity recognition. The result stated that the approach also applies to opportunity recognition in sustainable entrepreneurship. Furthermore, categorization for prior knowledge was divided into two types: sustainability knowledge and entrepreneurial knowledge, and motivations into two types: social and environmental motivation and personal motivation, all of which influence the process of discovering sustainable entrepreneurship opportunities as illustrated in figure 2. This research also uncovered other critical factors, such as sources of sustainability and entrepreneurial knowledge.



**Figure 2.** Model of opportunity recognition in sustainable entrepreneurship

To recognize third-person opportunities, individuals must equip themselves with knowledge (9), in this case, entrepreneurial knowledge that allows them to perceive patterns and

expose hidden relationships. In addition, sustainable knowledge about natural harm caused by prior unsuccessful attempts to react to natural and societal requirements and their prevention allows one to identify sustainable opportunities (10).

Entrepreneurial knowledge is required to offer an overview of a market. Familiarity with the market makes it easier for entrepreneurs in this study to recognize business opportunities. According to the findings, sustainable entrepreneurs possess entrepreneurial knowledge before recognizing entrepreneurial opportunities. This means the same prior entrepreneurial knowledge that encourages traditional entrepreneurs to recognize business opportunities inspires sustainable entrepreneurs. As a result, a link between traditional and sustainable enterprise is formed. According to Shane (15), entrepreneurial knowledge, such as prior knowledge of markets, prior knowledge of ways to serve markets, and prior knowledge of customer problems, draws people to become entrepreneurs.

However, in this study, the most critical knowledge is prior market knowledge obtained by entrepreneurs when they pursue their first degree. Entrepreneurs gain exposure to the industry's market by understanding the materials and methods needed to create a product. After gaining market knowledge, entrepreneurs join the business incubation to learn how to service the market. Knowledge of consumer concerns, which earlier research suggests is critical in spotting possibilities (22), appeared less useful for sustainable entrepreneurs in this study. Respondents prefer to offer things they are familiar with and manufacture better than those on the market rather than developing new products to fulfil customer needs.

Recognizing opportunities for sustainable entrepreneurship requires an individual's knowledge of changes in the market and the natural or communal environment in which they live

(13). According to the findings of this study, prior knowledge of environmentally destructive activities, environmental protection, and positive trends in sustainability concepts might impact the capacity of sustainable entrepreneurs to recognize an opportunity. As in the case of IS's founder, who identified the possibility of using natural colours for textiles after noticing river pollution in the Java area. Respondents in this research gained sustainability knowledge from four sources: engagement in the sustainability community, socialization, formal education, and prior job or project.

Previous research has suggested that two components play a role in the process of opportunity recognition: knowledge and motivation (9). The second stream emphasizes the ability to tolerate uncertainty and often claims that persons who choose to engage entrepreneurially are different from those who do not due to variations in motivation (9). Shane et al. (35) proposed that there are eight entrepreneurial motivations that influence someone's ability in recognizing opportunities which are the need for achievement (nAch), the locus of control, the vision, the desire for independence, the passion, the drive, the goal setting, and the self-efficacy. This study partially supports this notion since the respondents in this study are only affected by locus of control, need for achievement. In addition, this study extends Shane et al. (35) research by adding other motivations such as the desire to be self employed and the desire to fulfill a purposeful life. This shows that not all motivations for becoming a sustainable entrepreneur are necessarily directly related to sustainability motivations. Sustainable entrepreneurs can also be motivated by the same personal motivations as conventional entrepreneurs.

The second type of motivation is social and environmental motivation. This motivation drives entrepreneurs to recognize sustainable opportunity rather than an opportunity that merely

seeks economic benefit. According to the findings, two motivations inspire entrepreneurs to recognize sustainable opportunities: the desire to preserve the environment due to witnessing environmental damage and the striving for improvements for workers and communities.

In addition, the findings suggest that sustainable entrepreneurs were affected by impure altruism rather than pure altruism. Sustainable entrepreneurship in this study contributes to the triple bottom line, which means they provide benefits for the entrepreneurs themselves, society, and the environment (42). Therefore, all the respondents in this study could be argued to possess impure altruism.

It is also worth noting that the four factors, namely entrepreneurial knowledge, sustainability knowledge, personal motivation, and social and environmental motivation, all influence opportunity recognition in sustainable entrepreneurship, and there is an interplay between these four factors.

## **Contributions**

This study's first contribution to the theoretical knowledge of entrepreneurial opportunity identification is by adding sustainable knowledge to the model of earlier research. Knowledge is an essential component of opportunity identification; however, past research has mainly taken an economic perspective and focused on information relevant to markets, technology, and business (7,8,15). While this knowledge may help recognize opportunities for entrepreneurship, it is insufficient to identify opportunities for sustainable entrepreneurship that consider people, profit, and the planet. Entrepreneurs who understand the natural and social contexts are more likely to focus on those settings, uncovering sustainable opportunities.

Second, this study examines social and environmental motivation and individual motivation, broadening the understanding of motivation's role in sustainable entrepreneurship opportunity recognition. This motivation is also what differentiates why there are individuals who can recognize sustainable opportunities compared to others

The third contribution of this study is the development of a model of opportunity recognition for sustainable entrepreneurs, which was previously solely employed for traditional entrepreneurs. This model thoroughly explains how entrepreneurs' sustainability knowledge, entrepreneurial knowledge, social and environmental motivation, and personal motivation are connected to identifying sustainable entrepreneurship opportunity recognition. Examples of each knowledge and motivation are provided, as illustrated in Figure 2.

### **Recommendations**

Given the relevance of sustainability knowledge in recognizing opportunities, sustainable entrepreneurs should use the sources indicated in this study to enhance their knowledge. For instance, participating in socialization involving the environment and society, such as reading the news and attending seminars. Additionally, sustainable enterprises could join communities that focus on sustainability, such as green schools, environmentalists, and zero-waste communities. These communities teach their members to live sustainably and provide activities to lessen the negative influence on the environment. Obtaining information from the sources mentioned above can assist in the recognition of trends and developments, which may lead to the discovery of opportunities for sustainable entrepreneurship.

Entrepreneurial knowledge was also revealed to be important in facilitating the opportunity identification process. As a result, it is recommended that long-term entrepreneurs

enhance their entrepreneurial skills and knowledge, especially through business incubators. By doing so, sustainable entrepreneurs may raise their understanding of the market and customer needs, allowing them to recognize opportunities for sustainable entrepreneurship.

Furthermore, school education was highlighted as a source of sustainability knowledge. Therefore, educational institutions are encouraged to promote sustainability to their students early on or provide classes on the environment and society. Students will be more sensitive to sustainability and opportunities for developing sustainable entrepreneurship, resulting in more entrepreneurs who positively influence the environment and society.

Finally, governments may implement programs to support sustainable entrepreneurship to meet the motivation discovered in this study. For example, environmentally and socially responsible enterprises can be rewarded for accomplishing specific environmental and social goals. By meeting environmental and social objectives, sustainable firms may improve their economic performance and image, enticing other entrepreneurs to join in sustainable growth.

## **Limitations**

This study was concerned with one's experience in recognizing sustainable entrepreneurial chances. Hence qualitative research was conducted (45). This method helped present a rich and thorough picture of the questioned respondents, although some limits occurred in such a study design.

First, the sample in this study focuses on the Indonesian manufacturing industry. As a result, the findings were not meant to be generalizable and cannot be assumed to be true for the vast majority of sustainable firms. Different sectors and localities might generate different outcomes.



Second, during interviews, entrepreneurs must recollect incidents that occurred a long time ago. This can result in a memory bias, in which entrepreneurs reinterpret their past experiences depending on their current thoughts (53). If the participants describe the occurrence in a biased manner, the answers may not represent the actual incident.

### **Future research recommendations**

Given the limitations indicated above, future research should concentrate on which contexts and settings the model would help describe the process of opportunity recognition for sustainable entrepreneurship. Differences between developing and developed countries might result in differing outcomes due to variances in culture and economic situations (54). Furthermore, each industry may have distinctions, such as different norms, values, and cultures, which might impact a person's motivation (55). Further study should be conducted across other countries and sectors to resolve this question.

Next, it would also be interesting to employ a quantitative method to improve the generalizability of results. They may combine the results of this study into quantitative measurements, for example, by using the length of past employment experience and the time spent in the sustainability community.

## References

1. Indonesia.go.id. Industri Manufaktur Tetap Bergeliat [Internet]. 2022 [cited 2023 May 14]. Available from: <https://indonesia.go.id/kategori/editorial/6681/industri-manufaktur-tetap-bergeliat?lang=1>
2. Oláh J, Aburumman N, Popp J, Khan MA, Haddad H, Kitukutha N. Impact of Industry 4.0 on Environmental Sustainability. *Sustainability*. 2020 Jun 8;12(11):4674.
3. Greco A, Jong GD. SUSTAINABLE ENTREPRENEURSHIP: DEFINITIONS, THEMES, AND RESEARCH GAPS.
4. Rosário A, Raimundo R, Cruz S. Sustainable Entrepreneurship: A Literature Review. *Sustainability*. 2022 May 5;14(9):5556.
5. Crals E, Vereeck L. The affordability of sustainable entrepreneurship certification for SMEs. *Int J Sustain Dev World Ecol*. 2005 Jun;12(2):173–83.
6. Alhaddi H. Triple Bottom Line and Sustainability: A Literature Review. *Bus Manag Stud*. 2015 Apr 3;1(2):6.
7. Baron RA. Opportunity Recognition as Pattern Recognition: How Entrepreneurs “Connect the Dots” to Identify New Business Opportunities. *Acad Manag Perspect*. 2006 Feb;20(1):104–19.
8. Kirzner IM. *The Driving Force of the Market: Essays in Austrian Economics* [Internet]. 0 ed. Routledge; 2000 [cited 2023 May 15]. Available from: <https://www.taylorfrancis.com/books/9781134585946>
9. McMullen JS, Shepherd DA. ENTREPRENEURIAL ACTION AND THE ROLE OF UNCERTAINTY IN THE THEORY OF THE ENTREPRENEUR. *Acad Manage Rev*. 2006;
10. Kyrö P. *Handbook of Entrepreneurship and Sustainable Development Research* [Internet]. Edward Elgar Publishing; 2015 [cited 2023 Mar 27]. Available from: <http://www.elgaronline.com/view/9781849808231.xml>
11. Sarma S, Attaran S, Attaran M. Sustainable entrepreneurship: Factors influencing opportunity recognition and exploitation. *Int J Entrep Innov*. 2022 Apr 11;146575032210930.
12. Hanohov R, Baldacchino L. Opportunity recognition in sustainable entrepreneurship: an exploratory study. *Int J Entrep Behav Res*. 2018 Mar 19;24(2):333–58.
13. Patzelt H, Shepherd DA. Recognizing Opportunities for Sustainable Development. *Entrep Theory Pract*. 2011 Jul;35(4):631–52.
14. Alsos GA, Virpi Kaikkonen. Opportunities and Prior Knowledge: A Study of Experienced Entrepreneurs. 2006; Available from: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1768092](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1768092)
15. Shane S. Prior Knowledge and the Discovery of Entrepreneurial Opportunities. *Organ Sci*. 2000 Aug;11(4):448–69.
16. Teh KL, Wahab SBA, Osman SIW, Latiff ASA, Zawawi NFM, Fazal SA. Factors of Sustainable Firm Performance and the Mediating Role of Strategic Opportunity Recognition: A Conceptual Study. *Int J Asian Soc Sci*. 2018;8(11):1048–58.
17. Tang J. How entrepreneurs discover opportunities in China: An institutional view. *Asia Pac J Manag*. 2010 Sep;27(3):461–79.
18. Politis D, Gabriëlsson J. Modes of learning and entrepreneurial knowledge. *Int J Innov Learn*. 2015;18(1):101.
19. Nhemachena C, Murimbika M. Motivations of sustainable entrepreneurship and their impact of enterprise performance in Gauteng Province, South Africa. *Bus Strategy Dev*. 2018

- Jun;1(2):115–27.
20. Sardeshmukh SR, Smith-Nelson RM. Educating for an Entrepreneurial Career: Developing Opportunity- Recognition Ability. *Aust J Career Dev.* 2011 Oct;20(3):47–55.
  21. Grigore AM. The Psychology of Entrepreneurship. *Romanian J Mark.* 2(Apr-Jun 2012):25–36.
  22. Ardichvili A, Cardozo RN. A MODEL OF THE ENTREPRENEURIAL OPPORTUNITY RECOGNITION PROCESS. *J Enterprising Cult.* 2000 Jun;08(02):103–19.
  23. Belz FM, Binder JK. Sustainable Entrepreneurship: A Convergent Process Model: Sustainable Entrepreneurship: A Convergent Process Model. *Bus Strategy Environ.* 2017 Jan;26(1):1–17.
  24. Roxas BG, Cayoca-Panizales R, De Jesus RM. Entrepreneurial Knowledge and its Effects on Entrepreneurial Intentions: Development of a Conceptual Framework. *Asia-Pac Soc Sci Rev.* 2009 Jan 12;8(2):61–77.
  25. Roberts EB. The technological base of the new enterprise. *Res Policy.* 1991 Aug;20(4):283–98.
  26. Davidsson P, Honig B. The role of social and human capital among nascent entrepreneurs. *J Bus Ventur.* 2003 May;18(3):301–31.
  27. Singh RP, Knox EL, Crump MES. OPPORTUNITY RECOGNITION DIFFERENCES BETWEEN BLACK AND WHITE NASCENT ENTREPRENEURS: A TEST OF BHAVE’S MODEL. *J Dev Entrep.* 2008 Mar;13(01):59–75.
  28. Debarliev S, Janeska-Iliev A, Stripeikis O, Zupan B. What can education bring to entrepreneurship? Formal versus non-formal education. *J Small Bus Manag.* 2022 Jan 2;60(1):219–52.
  29. Bapoo MA, Tehseen S, Haider SA, Yusof M, Razak UTA, Motaghi H, et al. SUSTAINABILITY ORIENTATION AND SUSTAINABLE ENTREPRENEURSHIP INTENTION: THE MEDIATING ROLE OF ENTREPRENEURIAL OPPORTUNITY RECOGNITION. 2022;28(2).
  30. Martins AA, Mata TM, Costa CAV. Education for sustainability: challenges and trends. *Clean Technol Environ Policy.* 2006 Feb;8(1):31–7.
  31. Hameed I, Zaman U, Waris I, Shafique O. A Serial-Mediation Model to Link Entrepreneurship Education and Green Entrepreneurial Behavior: Application of Resource-Based View and Flow Theory. *Int J Environ Res Public Health.* 2021 Jan 11;18(2):550.
  32. Shepherd DA, Patzelt H. The New Field of Sustainable Entrepreneurship: Studying Entrepreneurial Action Linking “What is to be Sustained” with “What is to be Developed.” *Entrep Theory Pract.* 2011 Jan;35(1):137–63.
  33. Bell2012 book.pdf.
  34. Douglas E, Prentice C. Innovation and profit motivations for social entrepreneurship: A fuzzy-set analysis. *J Bus Res.* 2019 Jun;99:69–79.
  35. Shane S, Locke EA, Collins CJ. Entrepreneurial motivation. *Hum Resour Manag Rev.* 2003 Jun;13(2):257–79.
  36. Carraher SM, Buchanan JK, Puia G. Entrepreneurial Need for Achievement in China, Latvia, and the USA. *Balt J Manag.* 2010 Sep 14;5(3):378–96.
  37. Rotter JB. Generalized expectancies for internal versus external control of reinforcement. *Psychol Monogr Gen Appl.* 1966;80(1):1–28.
  38. Agustin Basriani, Desi Susanti, Rahmi Zainal, Deviana Sofyan. The Influence of Capital,

- Independence, and Education on Women's Entrepreneurial Motivation in Indonesia. *Husnayain Bus Rev* [Internet]. 2021 Aug 29 [cited 2023 May 26];1(1). Available from: <https://journal.adpebi.com/index.php/hbr/article/view/24>
39. Locke EA, Baum, J Robert. *The Psychology of Entrepreneurship* [Internet]. Taylor and Francis Group; 2007. 93–102 p. Available from: [https://books.google.nl/books?hl=en&lr=&id=h\\_FfAwAAQBAJ&oi=fnd&pg=PA93&dq=egoistic+passion+entrepreneur&ots=gHAzLJH4Qx&sig=pVPkfd1esSTprjDUWPvFeU0uSPI&redir\\_esc=y#v=onepage&q=egoistic%20passion%20entrepreneur&f=false](https://books.google.nl/books?hl=en&lr=&id=h_FfAwAAQBAJ&oi=fnd&pg=PA93&dq=egoistic+passion+entrepreneur&ots=gHAzLJH4Qx&sig=pVPkfd1esSTprjDUWPvFeU0uSPI&redir_esc=y#v=onepage&q=egoistic%20passion%20entrepreneur&f=false)
  40. Bandura A, Freeman WH, Lightsey R. Self-Efficacy: The Exercise of Control. *J Cogn Psychother*. 1999 Jan;13(2):158–66.
  41. Yasir N, Mahmood N, Mehmood HS, Rashid O, Liren A. The Integrated Role of Personal Values and Theory of Planned Behavior to Form a Sustainable Entrepreneurial Intention. *Sustainability*. 2021 Aug 18;13(16):9249.
  42. Song SY, Kim YK. Doing Good Better: Impure Altruism in Green Apparel Advertising. *Sustainability*. 2019 Oct 17;11(20):5762.
  43. Bennett MJ. Overcoming the Golden Rule: Sympathy and Empathy. *Ann Int Commun Assoc*. 1979 Dec;3(1):407–22.
  44. Hyde KF. Recognising deductive processes in qualitative research. *Qual Mark Res*. 2000;3(2).
  45. Fossey E, Harvey C, Mcdermott F, Davidson L. Understanding and Evaluating Qualitative Research. *Aust N Z J Psychiatry*. 2002 Dec;36(6):717–32.
  46. Kesmodel US. Cross-sectional studies - what are they good for? *Acta Obstet Gynecol Scand*. 2018 Apr;97(4):388–93.
  47. Universitas Islam An Nur Lampung. *Perkembangan Sektor Industri di Indonesia* [Internet]. 2022 [cited 2023 Apr 9]. Available from: <https://an-nur.ac.id/perkembangan-sektor-industri-di-indonesia/#:~:text=Sektor%20industri%20manufaktur%20merupakan%20subsektor,dari%20total%20produksi%20industri%20Indonesia>
  48. Kementerian Keuangan Republik Indonesia. *Pertumbuhan Ekonomi Indonesia Triwulan III-2022 Tumbuh Impresif 5,72%* [Internet]. 2022 [cited 2023 Apr 9]. Available from: <https://www.kemenkeu.go.id/informasi-publik/publikasi/berita-utama/Pertumbuhan-Ekonomi-Triwulan-III-Impresif>
  49. Etikan I. Comparison of Convenience Sampling and Purposive Sampling. *Am J Theor Appl Stat*. 2016;5(1):1.
  50. Nave A, Franco M. University-Firm cooperation as a way to promote sustainability practices: A sustainable entrepreneurship perspective. *J Clean Prod*. 2019 Sep;230:1188–96.
  51. Tunio MN, Chaudhry IS, Shaikh S, Jariko MA, Brahmi M. Determinants of the Sustainable Entrepreneurial Engagement of Youth in Developing Country—An Empirical Evidence from Pakistan. *Sustainability*. 2021 Jul 12;13(14):7764.
  52. Williams M, Moser T. The Art of Coding and Thematic Exploration in Qualitative Research. *Int Manag Rev*. 2019;15(1):45–55.
  53. Quas JA, Malloy LC, Melinder A, Goodman GS, D'Mello M, Schaaf J. Developmental differences in the effects of repeated interviews and interviewer bias on young children's event memory and false reports. *Dev Psychol*. 2007 Jul;43(4):823–37.
  54. Choongo P, Van Burg E, Paas L, Masurel E. Factors Influencing the Identification of Sustainable Opportunities by SMEs: Empirical Evidence from Zambia. *Sustainability*. 2016

Jan 15;8(1):81.

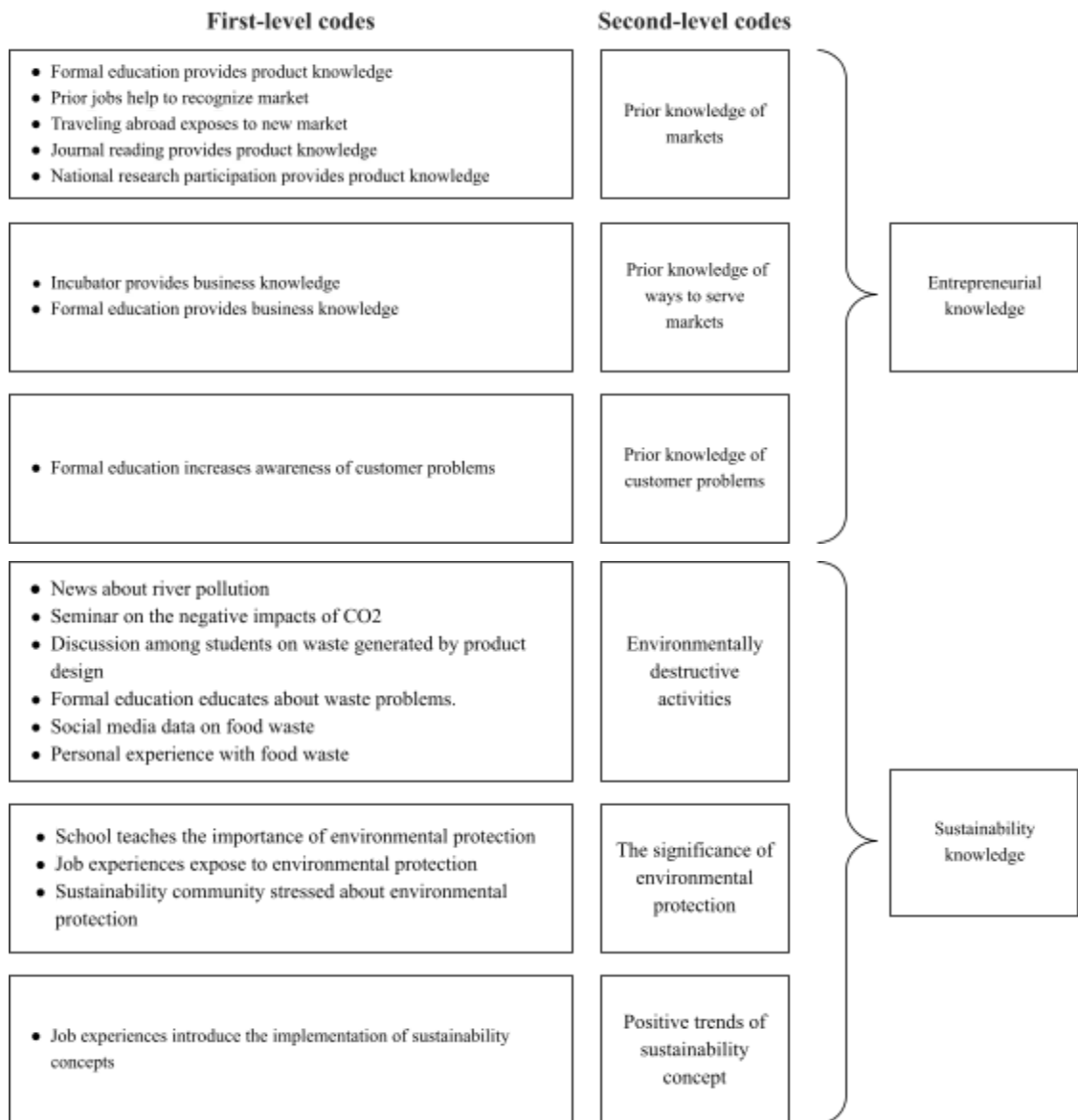
55. Argade P, Salignac F, Barkemeyer R. Opportunity identification for sustainable entrepreneurship: Exploring the interplay of individual and context level factors in India. *Bus Strategy Environ.* 2021 Dec;30(8):3528–51.

# APPENDIX

## Appendix A. Coding Table

[Link](#) to coding table

## Appendix B. Coding Tree



## Appendix B. Coding Tree (continued)

