

Entrepreneurship in the Circular Economy

The Influence of Vision and Ambition on Motivation, Growth and Scalability



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the influence of vision and ambition on motivation, growth and
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DEDICATION

*This thesis is dedicated
in loving memory of my
mother, Anja*

Foreword

Hereby, I present my master's thesis titled 'Entrepreneurship in the Circular Economy – The influence of vision and ambition on motivation, growth and scalability'. This thesis was written during and after an internship at an organization, which is a part of the graduation requirements of the MSc Sustainable Business & Innovation at the Utrecht University. The organization, Impact Hub Amsterdam, aims to support social and impact entrepreneurship worldwide through community building, events and start-up support programs. During the internship, I worked in the Programs team and engaged with entrepreneurs and founders varying from those looking to build a start-up from the ground up to investment ready innovations looking to move to the next step. Since the scope for this thesis was developed beforehand in conjunction with my supervisors, Marvin Henry (MSc, Utrecht University) and prof. dr. Marko Hekkert (Utrecht University), the choice of organisation was based on that which would be most attuned with the research. Manon Klein (Impact Hub Amsterdam) approved the topic of research, and supported the process during a 5 month internship from February until the end of June.

In this thesis, a study looking into understanding the vision and ambition behind entrepreneurs engaging in the circular economy is presented. This research supports the increasing amount of attention that is expressed towards the new concept of circularity, with the aim to better understand and support the actors engaged in this field.

During my time working with circular entrepreneurs, I truly got inspired by the creativity, ingenuity and passion these people have for improving and positively impacting the world. Therefore, I hope you enjoy reading this dissertation and may it inspire you truly to dive deeper into this fascinating field of circular entrepreneurial activity.

Thijs Hoogenstrijd
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Abstract

The circular economy is becoming an increasingly discussed topic within business, yet incumbents still struggle with implementing circular strategies. Start-ups, however, prove a promising avenue for the implementation of new innovations such as circularity. Whilst in the entrepreneurial field currently many founders attempt to create circular start-ups, and awards and programs specifically focussed on supporting this group of circular actors are increasing, there is currently little research on this new breed of entrepreneurs. Therefore, this dissertation set out to create a first insight into the vision and ambition of founders creating a circular start-up. Via semi-structured interviews, circular and linear entrepreneurs were analysed to determine (i) their founder identities and resulting prioritizations, (ii) their entrepreneurial motivation through the multi-dimensional typologies and opportunity-necessity framework and (iii) their ambition and perspectives on growth and scalability resulting from their vision. The findings indicate that circular entrepreneurs have a missionary identity, albeit with hybrid tensions within their prioritizations. Furthermore, they are motivated by both an intrinsic form of necessity and an extrinsic opportunity. Lastly, they focus on growing their impact instead of other more regular types of growth found within linear entrepreneurs. The circularity strategies they pursue to achieve this are mainly focussed on either the “reduce” or “recycle” conceptualization, with their main scaling strategies involving either consumer engagement and product design for the former, and input-oriented industrial symbiosis for the latter. Recommendations are given for future research and policy guidance to further support the topic of circular entrepreneurship.

Executive Summary

With the increased demand and attractiveness to creating sustainable businesses, the concept of the circular economy has started to gain increased attention. Whilst incumbent firms have expressed interest in adopting circular business models, this process has generally proven to be slow and cumbersome. Contrasting to big firms, it is the smaller start-up companies that are proving to be a faster moving segment of new innovation, and a pioneering part of business who are adopting circular business models. An increasing amount of start-up support programs, challenges and awards are being developed specifically tailored to start-ups with a circular innovation. Whilst this new group of circular entrepreneurs is growing, little to no research has been done to understand why and how these entrepreneurs are creating start-ups within the circular economy. A better understanding of the vision and ambition of the circular entrepreneur, and how they differ from entrepreneurs in the linear economy, will benefit the further development of support towards this potentially impactful source of founders. Therefore, the aim of this thesis is to answer the following research question: *“Does the vision and ambition differ between circular and linear entrepreneurs and how is this expressed in their motivation and growth preferences?”*

To answer this question, this research sets out to define the circular entrepreneur within the current field of research by calling upon, and expanding, existing theories of entrepreneurship. The object of this report is to look into what types of people engage in the creation of circular start-ups, how they prioritize between the usual start-up requirements and their personal goals and values, what elements their entrepreneurial motivation exists of and how this influences their ideas and perspectives on growth and scalability. Via a qualitative study in which interviews were conducted with 20 circular entrepreneurs and 20 linear entrepreneurs this research attempted to find out how these key elements are shaped. The findings of this study reveal that circular entrepreneurs are solely associated with missionary entrepreneurial identities, meaning they create a business with a purpose to contribute to society. Nonetheless, they struggle with balancing their prioritization along the triple-bottom line of profit, environmental and social. This “chicken-and-egg” problem revolves around the delicate balance between their main drive to create positive impact, and the drive towards creating the profit required to make impact. Furthermore, there seems to be little to no prioritization going out towards social elements of the business, the third key pillar of sustainability. Circular entrepreneurs appeared to be motivated through both a mix of intrinsic necessity and extrinsic opportunity. Especially the former drive can influence the circular entrepreneurs’ decision making process, as it relates to an intrinsic urgency of the entrepreneurs to create positive impact. On a practical note, this is further expressed in their perspectives on growth and scalability as the circular entrepreneurs indicated to see growth as growing their impact and adjust their decisions around this notion. This leads to issues with attracting partners for finance and the validation and credibility of their circular innovations. Subsequently, they do not prioritize scalability at launch of their business, which is a key consideration to make in the founding phase where the business model is created. The findings in this paper can support the further development of Impact Hub Amsterdam’s programs; specifically for potential incubator program’s focussed on early-stage circular entrepreneurs where these key decisions for creating and growing the business are made.

Table of Contents

FOREWORD	I
ABSTRACT	II
EXECUTIVE SUMMARY	III
TABLE OF CONTENTS	IV
LIST OF TABLES	VI
LIST OF FIGURES	VII
1. INTRODUCTION	1
2. THEORETICAL BACKGROUND	3
2.1 Defining the field of research.....	3
2.1.1 Defining circular entrepreneurship.....	3
2.1.2 The role of founder identity.....	4
2.1.3 How motivation is shaped.....	6
2.1.3 Influence on growth ambition and scalability preferences.....	8
2.2 Conceptual framework.....	12
3. METHODOLOGY	14
3.1 Research method.....	14
3.2 Data collection.....	14
3.2 Data analysis.....	16
3.3 Internship.....	17
4. RESULTS	19
4.1 Sample overview.....	19
4.2 Founder identity & entrepreneurial motivation.....	20
4.3 Growth preferences & scalability.....	26

5. DISCUSSION	31
5.1 Discussion of the results.....	31
5.1.1 Current outlook on circular and linear entrepreneurs	31
5.1.2 The chicken-and-egg problem of impact	32
5.1.3 Extending the motivation frameworks	32
5.1.4 Growth perspectives of circular entrepreneurs	34
5.1.5 Scaling circular entrepreneurs	36
5.2 Limitations, implications and future research	40
5.2.1 Limitations of the research	40
5.2.2 Theoretical and practical implications of the research	41
6. CONCLUSION	44
7. ACKNOWLEDGEMENTS	45
8. REFERENCES	46
9. APPENDICES	56
Appendix A – Interview guide	56
Appendix B – Coding framework	58
Appendix C – Overview of in sample circular business model innovations	63
Appendix D – Example answers for the types of motivation	64

List of tables

Table 2.1 - Founder identity types and strategic decisions from Fauchart & Gruber (2011)	6
Table 2.2 - Multi-dimensional typologies of motivation (Stephan et al., 2015)	8
Table 2.3 - Scalability attributes for circular business model innovations	12
Table 3.1 - Overview of linear start-up respondent sample	16
Table 3.2 - Overview of circular start-up respondent sample	16
Table 3.3 - Overview of platforms for start-up sourcing	17
Table 3.4 - Conceptualization of hybrid coding procedure	18
Table 4.1 - Overview of linear start-up sample	20
Table 4.2 - Overview of circular start-up sample	21
Table 4.3 - Overview of entrepreneurial background for linear and circular sample	21
Table 4.4 - Entrepreneurial motivation based on multi-dimensional typologies	22
Table 4.5 - Overview of linear entrepreneurs' motivation	24
Table 4.6 - Overview of circular entrepreneurs' motivation	25
Table 4.7 - Business model prioritization along the triple-bottom line	27
Table 4.8 - Relevance of scalability for linear and circular entrepreneurs	30
Table 5.1 - Circular business model innovations categorized over the business model scalability attributes	38

List of figures

Figure 2.1 - Visualization of the links between growth aspiration, growth intentions and growth expectations (Hermans et al., 2015)	11
Figure 2.2 - The conceptual framework identifying the links between vision (founder identity & entrepreneurial motivation) and ambition (growth & scalability)	14
Figure 4.1 - Vision and ambition of circular and linear entrepreneurs	25
Figure 4.2 - Response rate for vision and ambition for missionary founder identity in both sample groups	26
Figure 4.3 - Comparison of weighted averages for respondent business model focus, split on founder identities	26
Figure 4.4 - Response rates on growth definition based on founder identity	28
Figure 4.5 - Opportunities for growth as seen by both sample groups	29
Figure 4.6 - Barriers for growth as seen by both sample groups	29
Figure 4.7 - Partnerships for scalability as defined by both sample groups	31
Figure 4.8 - Alternatives for scalability as defined by both sample groups	31
Figure 5.1 - A new typology of the opportunity-necessity framework	35
Figure 5.2 - Circular strategy and the related circular business model innovations they pursue	41

1. Introduction

*“Never doubt that a small group of thoughtful, committed citizens can change the world.
Indeed, it is the only thing that ever has.”*

~ Margaret Mead ~

Since the introduction to sustainable development in the Brundtland report (UNCED, 1987), discussions on how to deal with climate change have gained increased traction in society. One of the fields of discussion which has seen progressive awareness is on the responsibility of business in regards to sustainable development (UNRISD, 2000). Multinationals are increasingly seen as part of the problem, but possibly also as part of the solution (Kolk & van Tulder, 2010). It is understandable that society increasingly holds business accountable for the impact they create, and likewise firms become more aware as climate change is to a greater extent seen as a business risk (Pattberg, 2012). Resulting from this is that more attention is going out into ways for business to create “win-win-win” strategies across the triple bottom line of environmental, social and economic impacts (Elkington, 1994). One such areas which has gained increased attention amongst both researchers (Geissdoerfer, Savaget, Bocken, & Hultink, 2017) and policymakers (Brennan, Tennant, & Blomsma, 2015) is the circular economy. Various interest-groups have expressed the need for circularity (Accenture, 2014; Ellen MacArthur Foundation, 2013). Nonetheless, the circular economy idea has been slow to gain traction (Stahel, 2016) and it currently forms a niche discussion amongst sustainable development professionals (Kirchherr et al., 2018). Yet, the impact of transitioning to a circular economy (up to 70% reduction of a nation’s greenhouse gas emissions) remains undisputed (Stahel, 2016).

Discussion around the concept of circular economy often revolves around the implementation of such business models in incumbent firms (Bonciu, 2014; Kirchherr, Reike, & Hekkert, 2017; Korhonen, Honkasalo, & Seppälä, 2018; Stahel, 2016). However, considering this is a disruptive concept, it seems the role of incumbents in inducing this type of change is possibly overstated since they usually play by the rules and culture of the market (Michaelis, 2003). Instead, a bigger opportunity lies at the area of new entrants, who often engage earlier in sustainable entrepreneurship and to which incumbents react (Hockerts & Wüstenhagen, 2010). Start-up development is an essential mechanism through which entrepreneurs introduce new products, processes and ways of organizing into society (Schumpeter, 1934). Where innovations are most disruptive of existing markets, such as the circular economy, incumbents struggle more than start-ups due to their different risk profiles (Freeman & Engel, 2007). Looking at the development of start-ups within the circular economy is therefore essential. The entrepreneurs behind this phenomenon are often described as a crucial driver towards sustainable development (Hall, Daneke, & Lenox, 2010) and therefore can be seen as a strong pioneering force in the transition to a circular economy. Scholars argue that to overcome the challenges ahead, scaling sustainable entrepreneurship is what is now important (Leisinger & Bakker, 2013). Therefore, in Schumpeterian fashion, to understand how to transition business and society towards a circular economy, it is mandatory to develop a better understanding of the driving force behind it; the circular entrepreneur, who is the key determinant in a start-up’s development.

Since the circular economy is a new and still developing field of research, this paper argues that the circular entrepreneur might be a new type of entrepreneur, since they could hold different perspectives on critical processes and aspects normally seen within founders engaging in start-up development. To see if this holds true, this research will aim to unravel the entrepreneurs operating in this new field of circular economy by looking into their vision and ambition. Entrepreneurial vision is seen as the core element to a firm's realization (Witt, 2007), and therefore a crucial element to assess in understanding why entrepreneurs engage in start-up development, and in this case why entrepreneurs operate within the circular economy. When looking into the topic of 'why', the natural link is to look at motivation, a concept which is also inherently linked to ambition (Shane, Locke, & Collins, 2003). Entrepreneurial ambition in research looks into the notion of growth and the related ambition of entrepreneurs to grow the firm (Gundry & Welsch, 2001; Hermans et al., 2015). The definition of Stam et al. (2012) on ambitious entrepreneurship expands on this idea by describing it as "an ambitious entrepreneur is someone who engages in the entrepreneurial process with the aim to create as much value as possible" (p. 26). The value creation process could be interpreted differently by circular entrepreneurs in relation to their linear counterpart, as value might hold a different classification. Therefore, to unravel this new breed of circular entrepreneurs, this report will use the topic of vision and ambition to look into both their motivation to realize a circular start-up, and their views on ambition and the related interpretation of the concept of growth. In doing so, this report intends to create a better understanding of how the transition towards the circular economy is shaped by its entrepreneurial actors, and how the founders engaging in this field differ from their ordinary entrepreneurial counterparts. To do so, the leading research question will be:

"Does the vision and ambition differ between circular and linear entrepreneurs and how is this expressed in their motivation and growth preferences?"

This research will contribute to the field of circular economy research in three ways:

- by looking into the founder identity of circular entrepreneurs (Fauchart & Gruber, 2011) and how this relates to the focus areas in their business models,
- by exploring how the motivation of circular entrepreneurs fits to, and redefines the opportunity-necessity framework (Reynolds, Bygrave, Autio, Cox, & Hay, 2002),
- by researching the growth preferences of circular entrepreneurs and see how this is expressed in their growth ambition (Hermans et al., 2015) and the elements for achieving scalability of their circular business models (Nielsen & Lund, 2018).

As a first step, a literature research is conducted to provide context for the research findings. This consists out of further developing the concepts mentioned above and how these are constructed into a theoretical framework. In this framework, the linkages between motivation, growth and scalability will be identified. Thereafter, the qualitative case study methodology is considered. This is followed by a presentation of the results, which will then be discussed and linked back on the basis of the literature and theoretical framework. The paper concludes by answering the research question and proposing avenues of future action.

2. Theoretical Background

2.1 Defining the field of research

To help create meaningful insights and discussion, it is important to first show the context of the research and define the concepts that are discussed. To do so, this section will first place the new breed of circular entrepreneurs within the field of start-up literature. Consequently, the central concepts of founder identity, motivation, growth and scalability will be defined.

2.1.1 Defining circular entrepreneurship

Entrepreneurial activity is not solely related to start-up development, as it can be found all through-out business activity, from small businesses to large firms in the form of intrapreneurship. However, start-up development is driven by, and therefore inherently linked to, entrepreneurial activity (Blank & Dorf, 2012). This research will look into entrepreneurs involved in the creation of start-up businesses since this is the area where potential disruptive innovation most likely takes place, as described in the introduction. Following the logic of Carland et al. (1984), entrepreneurs and their entrepreneurial ventures are differentiated in this research from other small business ventures, such as small non-growth oriented businesses, by the principal goals of profitability, growth and innovative strategic practices. This distinction of a differing entrepreneurial focus shows the importance of looking deeper into the founders of start-ups, how their motivation towards those principal goals is shaped.

To understand where the ideas for entrepreneurial business ventures come from, it is important to understand entrepreneurial intentions (Krueger, Reilly, & Carsrud, 2000). Looking into circular entrepreneurship there is little research specifically on this topic and no clear definition of a circular entrepreneur. Schaltegger & Wagner (2011) differentiate between various types of sustainable entrepreneurship, including ecopreneurship, social entrepreneurship and institutional entrepreneurship, yet there is no mention of a circular entrepreneur. This nuance is important to make as the circular economy and sustainability are not interchangeable concepts (Geissdoerfer et al., 2017). Often, entrepreneurs engaging in the circularity are placed in the field of social entrepreneurship (Social Enterprise NL, 2018). However, considering the increased amount of programs (incubators and accelerators), start-up awards and challenges specifically focussing on entrepreneurs with a circular solution, it is argued that a separate look into this new type of circular entrepreneur is required.

One of the first definitions of circular economy comes from the Ellen MacArthur Foundation report who describe it as “an industrial system that is restorative or regenerative by intention and design” (Ellen MacArthur Foundation, 2013). Circular business models are defined as a business model retaining economic value of products after use in the production of new offerings (Linder & Williander, 2017). Similarly, Mentink (2014) describes it as how an organization can create and capture value using closed material loops. The main building blocks of circularity are depicted as: design out of waste/design for reuse, build resilience through diversity, rely on energy from renewable resources, think in systems and share values/symbiosis (Lewandowski, 2016). A similar operationalization is seen within the 4R framework, which states that actors in the circular economy aim to either reduce, reuse, recycle or recover material flows (Kirchherr et al., 2017). Following this contextualization, a circular entrepreneur would therefore be aiming to implement one or more of these elements when creating a business. Important to note is that circular business models do not necessarily look to balance ecological and social needs, although they can serve sustainable goals

(Mentink, 2014). Scott (2013) describes that sustainability instead is a mechanism that enables the circular economy. Hence, even though circular entrepreneurs share overlap and similarities to sustainable and social entrepreneurship, it is important to view this group separately if one is looking to define an understanding of this type of entrepreneur. One differentiation comes in the form of circular versus linear business models, which can be seen below and will be used further in this thesis when comparing and developing conclusions (Nancy M.P. Bocken, de Pauw, Bakker, & van der Grinten, 2016). With this definition the importance of assessing circular entrepreneurs becomes more apparent, since social entrepreneurs for example can also operate in a linear fashion.

- *Circular entrepreneurs*: entrepreneurs that founded or operate a start-up with a business model containing a circularity approach of slowing, closing or narrowing resource loops through either reduce, reuse, recycle or recover strategies (Nancy M.P. Bocken et al., 2016; Kirchherr et al., 2017).
- *Linear entrepreneurs*: entrepreneurs that founded or operate a start-up with a business model that does not have a distinct focus on slowing, closing or narrowing resource loops, but rather operates with a traditional business model of production of take-make-use-dispose (Nancy M.P. Bocken et al., 2016).

2.1.2 The role of founder identity

After having established the position of the circular entrepreneur within the current fields of literature, the next step of this research is to define the material which will be used to further assess this new breed of entrepreneurs. A classical framework that is used to learn more about why entrepreneurs engage in the creation process of their firms, and which can serve as a stepping stone to understand entrepreneurial motivation, is the social/founder identity theory (Fauchart & Gruber, 2011). This theory differentiates between Darwinian, communitarian and missionary entrepreneurs (Table 2.1). Using this framework will help to give insight in the vision and ambition of entrepreneurs who engage in creating a circular start-up, and will serve as a stepping stone to understanding their motivation and ideas on growth.

Research on sustainability-related start-ups and individuals developing sustainable alternatives such as green entrepreneurs, ecopreneurs and environmental entrepreneurs, has shown that these types of entrepreneurs differ from the 'ordinary' entrepreneur looking for profits (Gast, Gundolf, & Cesinger, 2017). Thus, labelling entrepreneurs within the field of sustainability would on first glance indicate a missionary background, as this shares a resemblance with green entrepreneurs who want their businesses primarily to be environmentally responsible; not with the goal to make money but to make a social statement (Isaak, 2002). Other parallels of these 'green' missionary entrepreneurs are found within ecopreneurship (Schaltegger, 2002; Schaper, 2002) and sustainable entrepreneurship (Cohen & Winn, 2007; Dean & McMullen, 2007) literature. Nonetheless, profit orientation and positive impact behaviour such as environmental action are not mutually exclusive (Dean & McMullen, 2007). Previous research has already shown that hybrid founder identity orientations, such as a combination of Darwinian and missionary identities, are often found within European entrepreneurs (Sieger, Gruber, Fauchart, & Zellweger, 2016).

Table 2.1. Founder identity types and strategic decisions from Fauchart & Gruber (2011)

Decisions	Darwinians	Communitarians	Missionaries
Market segment(s) served	<ul style="list-style-type: none"> - Produce for the average consumer or for quickly growing segments (the criteria of likelihood and value drive the choice of market served) - Tend to serve additional segments over time/extend applications to new segments to achieve firm growth 	<ul style="list-style-type: none"> - “Our customers are like us” (the criterion of similarity drives the choice of market served) - Stick to initial segment addressed because it is the only place perceived as legitimate 	<ul style="list-style-type: none"> - Produce for those consumers where they expect the greatest social impact; ultimately society is their audience - May serve additional segments, if this allows the firm to leverage its socio-political mission
Customer needs addressed	<ul style="list-style-type: none"> - Tend to address known dimensions of merit (e.g., safety, ease-of-use) - Derived from market analysis 	<ul style="list-style-type: none"> - Tend to address novel kinds of customer needs - Derived from own needs 	<ul style="list-style-type: none"> - Tend to address new social practices (e.g., new modes of consumption or production) - Derived from what the founder would like the world to become
Capabilities and resources deployed	<ul style="list-style-type: none"> - Focus on cost-effective and mass-production methods (which are necessary to reach profitability) - International sourcing of production capabilities (if needed) - Value intellectual property rights protection/help in achieving business goals 	<ul style="list-style-type: none"> - Tend to use highly individualized and artisanal production methods (products often considered work of art) - Reliance on personal capabilities - Reluctance to use intellectual property rights protection within community/would run counter to sharing values 	<ul style="list-style-type: none"> - Focus on socially responsible production methods - Sourcing from suppliers that match strict criteria (according to mission) - Demonstration of firm capabilities to diffuse the exemplary model

Such findings could also hold true for circular entrepreneurs, as examples in research have shown that there are hybrid tensions within sustainable entrepreneurship when trying to balance the triple-bottom line of environment, social and profit oriented goals (Davies & Chambers, 2018). In the field of social entrepreneurship there are mixed opinions as well, as some argue that hybrids which pursue both commercial and social objectives do exist (Boluk & Mottiar, 2014), whilst others say that this relationship is not as clear (Peredo & McLean, 2006). A comparable description is seen in the conceptualization of the social entrepreneur by Ashton (2010), who he describes as individuals making money while changing the world. Labelling circular entrepreneurs within the founder identity framework therefore becomes precarious, as it would mean they can be approximated with the missionary element of focussing on new modes of consumption or production (Table 2.1), but possibly unjustifiably get excluded from more profit-oriented motives as also seen with the social entrepreneur. Therefore, this research will aim to look into the founder identity of circular entrepreneurs and how this links to how they prioritize along the triple-bottom-line of environmental, social and profit oriented goals. It is expected that whilst circular entrepreneurs link more with missionary goals for the founder identity, it will not exclude a profit-orientation within their focus profile resulting from their hybrid goal orientation.

2.1.3 How motivation is shaped

Using founder identity as a base to get a first insight into the drives of circular entrepreneurs, the next step is to dive deeper into the motivation of starting a company; where the former helps to understand the broader vision of the entrepreneur, motivation will allow for a more hands-on approach into visualizing how their identity translates into the start-up creation process of circular entrepreneurs. The framework that is generally used to assess entrepreneurial motivation is the opportunity-necessity distinction. This term was first coined by the Global Entrepreneurship Monitor (GEM) in 2001 and is used to describe entrepreneurs who are either engaged in start-up activity through opportunity-driven or necessity-driven motives (Reynolds et al., 2002). Necessity entrepreneurs are those pushed into entrepreneurship as a result of poverty or lack of employment, whereas opportunity entrepreneurs are described as being motivated through free choice as a result of exploiting a business opportunity they identify. This relationship is also often described as ‘push versus pull’ factors, the former being linked to necessity and the latter to opportunity. Entrepreneurial motivation influences elements of entrepreneurship, such as differences on the basis of socioeconomic characteristics, personality and perceptions of barriers to entrepreneurship (van der Zwan, Thurik, Verheul, & Hessels, 2016), business aspirations (Hessels, Van Gelderen, & Thurik, 2008) and strategy (Block, Kohn, Miller, & Ullrich, 2015). Yet, within this field there is uncertainty over how well the opportunity-necessity framework can justify such conclusions. Langevang et al. (2012) discuss the assumption that necessity entrepreneurs in developing countries are unlikely to have growth aspirations, as was assumed before. Many researchers within this field mention a limitation of the opportunity-necessity distinction, arguing that it is too black and white and does not capture the ability of hybrid motivations being present, in other words entrepreneurs being engaged by a combination of both elements (Langevang et al., 2012; van der Zwan et al., 2016; N. Williams & Williams, 2014; Yitshaki & Kropp, 2016). Similar to the issue of hybridity within the founder identity framework, this could lead to limitations into how a circular entrepreneur fits within this framework, as opportunity is normally defined as related to business opportunities and excludes social or ecological motives (Stephan, Hart, & Drews, 2015). Said authors therefore attempted to expand on motivation by developing a multi-dimensional typology model on the basis of an extensive literature research on the topic of entrepreneurial motivation and drives which includes concepts such as status, roles, dissatisfaction and social motivations (Table 2.2). Although these distinctions do not specify between opportunity and necessity, they can aid in further defining the aspects of motivation by as they for example contain the element of community and social motives, which could be more relevant to the concept of circular entrepreneurs, who are possibly more driven by the motivation to address environmental and/or social goals. Other researchers have also looked into going beyond the opportunity-necessity framework (Langevang et al., 2012; C. C. Williams, 2010; N. Williams & Williams, 2014), arguing that motivation can adapt from necessity towards more opportunity driven orientations during development. Gabrielsson & Politis (2011) found early evidence that opportunity/necessity dynamics can take different forms, implying that they are not set to a single axis that opposes the two dynamics. Similarly, Yitshaki & Kropp (2016) show that a combination of internal pull and external push factors are found within social

entrepreneurship. However, a recurring issue within these current fields of research is a lack of empirical knowledge on how the concepts of ‘opportunity’ and ‘necessity’ are perceived.

Table 2.2. Multi-dimensional typologies of motivation (Stephan et al., 2015)

Dimensions	Description
Achievement, challenge & learning	Captures a desire for personal development through entrepreneurship. It includes aspects such as having meaningful work and responsibility and to learn through the challenge of creating/running a business. It also includes aspects of self-realization including fulfilling one’s personal vision.
Independence & autonomy	Highlights the entrepreneurial motivation to be able to control one’s work life including control over one’s own time and work, making independent decisions, having flexibility to combine work with one’s personal life.
Income security & financial success	Captures the importance of financial returns from entrepreneurship, and being financially successful.
Recognition & status	Captures aspects related to social status such as the desire to receive recognition and respect from friends, family and the wider community for one’s work as an entrepreneur.
Family & roles *	Captures the desire to continue a family tradition as well as follow the example of other role models or to create a family legacy.
Dissatisfaction *	Describes entrepreneurial motivation out of dissatisfaction with prior work arrangement.
Community & social motivations *	Includes the desire to contribute back to the community the entrepreneur lives in either through philanthropy or the business itself (i.e. social entrepreneurship).

Note: dimensions marked with (*) are rarely included in research on motivation

Looking into how circular entrepreneurs fit within these concepts might help create more insight into how the motivation of entrepreneurs is shaped. The aspect of having “hybrid goals” for profit and the environment goes beyond the boundaries of the basic either-or concept and calls for an expansion of the opportunity-necessity motivation distinction. It is expected that circular entrepreneurs engage in sustainable practices to combat the socio-institutional norms often found in the linear economy, whilst simultaneously opportunistically striving for a profitable start-up business. The question this research is setting out to answer then is how their motivations fit within the opportunity-necessity framework, and if they perceive their missionary beliefs as an opportunity or a necessity. For circular entrepreneurs it can be argued that their motivation is similarly formulated through a different, hybrid form of opportunity and necessity. This research will therefore aim to look into how motivation is shaped by circular entrepreneurs and how this fits within the current frameworks of opportunity-necessity and the multi-dimensional typologies.

2.1.3 Influence on growth ambition and scalability preferences

To further establish if hybrid tensions exist within the founder identity and entrepreneurial motivation of circular entrepreneurs, the final assessment to be made is to see how this group of entrepreneurs views their ambition to grow. Using growth as an instrument to further define these topics is shaped by the idea that motivation is an inherently linked concept to ambition (Hessels et al., 2008; Locke & Baum, 2007). Motivation and ambition are key entrepreneurial qualities related to a firm's growth (Guzmán & Santos, 2001). Yet, currently only a few studies investigate relationships on entrepreneurial motivation in relation to growth ambitions (Stephan et al., 2015). This proves to be a gap in the current field of research considering differences within the opportunity-necessity distinction of entrepreneurial motivation have been found to be an important indicator of growth ambition (Verheul & van Mil, 2008). Deciding if and how to grow the firm is the primary strategic decision that all entrepreneurs have to make (Gilbert, McDougall, & Audretsch, 2006). As Davidsson (1991) puts it; pursuing the continued development of the firm is the more entrepreneurial choice.

However, considering the original motivation of entrepreneurs to engage in a circular business as well as the possibility of hybrid tensions within their goals, there is a possibility that the more classical definition of growth as it is given above does not reflect to how circular entrepreneurs perceive growth. Zali et al. (2013) found that opportunity-driven entrepreneurship positively influences growth and growth expectation, whilst necessity-driven entrepreneurship correlates with negative influences. This is similar to other assessments made on this concept, which found that opportunity entrepreneurship is more likely to result in growth ambition than necessity entrepreneurship, specifically in the start-up phase (Verheul & van Mil, 2008). Considering circular entrepreneurs could possibly be driven by a hybrid of opportunity and necessity, these tensions could thus be influencing their perspectives on growth. Cassar (2007) found that economic motives, the importance that is placed on financial success, influence the growth preferences, intended size and achieved growth of an entrepreneur. However, the image of growth in the sense of continuous firm growth in an economical manner presents a quite linear view to the notion of growth. There are different paths to growth and individuals perceive and prioritize growth differently as part of their growth preferences (Gundry & Welsch, 2001; Welsch, Price, & Stoica, 2013); the small business owner from the example of Carland et al. (1984) has a different scope of growth than an entrepreneur with high aspirations for their start-up business. Furthermore, evidence is found that growth is a non-linear concept and that entrepreneurs could become more or less growth oriented over time as the business matures (Dutta & Thornhill, 2008; Orser, Hogarth-Scott, & Riding, 2000). Entrepreneurs who create ventures in a completely new area of business face different challenges (Bhide, 1996), and so when applying the terminology of growth to circular entrepreneurs it is possible that there are different perceived opportunities and barriers than regular entrepreneurs. For circular entrepreneurs it is possible that their environmental ambition may lead to conflicts as environmental goals potentially clash with market-oriented goals (Berchicci, 2005). Zahra et al. (2008) states that the views on entrepreneurial opportunities do not hold for social entrepreneurship, since they are based on market valuations which are difficult to convert to measurable social elements, an idea which might hold true for the circular entrepreneur as well. Researchers have previously emphasized that the opportunity of circularity is its market attractiveness of cost reductions and resource

saving opportunities (Bastein, Roelofs, Rietveld, & Hoogendoorn, 2013). Yet, common findings on barriers within the circular economy show that the core issues faced are cultural barriers, related to awareness and hesitant company culture, and in a slightly less related fashion market barriers, described as upfront investment costs and low virgin material prices (Kirchherr et al., 2018). Comparable findings show that barriers often revolve around a lack of support from both public and private parties expressed in the form of adequate legislation and financing, a lack of knowledge and technical skills resulting from a shortcoming of professionals and lacking consumer interest resulting from general perception and risk aversion factors (Ormazabal, Prieto-Sandoval, Puga-Leal, & Jaca, 2018; Ritzén & Sandström, 2017; Rizos, Behrens, Kafyeke, Hirschnitz-Garbers, & Ioannou, 2015). These findings do add to the point of Zahra et al. (2008) that the differing interpretation of market valuations associated with social entrepreneurs, or in this case circular entrepreneurs, complicate the growth opportunities for these start-ups. Thus, when touching upon the topic of growth related to circular entrepreneurs, growth ambition might relate to different aspects than those that are seen as important within regular entrepreneurship theory. Therefore, this research will aim to create more insight into what these aspects and relevant growth indicators could be for circular entrepreneurs, and how they shape their metrics for potential growth, growth success and the barriers they perceive to achieve this.

The relevance of doing so becomes clear when considering the notion that entrepreneurial growth is often measured through the lens of employee growth, using quantitative measures to derive conclusions on this basis (GEM, 2019; Hermans et al., 2015). Whilst such a pure form of measurement does help streamline findings between researches on the topic of entrepreneurial growth, it limits the possibility in redefining growth in a different manner, something which could be well applicable to circular entrepreneurs who might measure growth more in terms of resources saved for example. Hermans et al. (2015) highlight this issue of a lack of qualitative analysis related to the topic of growth ambition, with at the time of their research only one interview-based survey research being available. In order to operationalize the concept of growth ambition, Hermans et al. (2015) developed a conceptualization of growth based on three indicators (figure 2.1); growth aspiration (what the entrepreneur ideally wants to achieve), growth intention (what the entrepreneur intends to achieve, combined with the effort they make) and growth expectation (what the entrepreneur wants to achieve combined with the opportunities and constraints they perceive). Whilst this framework revolves around the notion of 'size', seeing how they apply to the current research will serve as a useful tool to assess what elements of growth are reflected in the circular entrepreneur. Levie & Autio (2013) showed that growth of entrepreneurs is a reflection of their motivations for starting the business. Growth in the conceptualization of the circular entrepreneur could therefore be more focussed on other elements, actually inverting the notion of growth by for example looking at the amount of resources saved or the sustainability contributions. Thus, this research aims to address the gap of a lack of qualitative research on the topic of growth by using the circular entrepreneur to see how they look at the topic of growth and if they match with the current literature on entrepreneurial growth.

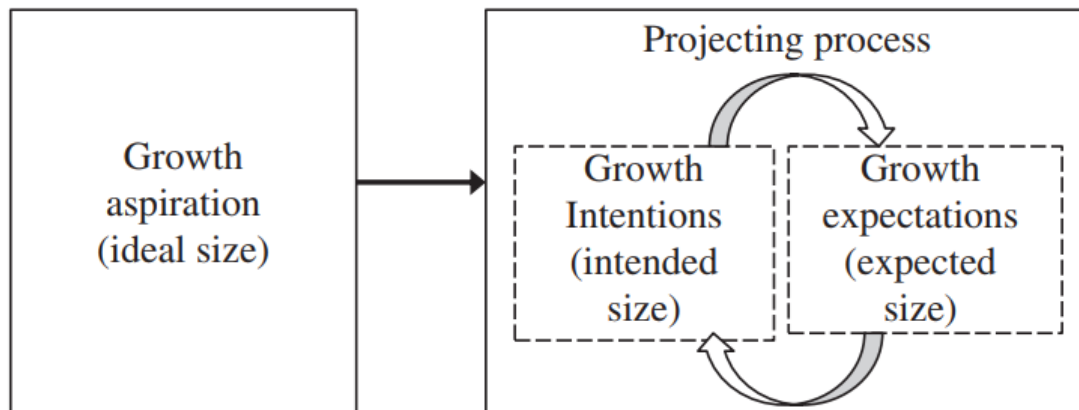


Figure 2.1. Visualization of the links between growth aspiration, growth intentions and growth expectations (Hermans et al., 2015)

Elements which are important aspects and can be used to assess growth ambition for entrepreneurs engaging in start-up business are related to the acquiring of financing (Morandin, Bergami, & Bagozzi, 2006; Nouria, Klofsten, & Lindholm-Dahlstrand, 2005), exit strategies (Bhide, 1996) and function within the ecosystem (Wallin, Still, & Henttonen, 2016). However, to determine growth, and thus the growth ambition of entrepreneurs, the key parameter to be researched is scalability (Jabłoński, 2016). Considering scalability translates relatively directly from growth, since growing a business means scaling the elements you want to grow, this research will apply the idea of scalability to further define growth ambition of circular entrepreneurs. Scalability, as defined by Nielsen and Lund (2018), can be seen as having “a business model that is agile and which provides exponentially increasing returns to scale in terms of growth from additional resources applied” (p. 4). When applying this definition to circular entrepreneurs, it leaves room for different perspectives on growth, as the ‘returns from additional resources applied’ can be broadly interpreted to include returns such as less waste, or the circular benefits gained from using resources differently. The authors add four dimensions of achieving business model scalability; enriching value propositions, removing capacity constraints, creating a platform and changing the role of stakeholders. They argue that scalable business models can be identified by looking into the way they incorporate these characteristics. Using the dimensions for business model scalability and applying this to circular entrepreneurs engaging in start-up development will help to discern how these aspects are applied in practice by this group of entrepreneurs. Nielsen and Lund (2018) define the ‘sweet spot’ for scalability as the combination of increasing returns to scale and the incorporation of the exponential attributes defined above. Considering that the notion of business model scalability in this sense involves aspects such as continuous growth and increased profit/scale maximization, it can be argued that circular entrepreneurs might look at business model scalability differently from a more environmental returns point of view. This sweet spot could therefore be valued differently amongst the entrepreneurs as a result of their growth ambition and the type of circular business model innovation they pursue, possibly leading to different dimensions being prioritized in order to achieve their preferred area of scalability and impact. Thus, a new approach is taken to use the framework of Nielsen and Lund (2018) by adopting the framework to fit with the types of circular business model innovations (Bocken, Short, Rana, & Evans, 2014; Boons & Lüdeke-Freund, 2013; Potting,

Hekkert, Worrell, & Hanemaaijer, 2016) that circular start-ups can pursue (Henry et al., 2019), see Table 2.3. It should be noted that the work by Henry et al. (2019) is not yet published, so conclusions that will be drawn from this framework will serve as additional interesting insights. Nonetheless, with this approach this research aims to give a first idea of how the relationship between perspective on growth and the actual efforts towards scalability are shaped within circular entrepreneurs.

Table 2.3. Scalability attributes for circular business model innovations

Nielsen & Lund (2018) dimensions	Pattern	BM innovation (Henry et al., 2019)	Fit with scalability dimension
Enriching value propositions	Achieving scalability through new/different form of distribution channels with a higher value proposition	Product-service systems	Focussed around business model innovation types looking to create servitisation or no-ownership models, creating usage efficiency through renting, leasing (<i>use phase-oriented</i>) and/or subscription-based or pay-per-use business models (<i>result-oriented</i>)
Removing capacity constraints	Look for ways to work around existing capacity constraints related to the respective industry	Core technology	Looks to innovate by either substitution with less resource-intensive, novel alternatives (<i>source material</i>), increase interchangeability, efficiency or maintainability of product (<i>product design</i>) and/or novel production method which enables circularity (<i>key process</i>)
		Industrial symbiosis	Structured collaboration between organizations to create value from residual resource streams of external (<i>input-oriented</i>) or focal (<i>output-oriented</i>) or usage of shared assets
		Circularity standards/ accreditation	The establishment of process/material standards with suppliers through knowledge sharing and backward integration of activities along the supply chain (<i>sourcing, manufacturing, transport/packaging</i>)
Changing the role of stakeholders	Strategies that focus on leveraging distribution methods, building customer loyalty, giving access to resources and other activities	Active involvement	Innovations that incorporate the inclusion of customers in after-use product lifecycle via take-back processes such as reverse logistics (<i>return, repair, reuse</i>), usage of shared assets with communities including shared ownership (<i>collaborative consumption</i>) and/or knowledge sharing to change customer preferences and diffuse circular economy practices (<i>consumer engagement</i>)
Creating platform-based values	Using platform-based business models to link and leverage partners across the value chain, often with the aim to turn competitors into partners or customers	Enabling technology	Business models looking to increase product utilization rate and reduce material through shared use/access/ownership (<i>sharing platform</i>), facilitate the exchange of resale of products and materials (<i>trading platform</i>) and/or tracking of products/components to enable adequate end-of-life treatment or create transparency (<i>asset tracking</i>)

2.2 Conceptual framework

Using the discussed elements of founder identity, entrepreneurial motivation, growth and scalability this research aims to develop a clearer understanding of the circular entrepreneur. How these elements link and are looked into can be found below in figure 2.2. By establishing the founder identity and entrepreneurial motivation, insights can be gained in how the vision of circular entrepreneurs is shaped. It is expected that due to the aforementioned hybrid tensions in identity and motivation, and how the entrepreneurs prioritize along the triple-bottom-line, these elements will influence the rest of the framework. Therefore, resulting from this vision, the framework argues that a further understanding can be gained into how their ambition is shaped through the perspectives on growth, and in a more practical form how this is expressed in scalability. This model will be used as a guiding story in the assessment of both linear and circular entrepreneurs to help visualize how the different elements interact and influence each other. It is expected that through the use of this model, a better understanding of the relationships between motivation and growth can be given, and thus more insights can be created into how growth is defined by circular entrepreneurs, and what activities are undertaken in order to achieve scalability. The next section will discuss how this assessment will take place.

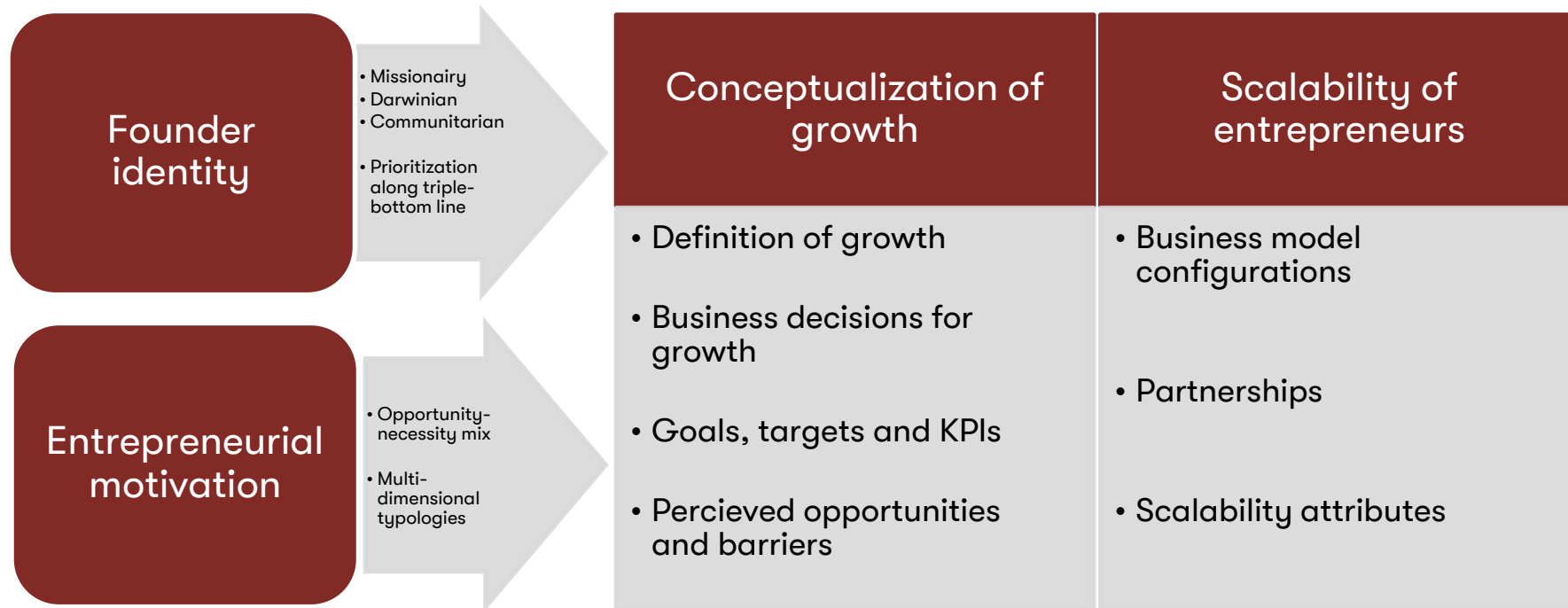


Figure 2.2. The conceptual framework identifying the links between vision (founder identity & entrepreneurial motivation) and ambition (growth & scalability)

3. Methodology

The following section will describe the methodological approach that was taken within this research. It will first argue the use of a qualitative approach, followed by a description of the data collection process. Next, the process of data analysis is described. The section ends with a short description of the internship that was done as part of the dissertation process.

3.1 Research method

The approach to this research was to interview linear and circular entrepreneurs, in order to compare outcomes and identify patterns between how founder identity, motivation, growth and scalability is shaped and differs between the two groups entrepreneurs. Therefore, the inductive qualitative approach (Thomas, 2006) was taken as the proper methodology, since this allows for findings to emerge from raw data and as such helps to develop theory building around new concepts such as the notion of circular entrepreneurs. Due to the relative early phase of research on circular entrepreneurs and the aim to distinguish this group as a new breed of entrepreneurs, this research considered a comparative approach (Oost, 2006) as most suitable. This type of methodology incorporates both a descriptive aspect which was used to define this new group of entrepreneurs within the existing frameworks, and a comparative aspect where key differences between the two types of circular and linear entrepreneurial activity were distinguished, which allows for expansion upon the existing theory. As part of the streamlining process, this research aimed to use an equal sample of entrepreneurs relating to their geographical location, sector and start-up criteria (see Section 4.1). A necessary part of the qualitative research is the creation of an interview guide as part of the semi-structured interviews, as this allows for increased reliability and credibility of the data (Bryman, 2012). The interview guide contained 12 questions (Appendix A) in which the research literature served as a guidance, which is seen as a common approach to designing an interview guide (Warren, 2002).

3.2 Data collection

The semi-structured interviews were conducted with a sample of 40 start-ups divided over the geographical area of the Netherlands, United Kingdom and Germany for both the linear and circular sample group. Such a sample size is in line with the generally accepted minimum for valid qualitative research, which indicates a minimum of 20 respondents per sample group (Warren, 2002). The geographical consideration is based on the fact that these countries contain key areas for start-up activity, of which the capitals are positioned in the top five of European start-up hubs (European Startup Initiative, 2017). Furthermore, these areas are known to be good areas for starting a business, have high competitiveness and score high on the factors of opportunity-driven entrepreneurship (GEM, 2019). The Netherlands specifically scores high on the element of having a favourable environment for entrepreneurship within an economy (GEM, 2019). An overview of the data sample can be found below (table 3.1 & 3.2). Besides a geographical criterion, the respondents were also selected on the criteria of having an active start-up, being independent and not older than five years since founding. These criteria help to draw pure conclusions on motivation and growth from the eyes of the entrepreneur, as a non-active or non-independent entrepreneur is likely to express differently

on their vision and ambition. This type of purposive sampling is an accepted and recommended method within qualitative studies to aid in gathering the correct data (Marshall, 1996; Patton, 1991).

Table 3.1. Overview of linear start-up respondent sample

Start-up	Initials	Role	Business
(1)	S. H.	Founder & CEO	VR, AR and mobile game advertisement
(2)	Y. B. M.	Co-founder & CEO	Instant grocery delivery service
(3)	B. C.	Co-founder	Combining pharmacy and data science for optimizations
(4)	T. G.	Co-founder & CEO	Food delivery and catering services
(5)	A. T.	Co-founder & CEO	Innovations in the fashion essentials space for women
(6)	A. M.	Founder	Nano-material solution for gas storage and separation
(7)	M. vd L.	Founder	Photography and design
(8)	G. W.	Founder	E-commerce data specialists
(9)	K. B.	Co-founder	Create fun alternatives to the usual fashion essentials
(10)	J. C.	Co-founder	Create real-time insights in material composition
(11)	A. V.	Co-founder	Investment platform within the mortgage industry
(12)	S. L.	Founder & CEO	Digital mental health company
(13)	M. O.	Founder	Career training and coaching for international graduate students
(14)	N. B.	Co-founder	AI integration support for SMEs
(15)	A. S.	Sales & export manager	Italian produced apple juice
(16)	K. I.	Co-founder	Create study, meeting and event spaces using unoccupied places
(17)	J. S.	Co-founder & CEO	Transparent bitcoin trading engine
(18)	J. B.	Founder & CEO	Empower patient health through personalized nutrition
(19)	R. B.	Co-founder	Sourcing platform for activities, challenges and events
(20)	L. M.	Co-founder & COO	Data-powered financial platform for personal finance

Note: due to anonymity this overview only shows the initials of the respondents and their respective roles

Table 3.2. Overview of circular start-up respondent sample

Start-up	Initials	Role	Business
(1)	C. vd M.	Co-founder	Sustainable design studio for plastic recycling
(2)	H. B.	Co-founder	Production of safe, reliable water for developing communities
(3)	C. H.	Co-founder	Intelligent battery components for large battery packs
(4)	F. G.	Co-founder & CEO	Innovative biomass fractionation process using low-cost ionic liquids
(5)	M. M.	Co-founder	Product- and system innovation for a circular fashion industry
(6)	M. V.	Founder & CTO	Sustainable export pellets for the Asian market
(7)	M. P.	Founder	Biotechnology company that create isolation material out of fungi
(8)	E. de G.	Co-founder	Sustainable sports fashion from hemp
(9)	J. L.	Founder	Recycle coffee grounds back into a new bio-based material
(10)	P. D.	Founder	Circular furniture out of bio-based materials
(11)	H. H.	Founder	Reduce single use plastic disposable waste through return system
(12)	S. G.	Founder	Paper based sustainable flooring for events
(13)	R. M. Y.	Co-founder & CEO	Sustainable clothing alternative for children
(14)	M. S.	Founder & CEO	Modular water turbines to power off-grid sensors
(15)	G. L.	Founder & CEO	Sustainable office furniture and design
(16)	N. B.	Co-founder	Circular product design from waste materials
(17)	T. vd H.	Founder	Circular concrete and interior design solutions
(18)	R. vd M.	Founder	Software as a service solution for the fashion industry
(19)	M. de B.	Founder	Sustainable alternative for consumer cosmetics
(20)	O. vd V.	Co-founder	Data quantification of food waste in the hospitality sector

Note: due to anonymity this overview only shows the initials of the respondents and their respective roles

Based on these criteria, the sourcing took place through either the researcher's personal network or via a variation of platforms (Table 3.3), depending on the type of start-up. These platforms varied from start-up sourcing websites, to incubator platforms and start-up challenges and awards. Furthermore, the work done at the Impact Hub Amsterdam as part of the internship (see Section 3.3) served as a valuable source for circular and linear start-ups. Potential start-ups were approached via email, phone contact or face-to-face connections. In the case that one of the respondents agreed to an interview, an appointment was made to either conduct the interview in person if the start-up was based in the Netherlands or through Skype if the start-up was based in the United Kingdom or Germany.

Table 3.3. Overview of platforms for start-up sourcing

Platform	Type	Region
StartupDelta	Linear/circular	Netherlands
Voor de wereld van morgen	Circular	Netherlands
Climate-KIC	Circular	Netherlands/Germany/UK
StartLife	Linear/circular	Netherlands
Startup and Running	Linear/circular	Netherlands
EU-startups.com	Linear/circular	Netherlands/Germany/UK
Zollhof	Linear/circular	Germany
Startups.co.uk	Linear/circular	UK
Impact Hub	Circular/(linear)	Netherlands/Germany/UK
Techstars	Linear/circular	Netherlands/Germany/UK
NOAH Awards	Linear/circular	Netherlands/Germany/UK

Note: standard platforms and websites such as Google not mentioned

3.2 Data analysis

After conducting the interviews, the collected data was transcribed and inserted into the coding programme NVivo for processing. The use of NVivo in qualitative research is seen as a significant contribution to the process of data analysis and aids in establishing codes, themes and links within the dataset (Bazeley & Jackson, 2013; Richards, 1999). This process involved the data being structurally coded through thematic analysis (Lindlof & Taylor, 2002), a process consisting of multiple rounds of coding which helps establish themes within the data. A total of three coding rounds were done, which consisted of a round of open coding, axial coding and selective coding (Kendall, 1999). This iterative process involved using open coding, codes from the existing dataset and codes generated from the theory that is used (Bryman, 2012). This process is also called hybrid coding (Fereday & Muir-Cochrane, 2006), a process that involves the use of inductive and deductive coding to aid in theme development. Using this method, themes can be discovered based in both a bottom-up approach of inductive analysis, as well as a deductive top-down approach using existing theory. Table 3.4 gives an overview of the hybrid coding procedure used within this research. After the third round of coding, no grand new contributions were found and a coding framework was established (Appendix B). Developing coding frameworks is seen as a crucial way to systematically analyse qualitative data (MacQueen, McLellan, Kay, & Milstein, 1998; Strauss & Corbin, 1990). The coding framework was then applied to all datasets to finalize the coding procedure.

Table 3.4. Conceptualization of hybrid coding procedure

Concept	Literature	Example questions
<u>Motivation</u>		
Founder identity [D]	(Fauchart & Gruber, 2011)	What do you want to achieve as an entrepreneur, why did you start the business?
Opportunity-necessity [C]	(Reynolds et al., 2002)	How did the business emerge? Was it out of opportunity, necessity or both?
Multi-dimensional typologies [C]	(Stephan et al., 2015)	What were your personal and business motivations to start a business?
<u>Growth ambition</u>		
Growth aspiration [I]	(Hermans et al., 2015)	What does growth mean to you?
Growth intention [I]	(Hermans et al., 2015)	How is your idea of growth reflected in your business decisions?
Growth expectation [I]	(Hermans et al., 2015)	What are opportunities and barriers you perceived for growing/scaling your start-up and how do you deal with them?
<u>Scalability</u>		
Definition [I]	(Jabłoński, 2016; Nielsen & Lund, 2018)	What does scalability mean within the context of your business, what criteria for scaling do you have?
Achieving [I]	(Jabłoński, 2016; Nielsen & Lund, 2018)	Who would be strategic partners for scalability, are there alternative options to achieve scalability?

Note: [I] = inductive, [D] = deductive, [C] = combination of inductive and deductive

3.3 Internship

Simultaneous to the data collection and analysis process, an internship was undertaken at Impact Hub Amsterdam. This hub is part of the fast-growing global Impact Hub network of impact entrepreneurs and innovators with more than 16,000 members in over 100 cities around the world. Starting as a group of university graduates in London, it is now part of the world's largest network for impact business. The Amsterdam venue welcomes 10,000 guests, hosts over 250 impact events and accelerates more than 150 enterprises each year. Since their start in 2008, they have helped over a thousand entrepreneurs to start, grow and scale their impact business. The key activities of the Impact Hub consist out of community building for social entrepreneurs, facilitation of co-working spaces, hosting of events and the delivery of programs related to incubation, acceleration and start-up challenges.

The expertise, network and knowledge of the Impact Hub Amsterdam helped guide the process of this research. Impact Hub has valuable expertise on how to scale and accelerate sustainable start-ups, and thus served as a good reference point for expert feedback. During the timeline of this research, the Impact Hub was running their biannual accelerator program for circular entrepreneurs, called the Investment Ready Program. This served as both a good source for potential respondents as well as a way to learn and study the activities of the Impact Hub in helping the growth of circular entrepreneurs. Furthermore, their international network allowed for easier connections with entrepreneurs in Berlin and London through the

connections of the respective local Impact Hubs. Since these hubs are geographically the closest, they share tight connections with the Amsterdam hub.

As part of the contribution to the Innovation & Acceleration team, the researcher supported the innovation sourcing activities by scouting promising sustainable start-ups for the incubator programs. This synergized well with the data collection process of reaching out to entrepreneurs for interviews, especially due to the fact that the Impact Hub also sources for external parties who do international challenges and programs, and thus this activity aided in finding a proficient sample size of circular start-ups for all three geographical locations. Secondly, support during the program activities helped the researcher in gaining valuable insights of the development process of starting entrepreneurs and the multitude of ways in which supporting programs such as these aid entrepreneurs in setting up their business.

4. Results

This section will specify the results gained from the aforementioned data collection, hybrid coding and NVivo analysis. First a descriptive overview is given of the sample, followed by data found on entrepreneurial identity & motivation, perspectives on growth and finishing with views on scalability. This section serves purely as a descriptive display of the results; Section 5 will contain the discussion of these findings and the theoretical and practical relevance of these insights.

4.1 Sample overview

Below is an overview of descriptives from the two sample groups that were interviewed as part of this research (Table 4.1 & 4.2). Both groups contained a similar mix of entrepreneurs based on geographical location and gender split, with a dominant male sample. Furthermore both groups showed a widespread range of founding years and varying sector and client foci. One takeaway from both samples is that they consisted of mainly small-scale start-ups based on team size, with only three start-ups who have over 10 employees. In regards to the linear entrepreneurs, it is interesting to note that the main sector of activity was services.

Table 4.1. Overview of linear start-up sample (N=20)

Country	Count (%)	Client focus	Count (%)
NL	12 (60%)	B2C	8 (40%)
UK	5 (25%)	B2B	7 (35%)
GER	3 (15%)	B2C – B2B	4 (20%)
		B2B – B2C	1 (5%)
Year of founding			
2014	2 (10%)		
2015	2 (10%)	Sector of activity	
2016	6 (30%)	Services	11 (55%)
2017	6 (30%)	Logistics	1 (5%)
2018	3 (15%)	Food & Beverage	2 (10%)
2019	1 (5%)	Fashion	2 (10%)
		Financial	3 (15%)
		Health	1 (5%)
Number of employees			
1-10	18 (90%)		
10-50	2 (10%)	Gender	
		Male	13 (65%)
		Female	7 (35%)

Note: B2C – B2B and B2B – B2C indicates start-ups that focus on both, but mainly on the first

The sample of circular start-ups was more varied in regards to sector of activity. Of note here is the gravitation towards business to business (B2B) activities. Thus it seems that the main focus of circular start-ups in this sample is to engage in activities that attempt to close resource loops of their respective industries through finding solutions for the (waste) resources from another firm. Table 2.2 shows the overview of the types of circular strategies the respondents engage in. Recycle and reduce strategies seem to be the most common in the sample, with only few circular strategies focussed on recovery and reuse.

Table 4.2. Overview of circular start-up sample (N=20)

Country	Count (%)	Client focus	Count (%)
NL	10 (50%)	B2C	4 (20%)
UK	5 (25%)	B2B	12 (60%)
GER	5 (25%)	B2C – B2B	2 (10%)
		B2B – B2C	2 (10%)
Year of founding			
2014	5 (25%)	Sector of activity	
2015	2 (10%)	Services	1 (5%)
2016	3 (15%)	Energy	2 (10%)
2017	6 (30%)	Transport	1 (5%)
2018	4 (20%)	Food & Beverage	1 (5%)
2019	0 (0%)	Fashion	4 (20%)
		Water management	2 (10%)
		Waste management	1 (5%)
Number of employees			
1-10	19 (95%)	Cosmetics	2 (10%)
10-50	1 (5%)	Materials	1 (5%)
		Manufacturing	5 (25%)
Gender			
Male	14 (70%)	Circular strategy	
Female	6 (30%)	Reduce	8 (40%)
		Reuse	2 (10%)
		Recycle	9 (45%)
		Recover	1 (5%)

Note: B2C – B2B and B2B – B2C indicates start-ups that focus on both, but mainly on the first

4.2 Founder identity & entrepreneurial motivation

The first step was to dissect the sample on the basis of entrepreneurial identity (Fauchart & Gruber, 2011). This will help to better understand the interaction between the ambition and vision of entrepreneurs, their motivation and how this is expressed in their business activities. Table 4.3 shows the variation of entrepreneurial identities within the current sample. Amongst the group of linear entrepreneurs there was a relatively even split of the three typologies of Darwinians, missionaries and communitarians. The inclusion of missionary entrepreneurs was mainly traceable to the fact that various social entrepreneurs were part of this sample group.

Table 4.3. Overview of entrepreneurial background for linear and circular sample (N=40)

	Linear (N=20)	Circular (N=20)	Total (N=40)
Entrepreneurial identity			
Missionary entrepreneur	6 (30%)	20 (100%)	26 (65%)
Communitarian entrepreneur	4 (20%)	0 (0%)	4 (10%)
Darwinian entrepreneur	10 (50%)	0 (0%)	10 (25%)
Previous experience			
First time entrepreneur	13 (65%)	12 (60%)	25 (62,5%)
Experienced entrepreneur	5 (25%)	6 (30%)	11 (27,5%)
Serial entrepreneur	2 (10%)	2 (10%)	4 (10%)

Note: personal background has a higher count due to multiple responses being coded

Having evaluated the founder identities of the sample, the next step was to relay this identity back to what the respondents indicated was their motivation to begin a start-up. As discussed, the frameworks that are used here are the opportunity-necessity distinction (Reynolds et al., 2002), and the proposed alternative of the multi-dimensional typologies from

Stephan et al., (2015), see Table 2.3 for an overview. An overview of the division in entrepreneurial motivation between the two respondent groups, based on these typologies, can be found below in Table 4.4. Important to note is that this research adds a key new typology of ‘passion’, something which was not part of the original framework but was mentioned often, most notably in the linear respondent group (79%). In general, most of the typologies are reflected rather equally amongst both respondent groups. Linear entrepreneurs are more driven by income and financial success, as well as achievement and passion seemed to be a frequently returning factors. The typology of environment was separated from the social motivations typology it is confound to in the original framework. Doing so showed that individually coding for the typologies allowed for a clearer vision of motivation: the entire sample of circular entrepreneurs indicated to be driven by environmental motivations and in lesser amount by social motivations.

Table 4.4. Entrepreneurial motivation based on multi-dimensional typologies (N=40)

Multi-dimensional typology	Linear (%)	Circular (%)	Total
Achievement	14 (64%)	8 (36%)	22 (100%)
Autonomy	17 (57%)	13 (43%)	30 (100%)
Challenge	9 (50%)	9 (50%)	18 (100%)
Learning	5 (45%)	6 (55%)	11 (100%)
Passion	11 (79%)	3 (21%)	14 (100%)
Income & financial success	6 (67%)	3 (33%)	9 (100%)
Recognition & status	3 (60%)	2 (40%)	5 (100%)
Environment	0 (0%)	20 (100%)	20 (100%)
Social motivations	8 (62%)	5 (38%)	13 (100%)

Note: multiple typologies possible per respondent

Whilst the multi-dimensional typology helps to understand specific drives, its aim is to go beyond the opportunity-necessity framework and therefore fails to reflect on whether the entrepreneurial drives originate out of opportunity or necessity. To give an example, when looking into descriptions of opportunity, an opportunity for self-development would be related to an attribute such as learning, whereas an opportunity in the market could be related to achievement or financial success. Therefore, this research expanded on the understanding of entrepreneurial motivation by looking into the opportunity-necessity distinction. During the interview the respondents were asked the following the question: “*Were you motivated by an opportunity or a necessity, or perhaps both?*”. From the responses to this question and other questions regarding their motivation, it became apparent that this either-or framework was too constrained to fully grasp the motivations of the entrepreneurs for two reasons. Firstly, when the respondents indicated they were motivated by opportunity, it was often a mix of both an opportunity for self-development as well as an opportunity that they found within the market. This suggested there is more depth to the dimensions of the opportunity-necessity framework. Secondly, another frequent answer, mainly amongst the missionary entrepreneurs, was that the motivation of opportunity or necessity is somewhat of a “grey area”. Respondents often indicated feeling a necessity to solve something they feel personally responsible or capable for, as well as an opportunity in the market or society to act upon this feeling. This research therefore argues that to allow for more depth in this framework, a differentiation should be

added based on intrinsic or extrinsic motivations. Through thematic analysis, the four following motivations were found as recurring themes, often appearing in various combinations of two or more dimensions (see Appendix D for a more in-depth overview of the type of answers related to the four types of motivation);

- **intrinsic opportunity driven;**
("I do this to develop myself, take up a challenge, achieve my personal vision etc.")
- **intrinsic necessity driven;**
("I do this because I feel the personal obligation to help or change things")
- **extrinsic opportunity driven;**
("I do this because the market was right, there was an outside opportunity etc.")
- **extrinsic necessity driven;**
("I do this because I am forced to due to loss of job/income, change in situation, etc.")

Table 4.5 shows the results for the linear entrepreneur sample and Table 4.6 shows that of the circular entrepreneurs. As the results indicate, motivation is indeed confined to a rather 'grey area', as respondents defined multiple aspects of motivation which drove them towards beginning a start-ups. Important to note is that none of the entrepreneurs in this sample showed an extrinsic necessity driven motivation. This research therefore uses the existing definition of necessity entrepreneurship as described in the theoretical framework to define this type of motivation (Block et al., 2015; Zali et al., 2013). The research adds the dimension of intrinsic necessity and expands on opportunity drives in a similar fashion by distinguishing intrinsic and extrinsic motivations. Linear missionary (83%) - and in some respect communitarian (50%) – entrepreneurs appeared to be driven mainly by an intrinsic necessity and an extrinsic opportunity. For the circular entrepreneur sample this was the case for the entire sample group. This combination was described by respondents as a need, obligation or mission to do something about environmental or social issues they perceive, whilst simultaneously spotting an opportunity to accomplish and act upon that drive. One of the circular respondents described it as follows:

"Yeah, I guess I'd say it's a hybrid. I mean, you know, that's the saying; the mother of invention is necessity. So, definitely kind of thought about that, that, you know, once I'd seen a problem, I mean, as I said before, like, you know, I'd seen the problem [...], and I had not yet come up with the solution, but I'm sure.. and on the one hand I'm still not completely sure that this is the solution, but I have what I perceive is a solution to this problem. And so I think I have to give it a go just to see if it does work."

A similar description was given by one of the linear missionary entrepreneurs:

"I would say opportunity, and necessity, I would say in like an internal intrinsic motivation that's just been present waiting for the right opportunity to strike."

Darwinian entrepreneurs in this sample group were mainly driven by a mix of intrinsic and extrinsic opportunity (60%). They see it as both a chance for personal development, such as business skills or achieving a personal goal, as well as an opportunity within the market which they look to fill to achieve these personal goals. The rest of the Darwinian entrepreneurs displayed only a single motivation of being driven by either extrinsic

opportunity (20%) or intrinsic opportunity (20%). From these results, it appears that missionary entrepreneurs have similar drives in regards to their opportunity-necessity motivation, mainly being driven by an intrinsic necessity and extrinsic opportunity. Darwinian entrepreneurs appear to be mostly motivated by opportunity, either a combination or a single form of intrinsic and extrinsic factors.

Table 4.5. Overview of linear entrepreneurs motivation (N=20)

Respondent	Intrinsic opportunity driven	Intrinsic necessity driven	Extrinsic opportunity driven	Extrinsic necessity driven
LIN 1	•		•	
LIN 2	•		•	
LIN 3	•		•	
LIN 4	•		•	
LIN 5 ^C	•		•	
LIN 6			•	
LIN 7	•			
LIN 8	•		•	
LIN 9	•			
LIN 10			•	
LIN 11 ^M	•	•	•	
LIN 12 ^M		•	•	
LIN 13 ^C		•	•	
LIN 14 ^M	•	•	•	
LIN 15	•		•	
LIN 16 ^C			•	
LIN 17 ^M		•	•	
LIN 18 ^M	•	•	•	
LIN 19 ^C		•	•	
LIN 20 ^M	•		•	

Note: (M) indicates missionary- and (C) communitarian entrepreneurs, no indication is Darwinian

Next, this research set out to understand how founder identity influences the ambition and vision the entrepreneurs have in regards to what they want to achieve with their start-up, which serves as the first link towards looking into the growth preferences of entrepreneurs. Figure 4.1 shows the respondents results based on whether they belonged to the linear or circular sample group. Here, the first differences in goals start to become clear; linear entrepreneurs strive more for developing an alternative to products or services in the market in order to empower the stakeholders in their respective industries. Circular entrepreneurs, however, focus more on creating a positive (environmental) impact for society at large and look into changing their entire industry, instead of empowering the relationships within, through creating awareness and setting examples. This distinction shows that linear entrepreneurs are more engaged in complementing areas within their industry, whereas circular entrepreneurs are looking to create larger impact induced by larger change within their sector, an insight that shows that they seem to be looking more towards disruptive innovations. These results remain similar when comparing the linear missionary entrepreneurs to the circular missionary entrepreneurs (figure 4.3). Thus, even though both displayed similar motivations within the opportunity-necessity framework, the circular entrepreneurs have different ambition and vision in regards to what they want to achieve with their business.

Table 4.6. Overview of circular entrepreneurs motivation (N=20)

Respondent	Intrinsic opportunity driven	Intrinsic necessity driven	Extrinsic opportunity driven	Extrinsic necessity driven
CIR 1		•	•	
CIR 2		•	•	
CIR 3		•	•	
CIR 4		•	•	
CIR 5		•	•	
CIR 6		•	•	
CIR 7	•	•	•	
CIR 8		•	•	
CIR 9	•	•	•	
CIR 10		•	•	
CIR 11		•	•	
CIR 12		•	•	
CIR 13		•	•	
CIR 14		•	•	
CIR 15		•	•	
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CIR 18		•	•	
CIR 19	•	•	•	
CIR 20		•	•	

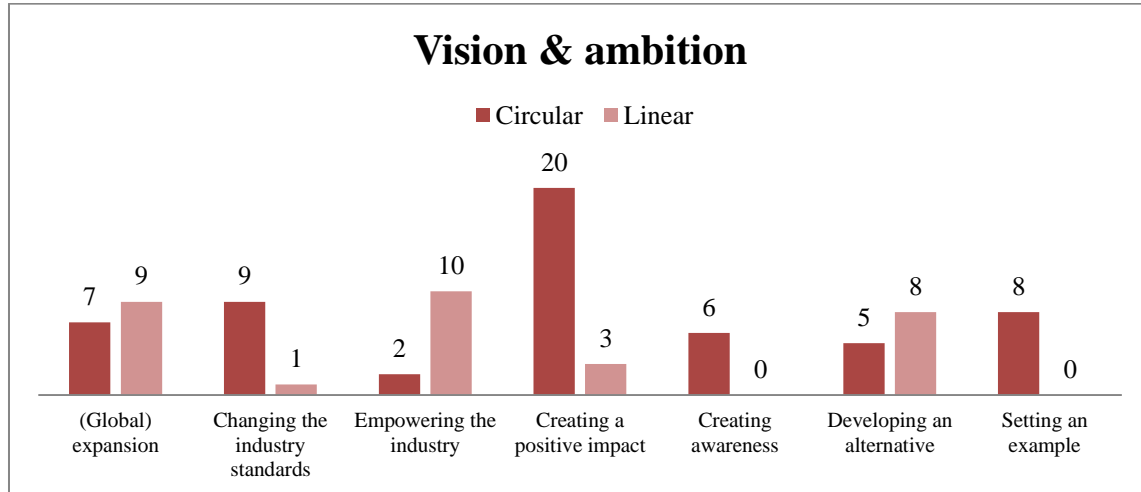


Figure 4.1. Vision and ambition of circular and linear entrepreneurs

With the knowledge that circular entrepreneurs have a different vision and ambition, the next and final step was to see how this is expressed in their business model focus by looking at which areas of the business they prioritize. To do so, respondents were asked to rank the five dimensions of profit, environmental conservation, social equity, consumer and (sustainable) supply chain management. The following results (Table 4.7) were found; linear entrepreneurs focus primarily on the consumer as the main drive for the business. Filling a gap for the consumer by developing an alternative or by empowering their position in a

certain industry is the main business orientation, which potentially explains the higher expression of the relevance of social equity in their prioritizations. The drive of circular entrepreneurs to change the industry and create a positive impact is focussed mainly on environmental conservation. Figure 4.3 visualizes the business model prioritization of the various entrepreneurs in the sample based on the weighted averages. Weighting is based on the ranking scale, the lower the score the better, and thus the more weight. Furthermore, a split is made based on founder identity which is compensated for sample size differences. This shows that circular and linear missionary entrepreneurs focus on different aspects of the business model, where the former has a high focus on environmental conservation and the latter on consumer and social equity, except for the area of profit where all entrepreneurs seem to strive for similar prioritization.

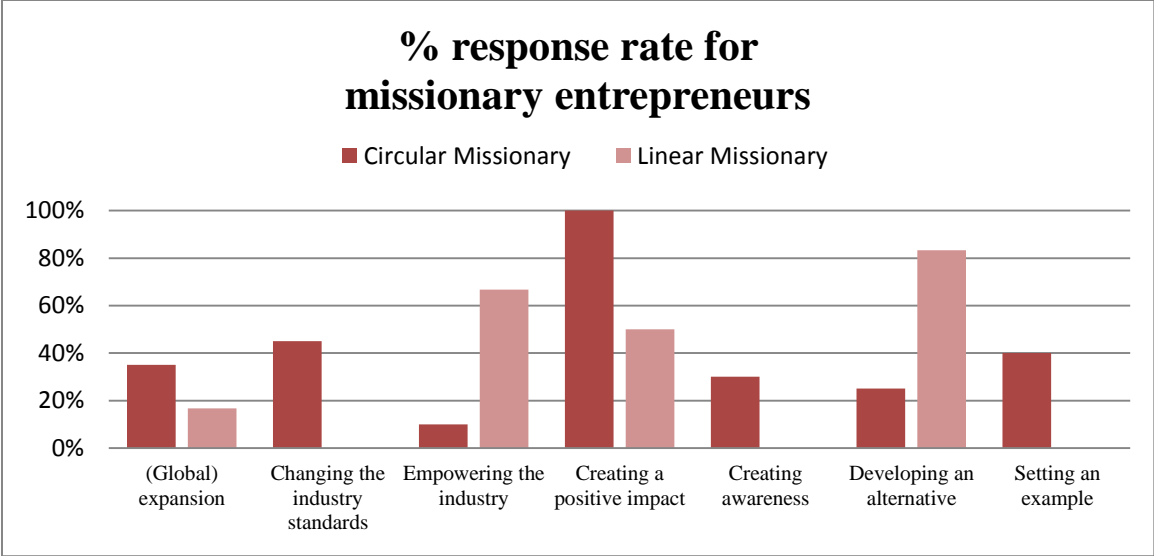


Figure 4.2. Response rate for vision and ambition for missionary founder identity in both sample groups

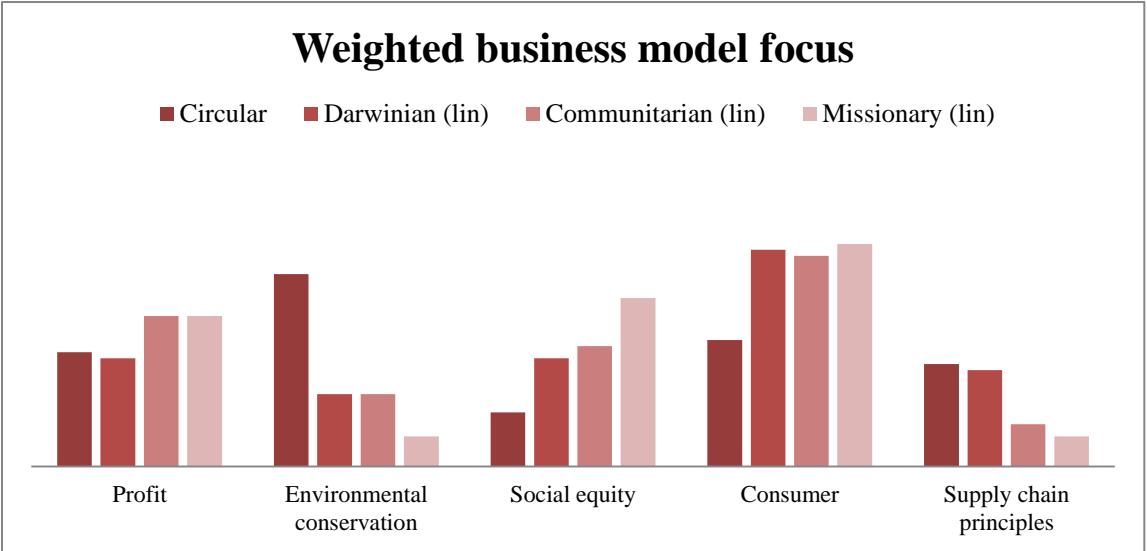


Figure 4.3. Comparison of weighted averages for respondent business model focus, split on founder identities

Table 4.7. Business model prioritization along the triple-bottom line

Respondent	Profit	Environmental conservation	Social equity	Consumer	Supply chain principles
Linear entrepreneurs					
1 (most important)	3 (15%)	1 (5%)	3 (15%)	13 (65%)	0 (0%)
2	6 (30%)	0 (0%)	4 (20%)	6 (30%)	4 (20%)
3	5 (25%)	5 (25%)	7 (35%)	1 (5%)	2 (10%)
4	3 (15%)	6 (30%)	5 (25%)	0 (0%)	6 (30%)
5 (least important)	3 (15%)	8 (40%)	1 (5%)	0 (0%)	8 (40%)
Weighted average	2,9	4,0	2,9	1,4	3,9
Darwinian	3,2	3,8	3,2	1,4	3,4
Communitarian	2,5	3,8	3,0	1,5	4,3
Missionary	2,5	4,5	2,2	1,3	4,5
Circular entrepreneurs					
1 (most important)	3 (15%)	8 (40%)	0 (0%)	4 (20%)	5 (25%)
2	3 (15%)	9 (45%)	3 (15%)	3 (15%)	2 (10%)
3	8 (40%)	2 (10%)	1 (5%)	6 (30%)	3 (15%)
4	2 (10%)	1 (5%)	8 (40%)	6 (30%)	3 (15%)
5 (least important)	4 (20%)	0 (0%)	8 (40%)	1 (5%)	7 (35%)
Weighted average	3,1	1,8	4,1	2,9	3,3

Note: bold indicates the highest % score in one focus area; percentages are for both x- and y-axis

4.3 Growth preferences & scalability

This section develops the previous findings further into the topics of growth and scalability of the entrepreneurs. First, respondents were asked what growth means to them. In line with the previous findings on prioritization, the main growth focus of linear entrepreneurs is on customer growth, whereas circular entrepreneurs focus mainly on growing their impact, more so than linear missionary entrepreneurs (figure 4.4). One important distinction here is that circular entrepreneurs frame impact differently than linear entrepreneurs, where the latter looks more at the reach towards people and the former towards the positive impact as a direct result from increasing their business activities:

“No actually I think, growth is the more impact we create, the more we grow. This is it actually. So the more recyclable products are on the market the better, the more we grow” – Circular entrepreneur

“Growth means making a platform that offers value to a certain group of people, preferably as many people as possible, which experience a certain problem and solve it as fast as possible. So growth means adding value, as much as possible to as many people as possible.” – Linear entrepreneur

Interestingly, circular entrepreneurs put more emphasis on revenue growth than their linear counterpart. A cross-examination between the definitions of revenue and impact growth showed that in 5 out of the 6 cases both revenue and impact growth is simultaneously mentioned by the circular respondents. It likely indicates the nature of a circular start-up in

that growing their sales, and thus their revenue, automatically implies that they will grow their impact, as is the nature of their business:

“Also, two fold; growth means having more impact. So we sell more products, we save more trees, and we help more businesses having a positive carbon dioxide emission level.”

Similar to their definition of growth, both entrepreneurial samples have goals and targets related to what they see as crucial for their business. For linear entrepreneurs they focus mainly on goals or targets related to customer reach and retention, whereas circular entrepreneurs emphasize targets or KPI’s based on the impact they make. These vary between the various circular entrepreneurs based on the type of business they operate but generally involve either of the in some form; amount/level of recycling, amount of resources (trees, food, etc.) saved, amount of fossil fuels (CO²) negated.

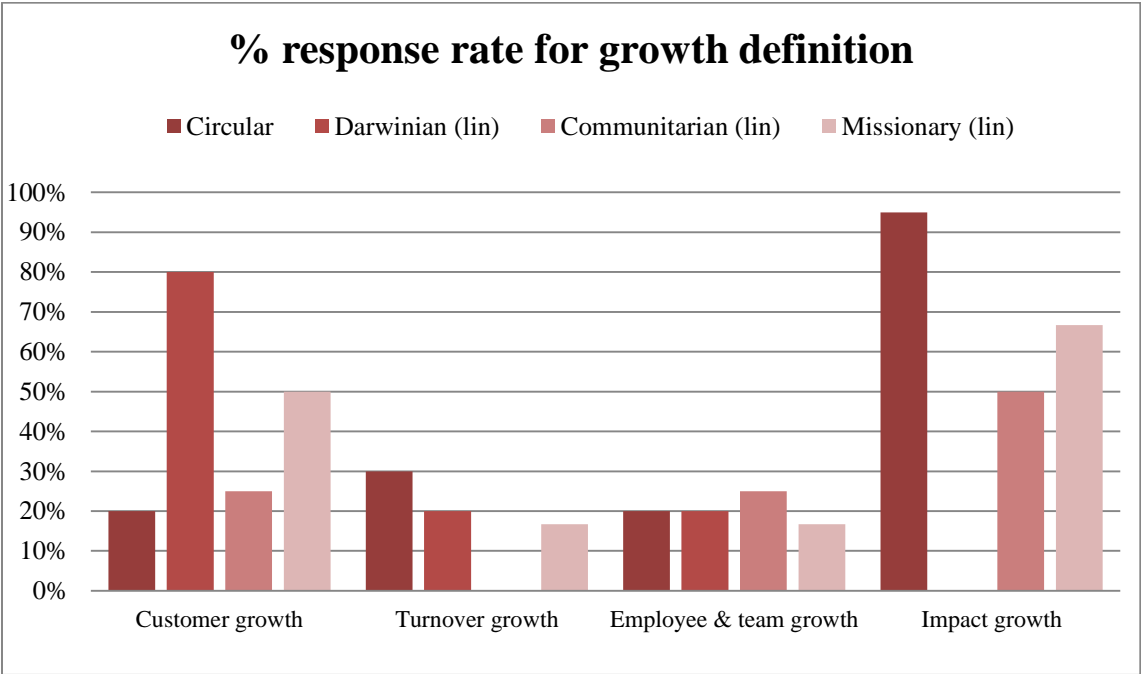


Figure 4.4. Response rates on growth definition based on founder identity

In regards to how the business decisions are influenced by the respondents’ view on growth, the main intention of both samples seems to be a focus on growth as the main driver of business decisions. Still, nearly 1/3rd of the circular entrepreneurial sample state that growth for them is secondary. This relates to a multitude of reasons, those being; wanting to say independent, ensuring quality first, refusing to work with certain parties based on ideological differences and not wanting to lose the impact credibility of the business. Some more perspective into this finding is given by looking how both groups of entrepreneurs perceive the opportunities and barriers for growth. Figure 4.5 and 4.6 give an overview of the responses from both sample groups. Results show that linear entrepreneurs see most opportunities through activities in expanding their client network, either through network effects or just basic sales activities. Circular entrepreneurs expressed more value in organic

adoption of their business, and market pressures and changes such as an increasing focus and attractiveness of circular business models. In regards to barriers for growth, it is interesting to see that circular entrepreneurs perceive more barrier overall than linear entrepreneurs. The main barrier for circular entrepreneurs is finding partners for finance, such as attracting investors or other partners which can financially support the start-ups. Another important finding is that circular entrepreneurs perceive multiple types of barriers related to industry specific issues such as validation of technology, lack of sector expertise, industry-wide change required and cultural barriers. The latter three of these barriers were exclusively mentioned by the circular respondent group, indicating the linear entrepreneurs do not see such barriers. Instead, linear entrepreneurs struggle most with finding the right partners to work with to help expand their client network. Furthermore, both types of entrepreneurs seem to suffer from general start-up barriers related to establishing a team and their credibility as a small organization.

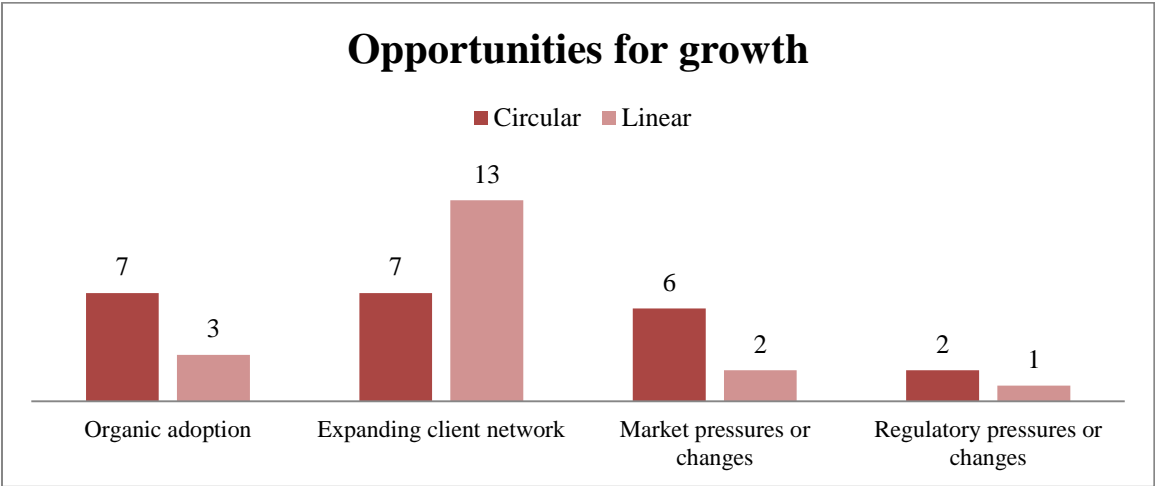


Figure 4.5. Opportunities for growth as seen by both sample groups

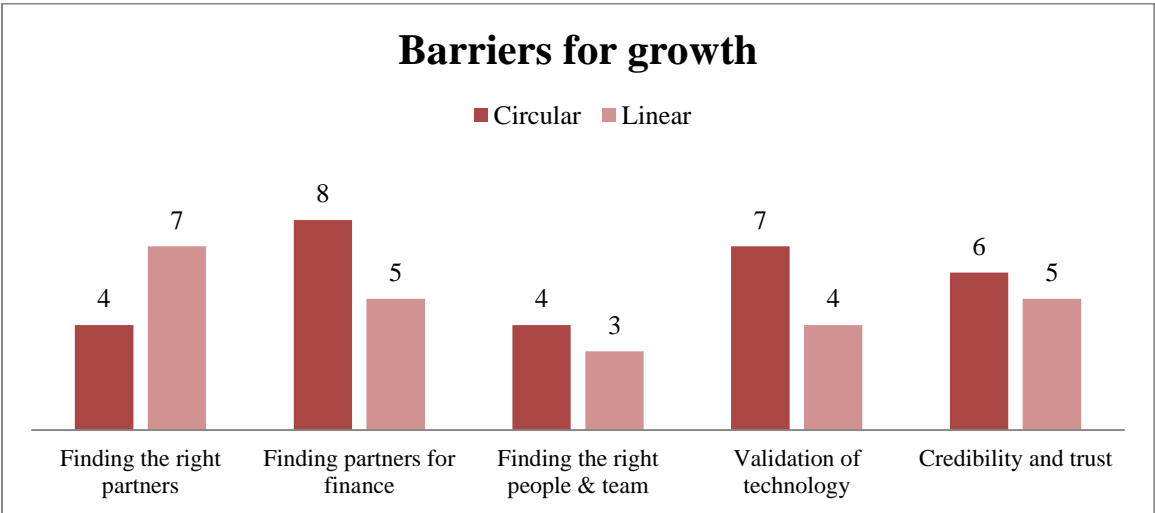


Figure 4.6. Barriers for growth as seen by both sample groups

The next step involved looking into how both respondent groups looked towards the topic of scalability. The results already indicated that for a share of the circular entrepreneurs growth was secondary. To get deeper insight into how both sample groups perceived the topic of growth and scalability, respondents were asked to express the relevancy of scalability both at launch of their firm and now. Results can be found in Table 4.8 below. The first key insight was that circular entrepreneurs have great variety in how they valued the importance of scalability at launch, with nearly all responses receiving an equal distribution. This is in stark contrast to the linear entrepreneurs, who had a clear stance on the relevance of scalability from the start, stating for the most part it was highly relevant at launch. Reasoning behind this for the circular entrepreneurs was that many of them (45%) expressed their focus at launch was merely on trying to prove their business model on a small scale, stating they usually just tried to create the solution they came up with for the problem they perceived and only later started looking into how scalable it was. This can be attributed to the intrinsic necessity driven motivation of these entrepreneurs, where they felt the need to create a solution first and only then started looking for the opportunity. Linear entrepreneurs, however, stated that scalability is the nature of a business (80%) and without scaling in mind they would not have considered beginning a start-up. When looking at their current situation, the circular entrepreneurs did fully express the importance of scalability for their business. From the responses it became clear that this change in relevance results from the fact that circular entrepreneurs now looked to create impact on a larger scale instead of just locally, as would be expected from their ambition and vision on creating a positive impact and through how they valued growth in the form of achieving more impact.

Table 4.8. Relevance of scalability for linear and circular entrepreneurs

Respondent	irrelevant	included	relevant	highly relevant
Linear entrepreneurs				
Launch	3	2	4	11
Launch (%)	(15%)	(10%)	(20%)	(55%)
Now	0	0	6	14
Now (%)	(0%)	(0%)	(30%)	(70%)
Circular entrepreneurs				
Launch	3	6	6	5
Launch (%)	(15%)	(30%)	(30%)	(25%)
Now	0	0	3	17
Now (%)	(0%)	(0%)	(15%)	(85%)

Further advancement on the topic of scalability resulted in giving insights into how both groups defined scalability, what criteria they have, what type of partnerships they look for, and if they have thought of any alternatives for scaling. The main idea of scalability according to linear entrepreneurs is expansion to multiple markets and users, combined with an easily replicable product, service or business model. Circular entrepreneurs also expressed the idea of expansion to multiple markets or users, instead with the extra added response of maximizing impact, which is in line with the previous findings on their vision and ambition. In the criteria aspect, linear entrepreneurs mainly look for generalizability and a product-

market fit, whereas circular entrepreneurs mainly focus on staying true to ones values, so always keeping impact in mind and refusing certain activities or opportunities if they are not in line with their vision. This is further expressed in their views on partnerships (figure 4.7); both linear and circular entrepreneurs seem relatively similar in their responses, except for the added factor of expressing the requirement of partners with similar values or visionary partners for circular respondents, which matches the criteria they place on staying true to their values and putting growth as a secondary, instead focussing on other values than immediate growth. Finally, in regards to alternatives for scalability (figure 4.8), both groups have looked into alternative configurations of their business model, such as a different target group and licensing. Notably, circular entrepreneurs also mention the idea of changing the role of stakeholders, related to changing the value and/or supply chain coordination within their sector, as well as open-sourcing.

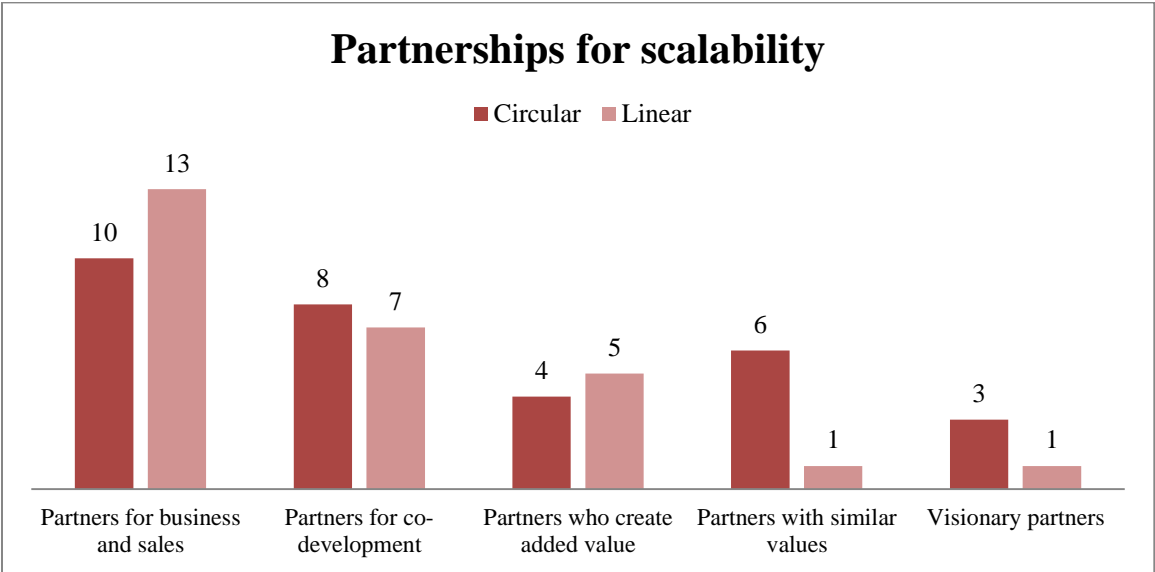


Figure 4.7. Partnerships for scalability as defined by both sample groups

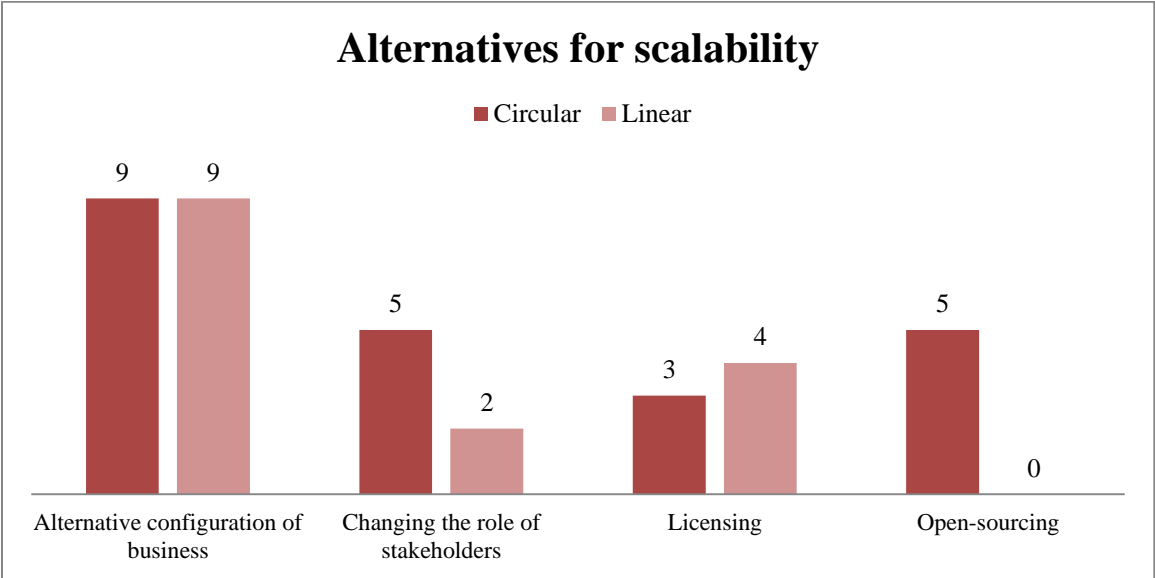


Figure 4.8. Alternatives for scalability as defined by both sample groups

5. Discussion

Following the results from the previous chapter, this section will link the findings back to the described field of literature and discuss key findings and implications within the current frame surrounding circular entrepreneurship. In doing so, the discussion will aim to show the contribution of the results to theory and practice. This process will lead to illustrating the significance of this research, after which limitations and avenues for future research will be discussed.

5.1 Discussion of the results

The aim of this research was to gain more insights into how the vision and ambition of circular entrepreneurs, a new and understudied breed of entrepreneurs, influences their perspectives on growth and how they look towards their scalability. This part will first discuss some findings related to the sample, then look towards founder identity and prioritization, followed by a discussion regarding the entrepreneurial motivation frameworks and finish with the topics of growth and scalability.

5.1.1 *Current outlook on circular and linear entrepreneurs*

Following the results of the interviews, some early insights can be made around the current field of circular and linear entrepreneurship. One interesting takeaway is the high amount of service-oriented start-ups within the linear sample of this research (Table 4.1). This could be attributed to the fact that most start-ups nowadays focus on service delivery in the form of IT/software development or software-as-a-service (SaaS) models and 99,3% of start-ups offer online solutions (Steigertahl, Mauer, & Say, 2018). Such a high number could be attributed to the fact that these types of start-ups have been found to be the prime business models when it comes to scalability (Stampfl, Prügl, & Osterloh, 2013). In a sense, it could be argued that the linear entrepreneurs in this sample therefore follow the more classical way to start-up development of trying to effectively create a scalable business model (Katila, Chen, & Piezunka, 2012). It is a first indication on the focus of linear entrepreneurs in this sample on more scalable business models as compared to circular entrepreneurs, something which is further discussed below (section 5.1.4). There is a connection to be made here with the high focus on reduce and recycle models within the circular start-ups and the lack of those focussing on the reuse model (Table 4.2). A recent report published last month by the Ellen MacArthur Foundation on reuse calls for an increase of these types of business models (Ellen MacArthur Foundation, 2019), arguing these types of models have significant benefits to both users and businesses. The interesting part is that these models often operate on a service base, through for example subscriptions, pick-up services, auto-replenishments, and more. They argue that these type of models work especially well within e-commerce as an online interface enables communication and reduces competition. In this research only three respondents could directly be linked towards reuse models, and only one of those to a “circularity-as-a-service” model, which is an interesting takeaway and perhaps could serve as a topic of inspiration towards new entrants looking to engage in circular entrepreneurship by arguing that it might be more effective to look towards a circular service solution if one is looking to create a scalable circular business model.

5.1.2 *The chicken-and-egg problem of impact*

Looking further into the sample of circular entrepreneurs and their answers on founder identity, it was revealed that the circular sample displayed only missionary identities. One could argue that the circular market provides interesting economic opportunities for Darwinian entrepreneurs, however; it seemed from this research that only those looking to positively influence society engage in circular activities, which perhaps comes as no surprise considering that the nature of their business focuses on environmental impact. Nonetheless, findings (Table 4.7) showed that the profit orientation of their business was similar to the linear sample, considerably so when compared to the Darwinian linear entrepreneurs. Overall, circular entrepreneurs on average placed profit orientation above aspects such as sustainable supply chain principles and social equity. The lack of prioritization towards social elements is similar to the findings of Stewart and Niero (2018), who found that the social aspect of circular economy is also underdeveloped within corporate sustainability reports. Furthermore, the balance between profit and environmental factors is a key consideration to be taken into account for circular entrepreneurs, as within the sample of this research there was a split amongst the respondents. Whilst impact was always stated as the end-goal, the circular entrepreneurs were divided in their prioritization. As one of the respondents stated; *“it’s the classical chicken-and-egg story”*. One either puts impact as the main priority before anything else, or states that one can only achieve real impact through profit, and thus prioritized those elements to achieve their goals. These findings relate back to the discussion on hybrid tensions that can arise within and between founder identities (Davies & Chambers, 2018; Sieger et al., 2016), showing how the element of profit and environmental goals interact within these circular missionary entrepreneurs. This research did not control for the possibility of multiple founder identities, only allowing for one form to be assigned. Still, when asked to elaborate on the argumentation of a focus on profit, circular entrepreneurs indicated that profit is essential for impact. It shows that profit and growth are crucial concepts for circular entrepreneurs in order to achieve their ambition of creating sufficient impact. As one of the circular entrepreneurs puts it:

“Growth means making more money, and making more money means making more impact”

5.1.3 *Extending the motivation frameworks*

Continuing on the results for motivation, this research applied two frameworks; the multi-dimensional typologies of Stephan et al. (2015) and the opportunity-necessity framework from Reynolds et al. (2002).

In regards to the multi-dimensional typologies, the typologies served as a good basis to deductively code from the respondents’ answers. However, through the inductive process a new additional typology was found, namely ‘passion’; entrepreneurs, mostly from the linear sample, described to be motivated by passion for their sector or work activity (Table 4.4). Research has shown that passion influences key drivers of entrepreneurial effectiveness (Cardon, Wincent, Singh, & Drnovsek, 2017) and should therefore be included as a parameter when looking into entrepreneurial motivation. Furthermore, this research addresses a limitation to the framework in the way it is confining certain themes and topics into one, which limits the insights into which specific motivation drives an entrepreneur. For example,

the typology of autonomy, achievement and learning is combined in the work of Stephan et al., (2015), but during the analysis it was found that splitting up the typologies allows for a deeper understanding of the motivations of entrepreneurs, for example by differing between achievements and learning. Finally, Stephan et al. (2015) notice that three dimensions are rarely included in current research; family & roles, dissatisfaction and community & social motives. Regarding community & social motives, this research has shown that this dimension is also crucial to be included in research on circular entrepreneurs, as environmental motives was a motive expressed in every respondents answer. This finding also further expresses the need to distinguish between the various typologies, since in the framework the environmental motives are seen as part of the social motives. Yet the findings in Table 4.4 as well as the results discussed above show that these are not used interchangeably within circular entrepreneurship motivation. As a result, this research helps to create both new insights into the multi-dimensional typology framework as well as contribute new findings to the understudied aspect of community & social motives.

Although Stephan et al., (2015) argue that the multi-dimensional typologies are sufficient to capture entrepreneurial motivation, it fails to reflect on whether these dimensions originate out of opportunity or necessity. Therefore, to further understand the drive behind entrepreneurial motivations, this research set out to deepen the concept of the opportunity-necessity framework, as this could help in visualizing where the differing nature of for example the challenge motive lies. The results from this research showed that there is a deeper level confined to the opportunity-necessity framework, described by the respondents as a 'grey area', or as this research prefers to call it; a hybrid motivation, defined by a distinction between intrinsic and extrinsic motivation. Whilst some similar distinctions have been made by for example Steigertahl et al., (2018) in the form of intrinsic and extrinsic rewards to entrepreneurship, these results were not applied to the framework of the opportunity-necessity distinction. Previous attempts have been made to deepen the conceptualization of entrepreneurial opportunities (Davidsson, 2015), or to reframe it in a different wording such as the 'improvement-driven opportunity' as described by the GEM (2019), which leans towards explaining the mix of intrinsic and extrinsic opportunity. However, the framing of motivation for entrepreneurship in these articles generally indicate that necessity entrepreneurship is something which is seen in low-income, developing economies. The results in this paper show that the intrinsic necessity dimension is clearly a factor which is relevant in developed economies, from which the entrepreneurs in this sample originate. As one of the respondents described it; "*it is the urgency to survive*" is why they feel this necessity to engage in circular entrepreneurship. This element of survival is similar to necessity entrepreneurs in developing economies looking to generate some form of income for their basic needs. Therefore, this research argues to give first attempt into deepening the understanding of necessity entrepreneurship, and to use a different form of opportunity-necessity to allow for hybrids to exist. This paper therefore suggests the use of the following matrix (figure 5.1) in future research on the topic of entrepreneurial motivation. An example of how this framework could be used would be to place the dimensions from the multi-dimensional typologies, such as achievement, within their respective quadrants, allowing for a complete picture of entrepreneurial motivation.

	Opportunity	Necessity
Intrinsic	f.e. "I do this to develop myself, take up a challenge, achieve my personal vision etc"	f.e. "I do this because I feel the personal obligation to help or change things"
Extrinsic	f.e. "I do this because the market was right, there was an outside opportunity etc"	f.e. "I do this because I am forced to due to loss of job/income, change in situation, etc"

Figure 5.1. A new typology of the opportunity-necessity framework

5.1.4 Growth perspectives of circular entrepreneurs

Having established how motivation is shaped differently between circular and linear entrepreneurs, this section will look into the implications this has on the perspectives on growth. First insights from the results express a key difference in how circular entrepreneurs look at growth compared to their linear counterpart. The GEM describes growth as the extent to which entrepreneurs create jobs, as this contributes to employment and the wellbeing in their societies (GEM, 2019). This research showed that such a definition for growth rarely applies to the idea of circular entrepreneurship. Growth, according to circular entrepreneurs, is related to how much impact one makes and as such their ambitions are related to impact and they measure growth goals related to this concept. This finding is a direct contribution to the call of Stephan et al. (2015), who argued in the case of social entrepreneurs that they show characteristically low wealth-seeking motivations and therefore a new definition on how growth is to be framed to raise ambitions amongst these type of entrepreneurs is needed. A similar notion holds true for circular entrepreneurs, as they look to define growth not by the pure firm growth but by the impact they make. The GEM looks at growth in form of jobs as this increases wellbeing in society, and whilst such a measure might be difficult to translate, it can be argued that the impact growth of circular entrepreneur attains to a similar goal. Ideas should be developed on how to define this type of growth within the current GEM definition of growth.

Continuing on the notion of growth, another key finding in the results was that circular entrepreneurs in this research showed mixed opinions on the relevance of scalability, and thus the growth of the company, at launch (Table 4.8). This shows similarity to research that has shown that entrepreneurs vary considerably in their desire to grow (Gilbert et al., 2006). Possibly in the case of this research this is related to the point made by Verheul & van Mil (2008) on the reduced growth ambition of necessity entrepreneurs in the start-up phase, considering the circular entrepreneurs stated to be motivated by an intrinsic necessity and thus showing a different ambition to growth. This phenomenon could be explained by the hybrid

motivation that is inside the circular entrepreneur, expressed in the lower ambition for growth at launch due to their reflexive necessity behaviour to start a circular business, compared to the opportunistic growth ambition they start to see once their solution actually begins to take shape in the market and actual gaps are addressed. The linear entrepreneurs have a more classical view on start-up development which aligns with the definition of Katila et al. (2012) of effectively developing a scalable business model. Interestingly, over time the relevance of scalability for circular entrepreneurs increased, getting more in line with the linear entrepreneur's idea of growth. This aligns with other findings on small business growth which showed that it is non-linear and the entrepreneurial initial intentions to launch a business and achieve a certain idea of growth evolve as the business matures (Dutta & Thornhill, 2008; Orser et al., 2000). However, the fact that many of the circular entrepreneurs do not emphasize growth and scalability at launch of the company could prove to be an issue for them to reach their goals. As one of the circular entrepreneurs described it:

“If you want to make real impact, you need to look at scalability from the start [...], sustainability has to come with scalability”

The results on perceived opportunities and barriers for growth (figure 4.5 & 4.6) help give more insight into why some of the circular entrepreneurs place less relevance on scalability at launch compared to others. Circular entrepreneurs mostly see opportunities through an organic uptake of their business as a result of market pressures creating more attractiveness for adoption of their business. This correlates with findings from the Social Enterprise Monitor in the Dutch market, where 77% of the entrepreneurs indicated that market conditions are improving as recognition of social enterprises increases (Social Enterprise NL, 2018). This is an important element for circular entrepreneurs as the changing markets as a result of pressures within industries, such as for example the current trend towards sustainable alternatives and the pressure that lies on firms to adopt circular practices, helps with the organic uptake. It coincides with findings on opportunities for circularity, which describe the increasing market attractiveness of the circular economy (Bastein et al., 2013). Interestingly, regulatory pressures were not named as opportunities for circular entrepreneurs, indicating that the market is moving ahead of the regulatory playing field. It is an issue which has been touched upon before in literature, arguing that governments are not putting enough efforts into stimulating the circular economy and the players operating in this new system (Rizos et al., 2015). Similarly, social entrepreneurs indicate that the policy of governments has not improved over the past years (Social Enterprise NL, 2018). If the circular economy needs to grow, and the circular entrepreneurs are one of the key players in that aspect, then there needs to be more governmental support for this area of business development. The following circular entrepreneur expressed an interesting take on this issue by looking at how they themselves can create more regulatory opportunities;

“I'm quite lucky that [redacted] City Council themselves, they've set themselves this rather ambitious target of being coffee cup waste free by 2020. They have in no way said how they will achieve that. They've just said that they will. So I'm trying to basically call them up and say; Well, hey, you know, we have a solution, let's put your money where your mouth is, let's, you know, do you want to do this? And if they want

to do it, and they want to support us in any way possible, then you know, then that's one Council and then another Council, and hopefully a domino effect may happen.”

In regards to the perceived barriers, the findings in this research support earlier findings of barriers in the circular economy such as the cultural and market barriers from Kirchherr et al. (2018) and a lack of expertise, an issue also described by Rizos et al. (2015) as a lack of knowledge and technical skills in the circular sector. Circular entrepreneurs express on top of that a barrier in credibility due to the need of validating the technology, an issue they run into more often than linear entrepreneurs as they are often engaging in completely new disruptive types of products and services. French (2002) described this issue occurs when not everyone is on the same technology growth curve, nor that they often believe that they “need” the technology or product that the entrepreneur is offering. It explains the reason why the ambition for some circular entrepreneurs is to not immediately grow the firm, but to ensure the quality of the product and technology first. This becomes an issue as when circular entrepreneurs are continuously engaged in the validation of their product, they cannot focus on growing their business, and thus their impact, elsewhere. This will then limit their capabilities in finding proper finance, a barrier often stated by circular entrepreneurs in this research. A similar issue is found in hybrid enterprises, where accessing finance from external parties is a core tension, as financial institutions struggle to understand the value capture aspect on an ideological level (Davies & Chambers, 2018). These barriers all relate to similar topics which are inherent to a new and complicated concept such as the circular economy, and perhaps also to why they struggle in finding partners which are willing to finance their business case.

5.1.5 Scaling circular entrepreneurs

As a final contribution, this part will continue on the topic of scalability and discuss a more hands-on approach to see how scalability of circular start-ups is formed by the entrepreneurial actors, which will help better understand how to scale circular entrepreneurs.

Scalability, in the view of the circular entrepreneur, means to expand the impact, not to easily replicate the product. When looking at how both groups then prioritize in regards to scaling, it shows that linear entrepreneurs value criteria such as generalizability, reaching growth goals and making sure the product fits the market they are looking to expand to. Circular entrepreneurs prioritize only one element in that they stay true to their values, the values which are linked to their founder identity and the reason as to why they began a start-up. It means that in every business decision related to scaling, they will reflect back towards the mission of impact, and will decide if it is not in stride with their values. For example, when offered the possibility to produce cheaper in different countries, they will prefer to produce locally albeit it slightly more expensive. Similarly, in selecting partnerships it means that circular entrepreneurs will look for partners with similar values, visionary partners who understand the mission for impact and who are on the same line. Crucially, it is these partners which can help with the credibility barrier of the firm. As one of the circular respondents describes;

“I mean, what we're working on is like something which is an industry wide change. And it's a lot about working together. And obviously, if you're only a start up, so, so

like, to get credibility that we really can manage this is one of the problems. But it helps us that we are now are having such big partners, which give us credibility.”

It shows the importance of partnerships for circular entrepreneurs, but also the complications that they run into when selecting appropriate partners. The ‘big partners’ from the quote above refers to major stakeholders in their industry which they are looking to work with to create credibility for their business. It is often these types of stakeholders that do not align with the vision of circular entrepreneurs, a criterion they have stated to be important when selecting the right people to work with:

“And these partners need to promote similar values. So we don't want to promote with our solution a different behavior, for example, don't want that our partners are very famous for capsule coffee, and then they use our recycling cups for the, for one purpose. So they need to also have a sustainability mindset and agenda, and goals.”

Research has already shown the effectiveness of partnerships of big firms with smaller innovative start-ups to enhance the circular economy (Veleva, Bodkin, & Todorova, 2017), however these firms were generally regarded as sustainability-oriented. It will be interesting to see how circular entrepreneurs view partnerships with other less aligned firms but who can bring major capital and influence to help enhance their impact. When asked for alternative ways to achieve scalability, some (and only) circular entrepreneurs indicated that they have thought about freely sharing their technology through for example open-sourcing, which would be a way to achieve great impact but would mean that they give away their competitive advantage. Similar findings were found within social entrepreneurs, who have stated that they do not only look to create impact by increasing sales or services, but to actively influence other firms and governments, 69% indicating that they do not mind to be copied by other companies (Social Enterprise NL, 2018). It shows that circular entrepreneurs, in their mission to achieve scalability of impact, are ready to put their personal goals of helping society as their main priority.

Using the business model scalability attributes from Nielsen and Lund (2018), this section wraps up by showing how the circular entrepreneurs can be fit within the scalability criteria of said authors, based on Table 2.3 from the theoretical framework. Appendix C contains an overview of the circular business model innovations per start-up, showing the types of business model innovations the various start-ups express within their firms. Table 5.1 below reports the various circular business model configurations and how they fit within the scalability attributes.

Enriching value propositions	
<i>Product-service systems</i>	
Use phase-oriented	
Description	Improved usage efficiency through renting, leasing, sharing or extended after-sales services
Related start-ups	CIR 10, 14
Result-oriented	
Description	Improved usage efficiency through subscription-based business models or

	pay-per-use
Related start-ups	CIR 11, 19, 20
Removing capacity constraints	
<i>Core technology</i>	
Source material	
Description	Substitution of source materials with less resource-intensive, novel alternatives (biobased, more durable, biodegradable, recyclable)
Related start-ups	CIR 2, 4, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19
Product design	
Description	Increase interchangeability, upgradability, modularity, energy-efficiency or maintainability of products and product components
Related start-ups	CIR 2, 3, 5, 10, 13, 14, 17, 18, 19
Key process	
Description	Novel production method or innovation of sub-processes enabling circularity
Related start-ups	CIR 1, 2, 6, 7, 9, 10, 13, 14, 15, 16, 17, 18, 19, 20
<i>Industrial symbiosis</i>	
Input-oriented	
Description	Structured inter-organizational collaboration to create value from residual resource streams of external organizations or usage of shared assets
Related start-ups	CIR 1, 4, 5, 6, 7, 9, 10, 12, 15, 16, 17
Output-oriented	
Description	Structured inter-organizational collaboration to create value from residual resource streams of focal organization or usage of shared assets
Related start-ups	CIR 10, 12
<i>Circularity standards/accreditation</i>	
Sourcing, manufacturing, transport/packaging	
Description	Establishing of process/material standards with suppliers through knowledge sharing and backward integration of activities along the supply chain
Related start-ups	CIR 2, 5, 6, 10, 13, 15, 16, 17, 18
Changing the role of stakeholders	
<i>Active involvement</i>	
Return, repair, reuse	
Description	Inclusion of consumers in after-use product/resource lifecycle; enabled by take-back processes at the source (e.g. reverse logistics)
Related start-ups	CIR 5, 8, 10, 11, 15
Collaborative consumption	
Description	(Cultivation and) usage of shared assets within communities potentially including shared ownership
Related start-ups	CIR 2
(Educational) Consumer engagement	
Description	(Open source) knowledge sharing to change customer preferences and/or diffuse distinct circular economy practices, materials or processes
Related start-ups	CIR 2, 5, 8, 9, 10, 12, 13, 14, 18, 19, 20
Creating platform-based value	
<i>Enabling technology</i>	

Sharing platform	
Description	Enables increased product utilization rate and reduced material throughput through shared use/access/ownership
Related start-ups	CIR 11
Trading platform	
Description	(Web) platform to facilitate the exchange and resale of products and materials
Related start-ups	CIR 5
Asset tracking	
Description	Tracking of products/components to enable adequate end-of-life treatment or create transparency on resource availability and origin
Related start-ups	CIR 5, 10, 12, 15, 16, 17, 18, 20

Table 5.1. Circular business model innovations categorized over the business model scalability attributes

What becomes clear is that there are only few circular start-ups focussing on enriching value propositions through product-service systems and creating platform-based value through sharing or trading platforms. Especially the latter is a contrasting finding with the results from Nielsen and Lund (2018), that found the platform-based business models to be quite widespread. In regards to circular business model configurations, the main attribute of scalability that is present is the removing of capacity constraints, either via the core technology, through input-oriented industrial symbiosis and in less convincing fashion through the establishment of circularity standards. Furthermore, another key attribute to scalability that is approached by circular entrepreneurs is changing the role of stakeholders through (educational) consumer engagement. According to these findings, the main area of scalability for circular entrepreneurs is through removing capacity constraints, which can be argued in some way to also be the nature of circularity. By accounting for the type of circular strategy within the 4R framework (Kirchherr et al., 2017), the findings show for each type of circular strategy what type of business model innovations are present (figure 5.2). Linking this understanding of how the circular entrepreneurs within this sample structure their business models helps in further examining the type of scalability attributes they attain to. For the reduce strategy, these findings show that consumer engagement and product design are often reflected in these types of businesses, relating to the fact that these firms are actively pursuing their customers to follow and understand their reduce motives. Interestingly, the notion of product design was mainly expressed by start-ups that have a reduce strategy. Whereas the source material and key process notion were found in multiple strategies, product design seems to be more unique to this group, indicating that they design to reduce the consumption and/or use of resources. For recycle strategies, input-oriented industrial symbiosis was expressed by all start-ups following this strategy, reflecting the importance of inter-organizational collaboration for these types of start-ups. For reuse strategies, product-service systems were present in both cases. Whilst it is only a sample of two, and therefore hard to infer conclusions, it can be argued that such sharing and subscription models do fit with the standard reuse strategies that are part of circular business models.



Figure 5.2. Circular strategy and the related circular business model innovations they pursue

5.2 Limitations, implications and future research

Following the discussion of the results, this part will discuss limitations that can be applied to this research and look into theoretical and practical implications of the findings, whilst simultaneously recommending future avenues of research.

5.2.1 Limitations of the research

The study presents some limitations that should be noted before assessing theoretical and practical implications. Firstly, due to the qualitative and semi-structured data collection process a rather open structure was applied. As a result, certain questions and follow-ups were not always considered in every interview. This creates some form of discrepancy between the gained results and leaves room for a subconscious influence on the interviewee by directing attention to specific topics. Nonetheless, the author feels that the chosen methodology was necessary for the purpose of the topic, which was to gain a better understanding of the understudied field of circular entrepreneurs. Specifically, such type of qualitative research is especially relevant when studying the universe of motives, aspirations, beliefs, values and so on when trying to understand new types of phenomena (Queirós, Faria, & Almeida, 2017). Additionally, in relation to the topic of growth it is mentioned that there is a lack of qualitative methods looking into how growth is valued amongst entrepreneurs (Hermans et al., 2015), and as such this research set out to increase the efforts in this area. This research, therefore, is to be seen as a first step into understanding circular entrepreneurship and their ambition and vision on the topic of growth and scalability. Finally, regarding the topic of the research method this research included two questions in the interview which had a closed, survey-based nature. Whilst such data usually does not belong within qualitative methods, such mixing has been done before in previous studies (Bryman, 2006). There is ambiguity in terms of how qualitative and quantitative designs are operationalized, therefore the leading guidance should always be the research question (Bowling & Ebrahim, 2005). The author of

this research argues that by using these two closed questions it allowed for deeper insights and key findings to arise on the topic of prioritization and relevance of scalability, which added to the results from the qualitative coding process and helped in giving a more rounded answer to the research question. Supplementing this topic in future research through a variety of methods such as a pure quantitative analysis to support the findings will help further validate the results that were presented here.

Furthermore, some limitations arise regarding to the sample present in this study. The initial idea was to compare a group of ‘linear’ entrepreneurs with circular entrepreneurs, the former being entrepreneurs who have a start-up that operates in the so called take-make-dispose economy. Due to the fact that it proved to be difficult quantify entrepreneurs in that sense, the sample of linear entrepreneurs resulted in being more of a mixed bag of entrepreneurs, also including social entrepreneurs and many service-related start-ups. Additionally, this research did not select beforehand on the entrepreneurial motivation, which resulted in a lack of (extrinsic) necessity entrepreneurs in this sample. This is attributable to the fact that the chosen geographical locations proved to score high on opportunity-driven entrepreneurship (GEM, 2019). Nonetheless, the author defends the choice for these locations as they do contain key areas for start-up and new innovation development (GEM, 2019). For future research, the author proposes to avenues; first, it would be interesting to look more into the various subgroups of entrepreneurs, also including more social, eco, green and sustainable entrepreneurs and see how they compare to the findings on circular entrepreneurs as discussed in this research, which will help in further distinguishing the circular entrepreneur. Second, by including necessity entrepreneurs in the sample and seeing how they hold up within the newly established framework of intrinsic and extrinsic opportunity-necessity motivation would help to further develop this new proposed motivation model.

5.2.2 Theoretical and practical implications of the research

The study contributes to the academic knowledge on the circular entrepreneur and establishes it as a new type of entrepreneur who possesses a new perspective on entrepreneurship which is essential to be understood for their further development. Particular insights related to this group of entrepreneurs are related to the circular strategies they apply and how they prioritize along the triple-bottom line. Many of the start-ups considered a “reduce” strategy, which is contrasting to findings from Stewart and Niero (2018) on circular economy reporting. Further research into if this contrast arises from a split between incumbent and start-up circular strategies could deepen the knowledge of how circular economy strategies are shaped by its actors. Furthermore, this research found that circular entrepreneurs prioritize less towards the social dimension, which is consistent with findings from Stewart and Niero (2018) who also perceive this lack of a social focus on circular economy reporting. Through understanding founder identity of circular entrepreneurs, this research serves as a stepping stone to gauge the potential outcome of their entrepreneurial behaviour and business performance. Whilst not part of this research, there is evidence that the founder identity has influence on entrepreneurial self-efficacy, the way in which entrepreneurs perceive their skills for starting and running a business (Brändle, Berger, Golla, & Kuckertz, 2018). Future research could look into how self-efficacy is shaped along circular entrepreneurs, and if these results can be related back to their founder identities. It should be noted that this research used a singular

form of founder identity even though hybrid forms have been found previously (Sieger et al., 2016), and considering the Darwinian elements of expansion and profit found within circular entrepreneurs it is argued that for a broader understanding this should be accounted for.

This research also found that circular entrepreneurs, mainly at launch, are not focussed on the notion of growth. This has an impact on the entrepreneurs way of doing business; high-growth-oriented entrepreneurs have shown to possess differing attributes compared to their low-growth-oriented counterpart (Gundry & Welsch, 2001), something which could be further researched by looking into how the differing growth ambition between circular entrepreneurs influences their entrepreneurial attributes and the potential growth of their business. Considering the lack of qualitative research on the topic of motivations for growth, this research addressed a key gap in literature. Circular entrepreneurs showed to look at the topic of growth differently by looking towards goals related to their impact, which contrasts from the main bodies of literature which focus on direct firm growth, such as size or employee growth (Hermans et al., 2015). Understanding how this impacts circular entrepreneurs and how to give value to the notion of impact will be crucial in understanding how to further develop these start-ups. Issues regarding growth that arise from the different perspectives found in circular entrepreneurship relate back to the barriers found within this research. Many of the literature on barriers to circular economy show similar findings related to the lack of support, technology, technical and financial resources and interest and support from public institutions and professionals (Ormazabal et al., 2018; Ritzén & Sandström, 2017; Rizos et al., 2015). Regarding the barrier of financial support, another avenue for success could be to look into finding access to finance from a new angle, through family offices. Some reports have already looked into the potential for impact investing through family offices, where a potential of \$1.7 trillion in assets under management is estimated for US family offices (Drexler & Noble, 2014; Hoque, 2016). According to recent data from 2017 around 62% of all family offices worldwide are active or expect to be active in impact investing (Bloomberg, 2018). Looking into the potential of family office investments to stimulate the circular economy could be an interesting topic for future research.

Finally, regarding the topic of motivation this research has set out to further elaborate on the motivation frameworks used to understand entrepreneurial motivation, and used the findings to apply it to circular entrepreneurship. Better understanding of the relationship and balance between the opportunity-necessity distinction is crucial, since research has shown the influence of opportunity-necessity motivation on the capabilities and success rates of entrepreneurs (Block et al., 2015; Hessels et al., 2008; van der Zwan et al., 2016). It was found that circular entrepreneurs showcase a form of necessity-entrepreneurship. This type of motivation has been previously found to negatively influence growth behaviour (Verheul & van Mil, 2008; Zali et al., 2013), which correlates with the findings regarding a reduced relevance for scalability within circular entrepreneurs at launch. With the contribution of expanding the framework, this research aims to add to a current call in literature of the importance in understanding entrepreneurial motivation to address social issues such as climate change, as this will lead to more relevant policy making guidance which is tailored to the entrepreneurial needs (Kaesehage, Leyshon, Ferns, & Leyshon, 2017). This can be elaborated on in further research, by looking into how the possible necessity element found within circular entrepreneurs influences their start-up behaviour. This research suggested that

circular entrepreneurs challenge the basic concept of opportunity-necessity entrepreneurs, as their ambition and vision are determined by the motivation to simultaneously seek market opportunities as well as act upon a necessity to induce positive change. Results on entrepreneurial motivation confirmed this suspicion, but also showed that regular missionary entrepreneurs fall within this description. Therefore, this research argues that it is not necessarily related to the dimension of circular entrepreneurship, but more so to the broader topic of social entrepreneurship and missionary identities in general. This finding calls for avenues of future research; to see if the framework holds up over a larger sample through a quantitative analysis, examining both founder identities and how the entrepreneurs describe their motivation according to this new extended opportunity-necessity distinction, and more understanding into how these hybrid motivations influence the entrepreneurs' growth behaviour, self-efficacy and other dimensions that are crucial to entrepreneurial success.

6. Conclusion

This comparative research set out to fill the gap on the current academic knowledge regarding the topic of entrepreneurship by answering the following research question: *“Does the vision and ambition differ between circular and linear entrepreneurs and how is this expressed in their motivation and growth preferences?”*

A group of 40 respondents, 20 circular- and 20 linear entrepreneurs, were interviewed and the resulting answers systematically coded and analysed to determine (i) their founder identities and resulting prioritizations, (ii) their entrepreneurial motivation through the multi-dimensional typologies and opportunity-necessity framework and (iii) their ambition and perspectives on growth and scalability resulting from their vision. The findings showed that circular entrepreneurs mainly operate out of a missionary identity, albeit with certain profit orientation in mind with the goal to generate impact. Furthermore, they appear to be motivated by both an intrinsic form of necessity to induce positive change and an extrinsic opportunity to act upon that feeling, contrasting to linear entrepreneurs who are motivated by a mix of intrinsic and extrinsic opportunity. As a result, circular entrepreneurs are mainly looking towards ways in which they can grow their impact, instead of other more regular types of growth found within linear entrepreneurs. The circularity strategies they pursue to achieve this are mainly focussed on either the “reduce” or “recycle” conceptualization, with their main scaling strategies involving either changing the role of stakeholders for the former, and removing capacity constraints for the latter.

Understanding how circular entrepreneurs are motivated and how this is expressed in their ideas of growth is a necessary step if society is looking to move towards more circular alternatives. Because circular entrepreneurs have this value of growth meaning impact, in the actual growing activities of their firm, the scalability, they keep this value with them. This has a crucial effect on the type of partnerships they look for, but also in the acquiring of finance and other growth activities of circular entrepreneurs. Learning about the circular entrepreneur in such a way can help guide policy in the right direction to support start-up development in this field. In a way, it is not only important for the future development of circular entrepreneurs that the outside world understands their views on growth, but it is also crucial that they themselves develop an understanding of their values and how this influences their growth capabilities, since they do not operate through the usual forms of entrepreneurship and thus perhaps limit themselves in their mission to achieve the most impact. Therefore, this research outlined the need to further explore the topic of circular entrepreneurship through expanding on the findings of the hybrid tensions that are part of the circular entrepreneurs’ vision and ambition by looking how this impacts their business capabilities and performance. The findings in this dissertation serve as a first attempt in framing and understanding entrepreneurs operating in the circular economy as a ‘new breed’ of entrepreneurs. Future development of this topic will help to deepen the knowledge on this impactful new area of innovation, which will aid in supporting this crucial group of people who look to change the world as it is shaped today.

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9. Appendices

Appendix A – Interview guide

Linear and circular entrepreneurs' visions and ambitions on growth and scalability – Interview guide

Company:

Interviewee & Title:

Date:

General

- 1) Could you please tell us a little more about yourself? (For instance, your name, company, and career path... for the recording.)
- 2) Please (shortly) describe the business model of the company you work for/started.
- 3) What do you want to achieve with your company?
 - i) What is the vision of the company?
- 4) Which sector do you operate in (i.e. waste management, energy, transportation, etc.)?

Entrepreneurial Background

- 5) Why did you decide to start this business? Can you please explain how the idea and your business model emerged? (Personal ambition to start it?)
- 6) What were your personal motivations to start this business? (missionary, communitarian, Darwinian)
 - i) What are your entrepreneurial ambitions? (In other words, the end goal as an entrepreneur).
- 7) Please describe what business motivations drove you to this business? (autonomy, job dependence, income, environmental conservation, social equity, community)
 - i) Would you say you were driven by opportunity or necessity? (or a combination of both)
- 8) Please rank the 5 following dimensions based on where your business model focuses on from most to least:
 - Profit
 - Environmental conservation
 - Social equity
 - Consumer (i.e. responsibility for production and consumption systems instead of just “selling products”)
 - Sustainable supply chain principles (e.g. reverse-logistics)

Scalability & Growth

9) What does growth mean to you?

- i) How does this influence your business decisions?
- ii) Is this operationalized? (goals/targets/KPI's)

10) What relevance did scalability have when you launched your company versus now? (i.e. the possibility to grow your business into a global one)

- i) Launch: Highly relevant, relevant, included, irrelevant?
- ii) Now: Highly relevant, relevant, included, irrelevant?

11) What does scalability mean within the context of your business model?

- i) What are 'criteria' for you to scale? What do you always have in the back of your mind when scaling?
- ii) Who would be potential strategic partners for scalability and how would these partners add to your value proposition?
- iii) What are opportunities you perceived for scaling your start-up and how did you deal with them?
- iv) What are problems you encountered while scaling your start-up and how did you deal with them?

12) What would be alternative options to achieve scalability of your business model?
(alternative configuration of business, platform-based, different role for stakeholders)

Appendix B – Coding framework

Entrepreneurial background	Entrepreneurial identity	Missionary entrepreneur	see their firms as political objects that can advance a particular cause for the benefit of society at large
		Communitary entrepreneur	view their firms as social objects that support and are supported by a particular community
		Darwinian entrepreneur	are focused on competition with other firms and are driven by their own economic self-interests
	Entrepreneurial experience	First time entrepreneur	has no experience with entrepreneurship, this start-up is the first time they engage in this activity
		Experienced entrepreneur	has had some form of experience with entrepreneurship before beginning current start-up
		Serial entrepreneur	has had rich experience with entrepreneurship, started (and exited) multiple start-ups
	Personal background	No past relevant experiences	has no form of experience in the current field of activity, through previous jobs etc.
		Non-relevant education	has no relevant education to the current field of activity
		Relevant experiences	has had some form of experience in the current field of activity, through previous jobs etc.
		Relevant education	has had relevant education within the current field of activity
Entrepreneurial motivation	Opportunity-necessity motivation	Intrinsic opportunity driven	"I do this to develop myself, learn, take up a challenge, achieve my personal vision etc."
		Intrinsic necessity driven	"I do this because I feel the personal obligation to help or change things"
		Extrinsic opportunity driven	"I do this because the market was right, there was an outside opportunity etc."
		Extrinsic necessity driven	"I do this because I am forced to, loss of job/income etc."
	Multi-dimensional typologies	Achievement	includes aspects such as having meaningful work and fulfilling one's personal vision
		Autonomy	includes aspects such as control over one's own time and work, making independent decisions, having flexibility
		Challenge	includes aspects such as looking to be challenged and pushed towards new things
		Learning	includes those that look to learn something from their entrepreneurial activity
		Passion	Includes those that started their business out of a passion
		Income & financial success	captures the importance of financial returns from entrepreneurship
		Recognition & status	captures aspects related to social status, such as the desire to receive recognition and respect for one's work
		Environment	includes the desire to contribute to the environment and engaging in environmentally friendly activities

		Social motivations	includes the desire to contribute to society or a community through their business activities
Business motivation	Vision and ambition	(Global) expansion	captures the drive for global expansion of the business
		Become market leader	those aiming to become the market leader with their business
		Changing the industry standards	involves those who look to change the standard in their industry or sector
		Empowering the industry	involves those who look to benefit or empower the stakeholders in their industry or sector
		Creating a positive impact	captures the goal of making a positive impact on society or the environment with their business
		Creating awareness	those looking to create awareness on a certain topic through their business activities
		Develop an alternative	those aiming to create an alternative product/service for an existing one
		Setting an example	involves those who see their business as a way of setting an example for others (also outside own industry)
		Strive for exit	those who set up a business with the purpose of going towards some form of exit
		Business model focus	Consumer priority
	Impact priority		captures those that see having the most impact as their main goal
	No profit prioritization		captures those that do not prioritize profit as a focus of their business
	Profit needed for impact		captures those that prioritize profit as an enabler for them to make the most impact
	Profit as a result		capture those that prioritize all other elements as profit will result from doing that
	Growth ambition	Growth definition	Customer growth
Production growth			defines growth as increasing production, production capabilities, etc.
Diversification growth			defines growth as increasing the diversification, diversifying product/service range
Turnover growth			defines growth as increasing the returns, profit or turnover
Marketing growth			defines growth as growing the marketing activities of the business
Employee & team growth			defines growth as growing the team both quantitative (team members) and qualitatively (employee development)
Impact growth			defines growth as growing the impact they make through their activities

		Personal growth	defines growth as personal growth, indicating that growing the business is growing themselves	
	Growth intention	Growth as the main driver	those that state that growth is the main driver for all their business activities	
		Growth is secondary	those that state that growth relies on certain factors or criteria they have for growth	
	Growth goals	Targets measuring customer reach	mention of having targets for how much clients/customers they reach	
		Targets for expanding operations	mention of having targets for expanding their operations over new markets/users	
		Targets for profit made	mention of having targets for profits made, revenues etc.	
		Targets for investments	mention of having targets to attract investments	
		Targets measuring impact	mention of having targets to measure impact, such as CO2 saved etc.	
		No metrics or KPIs	mention of having no targets or KPIs	
	Growth expectation	Opportunities for growth	Accelerator programs	see opportunity in accelerator programs
			Grants and funds	see opportunity in grants and funds that are available
			Organic adoption	see opportunity through organic adoption of their business
			Expanding client network	see opportunity in self-created expansion of client network
			Market pressures or changes	see opportunity due to market pressures or changes
			Regulatory pressures or changes	see opportunity due to regulatory pressures or changes
			Sector-specific investors	see opportunity in sector-specific investors being available
		Barriers for growth	Finding the right partners	see barriers in finding the partners that fit their business
			Finding partners for finance	see barriers in finding partners that can finance their business
			Finding the right people & team	see barriers in finding the right people for the team
			Validation of technology	see barriers in the validation of technology, proving the product/service works
Credibility and trust			see barriers in credibility and trust you have as a new organization	
Lack of sector expertise			see barriers in a lack of expertise within their industry/sector	
Industry-wide change required			see barriers in their industry which require a complete change of operations	

			Cultural barrier	see barriers in the form of cultural barriers, such as aversion to their product/service
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Scalability	Relevancy of scalability	Nature of starting a business	define scalability as the nature of setting up a business
		Not important at start	define that scalability was not the main drive when setting up the business
	Definition of scalability	Adjusting the organization and team	those that see scalability as growing the internal organization and team
		Easily replicatable	those that see scalability as creating an easily replicable product/service
		Expansion to multiple markets or users	those that see scalability as expanding to multiple markets and or users
		Generating returns	those that see scalability as generating increasing returns
		Having market potential	those that see scalability as having market potential
		Maximizing impact	those that see scalability as creating the most positive impact
		Criteria for scalability	Generalizability
	Creating more efficiencies		always look to create more efficiencies when scaling
	Reach growth rate goals		always look to reach growth rate goals when scaling
	Staying true to ones values		always staying true to ones values when scaling
	Attracting the right people		always trying to attract the right people for scaling
	Assess product-market fit		always looking at product-market fit when scaling
	Partnerships	Partners for business and sales	require partners that increase business and sales
		Partners for co-development	require partners that co-develop the product/service
		Partners who create added value	require partners that create added value both ways
		Partners with similar values	require partners with similar values
		Visionary partners	require visionary partners that dare to take risks and think big
	Alternatives for scalability	Alternative configuration of business	have looked into alternative configurations such as a different client focus
Alternative funding options		have looked into alternative funding options such as crowdfunding	

		Changing the role of stakeholders	have looked into changing the role of stakeholders to increase scalability
		Licensing	have looked into licensing their product/service
		Open-sourcing	have looked into open-sourcing, freely sharing their product/service
		Creating a platform	have looked into creating a platform to induce scalability

Appendix C – Overview of in sample circular business model innovations

Name	Client focus	Circularity strategy (4R)	Use phase-oriented	Result-oriented	Return, repair, reuse	Collaborative consumption	Consumer engagement	Source material	Product design	Key process	Sharing platform	Trading platform	Asset tracking	Input-oriented	Output-oriented	Sourcing, manufacturing, transport
CIR 1	B2B	Recycle	0	0	0	0	0	0	0	1	0	0	0	1	0	0
CIR 2	B2C - B2B	Reduce	0	0	0	1	1	1	1	1	1	0	0	0	0	1
CIR 3	B2C - B2B	Reduce	0	0	0	0	0	0	1	0	0	0	0	0	0	0
CIR 4	B2B	Recovery	0	0	0	0	0	1	0	0	0	0	0	1	0	0
CIR 5	B2B	Recycle	0	0	1	0	1	0	1	0	0	1	1	1	0	1
CIR 6	B2B	Reduce	0	0	0	0	0	1	0	1	0	0	0	1	0	1
CIR 7	B2B	Recycle	0	0	0	0	0	1	0	1	0	0	0	1	0	0
CIR 8	B2C	Reduce	0	0	1	0	1	1	0	0	0	0	0	0	0	0
CIR 9	B2B - B2C	Recycle	0	0	0	0	1	1	0	1	0	0	0	1	0	0
CIR 10	B2B	Reduce	1	0	1	0	1	1	1	1	0	0	1	1	1	1
CIR 11	B2B	Reuse	0	1	1	0	0	0	0	0	1	0	0	0	0	0
CIR 12	B2B	Recycle	0	0	0	0	1	1	0	0	0	0	1	1	1	0
CIR 13	B2C	Reduce	0	0	0	0	1	1	1	1	0	0	0	0	0	1
CIR 14	B2B	Reduce	1	0	0	0	1	0	1	1	0	0	0	0	0	0
CIR 15	B2B	Recycle	0	0	1	0	0	1	0	1	0	0	1	1	0	1
CIR 16	B2B	Recycle	0	0	0	0	0	1	0	1	0	0	1	1	0	1
CIR 17	B2B - B2C	Recycle	0	0	0	0	0	1	1	1	0	0	1	1	0	1
CIR 18	B2C	Reduce	0	0	0	0	1	1	1	1	0	0	1	0	0	1
CIR 19	B2C	Reduce	0	1	0	0	1	1	1	1	0	0	0	0	0	0
CIR 20	B2B	Reduce	0	1	0	0	1	0	0	1	0	0	1	0	0	0

Appendix D – Example answers for the types of motivation

<p>Intrinsic opportunity driven</p>	<p>“And I see it as a good way to develop these skills. To use them. So it's developing myself. I think I didn't understand the value of the personal value that that brings to me before I started working.”</p> <p>“I have one of the main focus of my businesses strategies of growing and expand my entrepreneurial experience”</p> <p>“Well, the reason why is.. I don't know, I think it's just a good time to explore this kind of stuff. “</p> <p>“I don't know. I just like making things and see if things work out the way you.. I don't know, how you put it.. you just think of something and like to see, work out the way you want it, the way you envision it. “</p>
<p>Intrinsic necessity driven</p>	<p>“Necessity in a way, maybe we should talk about the better future. So that in the end want want to leave the world in a bit nicer than you found it sort of.”</p> <p>“A duty to help people.”</p> <p>“Basically, the, for me, the pure motivation, the intrinsic motivation started with my master, where I saw that, that we have this tremendous resource problem, which is like, which we face already, and which we will face even more in the future. [...] I mean, I had this moment in my master where I just decided I want.. I see that I cannot change companies, which are already listed, so I have to create something by myself.”</p> <p>“Yeah also its responsibility. I have to do this. It must happen. It's like a kind of mission.”</p> <p>“I just felt an increased urgency to spend my time better.. and what do I mean with that, I worked on social issues, which I like and think are interesting, but to me, the idea of human kind, of how we human beings treat waste, is something that I can't wrap my mind around, and I wanted to change.”</p> <p>“I would say opportunity, and necessity, I would say in like an internal intrinsic motivation that's just been present waiting for the right opportunity to strike.”</p>
<p>Extrinsic opportunity driven</p>	<p>“And also, from the very beginning, a lot of people were interested into it. So I believe there's also a business opportunity involved to explore further”</p> <p>“I would say opportunity. So there was a chance for us because there wasn't a product on the market. And I would say there is a market for for that kind of product. And that was the opportunity.”</p> <p>“Well, I think, first I saw the opportunity because it came after I was talking to water utilities, just to try to understand what kind of challenges they're dealing with.”</p>
<p>Extrinsic necessity driven</p>	<p>No responses indicating this type of motivation within this sample.</p>