



LAPPEENRANTA-LAHTI UNIVERSITY OF TECHNOLOGY LUT

School of Business and Management

Master's Degree Programme in International Business and Entrepreneurship (MIBE)

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**ENTREPRENEURIAL INTENTIONS: EFFECTS OF INDIVIDUALS' PERCEPTION OF
ENTREPRENEURIAL ECOSYSTEM ELEMENTS IN SOUTH SAVO**

Master's Thesis

2021

Examiners: Professor Henri Hakala
Researcher Gregory O'Shea

ABSTRACT

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Due to policy and ecosystem mismatch, governments and policymakers continue to face difficulty in designing policies and ecosystems that support entrepreneurship. Since intention is a predictor of behaviour, this thesis posits that ecosystem development policies should begin with a diagnosis of how existing ecosystem elements influence individuals' entrepreneurial intentions in a given region. Using structural equation modelling, this study examined the relationship between individuals' perceptions of their entrepreneurial ecosystem and their intention to start a business. Data was gathered from 189 residents of a Finnish region.

According to the findings, individuals' attitudes and subjective norms towards entrepreneurship are the most influential factors affecting their entrepreneurial intentions. Furthermore, their perception of the ecosystem has an indirect impact on the formation of those intentions. Individuals' intentions are influenced by their perceptions of talent, knowledge, and network and their effect on the three antecedents of intention. The antecedent-intention relationship was shown to be moderated by perceptions of leadership and finance. The work concludes by discussing how these findings can influence and steer effective regional policies targeted at fostering vibrant entrepreneurial ecosystems.

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And so, another chapter comes to an end.

Special thanks to my parents, the hands that sculpted and imbued me with the perseverance and spirit that continue to serve me. For their ever-present love and support, I am forever grateful. *Daaly!*

I would like to thank Henri Hakala, Gregory O'Shea, and Seppo Luoto for their guidance and detailed feedback throughout this thesis project. Your assistance eased and sped up the whole process.

My people would say '*Ora na-azu nwa*' - it takes a community to raise a child. To all my friends in Nigeria, Russia, and Finland, who cared and helped me emotionally, physically, and academically. You have all been my community for the past couple of years. Thank you!

Cheers to the next chapter and the adventure that is sure to come with it!

In Lappeenranta, June 16th, 2021

Chukwuka Obiora Igboanua

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LIST OF SYMBOLS AND ABBREVIATIONS

ATB	Attitude towards the Behaviour
EE	Entrepreneurial Ecosystem
EED	Entrepreneurial Education
EEM	Entrepreneurial Event Model
EFC	Entrepreneurial Framework Conditions
EI	Entrepreneurial Intention
GEM	Global Entrepreneurship Monitor
PBC	Perceived Behavioural Control
SN	Subjective Norms
TPB	Theory of Planned Behaviour

1 INTRODUCTION

1.1 Background of the Study

Entrepreneurship has long been recognised as a key factor in economic development. The presence of a thriving entrepreneurial ecosystem within a region positively influences its economic performance (Szerb et al., 2019). To boost entrepreneurial innovation, Autio et al. (2014) advocate that policies should be aimed at fostering entrepreneurial ecosystem development. However, governments and policymakers still face challenges in creating such policies and conditions.

Admittedly, this is not a simple problem. Entrepreneurship is a complex economic behaviour that often begins before any observable action is taken (Kautonen et al., 2013). Change, complexity, financial and psychological ownership, novelty, risk, resource constraint and uncertainty often characterise the process of venture creation (Baron, 2007; Gibb, 1993). In the same vein, entrepreneurial ecosystems are complex adaptive systems comprising highly interdependent actors and factors. These characteristics of entrepreneurship and entrepreneurial ecosystems make for a challenging process of developing policies. The entrepreneurial intention (i.e., the intention to start a business) of individuals in a region is at the centre of these concepts. Undertaking the complex process of entrepreneurship requires planning or, at the very least, must be intentional. Roundy et al. (2018) argue that, among other factors, the intentionality of entrepreneurs influences the creation and development of entrepreneurial ecosystems. But entrepreneurial intention does not occur in a vacuum. An individual's perception of the regional conditions or environment affects their intention to start a business (Davidsson, 1991; Sternberg, 2009). According to Stam (2010 & 2015), the entrepreneurial ecosystem influences entrepreneurial motivation, preference, and intention.

Intention is the basis for action and behaviour. In social psychology, intention is regarded as the single best predictor of planned behaviour (Bagozzi et al. 1989; Azjen, 1991). Although research linking entrepreneurial intention and entrepreneurial behaviour is still limited (Fayolle & Liñán, 2014), several findings support this notion in

the entrepreneurial context. Entrepreneurial intention is a significant predictor of entrepreneurial behaviour (Kautonen et al., 2013; Kautonen et al., 2015). Despite this, research and regional policies aimed at fostering entrepreneurial intention have largely ignored how it is affected by entrepreneurial ecosystem factors, especially as subjectively perceived by individuals in the environment. This thesis will address this area and aims to understand the relationship between individuals' perception of the entrepreneurial ecosystem and their intention to start a business.

A subset of literature focuses on understanding and defining the elements of entrepreneurial ecosystems (e.g., Isenberg (2011), Stam (2015), and Spigel (2017)) and developing measures for assessing them (Liguori et al., 2019). International organisations such as Global Entrepreneurship Monitor (GEM), Organisation for Economic Co-operation and Development's (OECD), and the World Economic Forum (WEF) have also contributed to the entrepreneurial ecosystem framework development and assessment efforts. However, this subset (excluding the GEM framework) does not investigate the relationship between entrepreneurial ecosystem context and entrepreneurial intention. In another subset of research on factors affecting entrepreneurial intention, most studies are focused on the traits or demographic characteristics of the entrepreneur (Alammari et al., 2019). Some other studies focus on variables in different types of institutions such as culture, social networks, and universities (Liñán & Fayolle, 2015). Only a handful of studies have specifically focused on the whole regional context and entrepreneurial intention (e.g., Kibler (2013) and Elnadi and Gheith (2021)). So far, the results suggest that entrepreneurial intention is higher when the entrepreneurial ecosystems are more favourable.

However, these extant studies have key deficiencies that present a sizable research gap. First, the reliance on convenient 'objective' regional conditions. Kibler (2013) argues that 'objective' regional conditions shape individuals' perception of entrepreneurship and their entrepreneurial intention. While this is true to a large extent, it is worth noting that an individual's awareness and knowledge are limited, and this affects his or her perception of objective reality. That is, "while individual views may be informed by objective reality, bounded rationality and information asymmetry are at play" (Liguori et al., 2019, p.10). For example, entrepreneurial finance may be 'objectively' and readily available in a community however people who are not well informed or

connected to relevant networks would perceive a lack of entrepreneurial finance while their more informed and connected counterparts may disagree. This difference in perception of the ecosystem will affect the attitudes and behaviour of these two parties differently. To address this limitation, Kibler (2013) calls for future research using perceptual measures of regional conditions. Such an attempt does not just complement the 'objective' regional factors, but the difference between both measures can be informative. In the example above, raising awareness about the availability of entrepreneurial finance becomes a necessity. This difference in the objective presence of an ecosystem element and its subjective perception by individuals indicates the need for research focused on the perceptual assessment of ecosystem elements and their effects on individuals. This research need is illustrated in Figure 1.

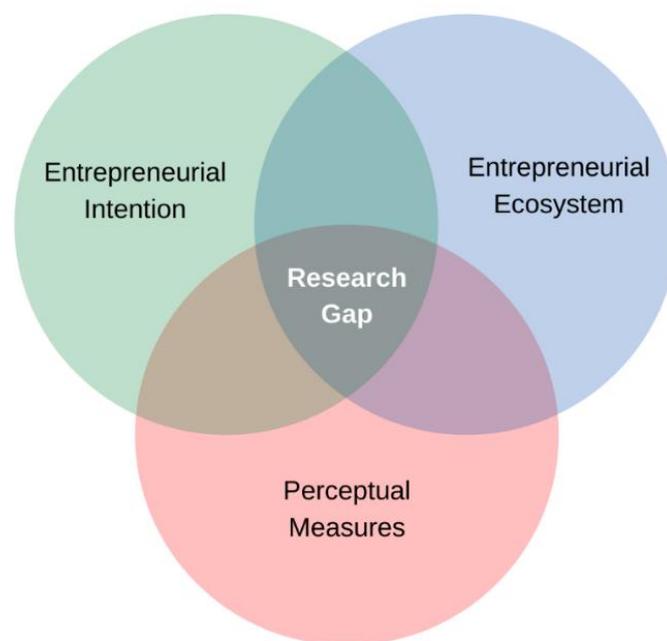


Figure 1 Research Gap
(Source: Author)

Second, most of the extant studies suffer from sampling limitations that limit the generalizability of findings. Despite calls to use more representative samples that account for subjects in various phases of life (Peterman & Kennedy, 2003), most entrepreneurial intention scholars still rely on convenient university student samples (Kautonen et al., 2013) and often report this as a limitation of their study (e.g., Krueger et al., 2000; Liñán et al., 2011; Elnadi & Gheith, 2021). In general, investigation of the

interaction between ecosystem and individual factors in determining entrepreneurial intention has only just begun and deserves more attention (Schmutzler et al., 2019).

1.2 Research Question and Objectives

The major shortcoming of policymakers is their adoption of best practices from thriving ecosystems without adapting them to the uniqueness of their local ecosystem (Harrison & Leitch, 2010). This failure leads to inapt policies riddled with implementation challenges (Bramwell et al., 2019; Brooks et al., 2019) and focused on the quantity rather than the quality of entrepreneurial activity (Brown & Mawson, 2019). Szerb et al. (2013) suggest the better approach is to employ various policy mixes depending on the specific needs of the ecosystem. In sum, there is a necessity for effective data-driven policy recommendation that fit the specific needs of individuals (potential entrepreneurs) within an ecosystem. To practically address this problem in the regional context, this thesis will study the South Savo region of Finland. It begins with considering residents' subjective assessment of the current entrepreneurial ecosystem and then examining how it affects their intention to start a business. Hence, the following research questions:

1. What are the important factors influencing entrepreneurial intentions in South Savo?
2. Do residents' perception of the entrepreneurial ecosystem impact their entrepreneurial intention?

Policymakers must consider how their ecosystem development policies affect entrepreneurial intention, given its relationship with entrepreneurial behaviour. Indeed, the first step in policy development should be the diagnosis of how and which existing entrepreneurial ecosystem factors affect individuals' entrepreneurial intention. Hence, this study has crucial implications for researchers and policymakers. First, the developed perceptual measure applies to entrepreneurial ecosystems at any level: city, region, or nation. Researchers and policymakers who want to employ it only need to define their scope or territory of analysis.

Second, entrepreneurial intention is an antecedent of entrepreneurial behaviour. Although people develop intention at an individual level, their perception also influences it. These perceptions are potentially more impactful than objective measures (Powell, 1996). Hence the value in cognitively assessing an entrepreneurial ecosystem to uncover the underlying issues facing actors in the entrepreneurial ecosystem. This information will align development policies and communication priorities with the specific needs of the region. Also, this study will answer the question: 'which critical entrepreneurial ecosystem sub-systems should policymakers give greater priority to?' (Cavalo, 2019, p. 24) as it applies to South Savo.

1.3 Theoretical Framework

The theoretical framework of this study is constructed around two major concepts: entrepreneurial intention and entrepreneurial ecosystem. Ajzen's (1991) tried, tested, and validated Theory of Planned Behaviour (TPB) provides the core theoretical foundation for investigating the relationship between individuals' perception of an ecosystem and their intentions to start a business. Stam's (2015) integrated model of entrepreneurial ecosystems, specifically the systemic conditions (leadership, finance, talent, knowledge, networks, and support services), is used to operationalize the ecosystem. Exogenous factors such as the systemic condition do not directly affect intentions (Ajzen, 1991; Krueger et al., 2000) hence this study only focuses on the indirect relationship (mediated and moderating). Figure 2 shows the relationships between the concepts that make up the theoretical framework. The relevant theories and concepts are discussed in the literature review in chapter 2.

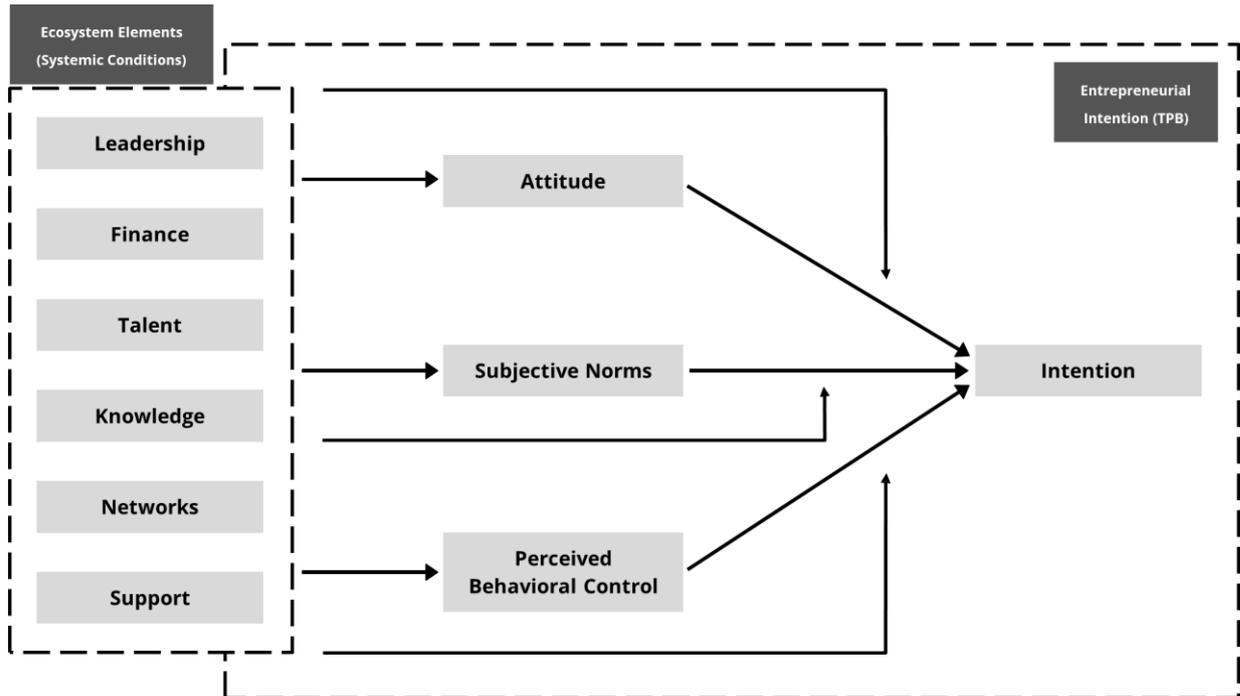


Figure 2 Theoretical Framework

(Source: Author)

1.4 Definition of the Key Concepts

Entrepreneurial Intentions

A person's self-admitted belief that they want to start a new business and that they intend to do so at some point in the future (Thompson, 2009). And this point in the future when the intent is actualised can be definite or indefinite and may never be reached.

Attitude

The degree to which a person's perception or appraisal of a given behaviour is favourable or unfavourable (Ajzen, 1991).

Subjective Norms

The perceived social pressure to engage in or refrain from engaging in a behaviour based on the likelihood of receiving approval or disapproval for a given behaviour from significant referent individuals or groups (Ajzen, 1991). Referent individuals in this study include family, friends, and important people.

Perceived Behavioural Control

The degree to which an individual perceives a behaviour to be easy or difficult to perform (Ajzen, 1991). In other words, a person's perception of his or her ability to execute a particular behaviour.

Entrepreneurial Ecosystem

A collection of interdependent factors and actors in a specific territory coordinated in a way that promotes productive entrepreneurship (Stam, 2015).

Systemic Conditions

A group of six ecosystem elements whose interplay is primarily responsible for the ecosystem's success. These elements include leadership, finance, talent, knowledge, network, and support services. (Stam, 2015)

Perception

Information about a stimulus that a person receives with or without awareness (Merikle et al., 2001). It is an individual's personal theory of reality and how they make sense of the world (Blake & Sekuler, 2006).

1.5 Delimitations of the Study

This study was delimited in several ways. First, this study was limited to the six elements that make up the systemic conditions to allow for a more in-depth examination of each ecosystem elements. Second, this study focuses on a single region. This limitation allows this study to obtain a better and more exact picture of the ecosystem and its effect on intentions in the region, however, it restricts the generalisation of its finding. Finally, the effects of control variables are not studied. Although some other background information such as age, gender, education, and entrepreneurial experience are collected they were not studied. They were only included to ensure that their potential effects were taken into consideration while exploring the ecosystem-intention relationship, which is the thesis's main focus.

1.6 Research Methodology

This study takes a quantitative approach using a cross-sectional survey design method. This approach suits research questions that are descriptive and focus on the relationships between variables (Creswell & Creswell, 2018). First, a comprehensive literature review of the key concepts and theory is conducted to establish the theoretical framework, develop testable hypotheses, and design a questionnaire for the study. One of the aims of this study, to aid data-driven policy development, justifies selecting a survey method that allows the collection of quantifiable data. This method enables establishing variation between multiple cases and examining the patterns of relationships between variables (Bell et al., 2019). The survey is cross-sectional, and no predictive relationships are tested.

Data is collected and administered via an online survey and telephone interview to expedite the process. The obtained data is analysed using exploratory factor analysis (EFA), confirmatory factor analysis (CFA) and structural equation modelling (SEM). Since the constructs used in the study are operationalised using multi-item scales, EFA and CFA are used to evaluate the factors to ensure validity and reliability. Then SEM is applied to evaluate the direct and indirect relationships in a structural model. These analyses are executed using IBM SPSS Statistics 26 and IBM SPSS Amos 26.

1.7 Structure of the Thesis

The study's introduction is presented first. The second chapter examines extant literature and research on entrepreneurial intentions and ecosystems. The hypotheses are formed as the literature review advances. The research design and methodology are discussed in the third chapter. The measurements to test the hypotheses are established in the fourth chapter, and the results of the analyses are reported. The fifth and final chapter discusses the study's findings, their theoretical and practical implications, and concludes with future research recommendations.

2 LITERATURE REVIEW AND HYPOTHESES

This chapter reviews the extant literature on entrepreneurial intention (EI) and its influencing factors. First, I introduce the concept of EI and the core models that have been used to explain it, with a focus on the TPB. I then examine the other factors that influence EI, such as the role of personal-level variables, entrepreneurship education, context, and institution. Following that, I conceptualize the regional context as an entrepreneurial ecosystem (EE) and explain how perceptions of the ecosystem influence intention formation. Finally, I explain why the elements of EE systemic conditions were chosen for empirical testing. As the literature review progresses, I present the study's hypotheses.

2.1 Entrepreneurial Intention

In addressing the problem of the absence of clear and universally accepted definitions in entrepreneurship research, Bygrave & Hofer (1992, p. 1) declared that “good science has to begin with good definitions”. About 3 decades since then several concepts in entrepreneurship research still suffer from this problem. Since the seminal works published in the eighties by Shapero (1984) and Sokol (1982), Bird (1988), and Katz and Gartner (1988), EI as a construct in entrepreneurship research has rapidly developed and evolved. However, there is still no universal consensus on an EI definition, and this has been problematic for the research field. Thompson (2009) found that researchers, often implying but not clearly stating, use EI to refer to a range of varying but related concepts including individuals’ view on self-employment, career orientation, desire to own a business and vocational aspirations.

In light of this issue, the EI construct as used in this study is defined as “a self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future” (Thompson, 2009, p. 676). This definition suggests several implications. First, the presence or absence of conviction and planning to start a business cannot be directly measured (Diamantopoulos & Siguaw, 2006) hence EI is self-reported. Second, the degree and intensity of intent vary from person to person and for each person, it may vary from time

to time depending on the other endogenous and exogenous factors. Third, due to numerous influencing factors, the point in the future when the intent is actualised can be definite or indefinite and may never be reached. (Thompson, 2009) However, since this study aims to assess the influence of existing exogenous factors on intention, emphasis will be placed on a definite point in the future, specifically, within 12 months.

So, why does studying intention matter? Intention is the basis for action and behaviour. In social psychology, intention is regarded as the single best predictor of planned behaviour (Bagozzi et al. 1989; Ajzen, 1991). Although, research linking entrepreneurial intention and entrepreneurial behaviour is still limited (Fayolle & Liñán, 2014) several findings support the intention-behaviour link in the entrepreneurial context. These longitudinal studies found that EI is a strong predictor of entrepreneurial behaviour both in the short term of about 1-3 years (Kolvereid & Isaksen, 2006; Kautonen et al., 2013, 2015) and long term up to 18 years (Schoon & Duckworth, 2012). Furthermore, several empirical studies have shown that the existence of a small group of ambitious entrepreneurs is more important for economic growth than the presence of new or small firms (Wong et al., 2005; Stam et al., 2009, 2011). Since intention is the basis of behaviour, the actions of such ambitious entrepreneurs should be preceded by strong levels of entrepreneurial intention. Hence, these findings show that a study of EI is relevant as it helps practitioners, educators and policymakers understand, nurture, and stimulate entrepreneurial behaviour.

2.1.1 Entrepreneurial Intention Models

Various models, methodologies, and theories have been used to explore the role of EI in the entrepreneurial process over the last 40 years of EI research. The efforts in this area have been directed towards clarifying the concept, developing an EI scale, testing existing theories, developing new theoretical frameworks, studying specific types of intentions, and testing the effects of additional variables and different configuration of motivational antecedents (Liñán & Fayolle, 2015). Papers testing existing theories and models easily dominate this area of EI research. Among these theories, Shapero & Sokol's (1982) entrepreneurial event model (EEM) and Ajzen's (1991) TPB are the most tested in EI study (Schlaegel & Koenig, 2014; Liñán & Fayolle, 2015).

The event model is more specific and native to the field of entrepreneurship research. The model argues that EI depends on an individuals' perception of the desirability and feasibility of an entrepreneurial event (e.g., starting a business) as well as their propensity to act on opportunities. Furthermore, although the entrepreneurial event depends on the existence of EI, a negative or positive displacement event may be required to trigger a change in behaviour toward its actualisation (Shapero 1982). The EEM has been applied in several studies with varied results. A study of senior university business students, for example, found that all three antecedents in the model were significant and explained about 40% of the variance in EI (Krueger et al., 2000). However, a meta-analysis of studies using the event model discovered that, while propensity to act had no significant effect on EI, perceived desirability and perceived feasibility did, accounting for 21% of the variance in EI (Schlaegel & Koenig, 2014).

In contrast, the TPB is one of the most widely used theories in social psychology (Ajzen, 2012). The theory argues that a sizable portion of the variance in the performance of a given behaviour, especially when combined with the perceived control over the behaviour, can be explained by behavioural intention. In turn, this intention is predicted to a great extent by its antecedents (motivational factors) - attitude towards the behaviour (ATB), subjective norm (SN) regarding the behaviour, and perceived behavioural control (PBC). (Ajzen, 1991) Since its introduction in the eighties (Ajzen, 1985), the theory has been applied to hundreds of studies with overwhelming results that show support for the model's ability to predict different behaviours (Engle et al., 2010). Some of these include chocolate consumption (Januszewska & Viaene, 2001), internet use (Hsu & Chiu, 2004), risk-oriented behaviour (Quinlan et al., 2006), attendance at health screening programmes (Cooke & French, 2008), alcohol consumption (Cooke et al., 2014) and healthy dietary behaviour (Li et al., 2019).

The TPB has attained a similar status in EI research. Along with self-efficacy (Bandura, 1982, 1997), another concept from cognitive psychology, it has been referred to as an epitome of effective incorporation of theories from other fields into entrepreneurship literature (Fayolle & Liñán, 2014). Indeed, one of the most cited papers (as of 2021) in EI literature is Krueger & Carsrud's (1993) introduction of the TPB as a framework to explain and predict intentions in the context of new venture initiation. Schlaegel &

Koenig's (2014) meta-analysis of papers in EI research that have applied TPB found that all three antecedents are significant and explain 28% of the variance in EI.

One of the drawbacks of individual intention models is that the constructs they contain may be insufficient to completely describe people's intentions and behaviour (Conner & Armitage, 1998). Accordingly, efforts have been made to incorporate the TPB and EEM into an integrative model with a higher explanatory power and deeper understanding of the determinants of EI (e.g., Iakovleva & Kolvereid, 2009; Solesvik et al., 2012; Schlaegel & Koenig, 2014; Alferaih, 2017; Sharahiley, 2020). In all of these attempts, the integrative model surpasses the TPB and EEM, explaining 8.3% to 27.5% more variance in EI than the nearest individual model (TPB or EEM) when applied to the same data. However, as the explanatory power and complexity of the model increase its parsimony decreases. This trade-off is considered in selecting an appropriate intention model for the current study.

The scope and aim of this study, understanding the relationship between EI and a wide range of complex exogenous factors, inherently increases the number of relationships within the conceptual model. Consequently, this study errs on the side of parsimony to reduce the complexity within the conceptual model. The TPB and EEM are thereby viable options. However, the selected model must also have a relatively high explanatory power. Comparing the results from Schlaegel & Koenig's (2014) meta-analysis, the TPB outperforms the EEM in explaining EI. With the TPB's higher variance explanation which can be seen as the average efficacy, one can conclude that the TPB (28%) performs better than the EEM (21%) at explaining the variance in EI across different entrepreneurship studies, samples, sample sizes and contexts. In addition, its success in other fields outside entrepreneurship provides a compelling argument for further application within entrepreneurship research. In sum, this thesis applies the TPB given that it is parsimonious, is well-grounded in theory, and robustly predicts a wide range of behaviours including entrepreneurial behaviour.

2.1.2 Theory of Planned Behaviour and Entrepreneurial Intention

Entrepreneurship is a complex economic behaviour that often begins before any observable action is taken (Kautonen et al., 2013). Given its complex nature planning or, at the very least, intentionality is often required to start a business. According to the TPB, an extension of the theory of reasoned action (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980), this intention relies on three independent motivational factors: attitude, subjective norms, and perceived behavioural control (Ajzen 1991). Figure 3 presents the TPB in relation to the formation of intention. Taken together, these three antecedents weaken or strengthen the intention to perform a behaviour, in this case, starting a business. Since intention is a direct predictor of behaviour, the stronger the intention to perform a particular behaviour the more probable it is that it will be performed (Ajzen 1991).

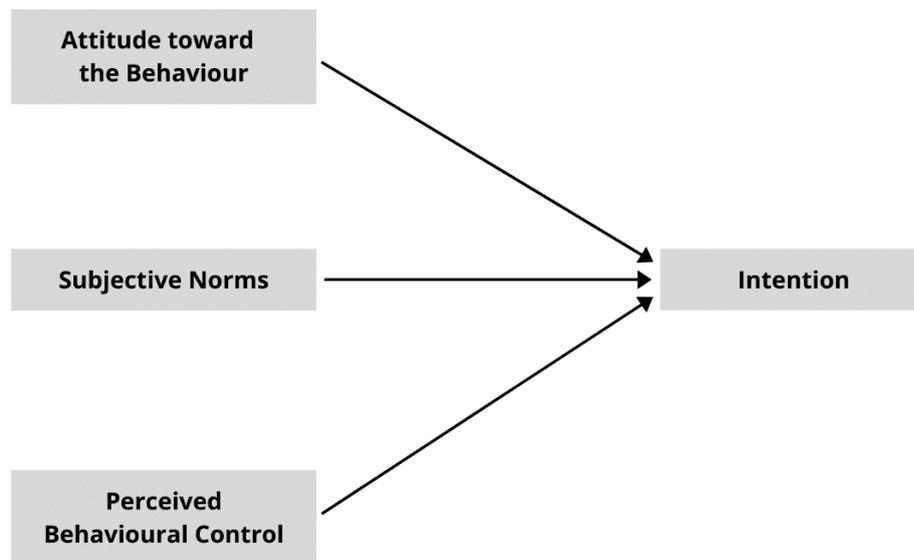


Figure 3 Ajzen's Theory of Planned Behaviour
(Ajzen 1991)

Attitude toward performing entrepreneurial behaviour

The first antecedent of intention, *attitude toward the behaviour (ATB)*, refers to the extent to which a person's perception or appraisal of a given behaviour is favourable or unfavourable. The basis of this attitude is rooted in salient behavioural beliefs about the expected outcome or attributes associated with performing the behaviour in question. A

positive or negative attitude is formed based on how desirable or undesirable the individual finds the consequences of performing the behaviour. (Ajzen, 1991) Some of the expected outcomes related to entrepreneurship include autonomy, personal wealth, independence, stress, community benefits, and freedom (Shapero & Sokol, 1982; Autio et al., 1997; Fayolle, 2004; Segal et al., 2005; van Gelderen & Jansen, 2006; Pruett et al., 2009). Hence, it follows that the more desirable individuals find these outcomes the more likely they are to develop a favourable attitude towards entrepreneurship and, consequently, a stronger intent to start a business. I, therefore, test the hypothesis:

H1a: Attitude towards entrepreneurial behaviour is positively related to entrepreneurial intention.

Subjective norms about entrepreneurial behaviour

The second antecedent, *subjective norms (SN)*, introduces a social element into the formation of intentions. It refers to the perceived pressure from others to engage in or refrain from a particular behaviour. Subjective norms are based on salient normative beliefs about the likelihood of receiving approval or disapproval for a given behaviour from significant referent individuals or groups. Depending on an individual's motivation to comply with the referent in question, the influence of these normative beliefs can be weakened or strengthened. (Ajzen, 1991) This is consistent with Bandura's (1977) social learning theory, which asserts that an individual is more likely to adopt behaviour observed among family, close friends, and other important people in their lives, such as a mentor or role model. Therefore, if entrepreneurial behaviour is perceived as socially acceptable and individuals have a strong motivation to comply, they are more likely to develop stronger entrepreneurial intentions.

However, among those who are highly action oriented (Bagozzi et al., 1992) or have a strong internal locus of control, SN is less predictive of intentions (Ajzen, 1987). There is still some debate in EI research about the direct SN-EI relationship, with some studies excluding the antecedent from their analysis (Liñán & Chen, 2009). Several studies (e.g., Krueger et al., 2000; Autio et al., 2001) found that SN does not significantly explain intention but has an indirect effect on intention through ATB and PBC (Liñán & Chen, 2009; Liñán et al., 2011). Other studies (e.g., Kolvereid, 1996; Tkachev & Kolvereid, 1999; Kolvereid & Isaksen, 2006; Siu & Lo, 2011) including a twelve-country study

(Engle et al., 2010) and a meta-analysis of 98 studies (Schlaegel & Koenig, 2014) have reported that SN is a significant predictor of intention. Considering this, the present study will stick with and test Ajzen's (1991) originally theorised direct SN-EI relationship. I, therefore, hypothesize that:

H1b: Subjective norms regarding entrepreneurial behaviour is positively related to entrepreneurial intention.

Perceived behavioural control

The third antecedent, *perceived behavioural control (PBC)*, was added to the theory of reasoned action to develop the TPB. The PBC, like the concepts of perceived feasibility from the EEM (Shapero & Sokol, 1982) and self-efficacy (Bandura, 1997), refers to the extent to which an individual perceives a behaviour to be easy or difficult to perform. To put it another way, a person's perception of his or her ability to execute a particular behaviour. However, the PBC goes a step further. Unlike self-efficacy, it also includes the individual's perceived controllability of the behaviour (Ajzen, 2002; Liñán & Chen, 2009). Furthermore, PBC depends on salient control beliefs about the availability of necessary resources and opportunities. It reflects anticipated impediments, obstacles, and past experience.

The complex process of venture creation is often characterised by change, complexity, financial and psychological ownership, novelty, risk, resource constraint and uncertainty (Baron, 2007; Gibb, 1993). Hence, PBC is highly relevant to developing entrepreneurial intention. An individual's entrepreneurial intention will be stronger if he or she perceives entrepreneurial behaviour to be controllable, relatively easy, and within his or her capacity. Hence, the following hypothesis:

H1c: PBC regarding entrepreneurial behaviour is positively related to entrepreneurial intention.

2.2 Other Influencing Factors of Entrepreneurial Intentions

The antecedents of intention are not formed in a vacuum. The behavioural, normative, and control beliefs that form their foundation are developed through experience and observation. These beliefs can be influenced by myriad background factors, including personality, personal values, age, gender, income, education, intelligence, and exposure to information (Ajzen & Fishbein, 2005). The TPB also assumes that these factors only indirectly influence intention and behaviour through their effect on the beliefs that underpin the antecedents of intention (Ajzen & Fishbein, 2005; Ajzen, 2011). This has been recognised in EI literature as well. Indeed, the main themes in the field studying these influencing factors explore the role of personal-level variables, entrepreneurship education, and context and institutions in EI development (Liñán & Fayolle, 2015). Table 1 presents prior research on other influencing factors of entrepreneurial intentions.

2.2.1 Personal-level Variables

A host of personal-level variables have been investigated in relation to EI. Some of the personality factors found to influence EI include the big five personality traits (e.g., Obschonka et al., 2010; Zhao et al., 2010; Şahin et al., 2019), risk perception (e.g., Segal et al. 2005; Nabi & Liñán 2013; Westhead & Solesvik, 2016), and emotional intelligence (e.g., Zampetakis et al., 2009; Mortan et al., 2014). Experience, family or parent's business background, social capital, and role models (e.g, Carr & Sequeira, 2007; Liñán & Santos, 2007; Gird & Bagraim, 2008; Hadjimanolis & Poutziouris, 2011; Laviolette et al., 2012; Karimi et al., 2014; Abbasianchavari & Moritz, 2021) represent other background or situational factors that affect an individual's EI.

The study of gender differences and their effects on EI is another interesting sub-theme of personal-level variables. Liñán & Fayolle (2015) found it to be the single most frequently studied subject in their systematic review of EI. Studies in this sub-theme overwhelmingly show that males exhibit higher EI than females (e.g., Mathews & Moser, 1995; Strobl et al., 2012; Zhang et al., 2014) across masculine and feminine cultures (Shneor et al., 2013), different stages of education, and career development (Wilson et al., 2009). Nevertheless, finding no gender differences in EI, a few others have

disagreed (e.g., Kolvereid, 1996; Díaz-García & Jiménez-Moreno, 2009; Gupta et al., 2009). The lack of gender differences in EI has been attributed to the samples used. The samples in Díaz-García & Jiménez-Moreno (2009) and Gupta et al. (2009) uncharacteristically associate feminine characteristics with successful entrepreneurs. Díaz-García & Jiménez-Moreno (2009) also cite the use of a sample composed of young, educated, and inexperienced individuals may be the cause of the lack of gender differences in EI.

Gender differences in EI, on the other hand, occur during the process of becoming an entrepreneur, that is, in the process of turning initial intention into implementation, females may face more obstacles (Haus et al., 2013; Shinnar et al., 2014; Shirokova et al., 2016). The association of entrepreneurship with male gender stereotypes has also been shown to drive gender differences in EI (Gupta et al., 2008, 2009; Sweida & Reichard, 2013; van Ewijk & Belghiti-Mahut, 2019), highlighting the need for more female role models (Zhang et al., 2014). This will greatly benefit women since the effect of role models on their perception of self-efficacy is stronger compared to their male counterparts (BarNir et al., 2011).

2.2.2 Entrepreneurship Education

Another influencing factor studied in EI literature is education, particularly entrepreneurial education (EED). In general, studies linking EED, and intention have examined participant characteristics, compared various groups of participants, analysed EED programmes and their outcomes, and proposed new EED programmes (Liñán & Fayolle, 2015). Most of the studies report a significant positive EED-EI relationship (e.g., Solesvik, 2013; Zhang et al., 2014; Barba-Sánchez & Atienza-Sahuquillo, 2018). Other factors like gender (Joensuu et al., 2013; Westhead & Solesvik, 2016), prior exposure to entrepreneurship (Fayolle et al., 2006), and culture (Bernhofer & Han, 2014; Solesvik et al., 2014) appear to moderate the EED-EI relationship.

Furthermore, Entrialgo & Iglesias (2016), explain that the effects of EED on EI is indirect as it only moderates the relationship of EI antecedents, particularly through reinforcing the SN-ATB relationship and diminishing the SN-PBC relationship. Conversely, according to a review by Nabi et al. (2017), only about 22% of reviewed articles (e.g.,

Petridou & Sarri, 2011) found a non-positive EED-EI relationship all reporting mixed, negative, unclear, or nonsignificant results. In light of these findings, one can conclude that EED tends to increase EI in individuals; however, Maresch et al. (2016) suggest that EED programme design should account for contextual differences that may exist between different groups of students or trainees, as a mismatch may result in unintended negative outcomes.

Table 1 Other Influencing Factors of Entrepreneurial Intentions

Theme	Paper
Personal-level Variables	
Big five personality traits	Obschonka et al. (2010); Zhao et al. (2010); Şahin et al. (2019)
Risk perception	Segal et al. (2005); Nabi & Liñán (2013); Westhead & Solesvik (2016)
Emotional intelligence	Zampetakis et al. (2009); Mortan et al. (2014)
Entrepreneurial Experience and family business background	Carr & Sequeira (2007); Gird & Bagraim (2008); Hadjimanolis & Poutziouris (2011)
Social capital	Liñán & Santos, (2007)
Role models	Lavolette et al. (2012); Karimi et al. (2014); Abbasianchavari & Moritz (2021)
Gender issues	Mathews & Moser, (1995; Kolvereid, (1996); Díaz-García & Jiménez-Moreno, (2009); Gupta et al., (2009); Wilson et al., (2009); Strobl et al., (2012); Shneor et al., (2013); Haus et al., (2013); Shinnar et al., (2014); Zhang et al., (2014)
Entrepreneurship Education	Fayolle et al., (2006); Joensuu et al., (2013); Solesvik, (2013); Bernhofer & Han, (2014); Solesvik et al., (2014); Zhang et al., (2014); Maresch et al., (2016); Westhead & Solesvik, (2016); Barba-Sánchez & Atienza-Sahuquillo, (2018)
Context and Institutions	Engle et al., (2010); Shneor et al., (2013); Liñán et al., (2016); Bogatyreva et al., (2019); Schmutzler et al., (2019)

Source: Author

2.2.3 Context and Institutions

So far, the discussed personal-level variables and entrepreneurship education affect individuals on a personal level. However, these individuals are embedded within a specific environment or institutions which also plays a significant role in the formation of EI. Studies on this role of environment or institutions predominately focus on cross-

cultural differences across countries and several types of institutions such as universities, media representations of entrepreneurs, social networks, and regional context (Liñán & Fayolle, 2015).

Studies on cross-cultural differences across countries confirm the applicability of intention models across countries (e.g., Engle et al., 2010) however, they often report variations in the relative influence of each antecedent due to cultural difference like masculinity vs femininity (e.g., Shneor et al., 2013) or individualist vs collectivist (e.g., Liñán et al., 2016; Schmutzler et al., 2019). Bogatyreva et al. (2019), take a step further to show the effects of each of Hofstede's six dimensions of national cultural values on the intention-action link across nine different countries. As aforementioned, the influence of several types of institutions on EI formation has been studied. Overall, results suggest that the more favourable institutions are the more likely EI will be higher. These studies reveal the contextual nature of EI formation and the important role of context and institutions.

Given its widely recognized role in economic geography and entrepreneurship (Malecki, 2009; Trettin & Welter, 2011), this thesis focuses on the regional context as an institution. Entrepreneurship results from the interaction of individual characteristics and the environment (Tamásy, 2006; Lundström & Stevenson, 2010), and individuals' perceptions of the regional environment influence their intention to start a business (Davidsson, 1991; Sternberg, 2009). Furthermore, the regional context represents a sizable unit of analysis that comprises and captures the presence and interaction of other types of institutions such as universities, social networks, media, and culture.

In broader entrepreneurship research, calls to address entrepreneurship in broader regional, temporal, and social settings are increasingly prevalent (Welter, 2011; Zahra & Wright, 2011; Autio et al., 2014; Zahra et al., 2014; Colombelli et al., 2017). Specifically, within EI research, there have been calls for research to understand how context, especially in sub-dimensions of spatial contexts including clusters, industrial districts, communities, and regions, interact with the individual to determine their EI (Liñán et al., 2011; Fayolle & Liñán, 2014; Liñán & Fayolle, 2015). Despite these calls, only a handful of studies have empirically analysed the role of the regional context as a whole in the formation of EI (e.g., Kibler, 2013; Elnadi and Gheith, 2021). So far, the results suggest that entrepreneurial intention is higher when regional conditions are

more favourable, however, the paucity of studies underscores the need for more research in this direction.

Both example studies conceptualise the regional context in different ways. Due to the scarcity of literature on regional influences on EI formation, Kibler (2013) relied on the regional characteristics used in existing entrepreneurship research - demographic, economic, structural, political, and entrepreneurial dynamism - and selected specific indicators for each of them based on theoretical conditions and data availability. On the other hand, Elnadi and Gheith (2021), conceptualised the regional context as an EE and identifies students' perception of their EE based on the Global Entrepreneurship Monitor's (GEM) nine entrepreneurial framework conditions (EFCs) - entrepreneurial finance, government policy, government entrepreneurship programs, entrepreneurship education, R&D transfer, commercial and legal infrastructure, entry regulation, physical infrastructure, and cultural and social norms.

This difference in how the regional context is conceptualised inhibits the comparability between studies. The calls to research entrepreneurship as a context-embedded concept, along with the seminal works Bahrami (2005), Isenberg (2010) and Feld (2012), have prompted studies to take a systemic view of entrepreneurship and facilitated the rapid development of the concept of EE (Cavallo et al., 2019). According to Stam (2015), the EE approach provides useful elements for a better understanding of regional economies and emphasises interdependencies within the framework of entrepreneurship. Therefore, this thesis takes a relatively similar avenue as Elnadi and Gheith (2021) by conceptualising the regional environment as an EE.

2.3 Entrepreneurial Ecosystem and Entrepreneurial Intentions

Even though the entrepreneurial ecosystem concept remains loosely defined and measured, it has grown in popularity among practitioners and academics who use it to understand the context for entrepreneurship in a defined geographical area (Stam & van de Ven, 2019). To coin a broadly applicable definition, Stam (2015) defined EE as a collection of interdependent factors and actors coordinated in a way that enables productive entrepreneurship within a particular territory. The focal point of the EE

approach is the entrepreneurial individual, and this differentiates it from other concepts, such as learning regions, industrial districts, clusters and regional innovation systems and clusters, which are more concerned with the enterprise (Stam, 2015).

One of the major themes in EE research is the context perspective, in which authors attempt to advance understanding of the ecosystem domain and distinguishing it from other types of ecosystems in business and management research (Velt et al., 2020). The insight that each ecosystem is unique is one contribution of this field of study. According to Szerb et al. (2013), although the entrepreneurial process is ultimately driven by individuals in any ecosystem, each one has its distinct systemic character, and hence adopting uniform development plans to different contexts is ineffective.

Furthermore, EEs are evolutionary. Changes occur over time in the system's location-specific institutions, the inner configuration of its various elements, the cause-effects shaping it, and the relative importance of its elements (Lefebvre et al., 2015; Mack & Mayer, 2015; Alvedalen & Boschma, 2017). This evolution makes applying uniform policies to different contexts much more challenging. According to Velt et al. (2020), the obstacles that public entrepreneurship development policy face arises from not recognizing the ecosystems' development status, contextual constraints, distinctiveness, and the public policy's goals. Szerb et al. (2013) propose using alternative policy mixes aligned with goals to resolve these difficulties. As a result, policy formulation should begin with a diagnosis of the region's systemic character and needs.

This view gives credence to another major theme in EE research – the geography perspective. Studies under this theme have championed the need to study entrepreneurial ecosystems as a locational phenomenon focused on a meso view of cities and specific regions and locations (Velt et al., 2020). For example, to boost the rate of formation, development, and success of new firms within a region, Lichtenstein and Lyons (2001) advocate the development of location-specific advantages (LSAs) such as entrepreneurial talent and support providers around them. As regional ecosystems' LSAs develop, entrepreneurial activity flourishes, which in turn, contributes overall value to the region by enhancing regional performance and development (Content et al., 2019).

In conclusion, while entrepreneurship is essential for regional development it is vital to understand the emergence and dynamics of EEs to build one that promotes quality entrepreneurship. For a complex adaptive system, such as an EE, it is critical to define the system's main agents, the forces influencing these agents' cognition and behaviour, and the degree to which these forces function (Bonabeau 2002). There is a consensus among scholars that entrepreneurs are key agents driving the creation of an entrepreneurial ecosystem (Feld 2012; Stam 2015; Roundy et al., 2018). Although the entrepreneurs' intentionality is the driving force behind an EE's emergence (Roundy et al., 2018), the EE influences the individual's entrepreneurial motivation, preference, and intention through its dynamic processes (Stam, 2010). Indeed, this co-dependent relationship between entrepreneurs and their ecosystem is crucial for the long-term development and survival of the ecosystem.

2.3.1 Influence of Perceptions of the Entrepreneurial Ecosystem

The process of promoting entrepreneurial activity starts way before any action is observed. Individuals are influenced by the local EE in which they are embedded even at the earliest stages of the entrepreneurial process, such as when deciding whether or not to be self-employed (Mueller, 2006). It appears that the formation of an individual's EI is not solely determined internally based on their evaluation of their capabilities but also externally by the attributes of their region (Bosma et al., 2009) such as the prevalence of resources and opportunities (Stam et al., 2010).

The regional environment shapes individuals' motivation and EI through its impact on their perceptual domain (Begley et al., 2005; Sternberg, 2009) and cognitive process (Davidsson, 1991). According to Kibler (2013), 'objective' regional conditions shape individuals' perceptions of entrepreneurship and entrepreneurial intention. While this is generally true, it is important to note that an individual's awareness and knowledge are limited, which influences his or her perception of objective reality. Put it another way, "while individual views may be informed by objective reality, bounded rationality and information asymmetry are at work" (Liguori et al., 2019, p.10).

Perception refers to information about a stimulus that a person receives with or without awareness (Merikle et al., 2001). It is potentially more influential than objective

measures of reality (Powell, 1996). This is because an individual's perception of the world is their "personal theory of reality" and how they make sense of the world (Blake & Sekuler, 2006, p. 10). As a result, one's experience of the world is inherently subjective, and it is difficult to differentiate the world as it exists from one's subjective perception of it. One's perception of their environment allows one to predict the consequences of their actions and guide their behaviour accordingly. (Blake & Sekuler, 2006) For example, entrepreneurial finance may be 'objectively' and readily available in a society, but people who are not well informed or connected to relevant networks may perceive a lack of entrepreneurial finance, while their more informed and connected counterparts may disagree. This disparity in awareness of the ecosystem would have a different impact on the attitudes and behaviour of these two parties.

To address this limitation, Kibler (2013) suggests future studies using perceptual measures of regional conditions. Such an effort not only supplements the results from 'objective' measures of regional factor, but the discrepancy between the two measures may be enlightening. Raising awareness about the availability of entrepreneurial finance becomes essential in the preceding example. The disparity between an ecosystem element's objective presence and its subjective perception by individuals highlights the necessity to employ perceptual techniques in evaluating regional conditions and their impact on individuals.

Consequently, this research proposes that the individuals' perceptions of their EE's elements affect their EI. Exogenous influences, such as EE elements, only have an indirect effect on intention, according to the TPB, and this effect is mediated by the three motivational factors of intention (Ajzen, 1991). Furthermore, Cooke & Sheeran's (2004) meta-analysis of TPB studies found that the properties of cognitions – accessibility, temporal stability, direct experience, involvement, certainty, ambivalence, and affective-cognitive consistency – had reliable moderating effects on the cognition-intention relation highlighting the potential use of moderator variables to improve prediction of intentions. Given that individuals' perceptions of the EE element are subject to these properties of cognitions, they should moderate the impact of the three antecedents on intention. Kibler (2013) examined and found moderating effect by several regional factors on the antecedents EI. Liñán et al. (2011) have also encouraged further studies on the moderating effects of the environment on EI.

2.3.2 Entrepreneurial Ecosystem Elements

The dynamic process within an ecosystem is a result of the interaction between its interdependent actors and factors. Extant literature has developed several frameworks for understanding and identifying the main elements of EEs. Some notable examples include Isenberg's (2011) six domains (culture, finance, human capital, markets, policy, and support), World Economic Forum's (2013) eight pillars (accessible markets, human capital/workforce, funding & finance, support systems/mentors, government & regulatory framework, education & training, major universities as catalysts, and cultural support), Feld's (2012) nine attributes (leadership, intermediaries, network density, government, talent, support services, engagement, companies, capital) and GEM's nine EFCs (Global Entrepreneurship Monitor, 2014).

These frameworks have been criticized for failing to provide clear connections or cause and effect relationships between the various elements (Stam, 2015; Acs et al., 2016), for ignoring their evolution and change over time (Alvedalen & Boschma, 2017), and for treating the elements as equally relevant (Cavallo et al., 2019). To address these shortcomings, Stam (2015) synthesized and expanded on previous research to create a new model with four ontological layers: framework conditions, systemic conditions, outputs, and outcomes. As illustrated in Figure 4, the ten EE elements classified as framework conditions and systemic conditions interact with each other to promote entrepreneurial activity and, ultimately, productive entrepreneurship that generates aggregate value. In this case, entrepreneurial activity can manifest itself in a variety of ways, including entrepreneurial employees, innovative start-ups, and high-growth start-ups (Stam, 2014). In a downward causation relationship, the presence of entrepreneurial activity and aggregate value creation feed back into the EE elements and help nurture them over time (Stam, 2015).

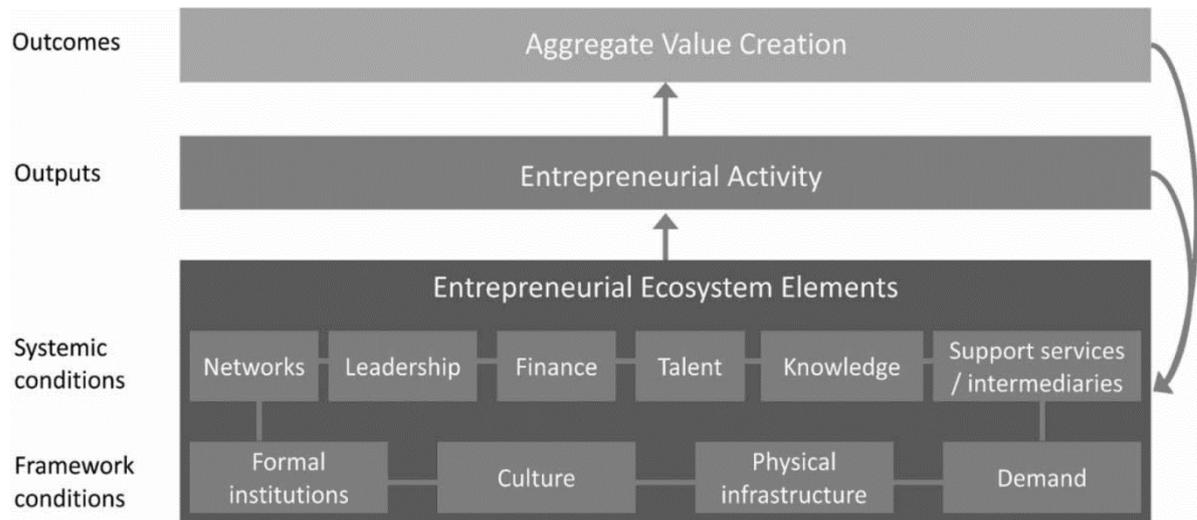


Figure 4 Key elements, outputs, and outcomes of the entrepreneurial ecosystem (Stam, 2015)

The framework conditions include culture, demand, formal institutions, and physical infrastructure. As an informal institution, entrepreneurship culture reflects the degree to which entrepreneurship is valued in society (Fritsch & Wyrwich, 2014). Demand is concerned with access to consumers of goods and services, such as local customers, whose needs provide opportunities and support the formation of new businesses (Spilling, 1996; World Economic Forum, 2013). Formal institutions reflect the rules of the game in society (North 1990) and their quality and efficiency (e.g., the perceived level of corruption) matters (Stam & van de Ven, 2019). Physical infrastructure reflects the availability and accessibility to office, telecommunication, and transport infrastructure (Spigel, 2017). Taken together the four elements of the framework conditions represent the fundamental basis for value creation within an EE.

However, it is the presence of and the interaction between the six elements of the systemic conditions that predominantly determine the success of an EE. These six elements – leadership, finance, talent, knowledge, networks of entrepreneurs, and support services – are regarded as the heart of an EE. (Stam, 2015) Based on their centrality in the EE and to delimit the present study, it only focuses on the six elements of the systemic conditions. Figure 5 summarises the conceptual framework of this thesis. Against this backdrop, this study examines the following general hypotheses.

H2: The impact of individuals' perceptions of the systemic conditions on EI is mediated by attitude, subjective norms, and perceived behavioural control.

H3: Individuals' perceptions of the systemic conditions moderate the effect of attitude, subjective norms, and perceived behavioural control on EI.

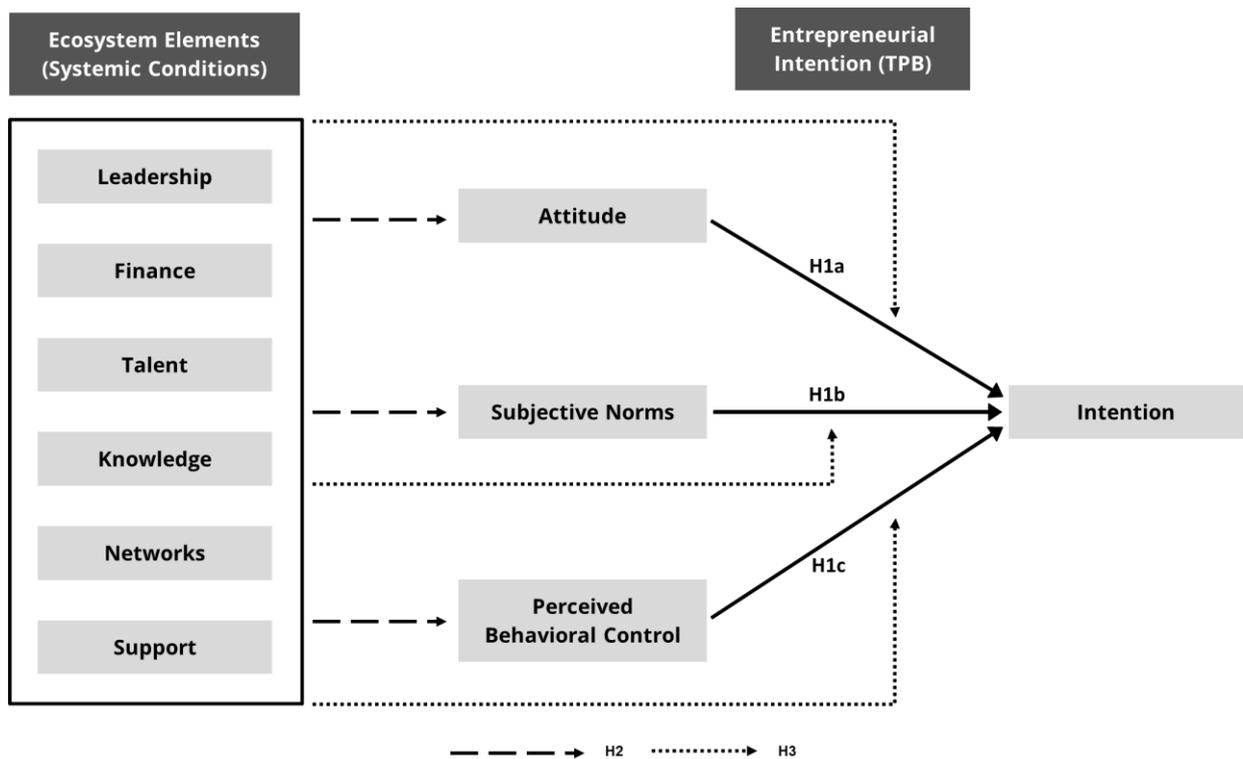


Figure 5 Proposed Conceptual Model and Hypotheses

(Source: Author)

2.3.3 Entrepreneurial Intention and the Systemic Conditions

The systemic conditions control human interaction in the ecosystem and are regarded as a driving force of entrepreneurial activity (Velt et al., 2018). Hence, it follows that individuals' EI will be positively affected if they perceive the systemic conditions to be favourable. Next, the systemic conditions are discussed in detail to complement the general propositions.

Leadership

Entrepreneurial leadership is crucial for a successful EE. According to Isenberg (2011), a productive EE is likely to have one or more successful entrepreneurial leaders who

serve as inspiration to their peers. As role models in the ecosystem (Stam, 2015), they provide guidance for and direction of collective action (Stam & van de Ven, 2019), particularly for younger entrepreneurs (Spigel, 2017). Aside from helping to build the ecosystem, leadership is essential in keeping it healthy in the long run (Feld, 2012; Stam, 2015). This is accomplished through a cyclical mechanism known as “entrepreneurial recycling” (Bahrami and Evans, 1995; Mason and Harrison, 2006), in which active entrepreneurs take on even more prominent roles within the EE as mentors, serial entrepreneurs, board members, angel investors., and venture capitalists (Velt et al., 2018).

These claims suggest that having sufficient visible and accessible entrepreneurial leadership in an EE has a beneficial impact on intention antecedents. The visibility, accessibility, and availability of entrepreneurial leaders in a region can influence attitudes towards entrepreneurship. For example, if these leaders give off positive impressions about entrepreneurship individuals attitude can change towards the same direction or become more certain about what they think and know about entrepreneurship when seen in others. The prevalence of such leaders in a region can also influence subjective norms about entrepreneurship as more people see its benefit. Furthermore, witnessing similar people to one become entrepreneurs could increase one’s PBC as this could evoke feelings that they can start a business too. Leaders can also become role models or mentors who help involve aspiring entrepreneurs. As a result, I investigate whether and to what extent individuals' perceptions of entrepreneurial leadership influence their EI. Thus, the following hypotheses:

H2a: The impact of individuals’ perceptions of leadership on EI is mediated by attitude, subjective norms, and PBC.

H3a: Perceptions of leadership moderate the effect of attitude, subjective norms, and PBC on EI.

Finance

Finance denotes the availability and accessibility of capital for the establishment and growth of new businesses. According to Feld (2012), it is an integral component of a thriving and supportive entrepreneurial community. Entrepreneurial finance can be

obtained by formal or informal means (Wu et al., 2016). Formal sources of funding include equity from angel investors, venture capitalists, and corporate venture capitalists, whose vast networks can help gain legitimacy and access to markets or contacts (Denis, 2004; Chemmanur & Fulghieri, 2014), and debt from bank loans (de Bettignies & Brander, 2007). These sources demand higher-quality business plans (Mason & Harrison, 1996) and often draft contracts to mitigate the evaluated risk exposure (Chemmanur & Fulghieri, 2014), however, their financing is critical to starting and growing new high-growth firms (Lam, 2010).

Finance can also be obtained informally by equity from crowdfunding (Chemmanur & Fulghieri, 2014; Mollick, 2014) or debt from the founder's savings, family, friends, and relatives (Chua et al., 2011; Zhang, 2015). Although the capital obtained from informal sources may be insufficient and may not be beneficial in the long run for entrepreneurial companies, it remains an alternative to formal sources, is less bureaucratic, and has lower transaction costs as opposed to formal sources (Wu et al., 2016). Given that the commercialisation phase requires large sums of capital (Ebben and Johnson, 2006), the availability and accessibility of capital from both sources should ease the entrepreneurship process and thus facilitate the formation and development of EI. Lack of finance could have effects on individual intentions too. Attitudes towards entrepreneur may become positive as individuals may perceive it as a viable and useful way to gain financial security (Henley, 2007) or at least some increased income (Mueller, 2006). Based on these claims this study hypothesizes:

H2b: The impact of individuals' perceptions of finance on EI is mediated by attitude, subjective norms, and PBC.

H3b: Perceptions of finance moderate the effect of attitude, subjective norms, and PBC on EI.

Talent

This refers to access to a diverse and skilled workforce. According to Stam (2015), the availability of talent may be the most important factor in an effective EE because it has a direct impact on the development of new ventures and the EE as a whole. Although start-ups are typically located near where their founders live (Parwada, 2008), if a skilled

workforce is not readily available, potential entrepreneurs may be forced to relocate to more desirable regions to establish their businesses (Neck et al., 2004). Notably, technological advances such as videoconferencing and cloud-based collaboration tools have reduced geographical constraints around access to talent in some industries; however, many industries continue to rely on human capital in their geographic vicinity (Liguori et al., 2019). Hence, access to talent remains vital to the EE.

The presence of educational institutions such as universities is particularly critical because they frequently serve as a source of talent for new firms (Nicotra et al., 2018). A region with a vast supply of skilled workforce encourages entrepreneurship (Armington & Acs, 2002; Naudé et al., 2008), as it leads to broader professional and social networks (Maillat, 1995) and higher levels of creativity (Ritsila, 1999), which aids in opportunity recognition and exploitation (Lundström & Stevenson, 2010). Moreover, in an EE with a lack of talent, it would be more difficult for potential entrepreneurs to build a founding team, which is often valuable during the early idea stage when no funding has been raised.

Talent can affect the antecedent-intention relationship. For instance, a prevalence of talent in a region may lead to tough competition in the labour market. In this case, starting a business becomes a viable option to evade the competition and achieve their professional goals. As people succeed in this fashion positive attitude towards entrepreneurship will begin to develop. Entrepreneurship becomes a viable career path and more individual may develop their PBC as they see their colleague succeed. The reverse is the case if there is a lack of talent in a region. This discussion suggests that the presence or lack of a wide pool of talent impacts the development of EI. This thesis, therefore, hypothesizes that:

H2c: The impact of individuals' perceptions of talent on EI is mediated by attitude, subjective norms, and PBC.

H3c: Perceptions of talent moderate the effect of attitude, subjective norms, and PBC on EI.

Knowledge

New knowledge from private and public organisations is a valuable source of entrepreneurial opportunities (Audretsch & Lehmann, 2005). Potential knowledge spillovers provide opportunities for entrepreneurs to recognize and capitalize on through new ventures that commercialise the exposed knowledge (Velt et al., 2018). Furthermore, knowledge sharing, which may be facilitated regionally or globally by spatial or digital affordances, leads to business model innovations and scale-up opportunities (Autio et al., 2018). To summarize, to achieve high levels of productivity, a healthy EE must create and accumulate new knowledge while also having a high capacity for spillover absorption (Acs et al., 2016). This high capacity for spillover absorption also depends on the quality of talent in the region.

This study proposes that individuals who are aware of the investment in and creation of new knowledge, the opportunities it presents, and programmes designed to commercialize it have a positive entrepreneurial attitude and, as a result, have stronger EI. Awareness of programmes designed to support the commercialization of new knowledge may also boost individuals' PBC as they may believe that the support could ease the entrepreneurship process. Hence, the following hypotheses:

H2d: The impact of individuals' perceptions of knowledge on EI is mediated by attitude, subjective norms, and PBC.

H3d: Perceptions of knowledge moderate the effect of attitude, subjective norms, and PBC on EI.

Networks

This element refers to the presence of networks that connect various ecosystem actors. Social networks and social capital are increasingly important in the entrepreneurship process in the modern network economy (Nijkamp, 2003). The network element is inextricably linked to and necessary for the finance, talent, and knowledge elements. A well-connected network should allow for free information flow, enabling the effective distribution of knowledge, labour, and capital throughout the ecosystem (Malecki, 1997; Stam, 2015). Through its impact on the accumulation of social capital, the level of trust

within the network can also be an important facilitator of new firm formation (Nicotra et al., 2018).

These points suggest that, given the exposure to vital information flow, individuals who perceive their networks as wide and entrepreneurially oriented will have higher EI. The quality of one's network can affect their attitude and PBC towards entrepreneurial activities. One's intention to start a business will be positively impacted if one's network comprises individuals who could help them with business or have a positive attitude towards entrepreneurship. Thus, the following hypotheses:

H2e: The impact of individuals' perceptions of network on EI is mediated by attitude, subjective norms, and PBC.

H3e: Perceptions of network moderate the effect of attitude, subjective norms, and PBC on EI.

Support services

Given the complexity, risk, uncertainty, and resource requirements that characterise the entrepreneurship process, entrepreneurs often need assistance to successfully navigate it. An adequate supply of support services in an EE can significantly improve innovation capabilities by lowering entry barriers for entrepreneurs and their new projects and shortening the time-to-market of new products (Zhang & Li, 2010; Stam 2015). Indeed, new ventures tend to cluster around areas where these support services are readily available and relatively cheap (Feld, 2012). According to research, some of the support services important to entrepreneurs and start-up survival include intermediaries (e.g., incubators, and accelerators) (Stagars, 2015; Auschra et al., 2019), professional services (e.g., technical, financial, accounting, legal, head-hunting, etc.) (Spigel, 2017; Brush et al., 2019), network services (e.g., alumni, trade and industry associations, supply chain networks) (Suresh & Ramraj, 2012), and engagement events (e.g., boot camps, hackathon events, social events, etc.) (Autio et al., 2018).

The presence of these services in an EE allows entrepreneurs to focus on their core competencies, gain legitimacy, access relevant information and contacts, and inspire new entrepreneurs. This option to outsource some company activities will ease the

entrepreneurship process and may boost ones' belief in their ability to perform and control entrepreneurial behaviour. Against this backdrop, this study posits that due to its impact on motivational elements individuals who consider their EE to be well-endowed with support services will have higher EI. This thesis, therefore, hypothesizes that:

H2f: The impact of individuals' perceptions of support on EI is mediated by attitude, subjective norms, and PBC.

H3f: Perceptions of support moderate the effect of attitude, subjective norms, and PBC on EI.

2.4 Summary of Hypotheses

The 15 hypotheses formulated based on the literature review are divided into three categories: direct effects of the three motivational factors on EI (Hypothesis 1), mediating roles of these motivational factors in the relationship between individuals' perception of the ecosystem elements and their EI (Hypothesis 2), and moderating effects of individuals' perception of the ecosystem elements on the antecedent-intention relationship (Hypothesis 3). Table 2 presents the hypotheses.

Finally, the brief review of other factors influencing EI showed how personal-level variables and EED may influence an individual's perception about starting a new venture. These factors have an impact on how individuals perceive, understand, and respond to reality (Liñán & Fayolle, 2015). Hence, even though individuals may share the same reality (e.g., live in the same region) their perception of this reality may vary. Since the premise of the present study is that individuals' perception of their region affects their EI, I will control for the effects of the personal-level variables and education. The main control variables will include gender, age, education, and entrepreneurship experience.

Table 2 Summary of the Hypotheses

No.	Hypothesis
H1a	Attitude towards entrepreneurial behaviour is positively related to EI.
H1b	Subjective norms regarding entrepreneurial behaviour are positively related to EI.
H1c	PBC regarding entrepreneurial behaviour is positively related to EI.
H2a	The impact of individuals' perceptions of leadership on EI is mediated by attitude, subjective norms, and PBC.
H2b	The impact of individuals' perceptions of finance on EI is mediated by attitude, subjective norms, and PBC.
H2c	The impact of individuals' perceptions of talent on EI is mediated by attitude, subjective norms, and PBC.
H2d	The impact of individuals' perceptions of knowledge on EI is mediated by attitude, subjective norms, and PBC.
H2e	The impact of individuals' perceptions of network on EI is mediated by attitude, subjective norms, and PBC.
H2f	The impact of individuals' perceptions of support on EI is mediated by attitude, subjective norms, and PBC.
H3a	Perceptions of leadership moderate the effect of attitude, subjective norms, and PBC on EI.
H3b	Perceptions of finance moderate the effect of attitude, subjective norms, and PBC on EI.
H3c	Perceptions of talent moderate the effect of attitude, subjective norms, and PBC on EI.
H3d	Perceptions of knowledge moderate the effect of attitude, subjective norms, and PBC on EI.
H3e	Perceptions of network moderate the effect of attitude, subjective norms, and PBC on EI.
H3f	Perceptions of support moderate the effect of attitude, subjective norms, and PBC on EI.

Source: Author

3 METHODOLOGY

Knowledge development in any field is produced under certain assumptions of the nature of reality, knowledge, values, and ethics. Consequently, this chapter discusses the assumptions and processes involved in this research to enhance its effectiveness and efficiency. First, the research design is presented. Then the procedures involved in data collection and analysis are elaborated. A summary of the reliability and validity measures employed in the study concludes the chapter.

3.1 Research Design

This study aims to understand the latent underlying structures and relations that are involved in the formation of entrepreneurial intention hence it assumes the philosophy of critical realism as a starting point for designing this research. Critical realism seeks to explain what we see and experience, with an emphasis on comprehending the underlying realities that influence observable phenomena (Saunders & Lewis, 2018). Accordingly, a deductive approach to theory development was taken. A deductive approach is used when the researcher attempts to test an existing theory rather than create a new one, as is the goal of this study (Saunders et al., 2015). Therefore, based on extant literature and theoretical considerations several hypotheses were deduced and empirically tested.

A quantitative research method using a cross-sectional survey design was favoured. This approach suits research questions that are descriptive and focus on the relationships between variables (Creswell & Creswell, 2018). One of the aims of this study, to aid data-driven policy development, justifies selecting a survey method that allows the collection of quantifiable data. The survey design was also chosen for its effectiveness in collecting primary data that captures respondents' ability, attitudes, and opinions in a relatively short period (Ghuri & Grnhaug, 2010). This also enables establishing variation between multiple cases and examining the patterns of relationships between variables (Bell et al., 2019). The survey will be cross-sectional, due to the limited timeframe characterising this thesis and since no predictive relationships will be tested.

3.2 Data Collection

Primary survey data are used in the empirical analysis. The survey data were collected in the 12 municipalities of South Savo in South-East of Finland in April 2021. Table 3 presents an overview of the region's key features. A data collection company provided a sample frame of about 2000 residents from the region ranging in age from 18 to 74 years.

Table 3 Key Characteristics of South Savo

Characteristics	Value
Population (total number)	132,702
Largest municipality	52583 (Mikkeli)
Smallest municipality	1369 (Enonkoski)
Population density (inhabitants/km²)	10.5
Working-age population (20–64 years)	67644 (51%)
Higher education (18 years and above, polytechnic/university) (2019)	30572 (23%)

Source: Statistics Finland (2021a)

As is common in a survey strategy data was collected using a questionnaire. Due to data availability constraints, data collection was administered via an online survey to expedite the process, lower cost, and maximize response rate. The questionnaire was drafted in English using plain and clear language to avoid ambiguous terms and double-barrelled questions that can confuse respondents (Bell et al., 2019). To ensure proper interpretation of the questions asked, it was translated into the Finnish language which is the native language for most of the respondents within the targeted population. Back translation was also carried out to ensure content similarity and consistency in both the English and Finnish versions. A pilot test was run with 21 people. Based on the feedback the survey language, structure and design were modified to further enhance clarity and user-friendliness.

The final questionnaire includes measurement scales developed by the author and adapted from other studies. There were 17 questions categorised into three groups representing the subject they addressed. The first group comprises six questions focused on each of the six elements of the systemic conditions of an entrepreneurial ecosystem. There are no validated scales that measure the constructs hence some

items for each of the scales were selectively adapted from Liguori et al.'s (2019) measurement scale for assessing Isenberg's (2011) six domains of entrepreneurial ecosystems. Others were drafted based on extant literature to make sure each construct was sufficiently described by the variable.

The second group contained five questions assessing respondents on their intention and each of its three antecedents. Unlike the first group, a measurement scale had been developed and validated by Kautonen et al. (2015) for assessing intention and its antecedents. The TPB constructs were operationalized using Ajzen's (2019) instructions and guidelines for designing TPB questionnaires. Six questions enquiring about the respondent's background made up the third group. They include gender, age, region, education, entrepreneurial experience, and occupation. These would represent control variables or help describe the sample of respondents in the study.

Some extra questions relating to intention and ecosystem were added to the questionnaire, but these were not used in measure development or data analysis. Several questions were reverse coded to ensure consistency of respondents' answers and aid the identification and removal of respondents affected by the acquiescence response set (Bell et al., 2019). To keep the questionnaire anonymous no personal identifying data was collected.

The Likert scale is often employed in quantitative studies that collect data via questionnaires because it reflects respondents' perceptions of the examined variables, (Saunders et al., 2015). Thus, it is a good fit for this study given its aim of obtaining respondent's perception of their ecosystem and intention. To maintain consistency with the scales adapted from other authors, a six-point Likert scale was used. Response ranged from strongly disagree to strongly agree, very untrue to very true, or I really do not care to I really care. All the questions deployed Likert scale answers except the six background questions which were closed multiple-choice questions. Table 4. summarizes the questionnaire structure and reflects the number of questions, items, and their sources. Due to the nature of some of the questions, which may be difficult for respondents to answer, a "cannot say" option was added to all of the Likert scale questions.

Table 4 Questionnaire Structure

Subject	Question/Item	Measurement scale	Source
Systemic Conditions of the Entrepreneurial Ecosystem			
Leadership	Q1 (6 items)	6-point Likert scale + Cannot say	Author
Finance	Q2 (6 items)	6-point Likert scale + Cannot say	
Talent	Q3 (6 items)	6-point Likert scale + Cannot say	
Knowledge	Q4 (5 items)	6-point Likert scale + Cannot say	
Network	Q5 (5 items)	6-point Likert scale + Cannot say	
Support	Q6 (4 items)	6-point Likert scale + Cannot say	
Entrepreneurial intention and its antecedents			
Entrepreneurial Intention	Q7 (3 items)	6-point Likert scale + Cannot say	Kautonen et al. (2015)
Attitude	Q8 (4 items)	6-point Likert scale + Cannot say	
Subjective Norms (Attitude)	Q9 (3 items)	6-point Likert scale + Cannot say	
Subjective Norms (motivation-to-comply)	Q10 (3 items)	6-point Likert scale + Cannot say	
Perceived Behavioural Control	Q11 (4 items)	6-point Likert scale + Cannot say	
Background Information			
Gender	Q12	Multiple choice	Author
Age	Q13	Multiple choice	
Municipality	Q14	Multiple choice	
Education	Q15	Multiple choice	
Entrepreneurial Experience	Q16	Multiple choice	
Occupation	Q17	Multiple choice	

Source: Author

Data collection was conducted in two weeks from 16 to 30 April 2021. 253 responses were recorded indicating a response rate of about 12.7%. A total of 64 responses were deleted due to inconsistencies in answers to reverse coded questions (56), respondents

that were already entrepreneurs, that is, self-employed, founder or co-founder (7) and being outside the studied age group (1). Thus, the final sample amounts to 189 residents of South Savo aged 18-74 years. The reverse coded questions were recoded to match the direction of other questions. There was a total of 15 missing values under the age (2), education attainment (5) and occupation (8) variables. This is below the threshold of 20%-30% of missing data and as such can be remedied by imputation techniques (Eekhout et al., 2014). The continuous variable, age, was imputed using the series mean method, while the categorical variables, education, and occupation, were imputed using the median of all points. As a result, the dataset used for analysis contained no missing data across all the variables.

3.3 Data Analysis

The survey data was analysed using IBM SPSS Statistics 26 and IBM SPSS Amos 26. First, using several analytical tools particularly frequency, central tendency measures, dispersion measures, kurtosis, and skewness the collected data is described. These descriptive statistics summarize the characteristics of the respondents' background and the structure of the data under each variable. Mean was used to describe the central tendency, the typical value, in the distribution of values for the variables. Standard deviation which depicts the average amount of variation around the mean of the variables was the selected measure of dispersion.

Skewness and kurtosis are used to determine the normality of the data. Both measures provide an objective measure for certain aspects of normality (Burns & Burns, 2012). Skewness is a measure of a distribution's symmetry. A positively or right-skewed distribution has a long tail to the right, while a negatively or left-skewed distribution has few small values and a long tail to the left. Kurtosis is a measure of a distribution's peakedness or flatness as compared to a normal distribution. A positive value implies that the distribution is relatively peaked, whereas a negative number suggests that the distribution is relatively flat. In general, Collier (2020) suggests skewness values between -2 and +2 and kurtosis values between -10 and +10 are required for data to be deemed normally distributed.

Following the descriptive analysis, factor analysis was used for data summarization and reduction in preparation for the structural equation modelling (SEM). A preliminary exploratory factor analysis (EFA) preceded a confirmatory factor analysis (CFA). Both analyses are required for scale development, which is the case in this work because the scales to measure the EE systemic conditions were being developed for the first time. The EFA and CFA are used to evaluate the factors and reduce the dimensions while ensuring construct validity and reliability.

The EFA is an interdependence technique for defining the underlying structure of the interrelationships of the variables in analysis. The interrelated sets of variables are then defined as factors assumed to represent dimensions or constructs within the data. (Hair et al., 2019) The variables were tested for their suitability for the factor analysis. The administered test included making sure variables were grouped based on a strong conceptual foundation, a test of sphericity and measurement of sampling adequacy. Hair et al. (2019) proposes that Bartlett's test of sphericity be statistically significant (sig. 0.50), indicating that there are sufficient correlations among the variables to proceed. The Kaiser-Meyer-Olkin (KMO) test was used to assess sampling adequacy and values greater than 0.6 are advised (Metsämuuronen, 2009).

Due to the scale development in this work common factor analysis (Principal Axis Factoring) was selected as the extraction method. The primary goal of this method is to find the latent dimensions or constructs represented in the original variables' shared variance, which is also the purpose of the scale development process (Hair et al., 2019). Scree test and latent root criterion were used to determine the number of factors to extract. For the scree test, a graph shows the eigenvalues against the number of factors in their extraction sequence, with the optimum number of factors determined at the point of the final substantial fall in the magnitude of the eigenvalues (Cattell, 1966). The latent root criterion states that the eigenvalues or latent root greater than 1 are considered significant (Hair et al., 2019). In addition, the oblique rotation method (PROMAX) was used as the method is more suited to the goal of obtaining theoretically meaningful factors.

Several guidelines were used to judge the significance and validity of the factor loadings. Factor loadings more than 0.45 are considered significant for sample sizes of 150 or

above, according to Hair et al. (2019). The communality value, which is the amount of variance explained by the factor solution for each variable, should be more than 0.3, as values less than this do not provide an adequate explanation (Metsämuuronen, 2009). Nevertheless, communality values greater than 0.5 are preferred (Hair et al., 2019) as outcomes may differ if communalities are less than 0.04. (Fabrigar et al., 1999). Finally, Cronbach's alpha is used to assess the reliability of each element. The alpha coefficient assesses the overall internal consistency of the scale and is only acceptable if it is more than 0.7 (Hair et al., 2019).

Next, a CFA is used to test the measurement model. CFA is a fundamental multivariate statistical tool that assesses how well measured variables represent a collection of theoretical latent constructs, which when combined with validity tests reveals the quality of the theoretical measurement model (Hair et al., 2019). In defining the individual constructs, expert opinions of professors and researchers in the entrepreneurship field were consulted to ensure the content or face validity of the constructs. Following Hair et al.'s (2019) suggestion, each latent construct was confined to a minimum of three items to offer proper model identification and coverage of its theoretical domain.

Several CFA models were also tested and iteratively modified to improve model validity and identify the most valid theoretical measurement model. To iteratively remove items, model diagnostic information such as standard residuals ($>|2.50|$) and modification Indices were considered in addition to the standardized factor loadings conditions ($<|0.5|$). However, significant theoretical underpinnings were required before items could be deleted.

Multiple fit statistics are used to assess the overall fit of the resulting measurement model. The relative chi-square test was preferred over the simple chi-square test due to the latter's sensitivity to model complexity and sample size (Collier, 2020). A relative chi-square test with a value under 3 is considered an acceptable fit (Kline, 2011) however values closer to but above 1 will be preferred to avoid overfitting (Byrne, 1989). Incremental fit statistics - Incremental Fit Index (IFI) and Comparative Fit Index (CFI) - comparing the model to the null models to determine which provides a better fit are also checked. The cut-off for an acceptable fit is 0.9 for both the IFI and CFI values (Bentler & Bonett, 1980; Collier, 2020). Finally, the Root Mean Square Error of Approximation

(RMSEA) was used as a badness-of-fit test. RMSEA values below 0.05 indicate a good fit while values above this mark but below 0.08 are still considered adequate (MacCallum et al., 1996).

Following the establishment of a good model fit, construct validity, which deals with measurement accuracy, is examined. For this, convergent and discriminant validity are examined. Convergent validity assumes that items that measure the same construct should share a high proportion of common variance (Hair et al., 2019). According to Fornell & Larcker (1981), the Average Variance Extracted (AVE) of a construct should exceed 0.5 to indicate convergent validity. To ensure this AVE value is met standardized factor loadings below |0.5| were considered for deletion. In addition, reliability was also used as an indicator of convergent validity. When using SEM, composite reliability is considered a better alternative to Cronbach's alpha (Hair et al., 2009) and is used in this study. Composite reliability values equal to or great than 0.7 indicates internal consistency and that the items within the factor represent the same construct (Hair et al., 2019). Discriminant validity measures the distinctiveness between constructs and implies that items do not have high cross-loadings, that is, they should represent only one latent construct with the model (Hair et al., 2019). For discriminant validity, a rigorous test compares any two factors' AVE values to their squared correlation estimate; if the AVE values are greater than the squared correlation estimate, there is good evidence of discriminant validity (Fornell & Larcker, 1981).

There is a concern that covariations between variables were artificially inflated because a single survey was utilized to collect both independent and dependent variables. In this situation, the SEM would have to account for common technique bias. As a result, Harman's single factor test is used to check for common method bias at the end of the CFA analysis. Although some scholars have questioned this methodology (Malhotra et al., 2006; Chang et al., 2010), Fuller et al. (2016) asserted that if common method bias is severe enough to influence outcomes, Harman's single factor test is sensitive enough to determine whether a problem exists. Harman's Single Factor Test runs an EFA on all the items kept from the CFA, and if only one factor emerges, the data is said to have common method bias.

The SEM is the final step in the data analysis process. The SEM is preferred over traditional regression models because it allows for the simultaneous estimation of multiple and interrelated dependence relationships, incorporates latent variables for a more accurate representation of theoretical concepts, and improves statistical estimation by accounting for measurement error during the estimation process (Hair et al., 2019). SEM is well-suited to analyzing the complex relationships investigated in this study, including indirect effects like mediation and moderation (Williams et al., 2009; Hox, 2013). The structural model is specified after selecting a valid measurement model with the CFA. This entails assigning paths denoting relationships from one construct to another based on the suggested theoretical model and enables the testing of postulated structural relationships between constructs. Maximum Likelihood Estimation (MLE) is the preferred estimation technique because it is generally unbiased, consistent, and efficient in identifying estimates for each free parameter (Hox et al., 2018; Hair et al., 2019). The same model fit statistics reported for the CFA are used to assess the fit and validity of structural models.

3.4 Reliability and Validity

Reliability and validity are important concepts in research design that signify the credibility and quality of research findings and conclusion (Saunders & Lewis, 2018). The degree to which a study's results are consistent and repeatable is referred to as its reliability (Bell et al., 2019). To guarantee measurement consistency, Cronbach's alpha and composite reliability tests were utilized and precisely reported. The process used in data collecting and analysis has been detailed to enable replicability.

Validity is concerned with the extent to which data collection procedures accurately measure what they were designed to measure and research findings are truly about what they claim to be about (Saunders & Lewis, 2018). Three measure of validity - content, construct, and criterion - were followed in this study. To ensure face validity, expert opinion, careful construct definition and item wording were utilized to make sure measures capture the theoretical domain of the construct in the study. The convergent and discriminant validity of all the constructs were assessed and reported.

4 RESULTS

This chapter describes the results of this study. First, descriptive statistics about the respondent and relevant constructs are presented. Then factor analyses, both exploratory and confirmatory, are conducted for dimension reduction and validating the measurement model. Afterwards, the structural equation model is used to test the hypotheses of the study including the direct effects of the three motivational factors on EI, the mediating role of these motivational factors in the relationship between individuals' perception of the EE elements and their EI and finally the moderating effects of individuals' perception of the EE elements on the antecedent-intention relationship.

4.1 Descriptive Statistics

This section aims to get a better understanding of the collected data. First, the characteristics of the respondents' background are described. Then the structure of data under each ecosystem and intention variable is examined. Furthermore, regional differences in the variables are also discussed.

4.1.1 Background

This section discusses the background overview of the sample to understand its characteristics and aid data interpretation. As stated earlier, the final sample of 189 respondents from the South Savo region was examined in this analysis. Table 5 presents the frequency distribution of background information. The distribution of respondents into the sub-regions Mikkeli (56.1%), Savonlinna (28%), and Pieksämäki (15.9%) are relatively similar to their reported share of the population in the region - 52%, 30% and 18% respectively (Statistics Finland, 2021b).

Table 5 Frequency Distribution of Respondents' Background Information

Variable	Mean	Response	Frequency	Percent (%)
Region	1.60	Mikkeli	106	56.1
		Savonlinna	53	28.0
		Pieksämäki	30	15.9
		Total	189	100.0
Sex	1.44	Female	106	56.1
		Male	83	43.9
		Total	189	100.0
Age	46.42	18-34	55	29.1
		35-44	30	15.9
		45-74	104	55.0
		Total	189	100.0
Education Attainment	3.02	Primary education	18	9.5
		High-school diploma	16	8.5
		Vocational degree	121	64.0
		Bachelor's degree	15	7.9
		Master's degree	17	9.0
		Doctorate/Licentiate degree	2	1.1
		Total	189	100.0
Entrepreneurship Experience	1.70	Yes	57	30.2
		No	132	69.8
		Total	189	100.0
Occupation	3.51	Student	16	8.5
		Employed part/full time	99	52.4
		Unemployed	20	10.6
		Retired	54	28.6
		Total	189	100.0

Source: Author

The sample comprises 106 (56.1%) females and 83 (43.9%) males. This ratio does not match the female to male ratio of 51:49 in South Savo (Statistics Finland, 2021), however, the gender imbalance may be attributed to the common higher response rate among women in survey studies in Finland (Kibler, 2013). As shown in Figure 6 only Pieksämäki had a significantly higher share of male respondents.



Figure 6 Distribution of Respondents by Gender and Sub-regions

(Source: Author)

Only 30.2% of respondents have prior entrepreneurial experience. The respondents' ages range from 18 to 74 years, and they are divided into three age groups (18–34, 35–44, and 45–74), with the middle group representing the most entrepreneurially engaged (Parker, 2009). Respondents aged 45–75 years account for 55% of the overall sample, whereas those aged 18–34 years and 35–44 years account for 29.1% and 15.9%, respectively. The distribution of respondents by entrepreneurial experience and age group is illustrated in Figure 7. Only 12.7%, 36.7%, and 37.5% of respondents aged 18–34, 35–44, and 45–74 respectively, have any experience starting a business alone or with others.

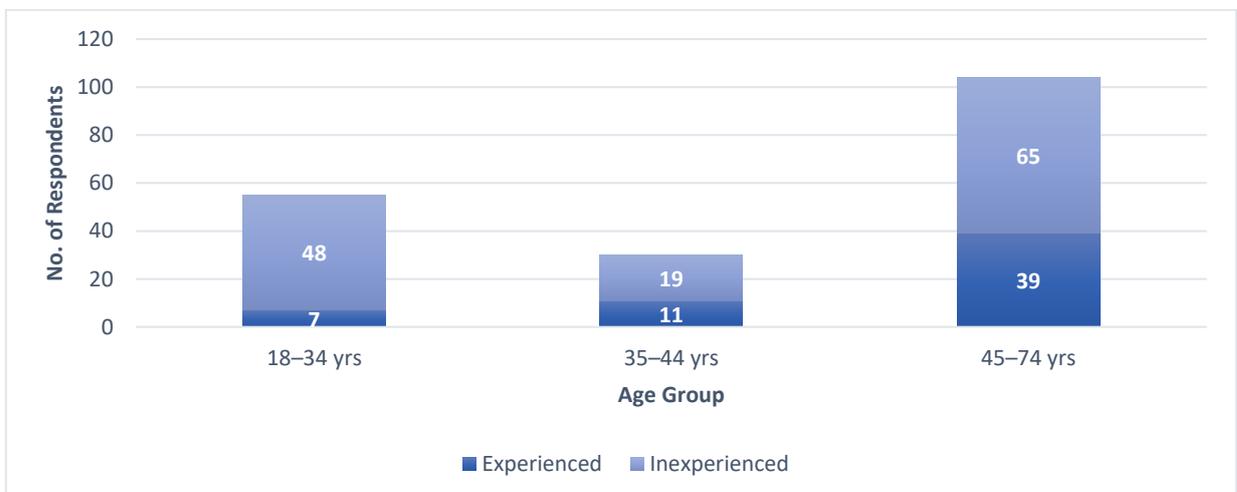


Figure 7 Distribution of Respondents by Age and Entrepreneurial Experience

(Source: Author)

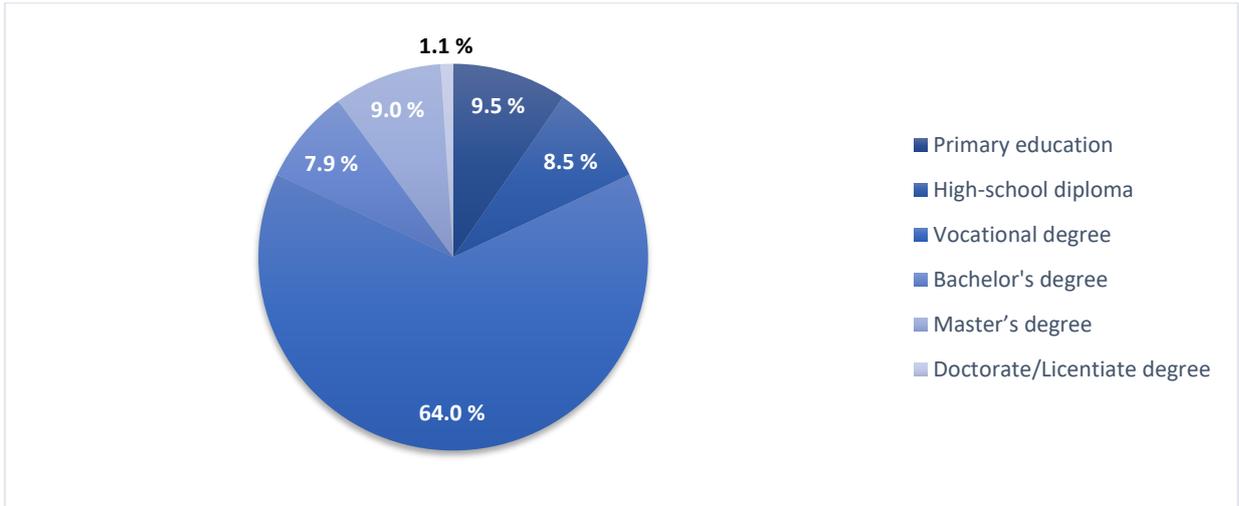


Figure 8 Share of Respondents by Educational Attainment
(Source: Author)

Information about respondents' educational attainment and labour market status was also collected. Regarding educational attainment (Figure 8), respondents with a vocational degree are the majority (64%), while primary education (9.5%), Master's degree (9%), high-school diploma (8.5%), Bachelor's degree (7.9%) and Doctorate/Licentiate degree (1.1%) follow in descending order of share represented. The sample is skewed toward respondents with the first three levels of educational attainment, which account for 82% of the sample. Respondents with higher education degrees make up only 18%. This percentage differs from that of the region's overall population, which stands at 23% of people aged 18 and older.

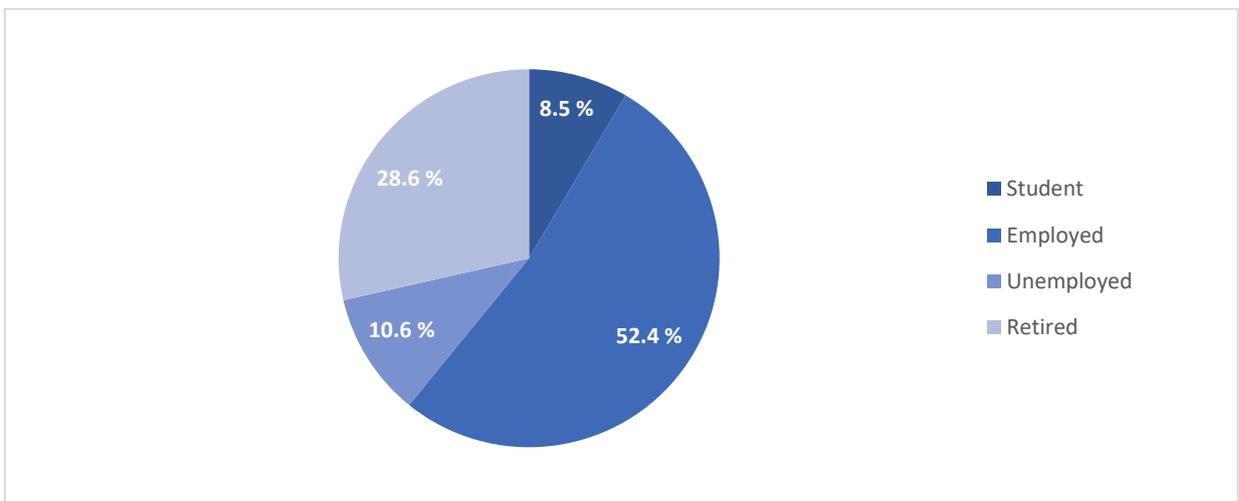


Figure 9 Share of Respondents by Labour Market Status
(Source: Author)

In terms of respondents' labour market status (Figure 9), the sample includes students (8.5%), employed (52.4%), unemployed (10.6%), and retired people (28.6%). As a result, respondents in the labour force – the employed and unemployed – account for 63% of the sample. By including respondents at various phases of life, the sample appears to be more representative of society as a whole. As a result, this sample enables the study to avoid some of the disadvantages of depending on convenient university student samples.

4.1.2 Entrepreneurial Ecosystem and Intention Variables

This sub-section focuses on understanding the variables used to measure respondents' perceptions of the ecosystem and entrepreneurial intentions. The measures of central tendency, dispersion and shape of the distributions are discussed. All the variable in this section were evaluated using a 6-point Likert scale with a “cannot say” option to indicate neutrality. For easy interpretation, the “cannot say” option was operationalised as the midpoint (4). Hence, average ratings below 4 are considered unfavourable and those, above are favourable. Appendix 1 outlines the values for these measures and denotes the code names for each item.

Perception of Leadership

Six items were used to assess leadership, inquiring about the availability, accessibility, publicity, and advisory activities of entrepreneurial leadership in the South Savo region. The mean of all six items (4.46) indicates that respondents view leadership rather positively. 54% of responses to all items measured were favourable (Figure 10). Although there is a lot of room to improve, compared to other ecosystem elements evaluated it was rated the most favourable. The means of items range between 4.25 and 5.11. L3, asking respondents if established entrepreneurs are easily accessible, had the highest mean (5.11). While L4, addressing the local government's promotion of entrepreneur-friendly legislation and environment in the region, got the lowest mean (4.25). A low standard deviation (1.366 – 1.652) across all six items indicates that the data values are clustered around the mean. All the items' distributions are negatively skewed, meaning that they have fewer small values and a long tail to the left. Except for L3, the distributions of all the items are platykurtic, as shown by their negative kurtosis

values. However, all the skewness and kurtosis values are inside the normal distribution range.

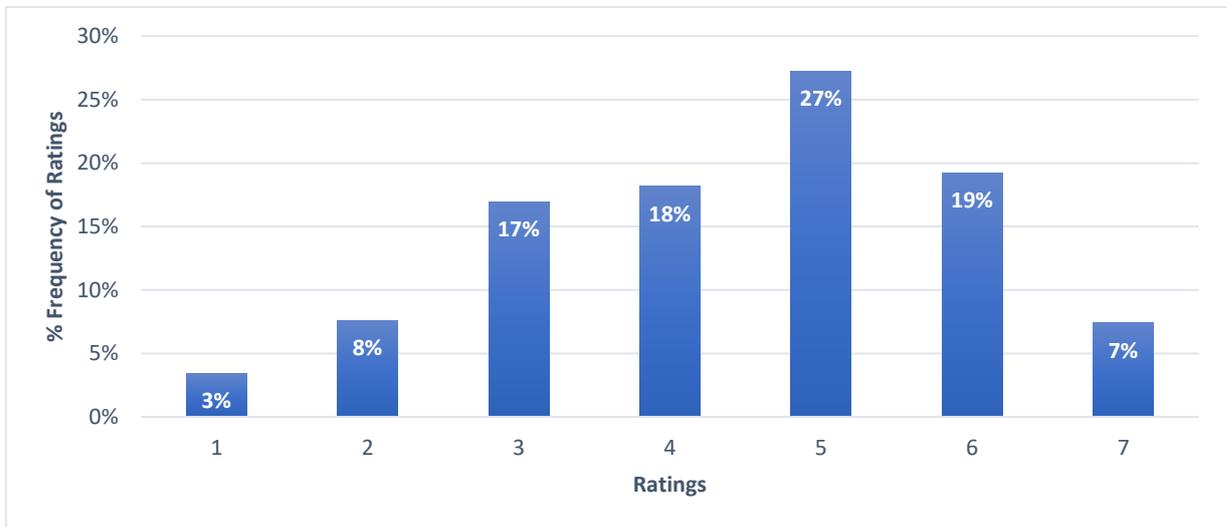


Figure 10 Perception of Leadership by Frequency of Ratings
(Source: Author)

Perception of Finance

Six items assessed the availability and accessibility of both informal and formal sources of funding in the South Savo region. The means of the items range from 2.85 to 4.83. Three items - F2, F3, and F6 - had means that were lower than the midpoint, while the other three were slightly higher but not considerably so. The average mean of all six items (3.79) indicates that respondents had a negative perception of finance in the region. On average, F2, asking about the ease of starting new businesses with funds from family, friends, and relatives, was rated the lowest (2.85). According to the means, respondents believe it is comparatively easier to obtain entrepreneurial finance through investors and venture capitalists, crowdfunding, and banks. F1, examining general finances in the region, received the highest rating (4.83). A low standard deviation (1.331 – 1.765) across all six items suggests that the data values are concentrated around the mean. Aside from F2, all the distributions are platykurtic, as evidenced by their negative kurtosis values. F2, F3, and F6 have positively skewed distributions, which means they have fewer large values and a long tail to the right. The remaining items are negatively skewed. All the skewness and kurtosis values, however, are within the normal distribution range.

Perception of Talent

Talent perceptions fared better than financial perceptions. The six factors indicating the region's availability, accessibility, and attractiveness to skilled workers have means ranging from 3.81 to 4.85. T1, which assesses how appealing the region is to talented labour, had the lowest mean (3.81), which was lower than the neutral threshold, indicating unfavourable impressions. However, respondents with the highest mean of 4.85 are quite positive that the region's workforce is highly skilled and competent. Overall, with an average mean of 4.29 across all six dimensions, the region's impression of talent is somewhat favourable. Across all six items, the standard deviation ranged from 1.499 to 2.022. When compared to responses on other elements of the ecosystem, opinions on talent appear to be the most dispersed around the mean. Aside from T1, the distributions of all the items are negatively skewed, which means they have fewer small values and a long tail to the left. The distributions of all the items are platykurtic, as evidenced by their negative kurtosis values, indicating that there are many cases in the tails of the distribution. Since all the skewness and kurtosis values are within the allowed range for normality, all the distributions appear to be normal.

Perception of Knowledge

A series of five questions on knowledge covered a variety of dimensions such as R&D investment, the availability of R&D institutions, and the commercialization of new information in the region. The five items' means vary from 3.53 to 3.94. The items are all on the unfavourable side. The worst mean (3.53) was found in K3, which measured R&D investment, while the best was found in K5, which measured the contribution of R&D institutions in the formation of new businesses (3.95). All six questions had a standard deviation ranging from 1.349 to 1.576, showing that opinions were relatively clustered around the mean. All the skewness and kurtosis values are within the normal distribution range, ranging from -0.253 to 0.097 and -0.694 to -0.151, respectively. As indicated by their negative kurtosis values, all the distributions are platykurtic. The distributions of K2 and K5 are left-leaning, meaning they have fewer small values and a long tail pointing left. The remaining items have right-leaning distributions.

Perception of Network

Among the ecosystem elements, respondents had the most unfavourable perception of network. 65% of responses to all items measured were unfavourable (Figure 11). The average mean across all five dimensions measuring the quality of individual and commercial networks in the region was 3.30. The lowest mean (2.25) was found in N3, which asked if respondents were members of a group of professional people in the region that share knowledge and information. Interesting, with a mean of 2.71, respondents' social media connection in the region (4) did not fare much better. Business connection and collaboration (N1) had the highest mean (4.47) which is almost favourable. The range of standard deviation from 1.461 to 1.884, is relatively high showing little concentration of the responses around the mean. All the skewness (-0.392 - 1.06) and kurtosis (-1.337 -- 0.295) values are within the normal distribution range.

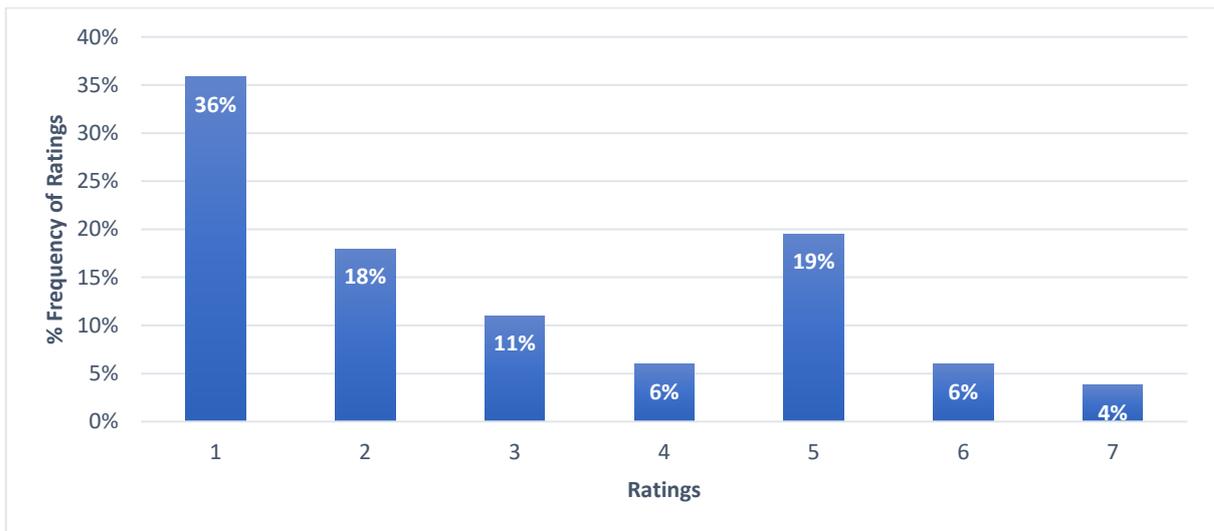


Figure 11 Perception of Network by Frequency of Ratings

(Source: Author)

Perception of Support

Four items assessed the availability and accessibility of support services for entrepreneurs and businesses in South Savo. Their means vary from 3.50 to 4.38. The average of all items (3.77) suggests that perceptions of support services in the region are unfavourable. S2, assessing the availability of professional service, was the highest (4.38) while S4, which assessed the regularity of networking events was the lowest

(3.50). Compared to other ecosystem elements, opinions about support are the most concentrated around the mean. Aside from S4, the distributions of all items are left-leaning, meaning they have fewer small values and a long tail to the left. As indicated by their negative kurtosis values, all the distributions are platykurtic. However, all the skewness and kurtosis values are within the normal distribution range, ranging from -0.209 to 0.182 and -0.590 to -0.248, respectively.

Attitude towards Entrepreneurship

Four items assessed respondents' attitude towards entrepreneurship. The means of all four items were unfavourable ranging from 2.86 to 3.4. This implies that respondents generally consider engaging in entrepreneurship to be unpleasant, useless, foolish, and negative. As seen in figure 12, 68% of respondents' response indicate that an unfavourable attitude towards starting a business in the 12 months. However, the high standard deviation for all items (1.974-2.128) suggests that some responses were much higher than the mean. As expected from the low means, all items have positively skewed distributions, which means they have fewer large values and a long tail to the right. All the distributions were also platykurtic. Nonetheless, all the skewness and kurtosis values are within the normal distribution range.

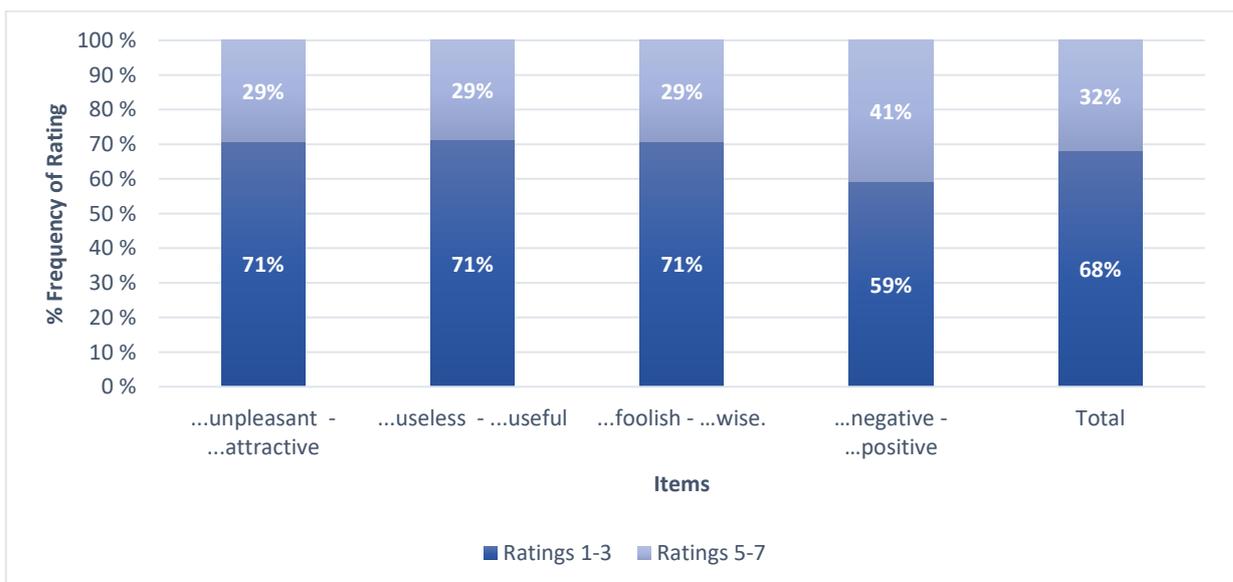


Figure 12 Attitude towards Entrepreneurship in South Savo
(Source: Author)

Subjective Norms about Entrepreneurship

Two sets of items were used to assess respondents' subjective norms about entrepreneurship. The first set contain three attitude items assessing the attitude of referent persons (closest family members, best friends, and important people) to the respondents starting a business in the next 12 months. The second set also had three items that assessed the respondents' motivation-to-comply with the opinion of them referent persons. Attitude scores were multiplied by the corresponding motivation-to-comply scores hence the subjective norms scores are on a different scale from the other variables.

The means of the resulting three items range from 6.81-7.94. Considering the range of possible values is 1-49, the means are significantly low. This indicates a low level of subjective norms regarding entrepreneurship among the respondents. The very high standard deviation for all items (8.606-10.341) suggests that some responses were much higher than the mean but not enough to pull the means higher. The skewness values support this notion. All items have positively skewed distributions, which implies that they have fewer large values and a long tail to the right. The distributions of all the items are very leptokurtic, as evidenced by their high positive kurtosis values, indicating that there are few cases in the tails of the distribution. SN3 meets the skewness and kurtosis condition for a normal distribution. The skewness value of SN1 (2.004) and SN3 (2.005) is just slightly outside the limit for normal distribution (-2 - +2). However, because the differences are not large, and their kurtosis value is within the accepted range, the distributions of SN1 and SN3 are also considered normal.

Perceived Behavioural Control

Four items assessed respondents' belief in their ability to perform and control entrepreneurial actions. On average responses on all the items were unfavourable with means ranging from 2.57-3.99. These values suggest a low level of PBC among the respondents. With the lowest mean (2.57), respondents think starting a business in the next 12 months will not be easy for them (PBC3). Whereas, with the highest mean (3.99) they had a stronger belief that if they started a one, they would be able to control the progress to a large extent on their own (PBC2). Compared to attitude, responses to the

PBC items are even more dispersed around the mean with high standard deviations ranging from 2.050 to 2.216. All the distributions are platykurtic, as evidenced by their negative kurtosis values. PBC1, PBC3, and PBC4 have positively skewed distributions, which means they have fewer large values and a long tail to the right. PBC2, which had the highest mean, was negatively skewed. All the skewness and kurtosis values are within the normal distribution range.

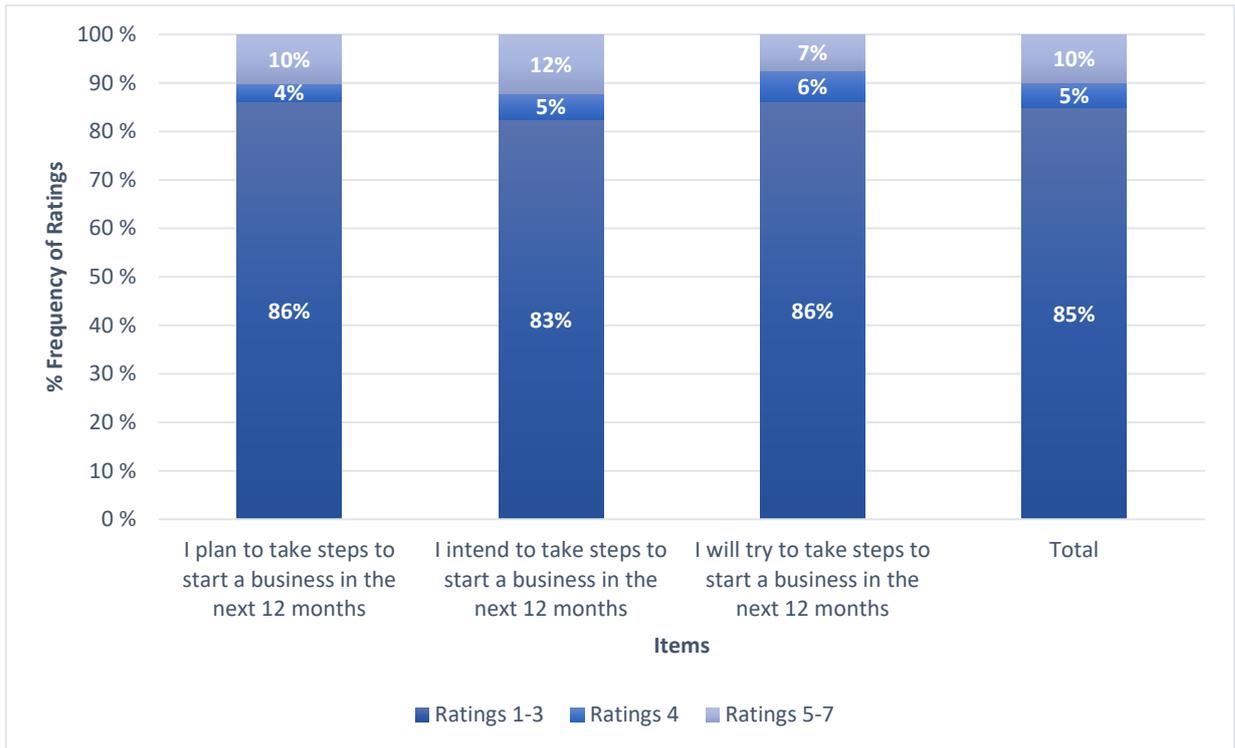


Figure 13 Entrepreneurial Intentions in South Savo

(Source: Author)

Entrepreneurial Intention

Entrepreneurial intention among respondents was significantly low. As seen in figure 13, 85% of respondents disagree with the opinion that in the next 12 months they plan, intend, or will try to take steps to start a business while only 10% agree. The means of the three items measuring if in the next 12 months respondents plan, intend or will try to start a business range between 1.75 and 1.97. Across all three items, the standard deviation ranged from 1.425 to 1.740. The distributions of all the items are very leptokurtic, as evidenced by their high positive kurtosis values, indicating that there are few cases in the tails of the distribution. They are also positively skewed, which means

they have fewer large values and a long tail to the right. The skewness value of EI3 (2.084) is just slightly outside the limit for normal distribution (-2 - +2). However, because the difference is not large, and its kurtosis value is within the accepted range, the distribution of EI3 is still considered normal. All the other items meet the skewness and kurtosis condition for a normal distribution.

4.1.3 Regional Ecosystem Perceptions and Entrepreneurial Intention

One of the aims of the present study is to assess the Entrepreneurial Ecosystem in South Savo as perceived by its residents. Figure 14 illustrates the average ratings of the perception of individuals regarding the systemic conditions of the entrepreneurial ecosystem on the regional and sub-regional levels. As expected, given its position as the smallest sub-region in South Savo, the respondents from Pieksämäki rated the ecosystem lowest across all elements. Surprisingly, respondents from Savonlinna rated the ecosystem slightly better than their counterparts from Mikkeli on four elements – leadership, finance, and knowledge. However, Mikkeli takes the top position on the talent, network, and support elements.

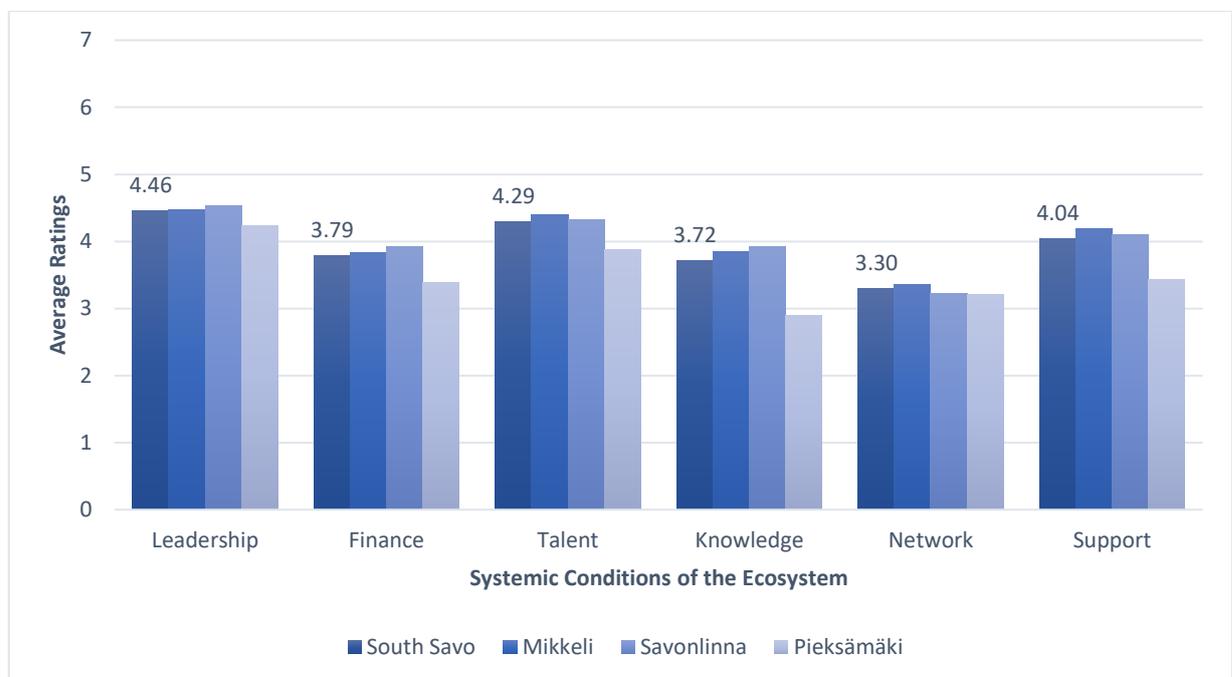
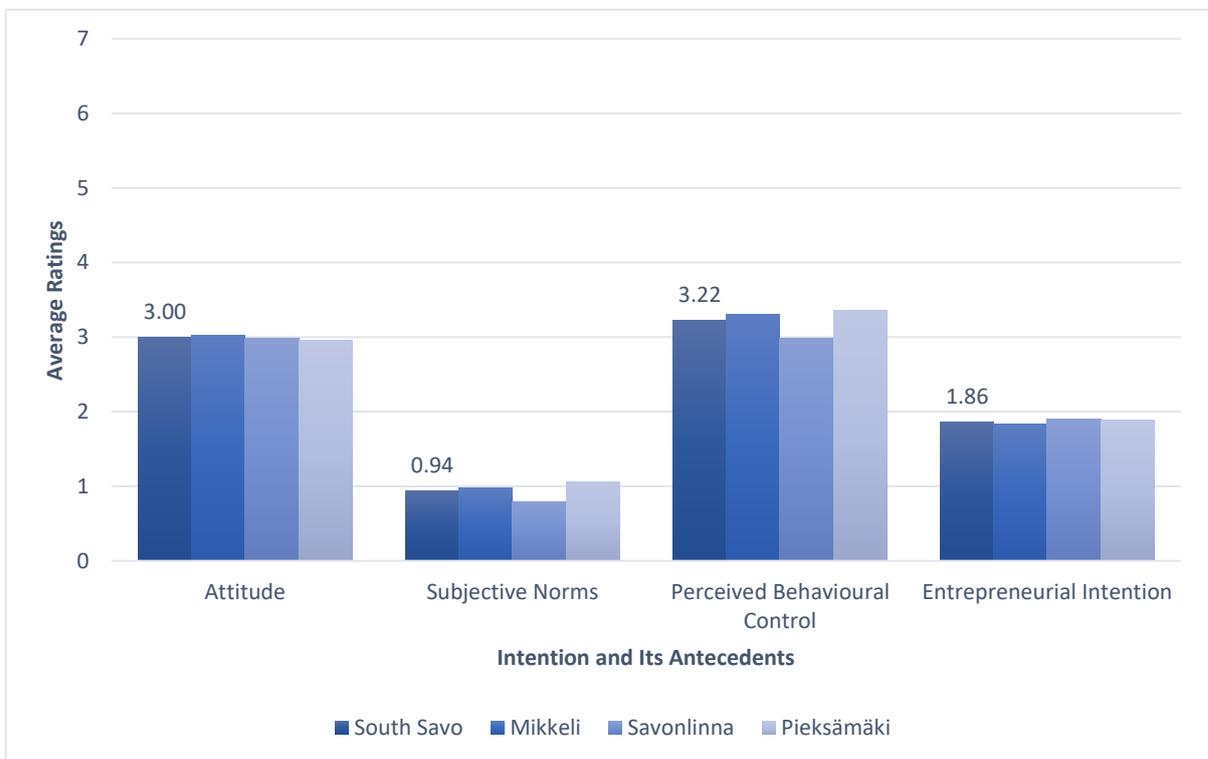


Figure 14 Perceptions of the Systemic Conditions in South Savo
(Source: Author)

Overall, the average ratings of three elements – leadership, talent, and support – were slightly higher than the neutral point (4), indicating that people in the region have a slightly positive perception of these ecosystem elements. Knowledge, finance, and network, on the other hand, fall short of the midpoint, indicating that people in the region have a negative perception of them. The worst element was network (3.30), with knowledge (3.72) and finance (3.79) rounding out the bottom three, while leadership (4.46) was the best element, with talent (4.29) and support (4.04) coming in second and third, respectively. Given that none of the elements significantly exceeded the neutral midpoint, it is possible to conclude that the entrepreneurial ecosystem in the region is perceived as unfavourable by its residents and only respondents from Pieksämäki appear to have significantly lower perceptions of the ecosystem.



*Values for subjective norms have been rescale to 7 to allow comparison

Figure 15 Entrepreneurial Intention by Sub-regions

(Source: Author)

As seen in Figure 15, with an average rating of 1.86 for the region, respondents report a very low level of entrepreneurial intention. There is no significant difference between the sub-regions. Mikkeli had the lowest level (1.83) of entrepreneurial intention while Savonlinna had the highest (1.91). Unsurprisingly, respondents also report low ratings

across the three motivational factors which are theorised to have a direct effect on intention. The general attitude toward starting a business is negative with an average rating of 3. Sub-regionally, the attitude toward starting a business is worst in Pieksämäki (2.96) and best in Mikkeli (3.03). Subjective Norms which measure perceived social pressure to engage in or refrain from engaging in entrepreneurial behaviour is rated even lower (0.94). Such a low rating suggests that there is little to no social pressure to engage in entrepreneurial behaviour in the region. Furthermore, this may imply that entrepreneurial behaviour is considered unacceptable in the region. Although it is equally not in a favourable zone, PBC which measures an individual's perception of their ability to engage in entrepreneurial behaviour recorded the highest average (3.22) among the three motivational factors. PBC was highest in Pieksämäki (3.36) and lowest in Savonlinna (2.98). Overall, only 33% of respondents agree that they could perform and control entrepreneurial activities.

4.2 Exploratory Factor Analysis (EFA)

An EFA was used to narrow down the 46 items to the ten variables examined in this thesis. The EFA was carried out according to the procedures outlined in Chapter 3. Table 6 summarizes the results of the EFA. Due to their similarities and/or factor loadings falling below the acceptable criteria (0.3 and 0.45, respectively) for the sample size, five items (L2, F1, T1, K5, and N1) were removed (Metsämuuronen, 2009; Hair et al., 2019). Furthermore, all items, except for the finance items, were initially loaded into single factors, as expected. The finance items loaded into two factors, mainly due to F1's cross-loading. The five remaining finance items successfully loaded into one factor after the removal of F1 which also had an unacceptable factor loading across the initial two factors. Overall, the remaining 41 items were all loaded into their respective factors, with loadings ranging from 0.511 to 0.900. The obtained eigenvalues (1.882-3.083) for each factor were greater than 1 and their extracted variance varied between 39% and 78%. There is a good total representation of the factors as the extracted variance across all the factors averaged 57%.

Table 6 Exploratory Factor Analysis, Adequacy and Reliability

Construct	Item	Factor loading	Eigenvalue	Variance extracted (%)	KMO	Cronbach's Alpha (α)
Leadership	L1	0.602	2.072	41.436	0.731	0.778
	L3	0.607				
	L4	0.654				
	L5	0.670				
	L6	0.682				
Finance	F2	0.511	1.951	39.020	0.757	0.735
	F3	0.684				
	F4	0.541				
	F5	0.603				
	F6	0.752				
Talent	T2	0.564	2.320	46.396	0.748	0.819
	T3	0.640				
	T4	0.698				
	T5	0.762				
	T6	0.724				
Knowledge	K1	0.754	2.216	55.389	0.804	0.829
	K2	0.713				
	K3	0.838				
	K4	0.661				
Network	N2	0.800	1.882	47.056	0.729	0.773
	N3	0.605				
	N4	0.759				
	N5	0.548				
Support	S1	0.742	2.243	56.087	0.773	0.827
	S2	0.737				
	S3	0.891				
	S4	0.597				
Attitude	A1	0.871	3.083	77.080	0.825	0.931
	A2	0.874				
	A3	0.887				
	A4	0.879				
Subjective Norms	SN1	0.857	2.343	78.115	0.757	0.911
	SN2	0.894				
	SN3	0.900				
Perceived Behavioural Control	PBC1	0.829	2.347	58.670	0.789	0.844
	PBC2	0.700				
	PBC3	0.867				
	PBC4	0.645				
Entrepreneurial Intention	EI1	0.811	2.187	72.899	0.744	0.885
	EI2	0.876				
	EI3	0.873				

Source: Author

Bartlett's test of sphericity for all the extracted factors was statistically significant (sig. <0.50). Thus, indicating that there are sufficient correlations among the items with each factor to proceed. To assess sampling adequacy, the Kaiser-Meyer-Olkin (KMO) test was applied. According to Metsämuuronen (2009), KMO values greater than 0.6 are recommended. All factors passed this test with KMO values ranging from 0.729 to 0.825. Cronbach's alpha measured the reliability of the factors. Ranging from 0.735 to 0.931, their alpha coefficients were greater than 0.7 indicating acceptable internal consistency (Hair et al., 2019). In conclusion, of the initial 46 items, 41 loaded into the extracted factors which were found adequate and reliable. Kautonen et al.'s (2015) validated scales for measuring entrepreneurial intention and its antecedents passed the tests as well without the removal of any original items.

4.3 Confirmatory Factor Analysis (CFA)

In this sub-section, the extracted factors are subjected to the more stringent CFA to further validate and assess the fit of the measurement model. The CFA was carried out according to the procedures outlined in Chapter 3. The initial CFA model using the 41 items and 10 factors extracted from the EFA had an unacceptable model fit. The model fit statistics of the initial CFA were as follows: $\chi^2 = 1226.419$; $df = 734$; Relative $\chi^2 = 1.671$; CFI = 0.883; IFI = 0.885; RMSEA = 0.060. The CFI and IFI were below the threshold required for a good model fit. Furthermore, three factors namely Finance, Knowledge and Talent had discriminant validity issues while four factors Finance, Leadership, Network and Talent did not pass the convergent validity.

Several CFA models were also tested and iteratively modified to improve model fit and validity. Items were removed iteratively relying on theory and model diagnostic information such as standard residuals and modification Indices. Table 7 summarizes the final CFA model results. Seven items (L4, L5, F5, T2, T6, N5 and S4) were removed in the final measurement model. The model fit statistics were as follows: $\chi^2 = 730.874$; $df = 482$; Relative $\chi^2 = 1.516$; CFI = 0.928; IFI = 0.930; RMSEA = 0.052. The model fit statistics of the final model are all within the threshold required for a good model fit. The final model improved across all the fit indices when compared to the initial model.

Table 7 Confirmatory Factor and Reliability Analysis

Construct	Items	Standardized Factor Loading	t-value	Average Variance Extracted (AVE)	Composite Reliability (C.R.)
Leadership	L1	0.668	**	0.468	0.725
	L3	0.706	6.958		
	L6	0.677	6.838		
Finance	F2	0.522	**	0.402	0.722
	F3	0.751	6.223		
	F4	0.493	4.969		
	F6	0.726	6.157		
Talent	T3	0.573	**	0.515	0.757
	T4	0.734	7.053		
	T5	0.824	7.341		
Knowledge	K1	0.748	**	0.556	0.833
	K2	0.720	9.409		
	K3	0.819	10.638		
	K4	0.688	8.989		
Network	N2	0.768	**	0.525	0.767
	N3	0.680	7.988		
	N4	0.722	8.315		
Support	S1	0.717	**	0.632	0.836
	S2	0.790	9.886		
	S3	0.870	10.482		
Attitude	A1	0.879	**	0.770	0.931
	A2	0.888	17.158		
	A3	0.876	16.725		
	A4	0.868	16.435		
Subjective Norms	SN1	0.850	**	0.780	0.914
	SN2	0.884	15.669		
	SN3	0.914	16.460		
Perceived Behavioural Control	PBC1	0.836	**	0.585	0.847
	PBC2	0.688	10.080		
	PBC3	0.888	13.333		
	PBC4	0.615	8.767		
Entrepreneurial Intention (EI)	EI1	0.801	**	0.726	0.888
	EI2	0.847	13.014		
	EI3	0.905	13.999		
Model Fit Statistics	$\chi^2 = 730.874$; $df = 482$; <i>Relative $\chi^2 = 1.516$</i> ; $CFI = 0.928$; $IFI = 0.930$; $RMSEA = 0.052$.				

** Items constrained for identification purposes.

Source: Author

Following the establishment of a good model fit, construct reliability, convergent validity, and discriminant validity were investigated. Composite reliability values were utilized to examine the constructs' reliability in the CFA. The composite reliability scores ranged

from 0.722 to 0.931, showing acceptable internal consistency of the constructs (Hair et al., 2019). Except for leadership and finance, all the constructs had an AVE value higher than 0.5, showing convergent validity (Fornell & Larcker, 1981). The rigorous test for discriminant validity proposed by Fornell and Larcker (1981) and described in Chapter 3 found all the constructs were distinct from each other. Even though the lack of convergent validity within the leadership and finance constructs could be an issue, I decided to proceed with them for this study since the problematic items have solid theoretical reasons for their inclusion. For example, extant literature supports the addition of item F2, which measures the availability of entrepreneurial funds among family, friends, relatives, as a key part of entrepreneurial finance (Chua et al., 2011; Zhang, 2015; Velt et al., 2018). Furthermore, both constructs passed the reliability and discriminant validity tests.

Finally, 34 items and 10 constructs were kept from the initial 41 items from the EFA and included in the final validated measurement model. Each latent construct had a maximum of three components. Academics in the field of entrepreneurship approved the constructs' face validity. Eight factors emerged from Harman's single factor test on the 34 items, indicating that common method bias was absent in the data. Therefore, the ten constructs can be utilized as reliable measures for further analysis and hypotheses testing with SEM.

4.4 Structural Equation Modelling and Hypotheses Testing

This sub-section presents the results of the structural models denoting and testing the 15 postulated hypotheses. Depending on the nature of the hypotheses being tested by a model, the standardized regression weights, t-values, and R-square values, direct and indirect effects, the lower and upper bound confidence intervals, and the significance of the indirect effect are reported to aid interpretation of results.

4.4.1 Direct Effects of the Antecedents on Entrepreneurial Intention

The first set of hypotheses (H1a - H1c) tested is concerned with the core model of this study – the Theory of Planned Behaviour (TPB). In general, the theory states that all three motivational factors have a positive effect on entrepreneurial intention. In specifying these relationships in the structural model other factors such as age, gender, entrepreneurial experience, and educational attainment are included as control variable. With an R squared of 0.633, three motivational factors while accounting for the control variables explain 63.3% of EI (Model 2). This is an improvement on the R squared of 0.607 for the model without the control variables (Model 1). Table 8 summarises the results of the structural model with the control variables. The fit indices suggest a good fit between the data and the model ($\chi^2 = 160.793$; $df = 111$; Relative $\chi^2 = 1.449$; CFI = 0.975; IFI = 0.976; RMSEA = 0.049).

Table 8 Structural Model Test Results (Model 2)

Relationships	Standardized Estimates	t-values	Hypothesis Supported
Hypothesized Relationships			
H1a: ATB + → EI	0.396***	4.719	YES
H1b: SN + → EI	0.349***	4.043	YES
H1c: PBC + → EI	0.149*	2.113	YES
Control Variables			
Age	-0.123*	-2.196	
Female	-0.104	-1.87	
Entrepreneurial Experience	0.035	0.592	
Higher Education	-0.073	-1.356	
Squared Multiple Correlation (R²):			
EI	0.633		
Model Fit Statistics:			
$\chi^2 = 160.793$; $df = 111$; Relative $\chi^2 = 1.449$; CFI = 0.975; IFI = 0.976; RMSEA = 0.049			

Note: *** $p < 0.001$, ** $p < 0.01$, and * $p < 0.05$.

Source: Author

Hypothesis 1a: Attitude towards entrepreneurial behaviour is positively related to entrepreneurial intention.

The positive standardized estimates (0.396) indicate a positive association between attitude and intention. If attitude increases by one unit, intention increases by 0.396 units. When the standardized estimates of the antecedents are compared, it appears that attitude has the most impact on intention. Hypothesis 1a is *accepted* since the p-value is less than 0.05.

Hypothesis 1b: Subjective norms regarding entrepreneurial behaviour is positively related to entrepreneurial intention.

Hypothesis 1b is *accepted* since the p-value is less than 0.05. As hypothesized, the positive standardized estimates (0.349) imply a positive relation between subjective norms and intention. This means that if subjective norms increase by one unit, intention increases by 0.349 units.

Hypothesis 1c: Perceived behavioural control regarding entrepreneurial behaviour is positively related to entrepreneurial intention.

The analysis results *support* hypothesis 1c ($p < 0.05$)., The positive standardized estimates (0.149) imply a positive relation between PBC and intention, as hypothesized. This means that if PBC increase by one unit, intention increases by 0.149 units. When the standardized estimates of the antecedents are compared, PBC appears to have the least effect on intention.

4.4.2 Mediating Role of the Antecedents of Intention

The next set of hypotheses (H2a – H2f) tested is focused on the mediating role of these motivational factors in the relationship between individuals' perception of the EE elements and their EI. To analyse this relationship, the ecosystem elements were introduced to the previous structural model with paths specified from each of them to the three antecedents of intention. The parameter estimations' corresponding standard errors and t values may be biased during the mediation sequence (Bullock et al., 2010).

To guard against this bias, bootstrapping with 5000 samples was used to generate bias-corrected confidence intervals at a level of 95%. Table 9 summarises the results of the test for mediation. The R-squared of the resulting model was 0.632 (Model 3). The fit indices indicate that the model and the data are a good fit ($\chi^2 = 918.188$; $df = 587$; Relative $\chi^2 = 1.564$; CFI = 0.908; IFI = 0.911; RMSEA = 0.055).

Table 9 Test for Mediation Using a Bootstrap Analysis

No.	Relationship			Indirect Effect		Confidence Interval		P-Value	Mediation
	IV	Mediator	DV	Unstd.	Std.	Lower	Upper		
H3a	L	ATB		-0.371	-0.283	-4.504	0.164	0.224	NO
		SN	EI	-0.566	-0.431	-5.983	0.079	0.15	NO
		PBC		-0.093	-0.071	-0.972	-0.002	0.086	NO
H3b	F	ATB		-0.819	-0.497	-4.193	0.117	0.146	NO
		SN	EI	-1.178	-0.715	-5.823	-0.026	0.087	NO
		PBC		-0.103	-0.062	-1.178	0.01	0.141	NO
H3c	T	ATB		1.645	1.17	0.562	9.676	0.002	YES
		SN	EI	2.16	1.535	0.551	9.507	0.002	YES
		PBC		0.246	0.175	0.059	2.11	0.012	YES
H3d	K	ATB		-0.935	-0.83	-4.696	-0.225	0.027	YES
		SN	EI	-1.179	-1.047	-6.241	-0.22	0.028	YES
		PBC		-0.149	-0.132	-0.919	-0.019	0.037	YES
H3e	N	ATB		0.39	0.434	0.076	1.675	0.043	YES
		SN	EI	0.569	0.634	0.119	2.351	0.027	YES
		PBC		0.102	0.114	0.022	0.412	0.032	YES
H3f	S	ATB		0.149	0.122	-0.781	1.039	0.780	NO
		SN	EI	0.181	0.149	-1.177	1.5	0.773	NO
		PBC		0.039	0.032	-0.064	0.253	0.428	NO

Note: *Unstd.* = Unstandardized Estimates; *Std.* = Standardized Estimates; *IV* = Independent variable; *DV* = Dependent Variable; *Bootstrap Analysis with a 95% Confidence Interval, Sample = 5000 with replacement.*

Source: Author

Hypothesis 2a: The impact of individuals' perceptions of leadership on EI is mediated by attitude, subjective norms, and perceived behavioural control.

The indirect effect of leadership on intention via attitude, subjective norms, and perceived behavioural control was negative but insignificant. Hence, hypothesis 2a is rejected.

Hypothesis 2b: The impact of individuals' perceptions of finance on EI is mediated by attitude, subjective norms, and perceived behavioural control.

Finance had a negative but insignificant indirect effect on intention via attitude, subjective norms, and perceived behavioural control. As a result, hypothesis 2b is unsupported.

Hypothesis 2c: The impact of individuals' perceptions of talent on EI is mediated by attitude, subjective norms, and perceived behavioural control.

The indirect effect of talent on intention via attitude, subjective norms, and perceived behavioural control was positive and significant. Hence, hypothesis 2c is accepted. Looking at the standardized indirect effects, the most mediation occurs through SN and the least mediation occur through PBC. Further analysis of the direct effect of talent on intention shows a positive but insignificant relationship. Hence, we can conclude that effect of talent on intention is fully mediated by the three motivational factors.

Hypothesis 2d: The impact of individuals' perceptions of knowledge on EI is mediated by attitude, subjective norms, and perceived behavioural control.

Knowledge had a negative and significant indirect effect on intention via attitude, subjective norms, and perceived behavioural control. Thus, hypothesis 2d is supported. The most mediation occurs through SN, while the least mediation comes through PBC, according to the standardized indirect effects. An examination of the direct impact of knowledge on intention reveals a negative but insignificant relationship. As a result, we can conclude that the three motivating factors fully mediate the effect of knowledge on intention.

Hypothesis 2e: The impact of individuals' perceptions of network on EI is mediated by attitude, subjective norms, and perceived behavioural control.

The indirect effect of talent on network via attitude, subjective norms, and perceived behavioural control was positive and significant. Hence, hypothesis 23 is accepted. According to the standardized indirect effects, the most mediation occurs through SN,

whereas the least mediation occurs through PBC. Network has a positive but insignificant direct relationship with intention, indicating that its effects on intention is fully mediated by the three motivational factors.

Hypothesis 2f: The impact of individuals' perceptions of support on EI is mediated by attitude, subjective norms, and perceived behavioural control.

Support had a positive but insignificant indirect influence on intention via attitude, subjective norms, and perceived behavioural control. As a result, hypothesis 2f is unsupported.

4.4.3 Moderating Effects of Ecosystem Elements

The final set of hypotheses (H3a – H3f) tested concern the moderating effects of individuals' perception of the EE elements on the antecedent-intention relationships. To test the moderation hypotheses the mixed model method SEM approach was used. The mixed model method, in addition to the independent and dependent variables, contains a composite moderator variable and a composite interaction term (Collier, 2020). Thus, the factor weights from the final measurement model are used to compute the composite scores each construct. The fit indices of the resulting model suggest a good fit between the data and the model ($\chi^2 = 913.359$; $df = 426$; Relative $\chi^2 = 2.144$; CFI = 0.923; IFI = 0.928; RMSEA = 0.078). With an R squared of 0.733, the model specifying moderation relationships appears to explain more variance in EI than Model 2 and 3. Table 10 summarises the moderation test results.

Hypothesis 3a: Perceptions of leadership moderate the effect of attitude, subjective norms, and perceived behavioural control on EI.

The moderation effect of leadership is only significant in the subjective norms-intention and attitude-intention relationships. The parameter estimates show that while leadership strengthens the attitude-intention relationship., it weakens the subjective norms-intention relationship. However, the standardized estimate suggest that the moderation effect is stronger on the subjective norms-intention relationship. Hypothesis 3a is partially accepted.

Table 10 Moderation Test Results (Mixed-Model Method)

No.	Hypothesized Relationships	Unstandardized Estimates	Standardized Estimates	t-values	Hypothesis Supported
H3a	ATB*L → EI	0.257**	0.316	2.690	YES
	SN*L → EI	-0.080***	-0.573	-3.490	YES
	PBC*L → EI	0.019	0.026	0.311	NO
H3b	ATB*F → EI	-0.342***	-0.355	-3.532	YES
	SN*F → EI	0.059**	0.317	3.260	YES
	PBC*F → EI	-0.165	-0.189	-1.936	NO
H3c	ATB*T → EI	-0.028	-0.033	-0.270	NO
	SN*T → EI	0.007	0.042	0.272	NO
	PBC*T → EI	0.047	0.063	0.593	NO
H3d	ATB*K → EI	-0.035	-0.053	-0.388	NO
	SN*K → EI	0.016	0.139	0.782	NO
	PBC*K → EI	0.030	0.051	0.419	NO
H3e	ATB*N → EI	0.047	0.091	0.938	NO
	SN*N → EI	0.007	0.080	0.610	NO
	PBC*N → EI	0.023	0.050	0.633	NO
H3f	ATB*S → EI	0.039	0.054	0.441	NO
	SN*S → EI	-0.014	-0.095	-0.586	NO
	PBC*S → EI	0.008	0.013	0.146	NO

Note: *** $p < 0.001$, ** $p < 0.01$, and * $p < 0.05$

Source: Author

Hypothesis 3b: Perceptions of finance moderate the effect of attitude, subjective norms, and perceived behavioural control on EI.

The moderation effect of finance, like Hypothesis 3a, is only significant in the subjective norms-intention and attitude-intention relationships. According to the parameter estimations, finance weakens the attitude-intention relationship while strengthening the subjective norms-intention relationship. The standardized estimate, on the other hand, suggests that the moderation effect is stronger on the attitude-intention relationship. Hypothesis 3b is supported in part.

Hypothesis 3c: Perceptions of talent moderate the effect of attitude, subjective norms, and perceived behavioural control on EI.

None of the talent interaction terms in the structural model were significant therefore Hypothesis 3c is completely rejected.

Hypothesis 3d: Perceptions of knowledge moderate the effect of attitude, subjective norms, and perceived behavioural control on EI.

Hypothesis 3d is fully unsupported because all the knowledge interaction terms were insignificant.

Hypothesis 3e: Perceptions of network moderate the effect of attitude, subjective norms, and perceived behavioural control on EI.

All the network moderation terms were insignificant therefore Hypothesis 3e is completely rejected.

Hypothesis 3f: Perceptions of support moderate the effect of attitude, subjective norms, and perceived behavioural control on EI.

Hypothesis 3f is fully unsupported because none of the support interaction terms were significant.

5 DISCUSSION AND CONCLUSIONS

This final chapter discusses the study's findings. It explains how the findings answer the research questions. The theoretical and practical implications of the study are then presented. The chapter concludes with a discussion of the study's limitations and recommendations for future research.

Entrepreneurs are key actors in any vibrant entrepreneurial ecosystem. And studies have shown that an underlying intention to perform a given planned behaviour precedes the actual execution of that behaviour. Thus, the present study argues that entrepreneurial intention (EI) should be at the heart of any ecosystem development policy. The study goes on to argue that intention is influenced by one's perception of the environment (their personal theory of reality). That is if one perceives the environment to be favourable for the performance of a given behaviour then they are more likely to develop an intention to perform the behaviour. As a result, the objective of this thesis is to understand the impact of the motivational factors that directly influence the formation of entrepreneurial intentions in a region and evaluate the indirect effects the exogenous systemic conditions of an ecosystem, as perceived by individuals, may have on this relationship.

To accomplish these goals in a regional context the South Savo region of Finland is studied. First, the entrepreneurial intention of residents of the region is evaluated. Then the current state of the systemic conditions is subjectively assessed through these residents' perspectives. Thereafter, using the TBP as the base theory, the direct relationship between the three motivational factors and intention is analysed. Finally, the moderating and mediated role of individuals' perception of the systemic condition in the aforementioned relationship is also evaluated. All the analyses conducted controlled for the effect of age, gender, educational attainment, and entrepreneurial experience.

5.1 Research Question 1: What are the Important Factors Influencing Entrepreneurial Intentions in South Savo?

The survey data reveal weak entrepreneurial intention among residents in the region. Similarly, data on the motivational factors of intention are also unfavourable. Attitude

towards entrepreneurship is negative, there is little to no social pressure to engage in entrepreneurial activities and the perceived behaviour control (PBC) is relatively weak. In support of prior EI research, the empirical analysis to test the TPB hypothesized relationships shows that all three motivational factors are positive and statistically significant predictors of EI. Attitude, subjective norms and PBC explain a combined 63% of the variation in intention. This result is way above the average variance explained (28%) among studies that have applied the TPB model (Schlaegel & Koenig, 2014). However, a more similar result is found in Kautonen et al. (2015) whose study comprised 969 adults from Austria and Finland found the three antecedents explained 59% of the variance in EI.

The relative importance of each antecedent is expected to vary across context (Ajzen, 1991). Accordingly, in the context of South Savo, all the motivational factors directly influence EI in individuals, but they do so to varying degrees. This study finds that attitudes and subjective norms have the strongest influence on EI in the region. Both antecedents have over two times the influence of PBC. The strong and significant influence of subjective norms is contrary to previous research which finds it the weakest predictor of intention (Schlaegel & Koenig, 2014) or outrightly insignificant in explaining intention (Krueger et al., 2000; Autio et al., 2001). Nevertheless, some other studies have found a similarly strong and significant influence of subjective norms and speculate that this may be due to the use of a wider adult population sample, as norms set by others may be more relevant for adults than for the frequently used student samples in prior studies (Kautonen et al., 2015).

5.2 Research Question 2: Do Residents' Perception of the Entrepreneurial Ecosystem Impact Their Entrepreneurial Intention?

To answer the second research question, the moderating and mediated role of individuals' perception of the systemic condition in the formation of entrepreneurial intention were evaluated. Supporting the TPB's claim that exogenous influences only have an indirect effect on intention, this study identified several EE elements' effect on intentions that are fully mediated (H2) by the antecedents of intention. In addition, two EE elements were found to moderate (H3) the impact of the antecedents on intention.

Support Services is the only ecosystem element among the six elements studied that did not have an indirect effect—mediated nor moderating—on intention.

5.2.1 Mediated Role of the Systemic Conditions

Regarding the mediation effects, this study found talent, knowledge and network have significant indirect effects on individuals' intention which are fully mediate through all three antecedents of intention. However, there was no evidence for any mediation involving the effects of leadership, finance, and support. Talent has a positive mediated effect on intention through attitude, SN and PBC. This means that if residents perceive an increase in the prevalence of skilled human capital in an ecosystem this will tend to positively impact their attitude, SN and PBC with respect to entrepreneurial behaviour which, in turn, improves their intention to start a business. This indirect effect of talent on intention is considerably stronger through its effect on attitude and SN than individuals' PBC.

This result implies that the prevalence of talent in a region has significant implications for individuals' attitude and subjective norms towards entrepreneurial behaviour. Human capital-rich areas attract even more highly qualified professionals in search of new challenges, opportunities, and wealth (Bahrami & Evans, 1995; Cohen, 2005). In addition, a prevalence of talent leads to tough competition in the labour market. Over time, to achieve one's ambitions or evade the competitive labour market, entrepreneurship becomes a viable and attractive option. As a result, the region's attitude, and subjective norms toward entrepreneurial behaviour gradually improve, and entrepreneurial intention develops in tandem.

On a similar note, the perception of one's network has a mediated relationship with their intention through its positive effect on attitude, SN and PBC. This is unsurprising given that a region's high supply of skilled workforces leads to broader professional and social networks (Maillat, 1995). The indirect effect of network on intention is also considerably stronger through its effect on one's attitude and SN than their PBC. For most people, the referent individuals or groups that inform their subjective norms are part of the professional and social network hence it follows that the effects of network on intention are strongest through one' SN.

An individuals' network also provides a localised sample for understanding the expected outcomes associated with entrepreneurial behaviour. For example, if one's network is predominantly made up of entrepreneurs who frequently complain about the stress that comes with the job, they are more likely to have a negative attitude toward entrepreneurship. On the other hand, a network that generally extols the personal wealth or community benefits of entrepreneurship is more likely to have a positive effect on one's attitude. PBC may also increase if one feels well connected to a network of people that share important information and could help them with their business (as advisors or co-founders).

Contrary to the positive indirect effects of talent and network, individuals' perception of knowledge has a negative mediated effect on intention through attitude, SN and PBC. This inverse relation is unexpected as it suggests that higher investments in R&D and the commercialisation of new R&D knowledge by business in a region dampens residents' attitude, SN and PBC towards entrepreneurial behaviour. This idea is contrary to the suggestion that knowledge is an important element for entrepreneurs in the discovery stage and a source of new business opportunities (Velt et al., 2018; Stam & van de Ven, 2019).

5.2.2 Moderating Role of the Systemic Conditions

Only leadership and finance were found to moderate the antecedent-intention relationship among the six elements studied in the empirical analysis. The positive effect of an individual's attitude on their intention to start a business is strengthened by their perception of leadership in the region.

Drawing from Cooke and Sheeran (2004), this moderating effect on the attitude-intention relation may be made possible through the properties of cognition, particularly certainty. In this case, this can imply that as an individual perceives higher visibility, accessibility, and availability of entrepreneurial leaders who motivate, advise and mentor others they become more certain about their attitudes towards regional entrepreneurship thus enhancing the effect on intention. Involvement is also a significant cognitive property in the moderation of the attitude-intention relation (Petty et al., 1995; Cooke & Sheeran, 2004). More involvement with these entrepreneurial leaders, perhaps

through workshops or mentorship, can also lead to the greater elaboration of information, which in turn makes attitude more certain, internally consistent and as such better predictors of intention.

The positive attitude-intention relationship is also moderated by perceptions of finance in a region. However, unlike leadership, it appears to dampen the relationship. This is contrary to some prior research. Kibler (2013) discovered that higher 'objective' wealth levels in a region improve the positive effect of attitude on entrepreneurial intention, arguing that this is because it represents a greater supply of venture capitalist and financial resources, which would foster perceptions of the ecosystem as financially supportive of entrepreneurship. Nonetheless, there is also some support for the negative effects of finance. A high supply of finance, particularly through higher wages, may make paid employment more desirable (Bosma et al., 2008) and increases the opportunity cost of entrepreneurship (Amit et al., 1995). Conversely, in regions with a low supply of finance, entrepreneurship may become attractive as individuals turn to it for financial security (Henley, 2007) or at least some increased income (Mueller, 2006). This situation is not favourable for high-growth oriented entrepreneurship which requires huge financial commitment for business capitalisation. Overall, this thesis argues that perceptions of a high supply of entrepreneurial finance in a region may weaken the positive impact of attitudes towards entrepreneurship preventing them from developing into strong entrepreneurial intentions.

Leadership and finance were also found to moderate the positive SN-intention relationship. Favourable perceptions of leadership weaken the relationship given that leadership provides guidance for and direction of collective entrepreneurial action (Stam & van de Ven, 2019), its weakening of the positive SN-intention relationship may seem illogical. However, on closer inspection, it is possible that as individuals perceive leadership to be more favourable and sufficient in a region the importance and relevance of subjective norms to them may begin to drop. On the other hand, favourable perceptions of finance strengthen the positive SN-intention relationship. That is, if entrepreneurial behaviour is perceived as socially acceptable and individuals have a strong motivation to comply, then perceptions of the ecosystem as financially supportive of entrepreneurship will intensify the development of intentions to start a business.

5.3 Theoretical Contributions

This research contributes to the entrepreneurial intentions research. Particularly, in its attempt to operationalise the systemic conditions of an ecosystem and assess the effects of ecosystem perceptions on intention formation. This study is an answer to calls for EI research that operationalise regional conditions using perceptual measures. This approach is novel as other studies have either assessed the effects of “objective” regional factors (e.g Kibler, 2013) or the effects of the ecosystem as a whole and not its distinct parts (Elnadi & Gheith, 2021).

The integration of the ecosystem systemic condition with the robust TPB also provides new insight into how intentions are formed in a regional context. Contrary to Elnadi & Gheith (2021) findings that the ecosystem-intention relationship is partially mediated by entrepreneurial self-efficacy, this study found systemic conditions of an ecosystem - talent, knowledge, and network - have significant indirect effects on intention which are fully mediate through all three antecedents of intention. This finding is in line with the TPB assumption that exogenous factors only indirectly affect intentions (Ajzen, 1991; Krueger et al., 2000). Interestingly, perceptions of the availability of knowledge in a region appeared to have a negative indirect effect on intentions to start a business. Since intention often precedes action, this finding appears to be in opposition to extant literature which suggests that knowledge should boost entrepreneurial activity (Velt et al., 2018; Stam, 2015; Stam & van de Ven, 2019).

Findings regarding the moderation effect of perceptions of ecosystem elements (leadership and finance) on the antecedent-intention relationship is also a new contribution to literature. For example, the negative moderation effect of finance on the attitude-intention relationship seems to support the claims that finance has an inverse effect on entrepreneurship (Amit et al., 1995; Mueller, 2006; Henley, 2007; Bosma et al., 2008). However, wealth levels in a region have been found to strengthen the attitude-intention relationship (Kibler, 2013). Hence, this study adds some evidence to the debate around the effect of the supply of finance on entrepreneurship in a region.

Finally, this thesis also contributes a developed and validated measurement model for assessing the systemic conditions of an EE and provides researchers with a readily

available tool for perceptually assessing and comparing regional ecosystems. This in combination with the TPB can be used to carry out research that informs new policy aimed at developing entrepreneurship in a region.

5.4 Practical Implications

This study presents evidence that policymakers can draw on to understand the effects of the different ecosystem elements on the formation of EI in their region. This information effectively diagnoses and provides a data-driven approach on which elements can be targeted with customized policies or initiatives to stimulate a region's entrepreneurial potential. In the context of South Savo, the importance of attitude and SN was uncovered and cannot be overstated. However, the current attitude and SN of individuals towards entrepreneurship are unfavourable. Therefore, this study reiterates Arenius's (2009) call for policy initiatives to address individual's perceptions of entrepreneurship in Finland. Attitude and SN are viable starting points to focus on in designing entrepreneurial ecosystem development policies or initiatives. The elements which have indirect effects – leadership, finance, talent, knowledge, and network – present avenues that also require consideration.

To improve attitude and norms in the region towards entrepreneurship, initiatives should emphasize the positive outcomes such as autonomy, personal wealth, independence, community benefits, freedom, etc., and highlight entrepreneurship as a viable and attractive career choice. As individual attitude improves, norms are bound to improve as well. Entrepreneurship education has been shown to have a significant positive effect on attitudes and perceived behavioural control (Fayolle & Gailly, 2015). Policymakers can design and provide entrepreneurship education programs to the public to clarify what entrepreneurship entails and improve residents' entrepreneurial ability.

A skilled workforce provides the basis for a wider professional and social network so initiatives to attract and retain skilled workers within the region are important. Networking events (e.g., social events, boot camps and hackathon events) where local stakeholders (e.g., founders, business angels, community members) can come together to exchange views and meet each other should be frequently organised to foster interaction and

engage people in the region. These events can become platforms for locally established entrepreneurs to share their story and inspire people to emulate them. Although growth-oriented entrepreneurship may be preferred, it is important to also showcase owners of small businesses to cater to different levels of entrepreneurial ambitions.

Finally, the survey data revealed a high proportion of individuals who were unable to decide if their perception of an element was unfavourable or favourable. This indicates a lack of awareness or smooth information flow. This is especially the case for the finance, knowledge, and support elements thus they should be communication priorities in the region.

5.5 Limitations and Future Research

This study is faced with several limitations. First, the small sample and geographic scope. Only the 12 municipalities of the South Savo region were included in the study. Thus, although the findings may be crucial to the region they cannot be generalized or interpreted in the context of another region. This means there is room for future research to replicate this study in other regions or take a broader Finnish scope that encompasses all regions of Finland.

Second, in the survey carried out in April 2021 respondents were asked about their intention to start a business in 12 months. Such a short term combined with the volatile, uncertain, complex, and ambiguous (VUCA) world created by the COVID-19 crisis may have influenced the responses collected. Third, in order to delimit the research, this study only focused on the systemic conditions of the ecosystem and ignored the (culture, demand, formal institutions, and physical infrastructure). This study acknowledges that perceptions of these framework conditions may also affect the formation of individuals' entrepreneurial intention. Hence, future research could also incorporate them to get a full picture of how the perceptions of all ten elements of the ecosystem affect the formation of intentions in individuals.

Another avenue for future study, particularly for researchers looking to improve intentions in a region, is to understand the seemingly opposing roles talent, knowledge,

and network play in its formation. Finally, the measurement model developed in this study could be further tested in future studies on different samples. One key issue that could be checked is the convergent validity issues concerning the leadership and finance constructs.

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APPENDIX

Appendix 1. Central tendency and dispersion measures

Code	Question	Mean	St. Dev.	Skewness	Kurtosis
Q1 Leadership					
L1	There are established entrepreneurs who motivate others to follow in their footsteps.	4.38	1.467	-0.417	-0.36
L2	The local government has programmes in place to help new entrepreneurs. (E.g., seed funding or entrepreneurship training programmes)	4.29	1.408	-0.289	-0.309
L3	The established entrepreneurs are easily accessible.	5.11	1.366	-0.747	0.046
L4	The local government actively seeks to create and promote entrepreneurship-friendly legislation and atmosphere.	4.25	1.652	-0.182	-0.861
L5	Local community leaders regularly advocate for entrepreneurs and entrepreneurship.	4.30	1.570	-0.16	-0.815
L6	The established entrepreneurs advise and mentor other aspiring entrepreneurs.	4.41	1.429	-0.193	-0.378
Q2 Finance					
F1	Financing for entrepreneurship is available.	4.83	1.339	-0.307	0.073
F2	It is easy to raise funds for starting a business from family, friends, relatives	2.85	1.485	0.424	-0.646
F3	There are local individual investors and venture capitalists who are willing to financially support entrepreneurial ventures.	3.53	1.331	0.096	-0.069
F4	There is a sufficient number of banks that are willing to lend to entrepreneurs.	4.33	1.765	-0.31	-0.933
F5	Information on what funding programmes are available for entrepreneurs is easily accessible.	4.04	1.574	-0.037	-0.612
F6	It is easy to raise funds for starting a business through crowdfunding	3.17	1.413	0.11	-0.308

Q3 Talent					
T1	My region is attractive to skilled workers.	3.81	1.754	0.233	-1.015
T2	The workforce in the region is highly skilled and competent.	4.85	1.499	-0.587	-0.481
T3	If I started a company in my region, it will be easy to find and employ skilled workers.	4.14	1.638	-0.033	-0.899
T4	There are sufficient local institutions of higher education (universities, community colleges, trade schools) within my region.	4.29	2.022	-0.225	-1.366
T5	The local institutions of higher education produce an adequately skilled workforce for new companies within my region.	4.31	1.822	-0.251	-1.035
T6	Various entrepreneurship-related training is offered in my region.	4.35	1.562	-0.232	-0.636
Q4 Knowledge					
K1	There are sufficient research and development institutions (e.g., universities and research centres).	3.53	1.525	0.031	-0.612
K2	Many businesses commercialise new knowledge from research and development institutions in the region.	3.89	1.349	-0.253	-0.165
K3	There is a high investment in research and development in the region.	3.49	1.576	0.097	-0.694
K4	Information about schemes that help turn research knowledge into business is easily accessible.	3.75	1.403	0.029	-0.151
K5	The research and development institutions play a key role in the creation of new business based on research knowledge in the region.	3.94	1.461	-0.096	-0.365
Q5 Network					
N1	Many businesses in my region connect and collaborate with each other.	4.47	1.461	-0.392	-0.472

N2	I have a good network of people who could help me with business.	3.29	1.884	0.204	-1.337
N3	I am a member of a group of professional people in the region that shares knowledge and information	2.25	1.659	1.06	-0.295
N4	I have good connections on social media (e.g., LinkedIn, Twitter, Instagram) with people in the region.	2.71	1.877	0.797	-0.684
N5	The members of my network in the region have good mutual trust.	3.77	1.491	-0.052	-0.395

Q6 Support

S1	Local organisations, such as incubators, accelerators, and small business development centres, actively support local entrepreneurs.	4.07	1.468	-0.17	-0.248
S2	Professional services (e.g., technical, financial, accounting, legal, head-hunting, market intelligence, advertising, real estate) are readily available to entrepreneurs.	4.38	1.509	-0.153	-0.59
S3	Network services (e.g., trade and industry associations, supply chain networks, alumni) are easily accessible and provide assistance for networking and business interaction.	4.23	1.386	-0.209	-0.328
S4	Networking events (e.g., social events, boot camps and hackathon events) are frequently arranged in the region where local stakeholders (e.g., founders, business angels, community members) can come together to exchange views and meet each other.	3.50	1.457	0.182	-0.325

Q7 Entrepreneurial Intention

EI1	I plan to take steps to start a business in the next 12 months	1.87	1.607	1.934	2.731
EI2	I intend to take steps to start a business in the next 12 months	1.97	1.740	1.757	1.935

EI3	I will try to take steps to start a business in the next 12 months	1.75	1.425	2.084	3.557
Q8 Attitude					
A1	...unpleasant - ...attractive	2.89	2.011	0.721	-0.882
A2	...useless - ...useful	2.87	2.052	0.759	-0.9
A3	...foolish - ...wise.	2.86	1.974	0.701	-0.889
A4	...negative - ...positive	3.40	2.128	0.28	-1.417
Q9 Subjective Norms (Attitude)					
SNA1	My closest family members think that I should start a business in the next 12 months.	1.92	1.560	1.771	2.163
SNA2	My best friends think that I should start a business in the next 12 months.	2.11	1.677	1.417	0.885
SNA3	People who are important to me think that I should start a business in the next 12 months.	2.10	1.705	1.406	0.69
Q10 Subjective Norms (motivation-to-comply)					
SNB1	My closest family members	3.41	2.454	0.354	-1.573
SNB2	My best friends	2.70	1.994	0.827	-0.738
SNB3	People who are important to me	3.11	2.225	0.5	-1.33
Q9 * Q10 Subjective Norms					
SN1	SNA1* SNB1	7.94	10.341	2.004	3.604
SN2	SNA2* SNB2	6.81	8.606	2.005	3.712
SN3	SNA3* SNB3	7.78	9.755	1.743	2.077
Q11 Perceived Behavioural Control					
PBC1	If I wanted to, I could start a business in the next 12 months.	3.01	2.216	0.643	-1.13
PBC2	If I started a business in the next 12 months, I would be able to control the progress to a great degree by myself.	3.99	2.147	-0.136	-1.413
PBC3	It would be easy for me to start a business in the next 12 months.	2.57	2.050	1.068	-0.314

PBC4	If I wanted to start a business in the next 12 months, no external factor, independent of myself, would hinder me from taking such action.	3.31	2.144	0.441	-1.247
Gen	Q12 Gender	1.44	.498	0.247	-1.96
Age	Q13 Age	46.42	16.161	-0.109	-1.22
Reg	Q14 Region	1.60	0.749	0.813	-0.764
Edu	Q15 Education	3.02	1.003	0.192	1.031
Ent_XP	Q16 Entrepreneurial Experience	1.70	.460	-0.872	-1.254
Occ	Q17 Occupation	3.51	1.156	-0.291	-0.255

Source: Author