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Entrepreneurial Ecosystems

An explorative study of cultural attributes in Veszprém, Hungary

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Abstract

Developing a functional entrepreneurial ecosystem (EE) is often a recognized and desired aim of regional developers, local governments, as well as policy making institutions. However, the theoretical conceptualization of EEs remains in a nascent phase, creating difficulty in understanding their success factors and sub-processes, thus hindering effective policy making. Following the theoretical model “The Relational Organization of EEs”, this thesis uses Veszprém, Hungary as a case study to understand the relationships between general cultural attributes and local processes in establishing a successful EE. Through using a population survey, semi-structured interviews with entrepreneurs and expert meetings, this model identifies three local sub-systems; well-being, place attachment, and relocation intention that contribute to the establishment of an EE. The thesis concludes that the Veszprém EE contains several local sub-systems, but they fail to reach their full potential due to a lack of institutional coordination. Additional research should focus on identifying the social and material sub-systems in this EE and analyze the interactions between all three to arrive at relevant policy implications for establishing a successful EE in the region given all local contextualities.

Preface:

“Sailing, seemingly similar on sea and lake, is a very different sport in each environment. On sea, dominant wind directions, strong currents, and long journeys forge great captains. On the other hand, lake sailing is about knowing the small wind shifts, the surrounding landscapes, and the different obstacles a shallow lake can have underneath the surface.

*Both captains are sailors,
but what makes them successful is not the handling of the boat but understanding the context of their environment and using the right equipment for it.*

Much like entrepreneurs in their respective environments.

Always navigating on the waters of opportunities with a set assemblage of resources. Entrepreneurs are the sailors of the world, always finding the best winds to explore new waters and through new waters, finding new worlds in the form of innovation. This explains the longstanding historical glorification of sailors and the developing academic fascination of scholars with entrepreneurs.

There is something addictively mystifying in the unknown waters.

Certainly, there is also something oddly exciting in successful entrepreneurs for academic researchers who have been attempting to create a holistic conceptual framework that explains success factors in the field of entrepreneurship.”

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1. Introduction

“Turbulent times pave the way to realignment and renewal. Today, a war in our neighborhood is severely disrupting European economies while we have an ongoing battle with climate change in the long run. More than ever, we need entrepreneurial innovation and ingenuity.” Says Máté Lóga, the Hungarian Secretary of State for Economic Development and International Financial Services in the foreword of the national entrepreneurship monitor of Hungary in 2023 (Csákné Filep et al., 2023). As motivational as this quote seems, academic scholars as well as policy makers have been attempting to create a successful framework for generating entrepreneurial activity for the past 100 years.

Starting with classical entrepreneurial views (Cantillon, 1953; Knight, 1933; Marshall, 1890; Schumpeter, 1934) the field of entrepreneurship as a research discipline has evolved into a multi-faceted and roaring collection of academic literature. Encompassing many other disciplines, such as biology (Bönte et al., 2016; Thompson, 2009), economics (Bosworth & Collins, 2008; Peprah & Adekoya, 2020), regional science (Acs & Armington, 2004; Fritsch & Mueller, 2004; Koster & van Stel, 2014), and strategic management studies (Alvarez & Busenitz, 2001; Nyström, 1993; Rumelt, 2005) the field of entrepreneurship as a research discipline has struggled to establish itself for a long period of time (Busenitz et al., 2001). However, the growing need to foster entrepreneurial activity in regions by European goals as well as regional development strategies (EU, 2003) generated an urgent call to harmonize policy and scientific research. Consequently, overarching frameworks to understand, improve, and nurture entrepreneurial activity have emerged (Acs et al., 2014; Mack & Mayer, 2016; Spigel, 2017). Seldom do these frameworks target single businesses, they much rather focus on a systematic understanding of so called ‘Entrepreneurial Ecosystems (EEs)’ (Cohen, 2006; Isenberg, 2011; Mason & Brown, 2014; Stam, 2015). Mainstream empirical studies concentrate on how a mature EE enhances entrepreneurial activity on three different spatial scales. Fritsch (2013) & Tsvetkova (2015) on the regional level, Mack and Mayer (2016) & Spigel (2017) on the city level, and Acs et al. (2014) driving EE studies on a supra-national scale. This study takes the city-level scale as its basis in conducting an explorative case study in Veszprém, Hungary.

Veszprém is highly relevant to form the basis of this study following its title of the European Cultural Capital (ECC) in 2023 as it presents a great opportunity to coordinate future policies with the recent induction of financial capital into the city via the ECC program. Therefore, the primary objective of this thesis is to investigate the local functioning of the Veszprém EE with a focus on its cultural aspects to advise future policy on inducing entrepreneurial activity.

Furthermore, this thesis will investigate the following sub-questions:

1. *What are critical and non-critical subsystems in the Veszprém EE?*
2. *What are the relevant sub-systems present in the Veszprém EE that enable its growth?*
3. *How and to what extent are entrepreneurs and the institutional setting harmonized in the Veszprém EE?*
4. *Do entrepreneurs thrive to strengthen the Veszprém EE or is it a natural process?*

2. Literature review

For the better part of the last century entrepreneurship research was characterized by descriptive studies and scattered theories borrowed from all disciplines driven by a fascination towards successful cases of venture formation (Busenitz et al., 2001). Therefore, different schools of scholars offer different definitions of entrepreneurs. Some groundbreaking classical views on entrepreneurs include Marshall (1890) describing them as young risk-lovers who mostly owe their success to fortune and family. Adding to this, Knight (1933) and Kirzner (1978), explain the importance of the ability to deal with uncertainty and the ability to obtain capital. Elaborating on the uncertainty, unpredictability, and the versatility of entrepreneurial outcomes, Knight (1933) attributes the success of entrepreneurs, in no small part, to luck. Approaching entrepreneurs from a different angle, since Schumpeter (Schumpeter, 1934), academic literature has widely accepted the role of entrepreneurs as catalysts for economic growth through the “creative destruction” process (Acs et al., 2014, Pike et al., 2017). Lastly, Cantillon et al. (1953) presents the role of opportunity awareness as a success factor in entrepreneurship. In his view, being able to accurately predict future outcomes and recognize the opportunities to exploit those outcomes make up an entrepreneur.

According to these classical views, entrepreneurs can be categorized as a narrow group of individuals who have the ability, family background, and resources to exploit opportunities. The classical entrepreneurship research avenues use an inductive approach to generate assumptions that are relevant in various scientific fields. As a response to, building on, and incorporating the classical views, modern entrepreneurship research avenues diverge according to scientific discipline. Table 1 provides an overview of the most prominent scientific disciplines in relation to entrepreneurship.

Table 1
Overview of scientific approaches to entrepreneurship

Scientific literature	Entrepreneur	Goal of entrepreneurship research
Resource-based theories	Creative individual	To explain the differences in firm output
Economic development	Productive laborer	To explain economic growth as a result of firm efficiency
Regional science	Employer	To explain regional employment changes
Biology	Individual with certain level of prenatal testosterone exposure	To explain differences in individual characteristics by hormonal exposure

Source: Own elaboration, 2023

Strategic management research offers a creativity-based view on entrepreneurs, defining them as “managers of radical change” (p. 237). Managing such radical change requires the creativity of an entrepreneur to create new opportunities (Nyström, 1993). Entrepreneurs in this view are, therefore, inherently creative individuals. Nyström (1993) even uses the terms creativity and entrepreneurship interchangeably. Furthering this view, Conner (1991) and Rumelt (2005) suggest that creative individuals (entrepreneurs) are not only creators of opportunities, but also of resources, making them an integral part of Resource Based Theories (RBT). According to RBT, what defines entrepreneurs is their unique ability to create something new from a combination of resources (Alvarez & Busenitz, 2001). RBT has multiple commonalities with classical entrepreneurship theory in that they both advocate for heterogeneity of resources, or the beliefs about the values of the resources. However, still this view offers an individualistic and resource driven study in why entrepreneurs succeed, disregarding external factors, institutions, and many collaborative benefits.

Similarly to RBT advocates, economic growth theorists focus on the role of entrepreneurs in combining resources in an effective way to create more output per worker. There are two eminent theories in the broad literature explaining the relationship between entrepreneurship and economic growth. The ‘Schumpeterian theory’ and ‘endogenous growth theory’. Schumpeterian theory suggests that the entrepreneur is key in constantly threatening new firms to find innovations. Furthermore, Schumpeter (1934) and Schumpeterian growth theorists recognize the entrepreneur as the driver of creative destruction, and that, the catalyst for economic development. In their paper, *Accounting for growth: Comparing India and China*, Bosworth & Collins (2008) explain Schumpeterian theory by what is called the ‘multi-factor productivity growth’ (MFP). MFP assumes that two seemingly homogenous firms can have a difference in output due to the different combinations of resource utilization. Building on this theory, combining resources in a more effective way can directly lead to economic growth and explain differences in country or region wide economic performance. Endogenous growth theory explains entrepreneurship as an endogenous process. This theory suggests that economic growth is achieved through investments in knowledge (Peprah & Adekoya, 2020). Therefore, knowledge investments become prerequisites for entrepreneurship and hence, economic growth. Furthering the endogenous growth theory, Aghion & Howitt (1992) connect the profit-oriented knowledge investments to the entrepreneur carrying out the tasks. Thus, empirically linking the Schumpeterian theoretical assumptions to economic growth.

Analysis of entrepreneurial activity that takes a regional scope widely focuses on new firm formation as the main independent variable (Fritsch & Mueller, 2004; Koster & van Stel, 2014). Mainstream regional science relates new-entry to unemployment or employment change to deduct assumptions about regional tendencies (Acs & Armington, 2004; Fritsch & Mueller, 2004; Koster & van Stel, 2014). Supplementing economic growth theories, the regional development literature derives two main processes that affect employment driven by entrepreneurial activity. Firstly, direct supply-side effects that pertain to the employment opportunities created by the formation of new firms. According to the direct effects, the creation of more firms results in the creation of

more jobs, thus driving regional development (Fritsch & Mueller, 2004; Koster & van Stel, 2012). Secondly, however, some indirect effects of new venture formation on employment exist. The indirect effects accentuate the role of competition using Schumpeterian logic. In this understanding, firms are constantly challenged by new entrants in the firm population to improve their efficiency, by means of increasing their labor productivity, which implies decreasing employment rates. With concentrating on employment tendencies, regional scientists contribute to entrepreneurship research in explaining the effects of firm creation on a regional scale.

A perhaps somewhat unexpected strand of entrepreneurship research emerged in the field of biology in recent years. Many empirical studies link individual psychological differences and opportunity exploitation (Shane, 2003; Shane & Venkataraman, 2000; Venkataraman, 2019), even with the availability of the same knowledge and expertise. However, Bönnte et al. (2016) find that in fact, biological markers in their sample have a positive and statistically significant correlation with entrepreneurial intent. Even after controlling for social status and gender. They identify entrepreneurial intent as a “construct in research relating to enterprising individuals, their cognitions of business opportunities, and their decisions of whether or not to risk exploiting them by creating new ventures.” (Thompson, 2009, p. 669). In this understanding, entrepreneurial intent influences the emergence of individual psychological differences, which in turn affect entrepreneurial decision making processes ergo the tendency to become an entrepreneur.

All research avenues offer valuable insights into different aspects of entrepreneurship. However, they fail to capture a systemic view of the interconnected nature of entrepreneurial activity. Cavallo et al. (2018) argue that this still remains the main direction of scholars undeterred by several articles outlining the importance of interactions between entrepreneurs, and their local, and social contexts (Autio et al., 2014; Colombelli et al., 2019; Van de Ven, 1993). As outlined by Alvarez & Busenitz (2001, p.756), “While an entrepreneurship context provides an excellent setting for much empirical research, the field of entrepreneurship needs to move further to create specific boundaries to establish the field’s legitimacy and distinctive contribution”. Further ambiguity towards the legitimacy of entrepreneurship studies revolve around the lack of a common unit of analysis and varying spatial scales of research. (Busenitz et al., 2001; Cavallo et al., 2018).

This thesis recognizes that it is immensely difficult to provide a conceptual framework for measuring entrepreneurship success factors due to the versatile nature and high levels of uncertainty associated with the field. Instead, this paper has two main contributions to the scientific literature on entrepreneurship. Firstly, it discusses an emerging approach called the ‘Entrepreneurial Ecosystem’ (EE) approach to entrepreneurship in understanding how entrepreneurs can drive regional development by taking cities as a spatial scale of analysis. Following the thorough discussion of Cavallo et al. (2018, p.1300) and De Brito & Leitão (2021), EE in this article is defined as “a set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship within a particular territory”. The paper achieves this by building onto the ‘relational organization’ (Spigel, 2017) of EEs to provide a comparative example. Secondly, this paper responds to the call by Cavallo et al., 2018 to “help policymakers to identify priorities and focal components of EEs” (p. 1313). This thesis achieves that by

investigating the cultural attributes of the Veszprém EE in Hungary, the cultural capital of Europe in 2023.

2.1 Entrepreneurial Ecosystems

Chapter 1 in this thesis details the complex nature of entrepreneurship research, the difficulties of grasping this wide topic, and the need to converge the versatile research avenues. Though the EE approach might be the most encompassing so far, it is no panacea for all problems from which entrepreneurship research suffers. As Stam (2015, p.1763) warns; "Seductive though the entrepreneurial ecosystem concept is, there is much about it that is problematic, and the rush to employ the entrepreneurial ecosystem approach has run ahead of answering many fundamental conceptual, theoretical, and empirical questions." This section analyzes the roots of the EE approach, the current academic debates surrounding this approach, and proposes a conceptual extension to existing literature. In short, this section argues the theoretical underpinnings of why an ecosystem approach is currently the best tool for conceptualizing entrepreneurial activity.

2.1.1 History of Entrepreneurial Ecosystems

The ecosystem approach stems, in its most natural form, from the definition of an ecological system. Using a classical definition, an ecological system "is a biotic community, its physical environment, and all the interactions possible in the complex of living and nonliving components" (Tansley, 1935 cited by Acs et al., 2017, p.2). The relationship is perhaps distant at first, but both economics and ecology share the commonality of performance based survival. Entrepreneurship studies have adopted this understanding in assuming that competition drives the evolution of firms (Aldrich, 1999; Mack & Mayer, 2016; Pike et al., 2017). Using ecological systems as a basis, regional development and strategy literature have provided the pillars of the entrepreneurial ecosystem approach over the past decades. Both lineages share a common trait with ecological systems, namely that they focus on the value-creating interactions between actors in a system (Acs et al., 2017).

Regional development literature has long considered systems and their socioeconomic effects in explaining regional differences. Concepts such as industrial districts, clusters, or regional innovation systems share their focus on regional performance despite using varying output measures such as innovativeness, employment, or productivity (Stam and Spigel 2016). As early as Marshall (1920), the concept of industrial districts has outlined the theoretical basis for understanding local labor divisions, and the interactions between a community of people and a population of firms. Building on this, Porter (1998) advances regional system discussions by introducing the cluster approach. Porter's (1998) approach entails "geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (...) in particular fields that compete but also cooperate" (p.197). Lastly,

Regional Innovation Systems (RIS) takes a knowledge based approach in explaining the emergence of local hubs such as universities, research centers, and innovative firms. RIS explains that through knowledge-spillovers, a region's innovativeness can be enhanced (Boschma & Frenken, 2010).

Strategy literature most notably refers to 'business ecosystems' as a way of business management. Following Adner (2017), a business ecosystem comprises the actors that need to be coordinated to convey a value proposition to the market. Adner & Kapoor (2010) find that coordination between stakeholders positively affects a firm's ability to capture a large share of the total value created. Via this process, a firm influences the viewpoints of current and potential market participants. (Gawer and Cusumano 2002; Autio and Thomas 2018). Therefore, harmonizing stakeholder interests to generate customer value is at the core of the business ecosystem approach. A coexisting stream of literature in strategy studies concerns itself with the ecosystem surrounding a given platform. This platform-centered approach focuses on a (physical) platform that connects a community to another group of customers (Rochet and Tirole 2003; Parker and Van Alstyne 2005;)

Both disciplines collectively form the basis of the entrepreneurial ecosystem approach, while differing in three main assumptions as summarized by Acs et al. (2017). First, the spatial scale of analysis. Regional development emphasizes territorial boundedness, while strategy literature assumes global scales. Second, regional development focuses on total performance of an ecosystem while strategy studies take the individual firm as the basis of analysis. Lastly, while strategy literature assumes a certain degree of leadership of the examined firm in the ecosystem, regional development literature barely recognizes any central authority beyond the facilitating role of the government.

2.1.2 Current view on Entrepreneurial Ecosystems

The EE approach has gained huge momentum over the past decade. This is clear from the analysis of De Brito & Leitão (2021) finding 4060 scientific articles written with some relation to EEs in the period of 2006-2016. Following this initial boom of academic work, some critics have been made for a lack of a common definition, no multi-dimensional aspects, and little empirical evidence on the creation, functioning, and success factors of EEs (Cavallo, 2018; Stam & Spigel, 2016; Spigel 2017). Coming together from different scientific disciplines to investigate the same concept, naturally, scientists have used different definitions of the EE concept. A shared understanding is often found in the importance of interdependent actors forming networks that sustain entrepreneurial activity through shared cultural values. A chronological summary of the leading definitions is presented in table 2.

Cohen (2006) forms the start of a distinct EE approach with his definition. Though many different definitions are offered in the period between 2006-2016, De Brito & Leitão (2021) conclude based on a systematic literature review of more than 1000 documents, that an EE can be

defined as “a set of independent actors and factors coordinated in such a way to allow entrepreneurship in a given territory”. (p.36) This thesis follows this definition.

Table 2
Selected definitions of EEs

Author	Definition of EE
Cohen (2006)	Sustainable EEs are defined as an interconnected group of actors in a local geographical community committed to sustainable development through supporting and facilitating new sustainable undertakings.
Isenberg (2011)	EEs consist of twelve elements consolidated in six domains which although idiosyncratic through interacting in very complex ways, are always present if entrepreneurship is self-sustainable. Therefore, although the combinations are always unique, for there to be self-sustainable entrepreneurship, appropriate policies, markets, capital, human skills, culture and support are necessary.
Mason & Brown (2014)	EEs are a set of interconnected entrepreneurial actors, entrepreneurial organizations, institutions and entrepreneurial processes.
Stam (2015)	An EE is a set of interdependent actors and factors, coordinated in order to allow productive entrepreneurship. Therefore, entrepreneurship occurs in a community of independent actors, where the systemic conditions are the heart of the ecosystem, being formed of networks of entrepreneurs, leadership, finance, talent, knowledge and support services. The presence of those elements and their interaction determine the ecosystem’s success.
Spigel (2017)	Entrepreneurial ecosystems are the set of localized cultural perspectives, social networks, investment capital, universities and active economic policies that create favorable environments for innovation-based undertakings.

Source: Own elaboration (2023), based on Alvedalen & Boschma (2017), Cavallo et al. (2018), and De Brito & Leitão (2021)

Despite fierce criticism from several scholars, EE as a research agenda moved forward to present empirically applicable frameworks (Acs et al., 2014; Mack & Mayer, 2016; Spiegel, 2017).

The post 2016 era in EE research is characterized by the call from various scholars to provide comparative explorative studies on different EEs in different contexts to serve as a basis for the creation of an empirically based and theoretically reinforced framework (Alevaden & Boschma, 2017; Cavallo et al., 2018; De Brito & Leitão, 2021; Roundy & Bayer, 2019).

Furthermore, as EE research develops into a maturing research field, some specialized branches within EE literature seem to emerge. These include digital EEs ((Bejji et al., 2023; Ferreira et al., 2019; Song, 2019; Sussan & Acs, 2017) and entrepreneurial innovative and sustainable ecosystems (De Brito & Leitão, 2021; Leitão et al., 2018).

Despite many scientific articles, the appearance of branching and specialized literature, and many policy recommendations, EE researchers still agree on the need for longitudinal empirical studies to provide full accountability for the EE approach to understanding entrepreneurial activity. The next section of this paper explains an empirical framework, namely the ‘relational organizational model’ (Spiegel, 2017) and how it extends that framework along the cultural aspect of EEs.

2.1.3 The relational organization of Entrepreneurial Ecosystems

As a response to the call from scholars for an overarching framework that helps conceptualize the emergence and functioning of EEs, Spigel (2017) introduces the relational organization of EEs. This approach in research takes three main attributes, namely cultural, social, and material as pillars to form a dynamic and iterative framework in understanding the functioning of an EE. Drawing on a large pool of EE studies several key components can be identified that affect regional economic systems. In table 3, Spigel (2017) describes such components as parts of the three main attribute groups mentioned above.

Table 3

Attributes of Entrepreneurial Ecosystems

Type of Attribute	Attribute	Description	Examples
Cultural	Supportive culture	Cultural attitudes which support and normalize entrepreneurial activities, risk taking, and innovation.	Aoyama (2009); Feldman (2001); Julien (2007)
	Histories of entrepreneurship	Prominent local example of successful entrepreneurial ventures.	Nelles et al. (2005); Feld (2012)
Social	Worker talent	Presence of skilled workers who are willing to work at startups.	Arruda, Nogueira, and Costa (2014); Audretsch et al. (2011); Bahrami and Evans (1995); Harrison and Leitch (2010)
	Investment capital	Availability of investment capital from family and friends, angel investors, and venture capitalists.	van der Borgh, Clodt, and Romme (2012); Kenney and Patton (2005); Malecki (2009)
	Networks	Presence of social networks that connect entrepreneurs, advisors, investors, and workers and that allow the free flow of knowledge and skills.	Dubini (1989); Malecki (1997); Neck et al. (2004)
	Mentors and role models	Local successful entrepreneurs and business people who provide advice for younger entrepreneurs	Feld (2012); Kenney and Patton (2005); World Economic Forum (2013)
Material	Policy and governance	State-run programs or regulations that either support entrepreneurship through direct funding or remove barriers to new venture creation.	Desrochers and Saulet (2008); Isenberg (2010)
	Universities	Universities and other higher education institutions which both train new entrepreneurs and produce new knowledge spillovers.	Audretsch et al. (2011); Dubini (1989); Feldman et al. (2005); Wolfe (2005)
	Support services	Firms and organizations that provide ancillary services to new ventures, for example, patent lawyers, incubators, or accountancies.	Kenney and Patton (2005); Patton and Kenney (2005); Startup Genome Project (2012)
	Physical infrastructure	Availability of sufficient office space, telecommunication facilities, and transportation infrastructure to enable venture creation and growth.	Audretsch et al. (2011); Mack and Rey (2014)
	Open markets	Presence of sufficient local opportunities to enable venture creation and unimpeded access to global markets.	Spilling (1996); World Economic Forum (2013)

Source: Attributes of Entrepreneurial Ecosystems. (Spigel, 2017)

Spigel (2017) outlines that there are immense interactions between attributes that determine the functioning of each separate EE. Furthermore these interactions are unique to each EE and exploratory studies such as this thesis are needed to understand the local interplay and building components of each attribute category. Therefore, this study concerns itself with finding the relationship between cultural attributes outlined by the ‘relational organization of EEs’ and unique local sub-systems that contribute to a sustainable EE in Veszprém, Hungary.

2.1.3a Cultural attributes

Culture and entrepreneurial activity has been a heavily researched topic within regional studies for the past decades (Davidsson & Wiklund, 1997; McClelland, 1961; Shane et al., 1991). While some scholars focus on understanding the effects of entrepreneurial culture on wider economic development, others debate the individualistic impacts of culture on new firm formation. However, it is widely accepted that culture and entrepreneurship do not exist in separation and one affects the other heavily.

Culture is often defined as a set of behaviors that are ubiquitous in a region and are passed on generationally (Davidsson et al., 1994; Reynolds and Maki, 1990). While the above mentioned studies do find positive correlations between culture in this definition and new firm formation, a more elaborate definition is needed to encompass not only the behaviors but also the local social norms and cognitive concepts that exist in a community.

Therefore, following Davidsson & Wiklund (1997), culture in this thesis follows a definition of mental constructs involving a systematic interplay of localized values and beliefs. The distinction between values and beliefs is important to point out. The first pertains to behavioral norms while the latter refers to perceptions of phenomena or things. (Eagly and Chaiken, 1993). In this understanding, local values embody themselves in actions while beliefs work as a supporting pillar towards action taking.

In the context of the relational perspective in table 3, beliefs are represented by ‘Histories of entrepreneurship’. Prominent examples of (local) entrepreneurs consolidates in a positive perception of being an entrepreneur. On the other hand, values relate to the ‘supportive culture’ attribute in the table underpinning the behavioral tendencies that “normalize entrepreneurial behavior” (Spigel, 2017, p.56). Therefore, cultural attributes are an outcome of localized value and belief systems that positively influence new firm formation. Without these, the consequent sub-systems do not function and entrepreneurial activity decreases. Hence, the cultural attributes mentioned above are considered to be *critical* concepts in understanding the role of culture on entrepreneurial behavior.

Critical and *non-critical* concepts throughout this study refer to the role they play in forming an EE. *Critical* concepts mean the common approaches to cultural elements that are present and vital in the functioning of any EE. While on the other hand, *non-critical* concepts refer to the unique, local factors that affect the cultural attributes specific to the Veszprém EE. Though

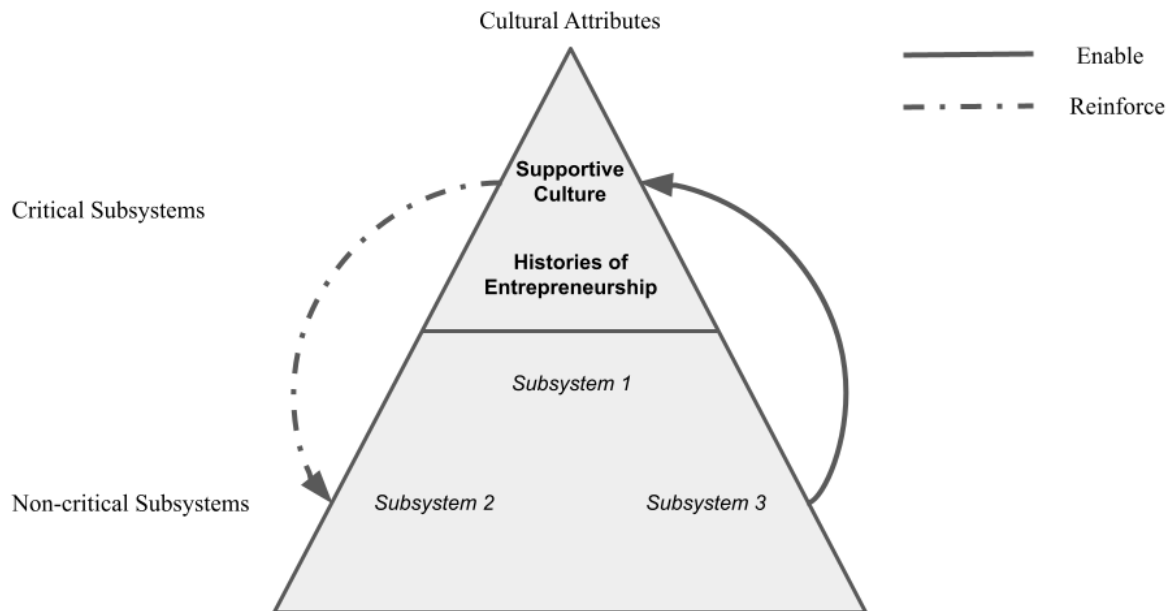
these *non-critical* concepts may emerge in other EEs they are not distinctively present. Furthermore, the presence of *non-critical* concepts highlights the uniqueness of each different EE.

2.2 Conceptual model

Extending the discussion above, each attribute group in the relational organization of EEs is made up of critical and non-critical components. They provide a unique interplay into the functioning of a focal EE. In figure 1, this thesis presents a conceptual model for these non-critical subsystems and to showcase their relation to the critical concepts established by Spigel (2017).

Figure 1

Conceptual model for EE sub-systems



Source: Own elaboration,

A key notion to understand in the functioning of EEs is that they have multiple configurations. In each EE different attributes are present, and they hold different functions. Conclusively, when studying ecosystems, the inputs matter more than the outputs. As Spigel (2017) puts it; “The study of ecosystems should focus not only on the outcomes—rates of entrepreneurship but rather the inputs such as the localized cultural, social, and material attributes that support entrepreneurial activity.” (p. 57).

2.2.1 Expectations

Based on previous literature, three different non-critical subsystems are expected to play a role in establishing the cultural attributes of an EE. Namely, well-being; place attachment; and relocation intention. These expectations often prevail in studies despite differences in study areas and empirical settings. Furthermore, they focus on the role of the entrepreneur in the process of firm creation. Detaching the firm from the entrepreneur is often the limitation of these findings. These expectations are defined based on a literature review and they serve to answer sub-question 2 in chapter 1. Additionally, the expectations below form the basis of the conceptual model presented in chapter 3.3.

2.2.1 Well-being and Entrepreneurship

Well-being has received growing attention from social scientific disciplines. Consequently, entrepreneurship and well-being build a fledgling, but briskly expanding part of scientific entrepreneurship literature (Abreu et al., 2019). Generally, well-being in relation to entrepreneurship falls under the regional development literature as introduced in section 1 and table 1. The analysis of entrepreneurial well-being rests on the assumption that an individuals' decision to engage in entrepreneurial activity is not primarily a financial opportunity exploitation (Dolan et al., 2008). To specify, some non-pecuniary motives; greater independence (Hamilton, 2000), flexibility and self-control (Hessels et al., 2017), and rise in social status associated with self-employment all have a positive effect on well-being (Dolan et al., 2008; Praag, 2009). Furthermore, these studies conclude that the effects of entrepreneurial well-being are stronger for opportunity entrepreneurs as opposed to necessity entrepreneurs. Importantly, when non-financial drivers of entrepreneurship occur, they affect the value system in a community, namely what is labeled as 'supportive culture' in the conceptual model inherently affecting the relational organization of the other attribute groups and that of the whole EE. Well-being therefore is expected to affect the individual values which in turn enable a supportive culture for entrepreneurship in Veszprém.

2.2.2 Place attachment and Entrepreneurship

“Often the question is not where to locate, but what to do at a given location” states Schutjens et al. (2006, p.5). This, paired with Stam's (2009) findings of newly formed firms being relatively immobile naturally results in home-based startup rates being relatively high (Schutjens & Stam, 2003). Logically, the question arises whether this is because new firms often do not have the financial power to rent an office or because micro level neighborhood interactions matter so much to such firms that they choose to operate from home. Therefore, place attachment can be defined in two ways. One, place attachment can mean an economic constraint on a firm wherein due to its

lack of resources it is unable to relocate resulting in literally being attached to a place (McCann, 1995; Stam, 2009; Stam & Schutjens, 2000). Second, place attachment can also be understood as the preference of a firm to form and stay at a given location due to its neighborhood level social networks, local knowledge and embeddedness in the local community (Ayuningtyas et al., 2021; Figueiredo & Guimarães, 1999). Empirical evidence points at both processes being present on micro scale and it is both the type of the dwelling where the business is formed and future aspirations that determine the relocation intention of firms and entrepreneurs (Schutjens et al., 2006). Additionally, Schutjens et al. (2006) suggest that the impact of new businesses is most influential in their own neighborhood. Thus, linking place attachment to well-being literature in the context of entrepreneurship.

2.2.3 Relocation intention and Entrepreneurship

Classical locational theories of firms form the basis of economic geography as a scientific discipline. Despite most such theories and assumptions now acknowledged as improbable (Pred, 1967; Storey, 1982; Townroe, 1991), their impact is still felt in the modern firm locational theories. However, it is important to note that the firm and the entrepreneur's location connote different meanings and theoretical implications. A growing group of literature however concern themselves with investigating and understanding the locational patterns of young entrepreneurial firms as well as the connections between firm and the entrepreneur (Pellenbarg, 2005; Stam, 2009). In the Veszprém lakossági kérdőív dataset the question is directed toward the relocation intention of the entrepreneur. Therefore, this thesis investigates the latter, namely the impact and relationship of the entrepreneur to a firm and its relocation patterns. Relevant literature (Pellenbarg, 2005; Stam, 2009; Vlasov et al., 2018) concludes that (1) micro firms in the nascent phase are often static and immobile due to the high level of attachment between the firm and the entrepreneur. This coupled with the local embeddedness of the individual often hinders relocation of the firm. (2) Most entrepreneurs who considered moving prioritized their personal relationship with the localities and stayed. (3) Growing entrepreneurial firms become detached from the entrepreneur and transition into a highly mobile state, where moving occurs often. There are less studies focusing on the entrepreneur's intent to relocate personally and its effect on the firm. This is because in early stage firm formation, the entrepreneur is often almost equal to the firm, therefore the two concepts do not exist in separation.

3. Methodology

3.1 Study area

One of the oldest urban areas in Hungary with county rights, Veszprém forms the administrative center of the county with the same name. The city is located 15 kilometers from Lake Balaton making it very accessible for tourism. Counting around 56.000 inhabitants Veszprém is the 16th most populated city in Hungary (2022). Importantly, many historic roots of Hungarian higher education start here as well as being the regional center of the catholic church. As early as the 13th century, the first higher educational institution taught seven liberal arts in the city. (Barnyai et al., 2021; veszprem.hu (online))

In terms of its characteristics, Veszprém is a city with generally educated inhabitants, 21.7% of the population holds a university degree according to the 2011 census, which is considerably higher than the country wide average of 12.7%. Veszprém has a strong and diversified economy, which is reflected in the average earnings continuously rising from 2009 onwards. Perhaps somewhat surprising that despite earnings being higher than the Hungarian average the population of the city has declined by 8.84% in the period between 2011-2022. Such challenges are addressed in several urban development plans in which Veszprém proposes to become the city of “harmony, high life quality and strong communities” by 2030 (Baranyai et al., 2021, p. 6). A step towards achieving this vision is winning the title of European Capital of Culture in 2023. This program allows the city to develop its high value added creative industries and become the main driver of regional development (Baranyai et al., 2021; Szabó, 2020). Figure 3 represents a map of the region and the city and figure 4 illustrates the different neighborhoods within and around the city. This study considers the city-level EE as its unit of analysis to allow for the identification of the impacts of micro-level processes.

Figure 3

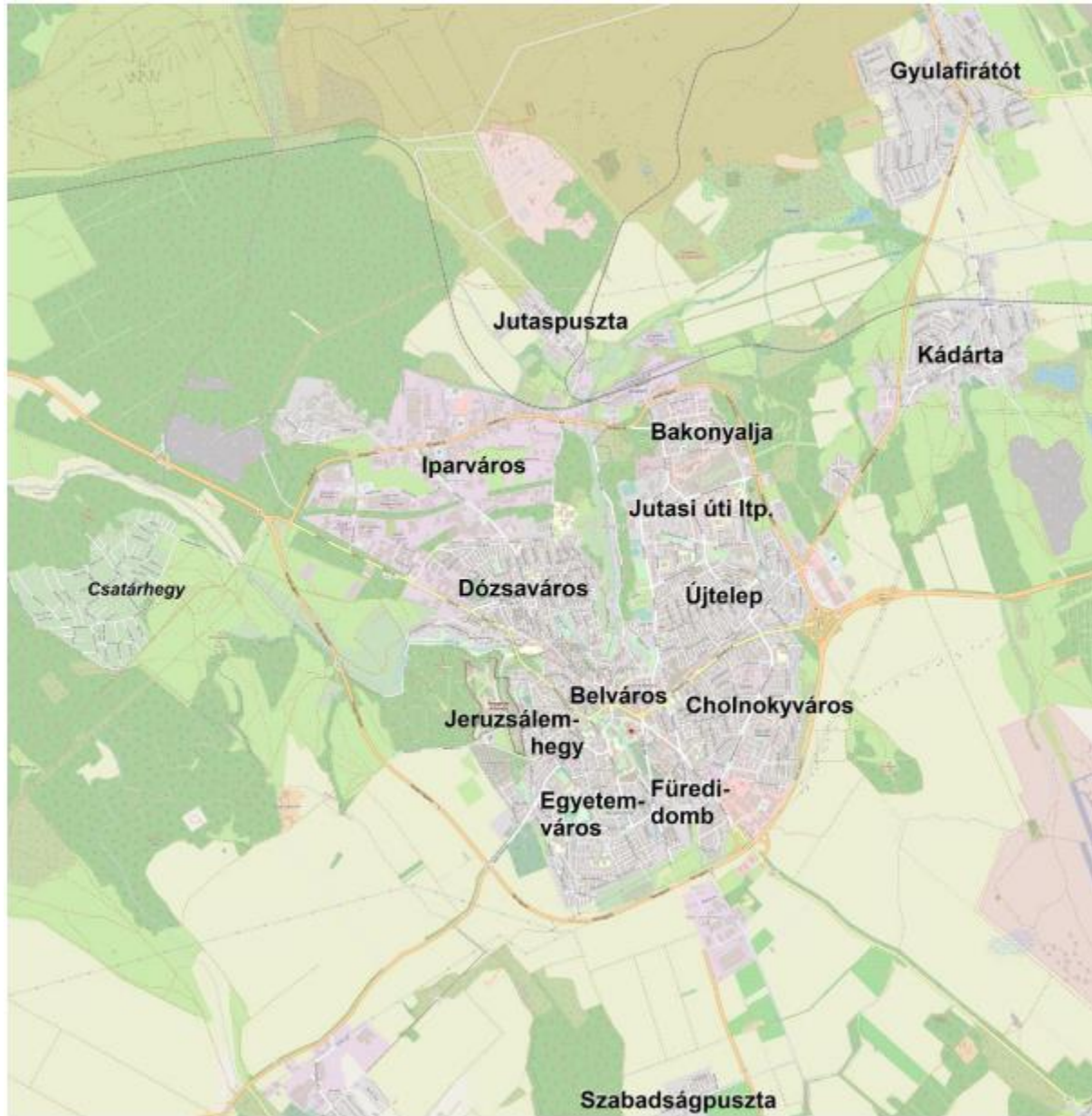
Veszprém county and city in Hungary



Source: veszprem.hu (online, 2023)

Figure 4

Map: Neighborhoods of Veszprém



Source: openstreetmap.com edited by veszprem.hu (2023)

3.2 Data & Methodology

The data collection process consists of three steps, each of which adds a different value to this thesis in completing its purpose.

Firstly, (1) a city survey of 1200 respondents was analyzed to establish the relevant subsystems in Veszprém that affect the development of an EE. Using the Cramer's correlation, any association between two nominal variables can be established. Applying this test, using 'entrepreneurial intent' as the independent variable, three nominal variables were found to have a positive correlation as displayed in table 4. The limitations of using Cramer's V test are twofold. One, it does not account for ordinal variables, and the 'Veszprém lakossági kérdőív' survey contains several variables that contain a 4-point likert scale. This is a clear limitation of using this test. Second, this statistical test does not necessarily contain any meaningful assumptions beyond the identification that there is an association between two variables. Kvålseth (2018) offers an extensive explanation of the limitations of the Cramer's V test while acknowledging that it is the most commonly used test to identify relationships between nominal variables. This thesis understands the limitations of using the Cramer's correlation to infer about the relationship between entrepreneurial intent and other variables in the survey. However, the purpose of this test in this study is not to generate assumptions about the Veszprém EE on the basis of the results. It is to simply identify the possible subsystems that are present in the EE.

Secondly, building on the identification of subsystems and the review of relevant literature, (2) semi-structured interviews are used to explore and understand the local processes that enable the presence of such sub-systems. Furthermore, these interviews shed light on the dynamics between the critical concepts formed in the wide literature on EEs and the local specific dynamics in Veszprém. In contrast to the city survey, which was filled in by any inhabitant of the city, interviews are focused specifically on local entrepreneurs. This is to ensure that the answers focus on and integrate entrepreneurial views on the EE. This way of a case-study methodology allows for an in-depth study of the Veszprém EE in its specific context (Abiad & el-Chaarani, 2021). The interviewees were selected in two different ways. Firstly, a snowballing technique was used to find local entrepreneurs based on personal networks and acquaintances. This resulted in 3 interviews. Secondly, a database consisting of around 7000 firms is openly available from the Chamber of Commerce in Veszprém county, 63 randomly selected firms were contacted which resulted in 7 interviewees. Some interviewees were vary of my presence as a researcher from a foreign university and were protective of information regarding their entrepreneurial intentions and firm details. Therefore, some interviews were rather short-answered and resonate with a closed question type interview. This is a clear limitation of this research and future research practices should focus on establishing trust with the local community before engaging in semi-open interviews. Table 4 includes the main activity and start of operation of the entrepreneurs. As per the request of the interview participants, their names will remain anonymous.

Table 4. Interview list

ID	Main Activity	Establishment Year
1	Bakery	2008
2	Consultancy	2011
3	Tourist Guide	2019
4	Beer Brewery	2014
5	Shirt and Textile Printing	2001
6	Public Park Planning	1990
7	Restaurant	2022
8	Travel Agency	2005
9	Coffee and Confectionary Shop	2015
10	Gardening Services	2022

The third data methodology used to collect and analyze data is a (3) stakeholder meeting with city level decision makers. The purpose of this is to present the theories found during the literature review, the subsystems identified by the statistical analysis of the survey, and the local entrepreneurial dynamics from the interviews. Furthermore, this stakeholder meeting allows to compare practice with policies aimed to foster entrepreneurial activity, thus leveling the problems and needs of both the city's decision makers and entrepreneurs. Flick (2018) argues that using mixed methods and triangulation to analyze data helps deepen the understanding within a given topic as well as strengthening the research outcome. Two of such meetings took place, both at the 9th KRAFT Conference in September, 2023.

3.4 Data protection and privacy

The data collected during this thesis will be stored on a password protected laptop for the entirety of the study period. Additionally, recordings of the interviews and notes from the expert meetings will be stored on a password protected phone as well which is used as the recording device for these data collection moments. Furthermore, emails exchanged with relevant actors are stored in a double factor authenticated email address provided by the University of Groningen. A transcription made from the data collections will also be kept on a protected email address and will only be visible to the iASK supervisor of this thesis, and the University of Groningen supervisor.

3.4 Preliminary data and conceptual framework

Applying the framework in figure 1 to Veszprém in Hungary requires some preliminary data analysis to build hypotheses about the functioning of the EE in the area. A survey conducted by iASK in 2017 within the overall population of Veszprém provides valuable insights to the relevant sub-systems that operate within the area. iASK is an independent research organization conducting interdisciplinary studies in, among others, the field of regional development in Hungary. The “Veszprém lakossági kérdőív” survey counts 1200 respondents. To arrive at the identification of some possible sub-systems, this paper uses Cramer’s V-test. This statistical test is used to establish an association between two nominal variables (Kvålseth, 2018). Using this test, the respondents show associations between three variables relating to entrepreneurial intent. The results are shown in table 4. Despite showing weak positive relationships between all variables, the Cramer’s V test allows to identify the subsystems that emerge in the Veszprém EE. In section 3.2 the thesis discusses further implications, other data collection methods and the limitations of the methods and the data.

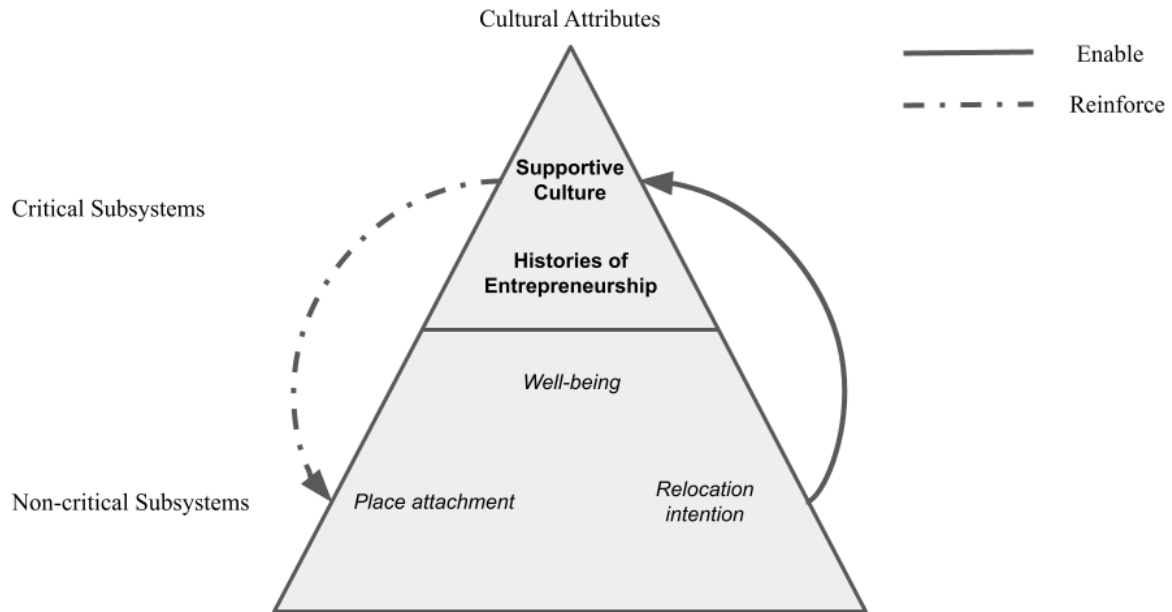
Table 5
Cramer's coefficient for variable 'entrepreneurial intent'

Variable	V
Happiness	0,167
Relocation intention	0,191
Sense of belonging	0,173

Note. 0=no association, 1=strong association

Based on table 4, the conceptual model can be specified for the Veszprém EE. According to the specified conceptual model in figure 2, the three variables that show an association to entrepreneurial intent using the Cramer’s coefficient are included. Conceptually, all three play a unique role in enabling the presence of the *critical* concepts of ‘Histories of Entrepreneurship’ and ‘Supportive Culture’. In turn, such *critical* concepts are hypothesized to have a reinforcing effect on subjective well-being, the place attachment and the intent to relocate. The following three sections detail how each of the three relevant variables in the Veszprém EE relate to the *critical subsystems* in the cultural attribute group according to the current academic views.

Figure 2
Specific conceptual model for the Veszprém EE sub-systems



Source: Own elaboration

3.5 Ethical considerations

Ethical handling of the data in this research is crucial since collaboration between companies and decisions to become entrepreneurs can be sensitive data. For this purpose, iASK has asked the respondents of the survey to declare that they accept the use of their data for research purposes in an anonymous and confidential manner. On top of this, a consent form detailing the data handling process will be presented to the interviewees to which they have to agree before conducting the interview. On top of this, interviewees can request to be updated about the research process at any given moment.

Another important ethical aspect comes from working with a research institute that is tasked by the Ministry of Infrastructure. Undoubtedly, being close to the political sphere in this case the studies of iASK and their research is fully financed by the Ministry of Infrastructure in Hungary. For this reason, the research has to be completely politically neutral and cannot undermine the integrity of the research institute as a whole. To make sure this happens, constant checks will be done with a representative from iASK to ensure that this research is in line with their general research program.

4. Results and Discussion

The interviews and the expert meetings clearly point out the sub-systems that take place in the Veszprém EE and detail their relationships. All three elements identified in the conceptual model as non-critical, local sub-systems do exist as stated in section 3.4. However, there are different extents to which they influence the establishment of a successful local EE. Furthermore, the interviews and expert talks point out a distinct element which stems arguably from cultural attributes that hinders the establishment of local EE success.

4.1 Sub-system 1: Well-being

Well-being is mentioned several times during the interviews, mainly during discussions about motivation to start a business. There are three main aspects of well-being related motivational factors to start a business.

Firstly, personal passion. Interviewees 1, 3, 4, 9 mention *“personal ambition”*, *“My passion for the rich culture of Veszprém inspired me”*, *“I was passionate for drinking and making beer”*, *“I always liked to bake”*, respectively as their reason for starting a business. Personal passion that turned into a form of entrepreneurial activity is always paired with at least one other motive for starting a business, such as *“my previous job ceased to exist, so I took a chance”* says interviewee 9. In this case, it becomes clear that while interviewees mention their personal passion as the primary reason for engaging in entrepreneurial activity, it does not directly lead to the formation of a business.

Secondly, greater independence. Interviewees 5,6,10 express that their entrepreneurial activity began as a result of seeking greater independence regardless of their current working field. Interviewee 5 mentions that *“of course there are financial reasons too, but they are not the primary”*, this sums up the general view on this group of entrepreneurs. While they are seeking independence, again their motivations are multi faceted. Regardless, Interviewees 6 and 10 mention *“whatever I did, I just knew I wanted to make my own fate”* and *“I was an employee, until I learned all the tricks and trades of starting a business so I became my own boss”* respectively, thus showing the primary reason for starting a business to be greater independence.

Thirdly, the last group that mention non-financial well being as a factor for starting their business focuses on factors extrinsic to the entrepreneur. These contain two separate categories as well. One, is the family status of the entrepreneur. Interviewees 2,7 express *“after having a child I did not have the time to go back to a full time job”* as a reason for engaging in entrepreneurial activity. While interviewee 8 is the only one expressing a pure form of opportunity entrepreneurship, in which she mentions *“It was a good idea to sell travel plans online, we were the first ones to do so in Hungary”*. In this case, interviewee 8 acted solely on an extrinsic opportunity to establish a firm. Table 6 summarizes the code table of sub-system 1 in this case study of Veszprém.

Table 6 Inductive codes of well-being and entrepreneurship

Code	Interviewee	Quote
Personal Passion	1	My personal ambition is why I started my business
	3	My passion for the rich culture inspired me
	4	I was passionate for making beer
	9	I always liked to bake
Greater Independence	5	Of course there are financial reasons too, but the primary is to be my own boss
	6	Whatever I did, I just knew I wanted to make my own fate
	10	I was an employee, but I learned all the tricks and trades of starting a business so I became my own boss
Extrinsic Factors	2	After having children
	7	Due to my kids
	8	We were the first to sell online travel plans

None of the interviewees mentioned financial factors as their primary reason to start a business. In this case, the assumption that entrepreneurs engage in entrepreneurial activity due to non-financial reasons holds true. Therefore, the value system of entrepreneurs in the Veszprém EE suggests a supportive culture towards entrepreneurship. In this setting, entrepreneurs find fulfillment in their activity and are not afraid to take a financial risk to engage in entrepreneurial activity. Interestingly, a rise in social status due to being an entrepreneur was never mentioned, neither could the interviewees name famous role models from the region.

4.2 Sub-system 2: Place attachment and entrepreneurship

All of the interviewees during this study have a personal connection to the city. Undoubtedly this affects their choice of starting a firm in Veszprém. Namely, interviewees 1, 3, 4, 5, 6, 7, 9,10 have lived in Veszprém for the majority of their life and have gone to school in the city. Interviewee 9 sums up this type of place attachment very well, “*I was born and raised here, everything ties me to this place*”. Place attachment in this case means personal connections, family, as well as the safety of being familiar with the local environment. On the other hand, interviewee 2 moved to the city due to her marriage partner living there. Thus she had no previous connection to the city. However, still her immediate family was firmly attached to the place, thus her business is as well. Additionally, Interviewee 8 is the only one who had moved to the city without having immediate local family, but she also decided to move to Veszprém due to her son winning a sport scholarship in the city.

Therefore, all of the participants in this research have decided to set up their business in the city due to personal ties, or their immediate family having personal connections to the place. Interestingly, these are all non-financial reasons and while Interviewee 6 describes “*I think Veszprém is a good place to start a business, it is in a logistically good position, we get lots of tourists and it is a relatively big city*”, it does not seem to be the primary reason for starting a

venture. This ties in with the expert talks, in which two decision makers have expressed that while Veszprém is a culturally rich city, it is hard to incentivize firms to locate here from pure financial reasons. Personal place attachment therefore is a driving process behind the formation of firms in this city.

4.3 Relocation intention and entrepreneurship

This thesis differentiates between interviewees into two groups based on whether they can be separable from the firm or not. This determines the basic assumptions when it comes to investigating the relocation patterns of a firm. Interviewee 5, 6, and 8 have reached a firm size where according to their responses, *“after some difficulty in the beginning, there would be no problems to run this firm without me”* (Interviewee 5). Furthermore, interviewee 6 describes that *“my intention is not to cling onto my position until the end of times, I also need to think about the 40 families I employ, so the firm needs to continue without me as well”*. According to the literature, growing entrepreneurial firms become detached from the entrepreneur and enter a highly mobile stage. In this case, interviewees 5, 6 and 8 have all become detachable from the organization according to their own responses, yet they all firmly state their intention is to stay in this area. This indicates that once the business has established itself, Veszprém is a rather favourable environment to operate in, otherwise these firms would consider to move.

The second group of entrepreneurs are all the other interviewees who are either sole traders or they operate a micro firm. In this group, the firm does not exist in separation from the entrepreneur and therefore, the relocation intention of the firm depends solely on the individual relocation intention of the entrepreneur. This assumes highly static behaviour as well as high levels of local embeddedness, as the entrepreneurial activity in this case is dependent on the individual's local place attachment as discussed in the previous section.

An interesting notion mentioned by several interviewees is when asked to describe to people of Veszprém, they used adjectives such as *“cold”*, *“distant”*, or *“I don't know, they are perhaps not as friendly as some eastern people in the country”*. Suggesting a very business-like atmosphere in the collaboration between firms. This is due to the lack of a mediator or a physical space to allow interaction in a socially relaxed setting between entrepreneurs, as expressed specifically by the expert talks as well as interviewee number 5. On the other hand, interviewees 2 and 7 describe that there is a very vibrant community scheme on the neighbourhood level. Conclusively there is a separation between business and public communities, one being cold and distant, while the latter being friendly and open. This disparity is caused by the *“lack of a space where I could go to meet like minded people. I would actually very like that”* (Interviewee 5).

The meaning of culture in Veszprém is thus twofold. Firstly, the historical culture of the city acts as a catalyst for entrepreneurs by presenting opportunities to establish firms through the tourists that visit the city. Secondly, the entrepreneurial culture, that is heavily reliant on personal ties to the city, but still there is a lack of widespread cooperation between local firms with similar values.

5. Conclusion

This thesis presented an overview of the current state of entrepreneurial ecosystem research and proposed a case study based perspective to develop the EE framework in the international academic community. Taking Veszprém, Hungary as the base of the study, this research project finds that well being, place attachment, and relocation intention act as sub-systems in this EE to enable a supportive entrepreneurial culture. Well-being and entrepreneurship is responsible for influencing individual value forming processes in which non-financial aspects of entrepreneurship serve as a catalyst for entrepreneurial activity. In Veszprém, personal passion and greater independence are the leading non-financial motives of entrepreneurs to start a business. This case study finds that place attachment of the individual entrepreneur to the city is key to starting a business in this EE. Furthermore, findings reveal that businesses in Veszprém are reluctant to relocate despite the differences in firm size, mobility and its dependency on the entrepreneur. All findings point toward an EE that manages well to keep its actors and provides the necessary context for successful business formation. However, two main challenges are clearly delineated. Firstly, this EE struggles to attract new actors without a personal attachment to Veszprém. Secondly, the attitude of businesses towards each other is described as cold and distant. This hinders meaningful collaboration. These two challenges present clear focus points for local governments to base future policy on.

Additionally, the main and clear limitation of this thesis is that it focuses only on the cultural elements of the Veszprém EE. This can lead to errors in making assumptions about the whole EE and its challenges. Therefore, future research should aim at investigating the sub-systems of cultural, social, and material attributes in unison to provide an overarching analysis of Veszprém as an EE.

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