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**THE INFLUENCE OF POLAND'S ENTREPRENEURIAL ECOSYSTEM ON A
TECHNOLOGY PROGRAM – GOOGLE FOR STARTUPS IN POLAND**

Master's Thesis

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I have written this Master's Thesis independently. Any ideas or data taken from other authors or other sources have been fully referenced.

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Abstract

The Master's thesis is focused on the analysis of the influence of the entrepreneurial ecosystem through Isenberg's model and reflects the key elements of the Google For Startups program in Poland as an example of an entrepreneurial relationship. Along with the model domains, a qualitative study in the form of the interview was conducted to determine how elements of the entrepreneurial ecosystem are interconnected and what are the problematic areas in the Polish economy that reshape the system in both positive and negative directions. It was determined that along with good infrastructure, a significant number of incubators and mentorship programs conducted by Google, there are potential caveats expressed in the ongoing trend of "brain-drain" of support professionals, as well as decreased activities of non-governmental institutions that provided support to entrepreneurial networks before the pandemic period. The master thesis concludes with limitations of the research and suggests further studies on the interconnection of elements but on a broader scale, giving an example of analysis of the entrepreneurial ecosystem in the European Union and analyzing its impact on the region.

Introduction

Entrepreneurship remains one of the most comprehensive definitions of business and economic processes for the region or other unit of study. As Illes et al. marked, “entrepreneurship is related to various sets of activities that involve human, technical and managerial characteristics and diverse skills” (Illes et. al, 2015). Although definitions of entrepreneurship tend to slightly vary in different contexts, there is a formal agreement on the key aspects and fundamental elements based on which the concept is derived. It comes to a more complex nature when the entrepreneurial ecosystem is introduced. First, it is a combination of biological terminology (ecosystem) and entrepreneurship, which “requires accuracy in defining the elements that affect and re-shape the ecosystem itself” (Trojnarska, 2015). With the ecosystem definition, the further division includes “biotic elements” such as people, educators, and bankers along with “abiotic” ones which are represented by infrastructure, culture, etc. (Isenberg 2016). Elements of the entrepreneurial ecosystem, as well as leading forces of change, can be significantly different in each methodology chosen. It goes even more complex when it comes to the analysis of ecosystems with a stronger focus on non-regional borders.

In the frame of this case study though, a key area of research will be the understanding of the importance of the entrepreneurial ecosystem in Poland, the economy of which was rapidly growing up until the pandemic outbreak in 2020. Considering the history of the development of the Polish economy, there is a significant step forward towards the advanced model of economic policies. The privatization of industries across the country, the introduction of market competition, as well as membership in the European Union (2004) has become one of the successful paths for rapid growth rates of the economy. The boom has its roots to 1989, after the end of the communist era, and reflected in the rapid increase of the SME sector. As R. Ruminski points out in his work, Poland “Although SMEs could use the opportunity of lack of relevant regulations and be quite free in developing the businesses, that lack yet created uncertainties for a sustainable business model in the country” (Ruminski, 2015). The development was not only measured in terms of the increasing number of SMEs, but also on their impact on the overall economy. The McKinsey report on Poland illustrates that compared with other EU countries, Poland has experienced remarkable performance in development (McKinsey, 2015). The report also states that despite the pandemic situation,

“Polish adults focus on recouping of lost income in future”. It also allocated significant reliance on entrepreneurial activities, though being heavily impacted with recent year economic performance. These factors will be considered while exploring the entrepreneurial ecosystem of Poland and understanding the driving elements. Using Isenberg’s model developed in 2010-2011, the approach will be described in detail in the literature review section. Along with the model implied, there is a strong impact of startups on the entrepreneurial ecosystem. As K. Szmigiel(2018) points out, “startups constitute the policy objective supporting the development of a knowledge-based economy in less-developed countries, because they are perceived as a chance to catch up with innovation leaders” (Szmigiel, 2018). In fact, the startup environment in Poland has achieved a rapid growth, amounting to approximately 2700 in 2016, with most of them concentrated on ICT and digital transformation technologies. (GEM, 2020). However, startups alone are not yet enough to be applied as a sole factor of analysis for the entrepreneurial ecosystem. Poland’s case demonstrates how Google, being a technological giant, was able to contribute and reshape the entrepreneurial ecosystem back in the 2010s and currently implements a successful program, called Google For Startups. As a result, Google For Startups program was another important contribution to the entrepreneurial ecosystem. Formerly, it was recognized as Google For Entrepreneurs program, and it was launched in 2011, and later in 2018, it was renamed Google For Startups. The program operates in the form of campuses – where a network of physical spaces is easily accessible, and accelerators – mentorships and workshops. The first campus was launched in 2012 (London) and 3 years later, it was also opened in Warsaw, Poland. The accelerator program aims to bring the tech giant’s products, people and technology that have a direct relationship with machine learning development. It is an important aspect for Google: there is a need for a deep-dive outlook in many business processes and all the conditions are created to meet the constant demand for technological progress. However, the program also realizes the importance of non-technological aspects by providing leadership training (to address the need for corresponding organizational changes), implementation of various project frameworks (Agile, Kanban), as well as provision of media resources to ensure proper coverage and attract extensive funding for the long term.

Thus, the thesis aims to research the influence of the Poland’s entrepreneurial ecosystem on a technology program and analyze the changes in it by applying one of the theoretical models developed for ecosystem studies. The selected program was Google For

Startups. The model was developed by Isenberg back in 2010-2011 and covers the indicators that are vital for the entrepreneurial ecosystem. The model will be described in section 3.2 accordingly. Using the model principles, the goal will be to understand the entrepreneurial ecosystem through the prism of the technological giant and its relationship with startups in Poland and figuring out the key touchpoints and reflections through Isenberg's model by investigating the gaps and assessing the sustainability of businesses in the country. The main task of this research will be to explore the entrepreneurial ecosystem as a concept, as well as apply the definition to Poland as a research area and provide the example by establishing the linkage between startups and technological companies.

The research questions trying to fill the gap in the studied area can be divided into 3 separate topics:

- 1) Understanding the entrepreneurial ecosystem in Poland, assess the historical transformation through the literature review and correlate it with the current situation in the framework of the technology program.
- 2) Google For Startups – figuring methodologies to interact with startups and understand how those changes impact the entrepreneurial ecosystem.
- 3) Last, understand the sustainability of the entrepreneurial ecosystem in Poland – through the prism of Google and startups relationship, as well as reflecting it on the macro elements described in Isenberg's model of the entrepreneurial ecosystem.

Thus, with the research questions covering different aspects of a technology program and startups relationship, it is vital to understand through which macro elements the importance of the entrepreneurial ecosystem in Poland is reflected in current development. Furthermore, it will attempt to uncover the potentially problematic areas where the possible elements do not contribute to a sustainable direction leading the entrepreneurial ecosystem to be impacted and reshaped accordingly. It is also crucial to keep the assumptions that will be made in the methodology section while assessing further research gaps and exploring the topic in more detail.

1. Literature Review

The scope of literature analysis covers several areas that can be most suitable in describing the entrepreneurial ecosystem. These areas can be categorized in the following sections:

1.1 Entrepreneurial Ecosystem

The entrepreneurial ecosystem as a concept itself develops quite rapidly allowing the set of definitions applied to it in different methodologies. One of the first definitions appeared back in 2006, developed by Cohen, reflecting the concept as “an interconnected group of actors in a local geographic community committed to sustainable development through the support and the facilitation of new sustainable ventures” (Cohen, 2006). This definition required more elaboration, and it can be that in later studies by E. Stam, the local geographic factor was revised due to ongoing globalization as well as the economic development of the European Union as a regional unit (Stam, 2015). One of the recent attempts to define the entrepreneurial ecosystem can be encountered in Spiegel’s research, where the entrepreneurial ecosystem is represented by “a set of political, cultural, economic and social elements that support the development of startups” (Spiegel, 2017). It is important to highlight that the concept is rarely reflected without a public policy that is still considered as one of the most triggering factors to re-shape the ecosystem. “Entrepreneurial ecosystems are highly influenced by the current economic and political trends – the shift in entrepreneurial activities from quantity to quality is currently happening” (Samitowska, 2011). These ideas have been also reflected in the approach used by D. Isenberg when defining the entrepreneurial ecosystem in his studies conducted in 2010-2011. Isenberg marks that grouping the entrepreneurial ecosystem into several categories/elements such as policy, finance, culture, supporting infrastructure, human capital and markets provide a sufficient ground for policymakers to implement the decisions that aim to support these elements to create an environment for businesses and startups particularly. (Isenberg, 2010). The focus on policymakers through the prism of various macro elements will be shown in the “Isenberg model” section accordingly.

Despite the development of different theoretical models for the entrepreneurial ecosystem, through the literature review, it can be noticed that there are certain gaps existing with the concept that might be challenging to address in the practice. the entrepreneurial ecosystem and policies created to improve it might not necessarily contribute to the economic development of the specific region” (Alvedalen and Boschma, 2017). Other criticism of the entrepreneurial ecosystem includes, but is not limited to the general lack of theoretical

clarification and proper distinction from other concepts. Stam and Spiegel underline this in their studies, marking the need to “distinguish the concept from clusters and regional innovation systems” (Stam & Spiegel, 2017). This leads to a concept of interdependence of elements and whether entrepreneurial ecosystem as a phenomenon is actually “tracking” the relationship between elements and their causality, and whether there is any existing linkage at all. For instance, R. Boschma & J. Alvedalen derive this relationship as the interaction between individuals, organizations and institutions (Alvedalen & Boschma, 2017). The latter is a key focus in all methodologies that aim to define the entrepreneurial ecosystem, though being expressed in different theoretical contexts. A. Acs et al. defined an entrepreneurial ecosystem as “dynamic, institutionally embedded interaction between entrepreneurial attitudes, ability and aspiration by individuals that have an impact on the allocation of resources through creation and operation of new ventures” (Acs et. Al, 2018). The key finding is the interdependence that shapes the ecosystem and might drive economic growth. Therefore, in Isenberg’s model chosen as a methodology, these critical points should be addressed to provide a more accurate review of the interconnection of elements.

1.2 Isenberg and the model of entrepreneurial ecosystem

As it was noted before, Isenberg’s model was primarily developed as an attempt to prioritize the public policy through the derived major elements, that aim to granularize the complexity of the entrepreneurial ecosystem and its interactions to the defined checklist of the items. Although Isenberg underlines that this may serve as “a recipe for policymakers how to start the implementation of new reforms and develop the ecosystem”, he also warns that further enhancement and relationship study should be done to track the changes and address the problematic points in the right time (Isenberg, 2011). Before addressing each domain separately, it is vital to understand that Isenberg was using the entrepreneurial ecosystem as a definition while highlighting several misconceptions that were existing at that moment and some of them remain as a point of discussion in the academic world. He marks several commonly used assumptions and gives a rationale why the approach (called “mistakes” in his work) might not be the best if the model that he derived would be applied for further research of this topic. These are as follows:

- “Creation mistake” - Isenberg argues that an entrepreneurial ecosystem is not “something that is created, built, or established but rather affected, influenced, facilitated”. (Isenberg, 2011). This is an important consideration in the qualitative study conducted in this case study as well – the tech giant and its impact are assessed in the form of understanding how one unit influences the other one, instead of assuming that Google or other startups at the beginning of their development created an entrepreneurial ecosystem in Poland. The concept goes beyond that and rather focuses on the existing relationships that drive the changes in the ecosystem.
- “Centralized control mistake” – similarly, based on the previous assumption, entrepreneurial ecosystem is not about ownership and control, and the theory that ecosystem is reshaped does not imply that it was caused by the creator or owner of the entrepreneurial ecosystem (Isenberg, 2011). Rather, it is about the factors that bring up that impact and understanding the driving elements. Some of those drivers will be later grouped by Isenberg and presented in the model.
- “The geography mistake” – in this term, Isenberg uncovers the regional or rather geographical attempts to define or limit the entrepreneurial ecosystem. In fact, it may go far beyond the limits of national borders. In the case of Poland, the case of technology companies can also be reflected in the European Union, neighboring countries and other regional units but kept at the country level for simplifying the complexity under such an approach.
- “The intention mistake” – here Isenberg underlines that mistake can be expressed in defining the “intention of a one or a small set of actors is relevant and causal” (Isenberg, 2011), and the analysis should not be necessarily based on entrepreneurial impact to assess the entrepreneurial ecosystem.
- “The entrepreneur-centrality mistake” – following the previous idea on intentions, Isenberg refers to the concept of entrepreneurship again, highlighting that the entrepreneur should be the “only central element” of the entrepreneurship system (Isenberg, 2011). It is a set of factors that form up and under which the ecosystem is reshaped, with the similarities in contribution to the changes in the ecosystem. Thus, it is vital to distinguish the macro factors, entrepreneurship and other domains defined to be able to make a proper analysis in the frame of further studies.

With the pillars defined as per below, each of them can be discussed in detail to provide a comprehensive view of the model.



Figure 1: Isenberg Model of Entrepreneurial Ecosystem (Isenberg, 2011)

Although Isenberg admits that there are much more components that should be in the model, for simplicity they were grouped into 6 major domains each having certain directions and so-called “checklists” to assess them accordingly. Below is the summary view on each domain category:

Policy

In this domain, Isenberg differentiates leadership and government, each playing a specific role in the entrepreneurial ecosystem through different mechanisms. On the leadership side, this includes unequivocal support, social legitimacy, open door for advocates, entrepreneurship strategy and urgency, crisis and challenge. The leadership term is used as an umbrella definition for the element that might react to other elements (as well as the ecosystem as a whole) through the planning, strategic and organizational/institutional changes. On the government side, mostly the common player in the form of the institution is marked, as well as the financial support, regulatory frameworks, research institutes and

venture-friendly legislation that occur or develop in the ecosystem in parallel with other elements. Bringing Poland example, as it was underlined by Tarnawa et. al, “governmental efforts played a key role in determining the roadmap of entrepreneurial activities in the country and the government remains the balancing factor between interests of the country and the European Union” (Tarnawa et al., 2017).

Finance

This domain is heavily relying on the concept of financial capital applicable to the ecosystem in general. Technically, it is not only about venture capital investment, but also about available funding from different resources, angel investors, and ease of financing in terms of loans (mostly micro-loans). In Poland, the data provided by Global Entrepreneurship Monitor (GEM) shows that by 2020 there are more opportunities compared to previous years to get funding not only internally but externally as well, due to corresponding digital transformation (GEM, 2020). Obviously, the shift happened during the pandemic situation and affected in a negative way to the entrepreneurial activities, however, it also stimulated boosted recovery and widened the previously limited financing schemes. As Szmigiel underlined, “startups, when questioned about sustainability and recovery plans, note that re-financing will rely on entrepreneurial activities, rather than external sourcing (Szmigiel, 2018)

Culture

Here Isenberg underlines the importance of societal norms expressed in risk tolerance, wealth creation, creativity, innovation and ambitions, as well as success stories that help to build up a significant reputation outside the regional unit studied. (Isenberg, 2011). In the case of Poland, Google’s initiatives to contribute to the entrepreneurial ecosystem via different resources show a concrete example of an attempt to build a success story with an international focus. However, in terms of ambitions and risk tolerance, the situation might be varying due to “fragile post-pandemic economic situation where the sustainability and growth stage development is in the question itself” (GEM, 2020). Despite this factor, as well as existing conservatism among entrepreneurs, the effort is made to enlarge the current

entrepreneurial network (Tarnawa et al., 2017). This had an indirect impact on Google expansion planning when another office was opened in Wroclaw in 2018 (Google, 2021).

Human Capital

Along with Isenberg, several other researchers independently highlighted the factor of human capital and its contribution to the entrepreneurial ecosystem. In fact, “significant change in human capital, given the economic development and interdependency with other factors impact and re-shape the ecosystem inevitably” (Isenberg, 2011). Isenberg differentiates labor and labor micro-elements – skilled vs unskilled, later-generation family, serial entrepreneurs and education institutions aimed to support entrepreneurial “spirit” in the form of education degrees, mentorship and training. The concept of educational institutions requires clarification in the case of Poland since it should not be only viewed from government-based institutions such as universities that might provide an impact on the entrepreneurial ecosystem. Along with them having a strong impact, there is an additional factor of the existence of incubators, mentorship programs that are oriented not only to support entrepreneurship but the business concept and business knowledge enhancement. (Szmigiel, 2018).

Markets

This domain is divided into networks and early customers. In the case of networks, it covers both entrepreneurial and multinational networks, as well as the effort of the diaspora. Though the underlying sub-domains are quite straightforward for networks, the problem arises from the measurement of such indicators. As Szerb et al.(2016) pointed out in his study, “entrepreneurial aspirations and network effect remain complex measurements of entrepreneurship and mostly rely on surveying and sampling from the overall population, resulting in providing a different view on each economic segment studied (Szerb et al, 2016). From the Polish perspective, the assessment heavily relies on the growing number of multinational corporations in the country. Though regional discrepancies of this measurement might be skewed (e.g., Google office being opened in Wroclaw) it is still an adequate source of information to assess the entrepreneurial ecosystem in Poland for the whole country. As per early customers, Isenberg highlights that “early adopters, being the first and focal point of

interaction, as well as first provided, can be the best indicator for ease of market assessment” (Isenberg, 2011). As per Samitowska(2011), distribution channels in Poland function mostly with an internal focus. “There is a strong need in diversifying and globalizing the products within the European Union area as a starting point” (Samitowska, 2011). K. Szmigiel also underlines the factor of expertise in productization defined by Isenberg, marking the strong connection to the human capital and direct relationship between these domains (Szmigiel, 2018).

Supports

The domain reflects the components that are essential to provide “functioning” of the entrepreneurial ecosystem – infrastructure, support professions and non-government institutions. Each of them might have an indirect impact on the ecosystem: the degree to which infrastructure is well-developed in the regional unit might affect the existence of human capital, networks and labor, and the degree towards which support professions are engaged with entrepreneurial networks also can be an indicator for how the ecosystem is diversified. From the GEM report on Poland, non-government institutions have been experiencing a shortage of implemented programs that might be supplementing the ecosystem. “Institutions that aimed to get the financing for conferences and other entrepreneur-friendly projects haven’t achieved their target goals to attract entrepreneurs in 2020, due to budget restructuring in the post-pandemic era” (GEM, 2020). However, the recovery is expected as most entrepreneurs also underline that lost money will be mostly recovered due to the established entrepreneurial ecosystem that might have a shortage in the short term but provides resources for recovery in the longer term. (Szmigiel, 2018)

The Isenberg model is considered just one of the methodologies under which the entrepreneurial profile of a certain regional or economic unit can be assessed. Throughout the years, there were numerous alternatives proposed, to tackle the possible gaps in each concrete domain. For example, developed by Stam the entrepreneurial ecosystem model is based on the concept of systemic and framework conditions, with systemic “being a heart of ecosystem – the network of entrepreneurs, finance, talent, knowledge, support service and leadership”, while framework conditions mostly include “social and the physical conditions enabling or constraining human interaction”. The comparison between the two models shows both

similarities and significant distinctions. The similarities are reflected in forming up similar domains and focusing on institutions rather than earlier models based solely on entrepreneurship and entrepreneurship-related components. Both models also play a key role in understanding the concept of entrepreneurial ecosystem analysis in the regional unit. On the different side, Stam criticizes Isenberg for the less transparent system of relationship and causality factor in the model. He states that “lack of feedback mechanisms and lack of interaction between the elements prevent Isenberg’s model to become a clear roadmap for the design of effective policies” (Stam, 2017). However, from the perspective of Isenberg, causality was underlined in the assumptions that were made regarding the entrepreneurial ecosystem, covered earlier. This is an “intention mistake” called by Isenberg, and in fact, he recognized the correlation between the factors before deriving the model and forming it into the framework or guidance for policymakers. In addition, focus on policymakers is crucial and the model is simplified to provide the first touchpoint in re-shaping the entrepreneurial ecosystem. Thus, Isenberg’s model was chosen to reflect the qualitative study in this case study to provide a comprehensive picture and reconstruct the case in Poland in a less complex view.

2. Methodology

2.1 Methodology & Data

The entrepreneurial ecosystem is a phenomenon that can be analyzed using both quantitative and qualitative methodology. The thesis focuses on the latter one to assess the ecosystem through the prism of the Isenberg model and practical knowledge of professionals in the field. The structure of the thesis is following the theory-to-practice approach, as shown below:



Figure 2: Methodology structure

The thesis will follow a qualitative approach in the methodology. As per Aspers et al.'s definition, qualitative research represents an “iterative process in which improved understanding to the scientific community is achieved by making new significant distinctions and getting closer to phenomenon studied” (Aspers et al., 2019). In this example, the phenomenon is represented by the entrepreneurial ecosystem and its importance as a concept. To give the practical context to the phenomenon, the explanatory case study, as one of the types of qualitative research, was preferred to be a format in which the thesis was structured. An explanatory case study is often used to describe “when answers to the research questions attempt to explain causal links in real-life interventions that are too complex for survey or experimental strategies (Yin, 2003). Indeed, the explanatory case study helps to uncover the entrepreneurial ecosystem in a real context, by reflecting the theoretical models developed by mirroring them in the applicable example. This example or the case studied will be Google as a technology program and its program called Google For Startups. This will be reflected in the form of structured interviews conducted with Google For Startups managers. Structured interviews have an advantage “to convert the interview in a format that follows clarity and allows comparison between different participants” (Aspers et al., 2019). It basically

pre-defines the research area and attempts to find the linkage between theory and practice based on participants' experience. The key contribution of the structured interview to the case study is an ability to compare the findings for researching the phenomenon, as well as "genuinely assess the relationships defined in the theoretical matrix and real context" (Yin, 2003). The methodology behind conducting the interview is based on Isenberg's model, addressing questions that source the key domains described in the literature review section, namely – policy, finance, human capital, culture, supports, and markets. These domains have their own pillars, each focusing on the major components of that domain. Thus, interview questions are strongly correlated to these pillars: by analyzing the answers to each pillar of the domains, it will be possible to draw conclusions about how that component (domain) functions in the example of the Polish entrepreneurial ecosystem. In other words, the purpose will be to deep-dive into those pillars and understand the entrepreneurial ecosystem on the example of one technology program that manages relationships with startups and thus contributes to the ecosystem changes. It is necessary to highlight as well that questions will also be referred to participating in program startups, where Google representatives might provide feedback on main problematic areas that might prevent companies achieving or sustaining the growth. For this purpose, the representatives were reached via call and follow-up email, describing the need and asking for filling up the questionnaire. After they filled up the questionnaire, a follow up call was done to clarify the points and format them accordingly for written form. The basis of selecting the interviewed group was mainly depending on several factors: working experience with startups in the frame of program, ability to reflect the entrepreneurial problems from different perspectives (thus selecting interviewees from different business backgrounds) and close, ongoing relationship with Google For Startups program. At the end, from the whole lead management of the program which consists of 5 people, 3 have responded to the questions and their combined answers will be analyzed in the findings section accordingly. Below is the brief summary of the participant profile and their relationship to the program:

Participant ID	Years of Experience	Position	Focus Area	In Google Startups Team
Participant #1	7	Strategic Consultant	IT, Fintech	Since 2018
Participant #2	10	Product manager	IT, Pharmacy	Since 2015
Participant #3	12	Lead manager	Management & Leadership	Since 2016

Figure 3: Participant Profile

The interview questionnaire and follow-up email prepared are available in the appendix section.

By formulating the questions defined on each domain, the thesis attempts to correlate Isenberg's model to the practical example – Google For Startups program and its relationship with startups can uncover how elements work in the real context and whether there is any causal relationship between them. It will be also supplemented with the following Poland entrepreneurial profile to understand the historical, economic and entrepreneurial background and reflect on how these aspects changed over time.

From the interview conducted, the written forms were collected from 3 participants and using Isenberg's model, the answers were grouped together per each pillar and domain accordingly. This section aims to uncover each domain and related questions in separate sub-sections, followed up by reference to the entrepreneurial ecosystem concept in theoretical definition and reflecting the practical part in the form of participants' feedback. While assessing the responses, the case study refers to each domain as per Isenberg model, making the structured interview more transparent for understanding. It is important to highlight that not all written responses were presented in this section since some of them might lack new insights, or not be sufficient to draw the appropriate conclusions. The domains, as well as related responses with the analysis presented as per below:

2.2 Poland entrepreneurial profile

Considering the history of the development of the Polish economy, there is a significant step forward towards the advanced model of economic policies. The privatization

of industries across the country, the introduction of market competition, as well as membership in the European Union (2004) has become one of the successful paths for rapid growth rates of the economy. The boom has its roots to 1989, after the end of the communist era, and reflected in the rapid increase of the small-medium enterprises (SME) sector. As R. Ruminski points out in his work, Poland “Although SMEs could use the opportunity of lack of relevant regulations and were quite free in developing the businesses, that lack yet created uncertainties for sustainable business models in the country” (Ruminski, 2015). The development was not only measured in terms of the increasing number of SMEs but also on their impact on the overall economy. The McKinsey report on Poland illustrates that compared with other EU countries, Poland has experienced remarkable performance in development (McKinsey, 2015). Inside the EU, only Ireland and Slovakia could outperform Poland for the rates of 1991-2008. For the analysis of the current period, it can be noted that in 2014 there were already 343 thousand SMEs registered across the country (Ruminski, 2015). The growing number of SMEs and business environment was a significant driver for the Polish economy. In the startup ecosystem analysis, conducted by K. Szmigiel, the growth of the startups has been also highlighted, that most of those businesses were focused on the domestic market (Szmigiel, 2018).

For the analysis of the profile dated to the most recent data, Global Entrepreneurship Monitor (GEM) indicators can reflect a more accurate picture. The GEM project was launched back in 1997, currently covering 54 countries. It is based on the conduction of quantitative surveys in the participating countries, followed by qualitative studies and “not only considers the entrepreneurial ecosystem as such but also attempts to measure the changes and highlight the most significant areas where the changes happened, as well as reflect their nature and reasoning. (GEM, 2020)



Figure 4: GEM Report on Poland (2020)

The spider chart above shows Poland's performance in 2019 (orange lines) vs 2020 (red lines) and the expert evaluation from 1 to 5, with 1 being highly insufficient and 5 being highly sufficient. Findings from this chart show a different perspective on the entrepreneurship profile in recent years and underlining the problematic factors that were discovered during the pandemic situation. For example, there is still a lack of business education at schools and decreased entrepreneurial finance, which indicates the ability to refinance the company, investment resources and its diversity (how diversified the resource allocation) (GEM, 2020). This might be an insight when analyzing Google and startups to explore how entrepreneurial finance influenced the ecosystem given the recent pandemic situation as one of the factors. Among other notable indicators described in the GEM approach are government-related drivers (taxes, support, programs), market, infrastructure and regulations. These pillars will be referred to when assessing qualitative findings from an interview using Isenberg's model.

In Poland, in the frame of Samitowska(2011) and Szmigiel's(2018) research studies, entrepreneurial ecosystems are used parallelly with startup ecosystems. K. Szmigiel underlines the importance of "business environment institutions (BEI), scientific and research units, private entities financing startup project, venture capital funds and local government institutions", marking the lack of social capital and brain drain due to macroeconomic factors (Szmigiel, 2018). This clearly shows similarities on the micro-level with the entrepreneurial

ecosystem, which in its turn covers more aspects and considers macro-elements of the specific regional unit.

As an example of a macro element, there is a significant impact of the European Union on all entrepreneurial ecosystem elements which can be reflected in policies, economic relationships, entrepreneurs as business stakeholders and other ones. Apart from the direct impact of policies, the European Union implements specific programs by providing a substantial amount of funding and support. Those programs include but are not limited to, “Erasmus for Young Entrepreneurs”, “SMEs of Future” and other initiatives aimed for “harmonization” of regulations (Szmigiel, 2018). As a last important component, Google demonstrates another example of the entrepreneurial ecosystem element, contributing to it with its technology and entrepreneurial programs – Google For Startups.

2.3 Google & Poland: Google For Startups

Throughout the last decade, Google was actively involved in the diversification of the business after its successful launch in the USA and followed up the growth stage, the platform reached important milestones in 2011. For example, that year the daily search amounted to 3 billion per day (Google For Startups, 2021). One of the significant components of strategic planning was a physical presence in Europe and the development of other products that Google could easily replicate to the marketing needs of customers. Though the first office in Poland was opened more than 15 years ago, only recently, in 2015, the campus was opened in Warsaw, followed by continuous expansion and increase in headcount. “Google achieved quite significant growth in the short term, thanks to rapid economic development that was happening in Poland in 2015” (Google For Startups, 2021). The company also opened a second office in Wroclaw and introduced several other products to the European market. The most popular one is Google Cloud, with its “2 billion investment in Poland for a data center that helps to handle trillions of terabytes of data” (Reuters, 2021). Along with products, Google also contributed to the entrepreneurial ecosystem. It pioneered its Google for Entrepreneurs program back in 2011 in London, and then expanded it to other European countries. Today, this center is mostly associated with Central and Eastern Europe (CEE center) and in 2018 was renamed to Google For Startups, with the headquarters in

Poland, where most of the programs are being implemented. The reason for such a shift was understanding market demand and trends of entrepreneurial development in CEE countries.

The program operates in the form of campuses – where a network of physical spaces is easily accessible, and accelerators – mentorships and workshops. The accelerator program aims to bring the tech giant's products, people and technology that have a direct relationship with machine learning development. It is an important aspect for Google: there is a need for a deep-dive outlook in many business processes and all the conditions are created to meet the constant demand for technological progress. However, the program also realizes the importance of non-technological aspects by providing leadership training (to address the need for corresponding organizational changes), implementation of various project frameworks (Agile, Kanban), as well as provision of media resources to ensure proper coverage and attract extensive funding for the long term. The representatives of this program have significant experience in dealing with mentorship and advisory to the startups, not only in Poland but in the USA and most of the developed countries in the European Union. The team was structured back in 2015, attracting talented individuals who can establish strong connections with SMEs in Poland, as well as hiring local consultants that can contribute to the understanding of local market needs. This is also a crucial factor as per the nature of entrepreneurship that was discussed before – most of the startups offer a local product to the customer and lack strong diversification.

As it can be seen, the current state of the program, its popularity and success stories generated in the last 5 years, as well as the recent nomination of 3 startups in Poland to cooperate with Google, it was selected as a technology company that can shed the light on the importance of entrepreneurial ecosystem and how elements described by Isenberg function in the realities of the constantly re-shaped environment. The qualitative feedback then can be used to understand potential problematic areas that affect the startup environment and which elements trigger the changes in the entrepreneurial ecosystem. Rationally, there are other multiple factors to be considered when the regional ecosystem is assessed, however, this starting point can be one of the strongest entrepreneurial networks that currently exist in Poland.

3. Findings & Discussion

The findings will be analyzed through the domains of Isenberg's model and its pillars.

3.1 Policy

In the Policy domain, the key focus was to understand how two pillars are represented in the Polish entrepreneurial ecosystem. Merely, in the Government pillar case, the research area was to understand whether the startups receive any kind of governmental support, mostly focusing on policies and reforms. It follows up with the Leadership pillar, where the idea of government support is extended to the role of public leaders in the re-shaping of the entrepreneurial ecosystem. As per Participant #3 feedback, the point was made on assessing the public policymakers' impact on the entrepreneurial ecosystem. The person marked that *“throughout the years, the public policies that cover entrepreneurial networks and thus shaping it have been significantly changing. Changes were not necessarily bad: there were different changes in-laws, followed by certain tax benefits and subsidies to support SMEs. However, the problem was that changes were happening on a frequent basis, and it was difficult for startups to follow them”*. (E. Samadzade, personal interview, December 6, 2021). In fact, during the last 10 years, Poland has experienced quite significant changes in the business environment and legislation. Policymakers were trying to come up with certain regulations that would be most beneficial to accumulate the boost of the economy and support the businesses. As per Szmigiel, while evaluating startup support in Poland, she marks the importance of *“consultation with the public sector on the subject of legislative changes supporting the development of entrepreneurial ecosystem”* (Szmigiel, 2018). Participant #1 also provided some insights on this topic, stating that *in some situations, Google while mentoring the startups, had to dig into the legislative part of the company to understand conflict areas. At the very end, we did not want to teach business how to do business in Poland, nor did we want to bring the Silicon Valley ecosystem”*. (E. Samadzade, personal interview, December 6, 2021). The approach was chosen by the mentorship program indeed looked accurate. From Samitowska(2011) & Isenberg's(2011) studies, it can be clearly

seen that regional factors, in sum with other aspects being specific to the concrete examples (culture, policies, history of development) prevent ecosystems from being replicated or tried to be adapted (Samitowska, Isenberg, 2011). Therefore, Google's planning was merely focused on nurturing the existing entrepreneurial ecosystem by providing the technology and human capital (knowledge & mentorship) to support business needs (Vise, 2007).

As per governmental support, participant #2 stated the following: *“Google built up its program considering European market peculiarities and implemented it independently once there was sufficient ground in terms of resources to make it possible. The government was mostly supporting us indirectly, by stimulating entrepreneurs and providing official resources to spread the word about the program, as well as other incubators and conferences. I also noticed that since the pandemic outbreak this support has been significantly decreased: mostly due to restrictions, there is less focus given on governmental intervention to the conferences/programs for entrepreneurship and that is already mostly a part of non-governmental institutions”* (E. Samadzade, personal interview, December 6, 2021). Thus, the Polish government was quite cooperative before the pandemic situation and provided specific resources to support entrepreneurial programs. Furthermore, it is also reflected in the GEM report, where the indicators entrepreneurial subsidies/reforms were met by policymakers between the period of 2015-2020. (Gem, 2020). As a final note, all participants confirmed that the program developed by Google has not received any governmental funding. Thus, frequent changes of policies from the government, as well as reduced support from institutions after the pandemic situation had a negative impact on the Polish entrepreneurial ecosystem.

3.2 Finance

The finance domain aims to uncover what are the financial driving forces in the studied regional context. This part is mostly used to understand the common source of the funding for Polish startups, and how they finance their growth. An important consideration there was in assessing the general source of funding: the pandemic situation could bring possible changes to this sphere as well. In this section, Participant #2 and Participant #3 provided quite a similar view on the funding of startups that have been consulted with Google in the past. They marked those startups usually *“received the funding independently through*

the simplest financial mechanisms, such as micro-loans and less often via crowdfunding. Technically, these were the companies we worked with, and they did not rely too much on the venture capital funds” (E. Samadzade, personal interview, December 6, 2021). Participant #2 also highlighted that *“among the problems we discussed while meeting with entrepreneurs, the funding was only in question when it came to restructuring or reorganizing their organizational structure”* (E. Samadzade, personal interview, December 6, 2021). From these responses, it can be highlighted that entrepreneurs that use mentorship programs offered by Google are mostly self-funded. This can be also explained from the perspective of Szerb et al.(2016), Spiegel(2017) and Szmigiel’s (2018) studies, where the classical entrepreneurial profile was mostly associated with the local market and thus required fewer resources at the start period (Szerb et al. 2016, Szmigiel 2018, Spiegel 2017). Though it can be a potential caveat for the long run, it seems that startups have not requested any funding from Google. In fact, as per participant #1 notice, *“financial support is barely in question when it comes to the mentorship program. We may help in finding potential angel investors to develop another milestone, especially when it comes to the health sector and pharmacy, but this is a rare case”*. (E. Samadzade, personal interview, December 6, 2021). Therefore, the element of the entrepreneurial ecosystem requires a more in-depth approach and assessment on a wider scope than just one country. At the same time, the acquired responses show that micro-loans and crowdfunding are some of the main financial funding, highlighting that there is no additional financial subsidy from Google as a partner in the mentorship program.

3.3 Human Capital

Through the prism of human capital, which is represented by labor (entrepreneurs’ education, skills) and educational institutions, the focus was to understand the educational background as a factor for entrepreneurs and assess initiatives made by educational institutions. Interestingly, in this domain, all participants admitted that they barely saw any correlation between the educational background and the business itself. As per participant #3, *“the person could have a master's diploma in physics, but the focus of the business was heavily related to digital marketing. Some of the entrepreneurs have not even finished their bachelor's degrees. In our cooperation, we don't really take this into account, because we think that the skills that are applied are vital for successful business ideas and if practical*

knowledge is presented, then it is only time that is remaining for the startup to grow substantially” (E. Samadzade, personal interview, December 6, 2021). Despite such discrepancy, there are still educational institutions providing training/seminars full-degree courses that aim to develop entrepreneurial skills. As per participant #2, *“we mostly focus on understanding how our technology – cloud system, office applications, hardware solutions can be useful for other companies. That does not mean that we are not educated. We have successfully launched several programs last year aimed to develop leadership and managerial skills for senior management, as well as consult them in scaling to the international recognition level”*. (E. Samadzade, personal interview, December 6, 2021). Based on these responses, there can be potentially uncovered topics between linkage of education and how well education is “upbringing” the entrepreneurs, or more accurately, whether that education system fully reflects the needs of the entrepreneurial ecosystem and whether it can contribute to its change in the positive direction. Another problematic point raised in this domain was the incubators factor. Since 2015, numerous incubators are offering a wide range of skills that promise significant tangible and intangible returns in the future. However, as per Participant #2, *“the tendency of the growing number of incubators should not tell you anything about how healthy the ecosystem is. I believe that there is a potential problem expressed in the common dilemma of quality vs. quantity”* (E. Samadzade, personal interview, December 6, 2021). In fact, these statements have a reflection in Szmigiel studies, where it was marked that “startups getting overwhelmed with opportunity programs that do not contribute to the development as such” (Szmigiel, 2018). Possibly, one of the explanations of this phenomenon can be a strong boost of the economy without a proper adjustment to the demand, creating supply surplus and thus inefficiency in incubators’ programs. Therefore, the findings show that educational background is not a significant factor for entrepreneurs in the Polish ecosystem and shows the rising problem of quality vs quantity of entrepreneurial incubators.

3.4 Culture

From the cultural perspective, the area of interest in the questionnaire was to reflect the so-called success stories and attempt to explore the underlying societal norms to better understand the profile of entrepreneurs in Poland. The culture domain was reflected in

controversial feedback from the participants since each of them focused on different aspects and their experience tended to vary based on the companies they worked with. That was primarily a case with the success stories: participant #1 claimed that *“entrepreneurs when working with us, aim to develop an international reputation and build up a success story. It is a key goal to understand for them what kind of strategic elements should be changed to scale and work on building up the reputation in the media”* (E. Samadzade, personal interview, December 6, 2021). However, participant #2 distinguished between success stories and international reputation or recognition, stating that *“though Polish startups were mainly focused on growth, I observed that during our mentorship program they were not concentrating enough resources on building up an international reputation. One of the possible explanations I think can be in the nature of the Polish entrepreneurial ecosystem, and I saw similar examples in other countries of Eastern Europe with whom we worked last several years”* (E. Samadzade, personal interview, December 6, 2021). The final response from Participant #3 on success stories has shown that it is quite problematic for startups to be recognized on an international level: *“though, it is not only about the complexity and necessary tools to build up the reputation, but lack of willingness”* (E. Samadzade, personal interview, December 6, 2021).

The next pillar was mostly concentrated on understanding the cultural background of the ecosystem element, and it seems to be that Google representatives generally come up with similar responses regarding this point. As per participant #1: *“Generally, Polish entrepreneurs remain conservative. It is business conservatism that is not necessarily bad but prevents them from achieving higher milestones. We have several modules that are aimed to improve entrepreneurs’ willingness to take the risks by educating them the nature of that risk – explaining what the market conditions are, growth strategy, and handling exit scenarios so that they can grasp the idea of making a step forward”* (E. Samadzade, personal interview, December 6, 2021). This is a crucial factor in understanding the cultural context of Polish entrepreneurs and what kind of decision-making processes are taking place while assessing certain political, market, economic and financial risks. From the responses, it can be seen that societal norms are driven by conservative approaches, and there is a different view on how the success story is treated by entrepreneurs.

3.5 Markets

This block was mainly addressing the macro elements of the entrepreneurial ecosystem – network and early customers pillars. These pillars help to explain the potential entrepreneurial network presented in the country and what can be the mechanisms used by startups while treating early customers (e.g., analyzing feedback, first reviews). The network pillar, was one of the complex indicators to be measured. Participant #1 mentioned more about the relationship between incubators and startups, underlining them as a major source of entrepreneurial network establishment. The more detailed response was from Participant #3, where the argument was based on highlighting the importance of several factors to the strong entrepreneurial network in Poland: *“currently, the network might seem heavily dependable on policies but due to constant revisions and legislations change the network boosted awareness among the companies and helped indirectly in handling complex situations in post-pandemic period”* (E. Samadzade, personal interview, December 6, 2021). However, the post-pandemic period was not only having a negative impact on startups. It indeed helped to reshape the startups and some of them started to establish connections with multinational companies. As per participant #2, *“apart from our program, there are several others introduced by multinational corporations that exist in this or that format in Poland. Google so far has the largest platform and provides a variety of initiatives to support startups, and we feel the response from the entrepreneurs that actually need that push”*. (E. Samadzade, personal interview, December 6, 2021).

As per the early customers pillar, participants shared a similar view on how startups do analyze the first reviews of customers and adjust their product accordingly. Participant #3, who is directly involved in product discussions with entrepreneurs, highlighted that the *“criticism of the minimum viable product and the final product is quite important for startups to better understand customer needs. We provoke specific discussions, using methodologies that we applied previously in similar products before. These methodologies include a conceptual set of measurement tools, so-called “pipelines” that help to connect customer feedback towards the product”* (E. Samadzade, personal interview, December 6, 2021). Also, participant #1 stated that *“as we focus on the performance of startups and their role in the entrepreneurial ecosystem, the lack of interaction with customers, if spotted, might directly*

influence the specific business sector, if the tendency continues. For example, in pharmacy, the failure to gather the feedback from customers on the medicines introduced might significantly slow down the further enhancement/innovation and affect the system as a whole” (E. Samadzade, personal interview, December 6, 2021). It brings to another important concept – the ability to properly react and analyze the outcomes. In the frame of the entrepreneurial ecosystem, weak relationships with customers (early adopters) might become the crucial element for entrepreneurial ecosystem change, thus directly influencing the sustainability of that ecosystem.

3.6 Supports

In the last section, the support domain is analyzed to see how sustainability is addressed in the entrepreneurial ecosystem through the prism of infrastructure, non-government institutions and support professions. Regarding the infrastructure, there is a significant improvement in transportation and hub development in Poland. Participants confirm GEM report highlights, that describe how quickly the inter-connection between the cities was established in recent years. As per participant #3, *“the driving force for the entrepreneurial network was the continuous development of the transportation system. It allowed us to open another office in Wroclaw and offer our mentorship programs there as well. I am glad that entrepreneurs are attracted not only within the Polish entrepreneurial ecosystem but also from other European countries as well”* (E. Samadzade, personal interview, December 6, 2021). It should be noted, however, that the situation with support professions is not that straightforward. Participant #1 and Participant #2 mark that during the last 5 years, along with the growth of SMEs and the expansion of entrepreneurial networks, there was also a so-called “brain-drain” process happening in Poland, simply because talented professionals found themselves paid more in developed economies of other European countries. Participant 2 stated: *“we had to tackle this problem and react accordingly. Our program, if taken isolated, could barely influence this tendency. But we partnered with other institutions to attract entrepreneurs and create conditions under which professionals won’t consider the relocation as a permanent decision and in fact will eventually contribute to the Polish economy. I can recall a couple of examples where we were able to bring back some young entrepreneurs that later were able to facilitate the business and contribute to the*

Polish entrepreneurial ecosystem” (E. Samadzade, personal interview, December 6, 2021). As per non-governmental institutions, participants mainly mentioned the occasional cooperation on certain projects and significant decrease of activities since 2020 due to pandemic restrictions. Moreover, it was mentioned that new planning is developed to address this issue in the frame of the Google For Startups program. Thus, the support domain was addressed more in the example of Google initiatives, that aimed to step in and provide support to entrepreneurs and partner with other institutions realizing their potential to impact the entrepreneurial ecosystem.

As an overview of covered items, below is the table that represents the findings and reflects the Polish entrepreneurial ecosystem and Google For Startups program:

Isenberg Model		Polish Entrepreneurial Ecosystem	Google For Startups
Domains	Pillars		
Policy	Government	Subsidies for SMEs and reforms in the regulations for running the startups	Frequent reforms make adaption process slower
	Leadership	Policymakers take into consideration entrepreneurs' feedback	Policymakers support the businesses, but reforms often lack clarity
Finance	Financial Capital	Various funding, no specific source is highlighted	Micro-loans and crowdfunding as the main source of funding for startups
Human Capital	Labor	Skilled labor, a growing number of professionals	"Brain-drain" problem of professionals is highlighted by Google representatives
	Educational Institutions	Entrepreneurship-related trainings, seminars, conferences	Conferences, trainings organized, but seriously hit by the pandemic situation
Culture	Success Stories	A growing number of incubators, educational institutions focusing on entrepreneurship as a discipline	Quality vs quantity problem for incubators is raised
	Societal Norms	Conservatism and risk-averse type of entrepreneurs is prevailed	Conservatism is highlighted, efforts made to address entrepreneurs' concerns
Markets	Networks	Significant development of the entrepreneurial network, converting Poland to the entrepreneurial hub	The network is strongly affected by regulations introduced, as well as post-pandemic situations that

			shape the entrepreneurial ecosystem
	Early Customers	Feedback analysis and minimum viable product revisions as a general trend	Highlighting the need for enhancing early customers review and conducting specific trainings
Supports	Infrastructure	Strong and well-established transportation, logistics	Infrastructure as a successful component of the entrepreneurial ecosystem
	Support Professions	Support professionals presented, but difficult to maintain	A sufficient number of support professionals retain strategies are developed within the program
	Non-government institutions	Projects initiated by non-governmental institutions, such as "SMEs of Future", "Young Entrepreneurs", etc.	Google For Startups partnering with institutions to provide technological solutions, supporting several startups for further growth

Conclusion

The research makes a next step in exploring the rapidly changing elements of the entrepreneurial ecosystem in the context of Poland chosen as a regional unit and its impact on a technology program. For deriving the key factors to be analyzed, the entrepreneurial ecosystem was viewed and applied as a definition given by Isenberg, and his model was heavily used in the assessment of the qualitative study conducted in the interview form. Although the Isenberg model has its own limitations and alternative models could be applied, the focus of the model on policymakers and Poland's rapid development mainly due to policy changes reflect the more accurate view on the factors that reshaped the ecosystem in this example. Specifically, it was also determined how elements of Isenberg may cause an impact on each other and that relationship was uncovered in the qualitative study. Furthermore, the conceptual theory behind Isenberg's methodology had its reflection as well: the entrepreneurial ecosystem was viewed as a decentralized phenomenon with strongly interconnected elements and the ease of reshaping the ecosystem primarily depending on each contributor to it.

To focus on the example of a technology program, Google was chosen as a company that has the biggest investments in the entrepreneurial ecosystem of Poland (GEM, 2020), and those

investments also include a variety of entrepreneurial programs aimed to support small businesses. Google For Startups program, launched back in 2015, was one of the initiatives that helped over 100 startups during these years (E. Samadzade, personal interview, December 6, 2021).

Through the conducted interview with 3 representatives from Google For Startups program, the research questions were addressed in the questionnaire that contained domains & pillars defined by Isenberg. From the perspective of the policy domain, it was figured out that governmental support was quite intense during the last decade, however, frequently revised policies slowed down the adoption process leading to lags and corresponding conflicts in the legislation area. This was a new insight since multiple sources were mentioning rapid growth and entrepreneurial policies/support, but there was a lack of entrepreneurs' feedback on these changes. From a leadership perspective, Google representatives confirmed the entrepreneurial spirit of startups they had relationships with and focused on the further development of this local leadership in the context of the region rather than trying to replicate the previous experience in the USA. This can be also tracked in Szmigiel's (2018) work, where it was pointed out that there is no intention to introduce the US entrepreneurial ecosystem. As per the finance domain, it can be noted that the entrepreneurial ecosystem is based on micro-loans and less developed venture networks, thus tying up the entrepreneurs to the economic development of the country. The trend is changing towards diversifying the funding resources but was significantly slowed down as per the pandemic situation. The insights here provide more details on the source of funding of startups – crowdfunding and micro-loans, though focusing on those that had an interaction with tech giants. On the human capital domain, it was underlined that entrepreneurs have different educational backgrounds and contribution to the entrepreneurial network comes from various professionals. Along with talent acquisition, the problem of “brain-drain” was mentioned as a key factor of human capital and there is a need to develop strategies to maintain talented professionals in the region. This factor can also be noticed in Tarnawa's et al.(2017) and Szmigiel's (2018) work, where “brain-drain” trend was mentioned as a growing problem in Poland. It also seems that since the papers were published, not much was done to improve in this area and policymakers are still trying to find an efficient solution that will stimulate both entrepreneurship in the country as well as cause less negative impact on the entrepreneurial ecosystem. From the cultural perspective, while assessing the risks of the

projects, Polish conservatism and risk-averse culture should be considered and the most effective solution would be developing several scenarios with outlined benefits that can be the most transparent way for entrepreneurs to assess the company performance. Here the finding ties up with Samitowska(2011) and Tarnawa et al(2017) findings, though providing more insights on how the cultural aspect of conservatism can be tied to measuring the business risks. On the markets side, Google was mostly focused on enhancing the first customer experience, addressing the factor of minimum viable product and related methodologies to improve the first impression and collection of feedback. This finding is quite unique since it related to Google's vision on the problematic measurement of customer feedback and the need for improvement. Last, on the supporters' domain, it was marked that non-governmental institutions still need further development in rebuilding the relationships with startups given the market conditions. It was stated that those institutions lag in developing the programs that can be effective in the post-pandemic state, but there are resources to reshape them in Poland, since there are multiple initiatives to help entrepreneurs with the recovery period. The insight is also supported by the GEM report regarding startups, where authors refer to the “need in developing crisis management skills for entrepreneurs for handling both internal and external factors” (GEM, 2020).

Mainly, the importance of the entrepreneurial ecosystem was shown as a strong component in building up an entrepreneurial network. As it was confirmed by interview participants, Google chose the more efficient way to impact the ecosystem. First, it was rather support and reshaping forces, rather than creation forces and second, it was about retaining the local market and its uniqueness instead of attempting to adapt the concept of success story in the USA, where Google has achieved tremendous results in Silicon Valley. These factors helped to understand why the entrepreneurial ecosystem in Poland was able to develop for the last decade. Along with this, throughout the literature review and responses in the interview, several problematic areas were uncovered that either already impact the entrepreneurial ecosystem or might be a significant issue in the future. One of them is governmental support, which tries to maintain a certain degree of control and keeps the policy changes as a primary strategy that impacts entrepreneurship. However, if in the long term that can be beneficial for both sides, short-term influence is undervalued, and startups are struggling with adoption to the constantly changing legislation. Another important aspect was the human capital problem, where Google and other incubators try to attract entrepreneurs (labor) in Poland since due to

changing economic conditions, these entrepreneurs shift their preferences toward countries with developed economies. The trend is especially important in the post-pandemic stage, where many companies (of which the majority is locally micro-loan funded) have difficulties with planning and development. Therefore, for the entrepreneurial ecosystem in Poland, it is vital that the contributors that might cause an impact will be prepared with long-term planning and ad-hoc reacting to the global challenges causing instability in the development of the economy. This in turn leads to the concept of sustainability of the ecosystem: given the properly managed infrastructure due to imposed reforms by the government and thus developed transportation and logistics, the entrepreneurial network as an element was also positively affected. “Poland steps into the new roadmap of development in the 2020s, and success stories on the country level will primarily be based on the performance of SMEs that were growing rapidly in the last decade” (GEM, 2020). Along with the GEM report, these challenges were also realized by Google in Poland as well. In the interview, they admit the currently existing problems with non-governmental institutions' support and are eager to develop a roadmap for mentorship programs to make them more useful and applicable given the reshaped economic conditions.

Suggestion

Last, the suggestion will be to focus on the example of different relationships between companies and understand the nature of startup in the context of the non-technological industry as well. This requires a deep understanding of the entrepreneurial ecosystem network and how the components correlate with each other at the regional level.

Limitations

Finally, the research methodology and the qualitative study had their limitations in the assessment of Poland's entrepreneurial ecosystem, along with Isenberg's model assumptions. The key limitation was expressed in defining Poland as a regional unit and thus ignoring the significant impact caused by European Union policymakers in reshaping the global European ecosystem. Such limitation helps to keep a focus on local tendencies and problems but provides a gap for additional research in the analysis of cumulative elements of the wider

ecosystem that is currently existing in the region. Another limitation can be the nature of the study, which talks about Google and its interaction experience with startups across the Poland market. The efforts of mentorship programs conducted by different incubators might be quite different. Nevertheless, bringing the technology company with a strong roadmap of development and its professionals as an example was one of the possibilities to uncover the importance of the entrepreneurial ecosystem in Poland through Isenberg's model. Therefore, the further studies that can be recommended in this area will be primarily related to exploring the entrepreneurial ecosystem through the prism of several countries within the European Union to understand how the environment is reshaped in the regional context and address the patterns in the key domains/pillars as well as critical factors in determining the sustainability of the ecosystem in general.

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Appendix

Appendix 1: Google Interview Questionnaire

Interview Questionnaire | Google For Startups

Domains	Questions	Pillars
	If assessing the Polish entrepreneurial ecosystem, what is the role of public leaders from your perspective?	Leadership
Policy	Does the government implement any entrepreneurship-friendly legislations and benefits?	Government
	Is there any support you receive in the frame of Google For Startups program to work with small businesses?	Government
Finance	When you analyze the startups, what is the situation with funding? Is it micro-loan based, crowdfunding or more structured investments such as venture capital funds?	Financial Capital
	Do startups request additional financial support from Google?	Financial Capital
Human Capital	What is the background of entrepreneurs you work with? Please briefly describe the average profile of the persona.	Labor
	Do entrepreneurs educate themselves by any other means (university, incubators, other mentorship programs)	Educational Institutions
Culture	Can startups participating in a program turn their experience to visible success?	Success Stories
	What is entrepreneurs' attitude towards building international reputations?	Success Stories

	How do entrepreneurs usually assess the risks? If, for example, you challenge the startup with their projections or organizational structure, what are the main pain points?	Societal Norms
Markets	How can you assess the entrepreneurial network in Poland?	Networks
	Are there any connections between startups and other multinational corporations?	Networks
	Do startups assess performance based on early-adopters review?	Early Customers
Supports	How would you assess the Polish infrastructure for the entrepreneurial ecosystem? Are there potential problems / critical areas?	Infrastructure
	Is there any shortage with support professionals (Accountants, investment bankers, etc.) in Poland?	Support Professions
	Are you satisfied with activities performed by non-government institutions for the entrepreneurial ecosystem?	Non-government institutions

Appendix 2: Google Interview Request

Dear Google For Startups Team,

As per earlier discussion, please see attached the list of questions that I have briefly covered in our conversation earlier. Kindly ask you to provide a detailed answer to the questions and please feel free to ask any clarifying questions as per need. For convenience, the questions are divided into the questionnaire blocks, following Isenberg's model of entrepreneurial ecosystem.

I thereby confirm that the answers will be solely used for thesis work and should not be used for any other purposes.

Kind Regards,

Elshad Samadzade

POOLA ETTEVÕTLUS ÖKOSÜSTEEMI MÕJU TEHNOLOOGIA PROGRAMMILE – GOOGLE FOR STARTUPS POOLAS

Resüme

Antud magistritöö keskendub ettevõtluse ökosüsteemi mõju analüüsile Isenbergi mudeli kaudu ja kajastab ettevõtlussuhete näitena Poolas koostatud programmi Google For Startups võtmelemente. Koos mudeli valdkondadega viidi läbi kvalitatiivne uuring intervjuu vormis, et teha kindlaks, kuidas on ettevõtluse ökosüsteemi elemendid omavahel seotud ning millised on Poola majanduse probleemsed valdkonnad, mis kujundavad süsteemi ümber nii positiivses kui ka negatiivses suunas. Leiti, et koos hea infrastruktuuri, märkimisväärse arvu inkubaatorite ja Google'i poolt läbiviidavate mentor programmidega on võimalikke ohtusid, mis väljenduvad jätkuvas tugispetsialistide "ajude äravoolu" trendis, kui ka enne pandeemia perioodi ettevõtlusvõrgustikele tuge pakkunud valitsusväliste institutsioonide tegevuse vähenemises. Antud magistritöö valmis uurimispiirangutega ning pakub välja edasised uuringud elementide omavaheliste seoste kohta, kuid laiemas skaalas, tuues näite ettevõtluse ökosüsteemi analüüsist Euroopa Liidus ja selle mõju regioonile.

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