EXPLAINING STARTUP PERFORMANCE:
HOW DO ENTREPRENEUR AND ENTREPRENEURIAL TEAM
CHARACTERISTICS MAKE THE STARTUP SUCCESSFUL?

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ABSTRACT

EXPLAINING STARTUP PERFORMANCE: HOW DO ENTREPRENEUR AND
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SUCCESSFUL?

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Acceleration is a relatively new support mechanism that primarily aims to assist the growth of startups to ensure their success in the market. The selection mechanism of accelerators enables them to admit fittest early-stage startups that are most likely to perform well, and succeed in the market. Entrepreneurial characteristics are among the criteria that affect startup selection and startup performance. Based on the interviews of 14 acceleration and incubation programs in Turkey, this thesis initially aims to explore entrepreneur and entrepreneurial team characteristics as apart from each other. Further, the main objective of this thesis is to explain market-related, finance-related, and program-related performance of startups with individual and team level entrepreneurial characteristics based on the empirical analysis of 122 surveys conducted to startups that are admitted to interviewed programs. The main qualitative findings indicate that acceleration programs consider team-level entrepreneurial characteristics as more critical than individual-level entrepreneurial characteristics. However, quantitative findings reveal that individual-level characteristics have a higher influence on startup performance. Team-level characteristics become decisive on the program-related performance of startups. In light of the findings, there are several implications for entrepreneurs, accelerators (and similar mechanisms), and for ecosystem builders (universities, government, and industry) to ensure sustainable development of the entrepreneurial ecosystem in Turkey.

ÖZ

GİRİŞİM PERFORMANSI ÜZERİNE: GİRİŞİMCİ VE GİRİŞİMCİ TAKIM
ÖZELLİKLERİ BİR GİRİŞİMİ NASIL BAŞARILI KILAR?

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Hızlandırma, öncelikli olarak girişimlerin pazar başarısını sağlamak için büyümelerine destek olmayı amaçlayan nispeten yeni bir destek mekanizmasıdır. Hızlandırıcıların seçim mekanizması, çeşitli kriterlere göre iyi performans göstermesi ve piyasada başarılı olması muhtemel, en uygun erken aşama girişimleri kabul etmelerini sağlar. Girişimci karakteristikleri, girişim seçimini ve girişim performansını etkileyen kriterler arasındadır. Türkiye'deki 14 hızlandırma ve kuluçka programı ile yapılan mülakatlara dayanarak, bu tez ilk olarak girişimci ve girişimci ekip özelliklerini nitel bir yaklaşımla birbirinden ayrı olarak incelemeyi amaçlamaktadır. Ayrıca bu tezin temel amacı, görüşülen programlara kabul edilen 122 girişimden anket yoluyla toplanan verinin ampirik analizine dayanarak girişimlerin piyasaya ilişkin, finansla ilgili ve programla ilgili performansını bireysel ve ekip düzeyindeki girişimci karakteristikleri ile açıklamaktır. Temel nitel bulgular, hızlandırma programlarının ekip düzeyindeki girişimci özelliklerini bireysel düzeydeki girişimci özelliklerinden daha kritik olarak değerlendirdiklerini göstermektedir. Bununla birlikte, nicel bulgular bireysel düzeydeki girişimci özelliklerinin girişim performansı üzerinde daha güçlü bir etkiye sahip olduğunu göstermektedir. Ekip düzeyindeki karakteristikler, girişimlerin programla ilgili performansında belirleyici olmaktadır. Bulgular ışığında, Türkiye'deki girişimci ekosisteminin sürdürülebilir kalkınmasını sağlamak için girişimciler, hızlandırıcılar (ve benzer

mekanizmalar) ve ekosistem oluşturucular (üniversiteler, devlet ve sanayi) için çıkarımlar bulunmaktadır.

Anahtar Kelimeler: Girişimci karakteristikleri, Girişimci takım karakteristikleri, Girişim performansı, Seçim kriterleri, Hızlandırıcılar.

To my brother

&

To my parents

ACKNOWLEDGMENTS

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LIST OF ABBREVIATIONS

CFA	Confirmatory Factor Analysis
COVID-19	Coronavirus Disease
EFA	Exploratory Factor Analysis
KOSGEB	Küçük ve Orta Ölçekli İşletmeleri Geliştirme ve Destekleme İdaresi Başkanlığı
NGOs	Non-Governmental Organizations
TEKMERs	Teknoloji Geliştirme Merkezleri
TUBITAK	Türkiye Bilimsel ve Teknolojik Araştırma Kurumu
BIGG	Bireysel Genç Girişim Programı
TTGV	Türkiye Teknoloji Geliştirme Vakfı
TTOs	Technology Transfer Offices

CHAPTER 1

INTRODUCTION

According to Schumpeter, productiveness of the entrepreneurs in an economy makes sustained economic growth possible (Aerts et al., 2007). When we consider the uncertain conditions of the world economy, especially the post-COVID-19 state, the survival of the entrepreneurial firms, and the creation of new ventures have become even more important. Lumpkin and Ireland (1988) emphasize the need for mechanisms that increase the probability of successful new ventures to deploy scarce resources in economies. Incubation and acceleration are among such mechanisms that aim to support the innovative activities of nascent firms within entrepreneurial ecosystems. In Turkey, such support mechanisms for entrepreneurial and innovative activities have started with the establishment of TEKMERs in the 1990s functioning similar to the incubation mechanism. The entrepreneurship ecosystem has developed in a rapid pace since then.

Acceleration is a relatively new phenomenon that aims to assist growth and increase the survival of entrepreneurial firms to achieve success in the market. Accelerators differ from incubators in terms of their objectives, operational attributes, and services offered to startups. In addition to the basic office, material, financial and business supports provided by the incubators, acceleration programs in Turkey offer various trainings, mentorship, networking supports, and some even finance to the early-stage technology-based startups. As of the end of 2018, there are 57 active acceleration programs in Turkey[1] indicating approximately 8 times increase since 2010. Such an increase in the number of accelerators aiming at providing market-oriented support to early-stage startups in the entrepreneurial ecosystem creates the need to examine various factors affecting startup success, and in an indirect way accelerator success.

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[1] Source: https://www.invest.gov.tr/en/library/publications/lists/investpublications/the-state-of-turkish-startup-ecosystem.pdf accessed on 07.06.2020

The selection mechanism of accelerators is among the factors affecting the success of both startups and accelerators because the acceleration format has been built upon the admission of the fittest early-stage startups by a careful selection mechanism based on the particular objectives of the accelerator (Cohen & Hochberg, 2014). There is a competitive and aggressive selection mechanism in accelerators since their objectives are focused on rapid growth, profitability, and market success (Cohen & Hochberg, 2014; Yin & Luo, 2018). Therefore, a well-formed selection process enables accelerators to accept the fittest and most promising entrepreneurial firms that are more likely to benefit from the resources offered to survive and achieve growth. Accordingly, accelerators select the entrepreneurial firms that are most likely to be successful and benefit from the program. Some of the studies in the existing literature examining accelerators also include the analysis of selection mechanisms of accelerators. Such studies provide clues on the selection criteria of accelerators, yet do not particularly examine the selection criteria (e.g. Cohen & Hochberg, 2014; Hoffman & Kelley, 2012; Pauwels et al., 2016; Smith & Hannigan, 2015).

A recent study by Yin and Luo (2018) shows that the selection mechanism of accelerators have not been elaborated comprehensively in the academic literature, while there are several studies on selection mechanism of incubators and investors. Chapter 2 reviews the literature examining the selection criteria of the mechanisms such as incubators and investors in addition to accelerators that select startups. As Bergek and Norrman (2008) suggested, it is possible to categorize the selection criteria examined by the literature under the approaches of idea-oriented selection and entrepreneur/ team-oriented selection. There are criteria related to the entrepreneurial project in the idea-focused selection approach such as the viability of the idea, the market, and the profit potential. On the other hand, criteria related competence, driving forces, and characteristics that indicate the qualities of the entrepreneurs or the entrepreneurial teams are evaluated in entrepreneur/team-focused selection (Bergek & Norrman, 2008; Yin & Luo, 2018). Based on the entrepreneur/team-focused selection criteria of accelerators, this thesis aims to examine how entrepreneurial characteristics affect startup performance in accelerators.

Entrepreneur oriented selection criteria focus on the individual-level characteristics of the founders who form an entrepreneurial team. Entrepreneur characteristics indicate personal attributes such as passion, self-efficacy, commitment (Cardon & Kirk, 2015; Cardon et al., 2017a; Chen et al., 1998; Chen et al., 2009), and demographic factors (Chowdhury, 2005; Foo et al., 2005; Vogel et al, 2014) shape behavioral and motivational competence of entrepreneurs, as well as education, experience, and expertise shape personal knowledge-

based competence of entrepreneurs (Carpentier & Suret, 2015; Foo et al., 2005; Lumpkin & Ireland, 1988; Protogerou et al., 2017; Vogel et al, 2014; Zhang, 2011). Unlike individual-level characteristics, entrepreneurial team characteristics correspond to team-level attributes that form collective competencies of founders in an entrepreneurial team (Chen et al., 2017; West, 2007). Attitudes affecting teamwork such as team level passion, commitment, harmony, and efficacy, or the awareness, flexibility, and openness of the team affect motivational, behavioral, and communicational competence of an entrepreneurial team (Aerts et al., 2007; Cardon et al., 2017b; De Mol et al., 2015, 2019; Esfandiar et al., 2019; Vyakarnam et al., 1999; Vyakarnam & Handelberg, 2005).

Furthermore, average experience, collective experience, technical expertise, and business expertise of an entrepreneurial team are among the task-related characteristics that determine team-level knowledge-based competency (Bergek & Norrman, 2008; Eisenhardt, 2013; Hackett & Dilts, 2004a, 2008; Lumpkin & Ireland, 1988; Yin & Luo, 2018). In addition, the differentiation of personal characteristics of founders within an entrepreneurial team indicates team diversity. The presence of diversified perspectives, knowledge, and unique skills within a team is associated with the effective performance and competence of the startup (Eisenhardt, 2013; Vanaelst et al., 2006). While team task-related diversity includes educational background diversity, educational level diversity (Foo et al., 2005; Protogerou et al., 2017; Vogel et al., 2014), or experiential diversity (Chowdhury, 2005; Thiess et al., 2016; Zhou et al., 2015); team non-task-related diversity includes age diversity, gender diversity (Chowdhury, 2005; Foo et al., 2005; Steffens et al., 2012), passion diversity (Cardon et al. 2017b; De Mol et al., 2019), or cognitive diversity (Chowdhury, 2005; Vanaelst et al., 2006).

Chapter 2 reviews the literature exploring individual-level and team-level entrepreneurial characteristics using qualitative methods and the studies empirically examining the impact of these characteristics both on the startup selection and performance. Considering that this thesis questions the relationship between entrepreneurial characteristics and performance of startups in accelerators, the combination of exploratory approaches used in studies discovering entrepreneurial characteristics and explanatory approaches in studies explaining the effect of these characteristics on outcome variables enables to answer the research question. Throughout the literature review, it is seen that most of the studies focus on entrepreneurial characteristics at either team level or individual level. Moreover, some of the current studies examining entrepreneurial characteristics intend to make inferences on entrepreneurial teams with the results obtained from individual-level (i.e., the entrepreneur)

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analysis. In other words, exploring or explaining the entrepreneurial characteristics at the individual level, and then discussing the findings over entrepreneurial teams lead to confusion in such studies.

Contrary to such studies, this thesis primarily aims to explore individual-level and team-level entrepreneurial characteristics as apart from each other based on the selection criteria of acceleration programs in Turkey with qualitative research methods. Considering individual and team level characteristics separately is the initial contribution of this thesis which allows a comprehensive and clear understanding of individual entrepreneurs, entrepreneurial teams and entrepreneurial characteristics. In addition, this thesis intends to explain the impact of these individual-level and team-level characteristics on startup performance by employing quantitative research methods. Accordingly, investigating individual and team level characteristics separately in the quantitative analysis is another contribution of this thesis that allows explaining the divergent impact of entrepreneurs and entrepreneurial teams on entrepreneurial performance. Examining the relationship between entrepreneurial characteristics and startup performance based on the selection criteria of accelerators leads to the examination of the selection mechanism, which has not been elaborated comprehensively in the academic literature (Yin & Luo, 2018). Additionally, this thesis contributes to the literature by focusing on the selection mechanism of accelerators and entrepreneur / entrepreneurial team characteristics in Turkey, as a developing country, complementing the majority of studies analyzing developed countries. Moreover, studies examining startup performance mostly focus on growth and survival rates as output variables. Since this thesis focuses on early-stage startups, factors such as growth or survival are difficult to observe. Performance indicators are employed as binary output variables in this thesis that indicate the potential of early-stage startups in a shorter time, such as launching new product, making the first sale, and obtaining external financing.

In order to make these examinations, this thesis analyzes the qualitative and the quantitative data collected within the scope of a TUBITAK project. The qualitative data are collected through interviews with the managers of 14 active acceleration programs[2] operating in Istanbul and Ankara, while the quantitative data are collected through questionnaires administrated to 122 startups that already benefit or graduated from these acceleration programs interviewed. The qualitative data are analyzed using QDA Miner to discover patterns and themes of the interview data regarding selection approaches, and entrepreneur

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[2] Among the 14 programs, there are also programs that function similar to the incubation mechanism. After that, all of these programs are mentioned as accelerators.

and team characteristics. Furthermore, the quantitative data are analyzed using Stata in order to explain startup performance with individual-level and team-level entrepreneurial characteristics obtained from interview data. Accordingly, the impacts of entrepreneurial characteristics on the market-related, finance-related, and program-related performance of startups are analyzed with probit and OLS models. Chapter 3 explains the details of this mixed-methods research design employed, as well as the data collection and data analysis methods assigned both in the qualitative and the quantitative parts.

The main findings in the qualitative part (Chapter 4, section 4.1) indicate that acceleration programs consider the criteria related to the entrepreneur/ team-oriented selection more than the idea-oriented selection. Moreover, team-level entrepreneurial characteristics become more critical than individual-level entrepreneurial characteristics. However, quantitative results (Chapter 4, section 4.2) indicate that individual-level characteristics have higher influence on startup performance. Nevertheless, the negative effects of individual-level passion and self-efficacy, which are associated with successful outcomes in the literature, stand out. Contrary to qualitative results, none of the entrepreneurial team characteristics affect the market-related and finance-related performance of early-stage startups. Team-level characteristics become influential on the program-related performance of startups. Yet, it is found that teams acting upon planned behaviors utilize the services provided by the acceleration program better rather than flexible and experimental teams. While this finding contradicts the literature, partially supports the qualitative findings.

This thesis consists of five chapters in total. The second chapter that follows the introduction reviews the literature examining the acceleration format, startup selection mechanisms, individual-level entrepreneur characteristics, and entrepreneurial team characteristics. Chapter 3 describes the mixed-methods research design adopted in this thesis, data collection and data analysis methods, as well as the details on variables employed in the quantitative part. Furthermore, Chapter 4 indicates the research results obtained from both the qualitative and quantitative research phases. In Chapter 5, the theoretical implications of the findings in Chapter 4 are discussed. Moreover, Chapter 5 includes policy recommendations for government and practical implications for entrepreneurs and accelerators, as well as the limitations of this thesis and possible suggestions for future research.

CHAPTER 2

LITERATURE REVIEW

According to evolutionary economist Schumpeter, productiveness of the entrepreneurs in an economy makes sustained economic growth possible (Aerts et al., 2007). Considering the uncertain conditions of the current world economy, the survival of the entrepreneurial firms and the creation of new ventures are even more difficult. Lumpkin and Ireland (1988) emphasize the need for mechanisms that increase the probability of successful new ventures to deploy scarce resources. Incubation is such a mechanism designed to provide a supportive environment for entrepreneurs to survive, assist growth, and achieve success in their new ventures.

2.1 Incubators

Incubators are described as organizations that promote local employment creation, economic development, innovativeness, and technology transfer through the emergence of technology-based startup companies (Bergek & Norrman, 2008; Peters et al., 2004). Hackett and Dilts (2004b) explain incubation as a shared office space and equipment facility to support new ventures by providing strategic and value-adding business assistance services in a broad network of individuals, organizations, industry contacts, universities, and government.

In the literature, business incubators are classified differently according to their objectives. According to Aernoudt (2004), all types of incubators build their primary objective on dealing with market failure addressing a specific gap that differentiates incubators from each other. He introduces five main types of incubators as; 1) mixed incubators to deal with business gap, 2) economic development incubators concerning regional or local disparity gap, 3) technology incubators to cope with entrepreneurial gap, 4) social incubators by focusing on social gap and 5) basic research incubators to handle the discovery gap. Another typology considers three main types of incubators as university-based incubators, for-profit incubators, and non-profit incubators (Peters et al., 2004). Barbero et al. (2012) discussed the effect of incubator typology on incubatee performance through four archetypes, which are

basic research incubators, university incubators, economic development incubators, and private incubators. By focusing on business incubators, Grimaldi and Grandi (2005) identified the business incubators in four main categories: business innovation centres, university business incubators, independent private incubators, and corporate private incubators.

As each archetype aims mainly to achieve successful venture creation and growth, their distinguished objectives and priorities make them different from each other (Bollingtoft & Ulhoi, 2005). The incubation mechanism facilitates emerging ventures by offering various support services in building business and marketing plans, management team formation, or access to consultancy services and specialized professional assistance (Grimaldi & Grandi, 2005). Regarding services provided, Bergek and Norrman (2008) summarized the main services of incubation model through the concepts of infrastructure supply (involving office and equipment facilities), business support (consisting of training/education activities and consultation on business development), and mediation (referring to intermediary role of the incubators which connect ventures to the relevant innovation systems). According to Carayannis and von Zedtwitz (2005), despite the variation of incubator types, they mainly offer networking services, administrative services, process support, and access to physical resources and capital.

2.2 Accelerators: As a Distinct Entrepreneurial Support Mechanism

Compared to these similar services provided by incubators, some scholars consider "accelerator" as a particular type of incubator (Crişan et al., 2019) which mainly offers a condensed program with specific services to early-stage startups (Yin & Luo, 2018). On the other hand, some studies suggest that accelerators have emerged in consequence of the evolution of the incubation industry (Grimaldi & Grandi, 2005) as the new generation incubation model aspires to speed up successful venture growth and survival (Pauwels et al., 2016). Indeed, such studies argue that accelerators emerge as a particular and unique organizational form resulting from the changing demands of entrepreneurial ecosystems in which nascent ventures are in need of a dynamic support mechanism offering intense and customized assistance for their innovative activities (Cohen et al., 2019; Crişan et al., 2019; Pauwels et al., 2016). Accelerators offer an intensive program with limited duration by providing services including a small amount of seed capital, education on entrepreneurship, seminars upon entrepreneurs' requests, sector-specific mentorship, broad networking, and access to external funding resources (Cohen, 2013; Cohen & Hochberg, 2014; Cohen et al., 2019).

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There are structural differences between the accelerator and the traditional incubator model (Pauwels et al., 2016). Table 1 summarizes the main differences between incubation and acceleration format. Besides entrepreneurial teams, individual entrepreneurs can also be admitted to an incubation program in the idea phase, at early or late venture stages for 1 to 5 years, while accelerators accept cohort-based early-stage startups in a fixed short duration to support venture growth (Cohen, 2013; Yin & Luo, 2018). Pauwels et al. (2016) explain accelerators as the mechanism that provides intangible and knowledge intensive business services, thus differentiate accelerators from incubators in terms of support they provide. The research argues that, while incubators fundamentally provide physical resources to incubatees, accelerators have not emerged to meet the need of the office space or equipment.

In terms of services they provide, Cohen and Hochberg (2014) made a comparison between accelerators and incubators (see Table 1). The authors stated that accelerators provide intense mentoring sessions while incubators supply minimal mentorship. Accelerators provide exclusive trainings to the ventures in a variety of topics related to entrepreneurship and business management, but there are ad hoc trainings in the incubation model. Moreover, accelerators aim to provide such training and mentoring services efficiently to participants of similar levels by accepting cohort-based ventures to their programs. With regard to their business model, a typical accelerator provides seed capital or become equity stake-holder to admitted ventures in return for cash while incubators provide physical resources to incubatees in provision of rent. Furthermore, one of the most distinctive features of accelerators is that the intensive program ends with a public presentation named as "demo day" which ventures present their business' to potential investors (Cohen & Hochberg, 2014). Demo days are graduation days on which successful startups have the chance to attract external funding or investment (Pauwels et al., 2016).

Table 1: Fundamental Differences Between Incubators and Accelerators

	Incubators	Accelerators
Business model	Non-profit	Non-profit or For-profit
	Rent	Investment
Duration	Flexible	Fixed
	1-5 years	3-6 months
Cohorts	No	Yes
Venture stage	Early or Late	Early
Selection	Non-competitive	Competitive
	Ongoing	Cyclical
Graduation	Flexible	Fixed
Education	Ad-hoc trainings	Seminars
Mentorship	Minimal	Intense
Source: Adapted from Cohen (2013, p.20); Cohen & Hochberg (2014, p.9)		

2.3 Firm Success

The performance of entrepreneurial ventures within incubators and accelerators has been investigated by various success indicators. The most common measure of success is considered as graduation in business incubators (Bruneel et al., 2012; Hackett & Dilts, 2004b, 2008; Peters et al., 2004). Besides graduation, timely graduation and positive traction outcomes are regarded as critical success indicators of startup companies in accelerators due to an established timeline and strict graduation policies (Cohen, 2013; Cohen & Hochberg, 2014). To be able to graduate or timely graduate, viability and survival of new ventures are required that indicates venture success (Schwartz & Göthner, 2009). With respect to tenants' survival and failure, Cohen (2013) indicates that accelerator companies reach quicker success or fail more frequently than non-accelerator companies in limited-duration. Thereby, accelerators help to resolve uncertainty related to venture viability and quality in a cost-effective and time-effective way. This situation enables successful entrepreneurial firms to graduate by finding external funding/investor or allowing their acquisition while weak ventures decide whether to continue or shut down (Yu, 2019).

2.3.1   Firm Success and Incubator/Accelerator Success

Services offered to new ventures by incubators may affect venture success (Martinez et al., 2018) since the support services mainly aim to achieve strengthened venture growth, viability, and survivability or enable new venture creation. Aerts et al. (2007) found that services with informal support and personal guidance improve effective cooperation between incubators and tenants. The strengthened cooperation increases the survival probability of ventures. In the acceleration format, the intensive mentorship mechanism actualizes the informal support and personal guidance which help ventures to solve problems that they face (Cohen, 2013; Pauwels et al., 2016). The solution of the problems allows new enterprises to survive and grow. Ensuring the progress of startups by providing various services and support is a must for both incubator and accelerator success (Aerts et al., 2007; Cohen & Hochberg, 2014; Gibson & Wiggins, 2003; Pauwels et al., 2016). Hackett and Dilts (2004b) address that venture progress renders expectation from the program which is an essential determinant of incubator success. According to European Commission (2002), job and wealth creation by ensuring the generation of new businesses and growth of entrepreneurial firms indicate incubator success. In the incubation process, it is possible for enterprises to delay their graduation so that they can grow in order to achieve the best outcome with job and wealth creation (Cohen, 2013). In other words, the graduation of the incubatees after accomplishing the best outcomes is the focal point in the success of the incubators. Unlike

incubators, the best outcome for accelerators is the noticeable traction of ventures by achieving rapid growth in the short duration. The more ventures gain acceleration by attracting external financing or actively operating in the market, the more an accelerator is successful (Cohen & Hochberg, 2014; Pauwels et al., 2016).

2.3.2   Incubator/Accelerator Success and Services

Barbero et al. (2012) found that archetypes that specified clear objectives are likely to meet them by providing a variety of services and perform better than other types of incubators. Besides the "nature of these services", how they are provided (Cornelius & Bhabra-Remedios, 2003), and the quality of these services (Hackett & Dilts, 2004a; Schwartz & Göthner, 2009) have a significant effect on incubator performance. Bruneel et al. (2012) built their research on the value proposition of business incubators to analyze the impact of incubation services. They suggested that incubators should set their value proposition key to their objectives to provide value-added services. If they do not, a mismatch occurs between the services they supply and the demand. The mismatch limits incubatee success, as well as incubator success. Ensuring the match between objectives of business incubators and tenant profile enables incubators to perform better since the incubators' success is highly related to the efficient usage of services provided (Peters et al., 2004). The previous literature that examines the correlation of incubators' mission, incubator performance, and incubation services concluded that the "match" between incubator and incubatee is important.

According to Wiggins and Gibson (2003), as the implementation of the value-added services distinguishes successful incubators from unsuccessful ones, selecting suitable ventures that fit with the incubator's mission is another crucial success factor for incubators. They concluded that developing value-added services based on incubators' objectives, and rational selection criteria to find promising ventures are critical tasks for incubators to ensure their success. A well-formed tenant selection process enables the acceptance of entrepreneur profiles that fit with the objectives of the incubator (Peters et al., 2004). According to Aerts et al. (2007), assuring the incubator-tenant cohesion potential by a quality selection process increases the probability of tenant success, and thus incubator success.

2.4 Accelerators and Selection of Ventures

The lack of selection criteria and exit policy proposition limit the utilization of provided services by prospective tenants (Bruneel et al., 2012). Despite this inefficiency in business incubation model, the accelerator format has been built upon admission of the fittest early-stage ventures by a careful selection mechanism based on objectives of accelerators (Cohen

& Hochberg, 2014). The authors stated that the intensive program structure in a limited duration forces accelerators to carry out a careful selection and strict graduation policy. Yin and Lou (2018) emphasized that the quality of selected entrepreneurial firms is one of the most influential determinants of accelerators' success. They argue that the selection process is essential for startup success as well, therefore, accelerators strive to attract high-potential startups according to certain success criteria.

2.4.1 Venture Selection

Entrepreneurial success is more likely when factors related to the market, effort, opportunity and the team fit together (Navis & Glynn, 2011). The harmony of these factors enables new ventures to prove their success. Since the achievement of survival and growth is desirable for entrepreneurial firms, a good selection mechanism enables accelerators and incubators to select the most promising ventures. In addition to accelerators and incubators, selection is also highly essential for investors as external entrepreneurial financing sources such as angel investors, venture capitalists, or corporate venture capital firms (Eckhardt et al., 2006). There is a competitive and aggressive selection mechanism in accelerators since their objectives are focused on rapid growth and profitability in short time (Cohen & Hochberg, 2014; Yin & Luo, 2018).

A recent study by Yin and Luo (2018) shows that the selection mechanism of accelerators have not been elaborated comprehensively in the academic literature, while there are several studies on selection mechanism of incubators and investors. The authors explore selection criteria and process in accelerators by analyzing the data obtained from the first seed accelerator in Southeast Asia. They found that the selection criteria differentiate across different stages of decision process in accelerators compared to incubators and investors. For instance, some criteria become influential during screening stage and some are effective during the final selection stage in accelerators. Although accelerators, incubators and investors differ from each other by prioritizing selection criteria according to their objectives, existing studies demonstrate that there are similar approaches on venture selection. For example, studies focusing on screening practices of business incubators remark that management team, market factors and financial ratios are main indicators in selection (Aerts et al, 2007; Lumpkin & Ireland, 1988). According to Hackett and Dilts (2008), selection by market characteristics, differential attributes of entrepreneurs/teams in terms of knowledge and behavior, and product/service characteristics, as well as selection by manager characteristics are considered when incubators select tenants.

Similar to incubators, an early study, in which Feeney et al. (1999) focus on private investors' investment criteria, highlights that attributes related to entrepreneur and business are two critical approaches in the investment decision process. Furthermore, Cardon et al. (2017a) demonstrate the essence of some motivational characteristics of entrepreneurial teams in angel investing decisions in addition to market related and management related factors (Carpentier & Suret, 2015). In venture capital decisions, Hisrich and Jankowicz (1990) investigate critical investment criteria into three categories as; (i) management of the venture, (ii) unique opportunity of the product/service, and (iii) appropriate return. As mentioned before, studies on accelerators are more or less silent on the selection mechanism in accelerators. Existing studies briefly touched on the selection approaches to explore the complexity of the accelerator format. Hoffman and Kelley (2012), for instance, conducted an exploratory case study of three leading accelerator companies operating in the United States. Their findings indicate that the primary selection criterion is whether the accelerator company can make a difference to the startup. Further, strong leadership within the startup and addressing a real problem are other important criteria.

Looking at the studies examining the selection criteria of incubators, investors and accelerators, it is possible to observe two main approaches for selection: business idea-oriented criteria and entrepreneur-oriented criteria. Supporting the overall categorization of business idea and entrepreneur-oriented selection; Bergek and Norrman (2008) develop a framework using data from 16 incubators located in Sweden. The framework indicates that the selection is done based on idea-focused criteria and entrepreneur/ team-focused criteria. The authors state that incubator managers evaluate the viability of the idea, the market and the profit potential in the idea-focused selection approach. The idea related selection concept includes criteria such as uniqueness, innovativeness, and sustainability to measure the quality of idea; relative advantage, competitiveness, accessibility to customers, and sector to figure out market opportunities; financial strength, sales and investment attraction to assess profit potential of the venture (Bruneel et al., 2012; Carpentier & Suret, 2015; Hackett & Dilts, 2008; Lumpkin & Ireland, 1988; Yin & Lou, 2018).

2.5 Entrepreneur/ Team-Focused Selection

In entrepreneur/team-focused selection, criteria related competence, driving forces, and characteristics of the entrepreneurs or the venture teams are evaluated (Bergek & Norrman, 2008). The entrepreneur/team-focused approach aims to measure the potential of entrepreneurs and entrepreneurial teams (Yin & Luo, 2018). Within this approach, criteria related to personal characteristics and managerial characteristics are most commonly studied.

Entrepreneur oriented selection criteria focus on the characteristics at the individual level in entrepreneurial teams. In other words, some of the attributes of the members that form an entrepreneurial team are considered in the selection. Some of these attributes are related to the demographic characteristics of entrepreneurs such as age, sex, and education which have been frequently analyzed in empirical studies (Aerts et al., 2007; Chowdhury, 2005; Foo et al., 2005; Lumpkin & Ireland, 1988; Vogel et al, 2014). In addition to demographic characteristics, exploratory studies lay emphasis on entrepreneurs' personal characteristics in which their qualities, skills and knowledge are evaluated (Cardon & Kirk, 2015; Chen et al., 1998; Pauwels et al., 2016).

In team-oriented selection approach, managerial characteristics, competence, and capability of the teams are taken into consideration. Regarding managerial characteristics, Hackett and Dilts (2004a) suggest using technical expertise, knowledge, and experience of an entrepreneurial team as critical selection criteria. Experienced entrepreneurial teams are associated with possible future success in which prior employment/work experience, managerial experience, and entrepreneurship experience are considered (Aerts et al., 2007; Bergek & Norrman, 2008; Hackett and Dilts, 2004a, 2008; Lumpkin & Ireland, 1988; Yin & Luo, 2018). Criteria that screen the quality and competence of an entrepreneurial team are crucial to evaluate the team potential as well (Lumpkin & Ireland, 1988). Using the screening criteria suggested by Lumpkin and Ireland (1988), Aerts et al. (2007) point out the importance of teams' capabilities as a critical factor to foresee entrepreneurial success. Criteria related to technical, non-technical and entrepreneurial skills which include motivational and competency characteristic of teams are components of a capable team (Carpentier & Suret, 2015; Feeney et al., 1999; Yin & Lou, 2018).

Studies examining the selection criteria of incubators, accelerators or investors often emphasize that the team is one of the primary selection criteria. An early qualitative study notes that investors tend to reject ventures with "one-man shows" and team is the key investment criterion of private investors (Feeney et al., 1999). In an empirical study using data of two leading accelerators operating in the United States, Smith and Hannigan (2015) indicate that the accelerators admit team-based ventures to their programmes rather than a single founder. Similarly, Pauwels et al. (2016) highlight that, all accelerators in their sample commonly confirmed that team is the most important selection factor. Together with team criterion, there are findings on the impact of both entrepreneur and team characteristics in selection. For example, Pauwels et al. (2016) state that one of the accelerators in their sample considers both the personal quality of the entrepreneurs and the quality of teams. Current

studies on the entrepreneur/team-focused selection approach include findings and analyses concerning the impact of both team and entrepreneur characteristics. Accordingly, the next sections elaborately review these findings of the existing literature regarding entrepreneur and team characteristics in selection.

2.5.1   Entrepreneur Characteristics in Selection

The components of an entrepreneurial team are the team members and founders. Therefore, selection criteria pay attention to the characteristics of both team members and the founders. Entrepreneur characteristics can be categorized under 3 main headings as personal knowledge, personal quality, and demographic characteristics. Table 2 demonstrates studies examining entrepreneur characteristics reviewed in section 2.5.1.

2.5.1.1 Personal knowledge

The current literature emphasizes that criteria related to personal knowledge and the expertise of entrepreneurs are particularly considered in selection. According to Shane and Venkataraman (2000), the knowledge stock of an entrepreneur builds an "information corridor" which shapes her/his unique perception and ability to explore entrepreneurial opportunities. Correspondingly, the educational background, educational level, and experiences of an entrepreneur are characteristics that shape their knowledge stock and indicate their knowledge-based competence. Vogel et al (2014) argue that the expertise and ability of entrepreneurs regarding their task highly depend on the education they receive. In other words, functional skill sets of entrepreneurs are shaped by their fields of education. For example, a business-trained member usually tends to focus on the marketing and sales strategies of a product or service, while an engineering-based member offers technical enhancements and solutions (Foo et al., 2005). In addition to the field of education, Chen et al. (1998) indicate that courses taken also have an impact on task related skills. More specifically, the authors find that MBA students taking the entrepreneurship course have better managerial, marketing, and finance functions compared to those taking management and psychology courses (Chen et al., 1998).

Along with educational background, the level of education is another indicator associated with task-related expertise. According to Foo et al. (2005), higher levels of education bring in conceptual skill sets, while the lower levels bring in practical based abilities. For instance, a graduate-level entrepreneur tends to be responsible for advanced tasks that require complex functionality such as engineering design (Foo et al., 2005; Vogel et al., 2014). Hisrich and

Jankowicz (1990) state that venture capitalists in their sample associate the entrepreneurs' greater levels of technical education with technically advanced products or services targeting a market niche which is an important criterion in venture selection. Protogerou et al. (2017) suggest that education level of entrepreneurs have a positive effect on their innovative performance. Learning outcome in higher education is the complex specialization knowledge as a source of innovative activities. Therefore, Protogerou et al. (2017) indicate that the complex specialization knowledge acquired through higher education increases the innovative activities requiring advanced specialization. The ability of startups to produce innovative products or services is also an important selection criterion (Aernoudt, 2004; Bergek and Norrman, 2008; Bruneel et al., 2012; Clarysse et al., 2005).

Furthermore, experience is the most frequently studied attribute among criteria denoting personal knowledge of entrepreneurs. Functional quality of ventures is associated with experiences of entrepreneurs in which employment, management, startup, and industry experiences are considered. Prior employment/work experience refers to general business abilities such as decision making, negotiating, and problem-solving, while management experience enables entrepreneurs to acquire skills regarding entrepreneurial strategy (Carpentier & Suret, 2015). According to private investors, the lack of management experience of an entrepreneur refers to inadequacy in management knowledge (Feeney et al., 1999). Thus, management track record is regarded as one of the most desirable entrepreneur characteristics by investors. Similarly, Hisrich and Jankowicz (1990) suggest that entrepreneurs' managerial or executive experience at a strategic level is an attribute considered by venture capitalists in selection. This attribute shows that the entrepreneur can professionally manage a startup and a team. In a similar vein, Vogel et al. (2014) examine the impact of leadership experience of entrepreneurs on funding decisions. The authors state that an entrepreneurial venture is likely to benefit from leadership experience if the member takes part in the management team.

Individuals who have established a venture before are considered as having startup experience that is identified as an important human capital in entrepreneurship literature (Carpentier & Suret, 2015; Steffens et al., 2012). In the literature, there is no clear distinction between startup experience at the individual level and at the team level. Most studies analyze both individual and team level startup experience together. Although an entrepreneur-based measurement is made, most of the analyses are performed considering the management/founding teams. The startup experience here is based on studies that empirically examine the previous startup experience of entrepreneurs and that measure the

startup experience as none, single or multiple previous startups. Despite most of the studies suggesting that learning by experience in entrepreneurship improves future entrepreneurial performance, Steffens et al. (2012) find that prior startup experience has no significant effect on entrepreneurial performance. Many studies examining the impact of startup experience on venture selection also indicate a positive correlation. According to such findings, most of the ventures accepted into an incubation process have been established by serial entrepreneurs (Bruneel et al., 2012) or entrepreneurs with prior startup experience tend to attract more venture capital (Zhang, 2011). On the other hand, Carpentier and Suret (2015) state that it has no effect on investment decisions, but entrepreneurs without startup experience are rejected more.

As for industry experience, the greater experience in the industrial sector of the startup refers to greater market knowledge acquisition and expertise. According to Hisrich and Jankowicz (1990), an entrepreneur's prior experience in the same industry is an indication of market awareness and thus provides a competitive advantage to the startup. Therefore, entrepreneurs' relevant experience in the same industry in which the present startup operates is an essential criterion in selection in addition to management experience. Likewise, Carpentier and Suret (2015) assert that "being funded is clearly related to entrepreneurs' industry experience which dominates the effect of management and startup experience" (p.819). Thus, the authors observed a statistically significant and positive relationship between industry experience and angel investment decisions. Protogerou et al. (2017) specify that entrepreneurs' occupational experience in the same sector has a significant effect on innovative performance.

2.5.1.2 Personal attitudes

In entrepreneurship, the personal quality of entrepreneurs is associated with successful startup outcomes. Venture capitalists have a strong belief that the quality of entrepreneurs influences their performance (Kakati, 2003). Moreover, investors tend to reject entrepreneurs with poor personal quality since it is perceived as a lack of vision (Feeney et al., 1999). Similarly, some selection criteria of incubators are positioned to judge entrepreneurs' personality, which is regarded as one of the driving forces of entrepreneurial success (Bergek & Norrman, 2008). The characteristics related to the personal quality of entrepreneurs demonstrate their soft skills, which bring cognitive, behavioral, and motivational competence (Chen et al., 2009; De Mol et al., 2019).

Regarding characteristics that bring motivational and behavioral competence, Lumpkin and Ireland (1988) state that aggressiveness and persistence are denoted as critical success factors in selection. Integrity and openness imply the credibility and honesty of entrepreneurs which are valuable attributes (Feeney et al., 1999). One of the accelerators in the sample of Pauwels et al. (2016) specifies the criteria indicating personal quality as ambition, tenacity, frugality, openness, and flexibility. In addition to these criteria associated with startup success, desire for success itself, which is also addressed as passion in many studies, is one of the qualifying criteria for venture capitalists (Kakati, 2003). The entrepreneurial passion is defined as "an entrepreneur's intense affective state accompanied by cognitive and behavioral manifestations of high personal value" by Chen et al. (2009, p.201). In line with this definition, De Mol et al. (2019) confirm previous studies stating that entrepreneurial passion at the individual level brings several cognitive and motivational consequences. There is a significant relationship between persistence, one of the motivational consequences, and the passion of entrepreneurs to invent a product/service and found a venture (Cardon & Kirk, 2015).

Entrepreneurs need to be passionate to deal with uncertain and challenging situations. Therefore, perceived entrepreneurial passion has a positive effect on angel investors' decision according to Mitteness et al. (2012). On the contrary, Chen et al. (2009) assert that entrepreneurial passion has no positive effect on investment decisions. Considering the entrepreneurial passion as enthusiasm, Cardon et al. (2017a) indicate that enthusiasm is not an important criterion for investors. However, the relationship between enthusiasm and investment decisions becomes significant if investors perceive commitment (Cardon et al., 2017a). In entrepreneurship, commitment is defined as the dedication, loyalty, and determination of the entrepreneur to the startup or the product/service proposed (Chen et al., 2009; Chowdhury, 2005). Commitment is an important criterion in startup selection and personal investment (Lumpkin & Ireland, 1988) is considered as one of the indicators of commitment of entrepreneurs. Investors consider entrepreneurs' investment of personal money to their venture as an indication of commitment which positively affects investment decisions (Cardon et al., 2017a; Cassar & Friedman, 2009).

One of the most studied personal quality characteristics in entrepreneurship literature is self-efficacy and is associated with both the cognitive and motivational competence of entrepreneurs (Cardon & Kirk, 2015). Self-efficacy is defined as having the necessary skills related to entrepreneurial individuals' tasks and strongly believing in their sufficiency and capacity to turn those skills into a successful outcome (Bandura, 1997; Martinez et al.,

2018). Entrepreneurs with high levels of self-efficacy bring more devotion to tasks, more willingness to pursue efforts, more resistance against challenging situations; and thus they perform more effectively (Chen et al., 1998). It is stated that self-efficacy affects entrepreneurial intentions positively (Martinez et al., 2018) and increases the likelihood of founding and running an entrepreneurial firm (Cassar & Friedman, 2009) which is an important selection criterion for incubators.

Although it provides overall motivational and cognitive advantages to entrepreneurs, Chen et al. (1998) remind that there is a possibility of going away from reality when self-efficacy causes overconfidence. According to Feeney et al. (1999), investors regard realism as one of the most desirable attributes of entrepreneurs. Therefore, investors tend to reject entrepreneurs who are extremely optimistic, and have unrealistic goals, expectations, and forecasts (Feeney et al., 1999). The existence of a realistic perspective enables entrepreneurs to allocate available resources effectively, able to produce backup strategies (Kakati, 2003), and aware of market opportunities (Aerts et al., 2007). Accordingly, based on their qualitative results Hisrich and Jankowicz (1990) find that a pragmatic approach matters in venture capital decisions. Moreover, one of their respondents tries to avoid investing in creative entrepreneurs by asserting that creativity contradicts pragmatism. However, in the majority of the existing researches, creativity is associated with the cognitive competence of entrepreneurs and is considered as one of the critical success criteria (Aerts et al., 2007; Lumpkin & Ireland, 1988; Kakati, 2003).

2.5.1.3 Demographic characteristics

Many studies examining entrepreneurial characteristics focus on demographic characteristics such as age, gender, nationality, educational attainment, and employment status. There is no study in the literature examining the direct effect of entrepreneurs' demographic characteristics on startup performance or selection. The literature focuses more on demographic diversity of the teams. Although these characteristics are measured at the individual level, the analyses are performed to examine team diversity. As Foo et al. (2005) mention, these attributes affect one's experiences and shape expectations. For example, the interests and priorities of different age groups are different (Foo et al., 2005) and consequently people with similar ages are more likely to meet and communicate with each other (Steffens et al., 2012). Likewise, employment status also affects entrepreneurs' priorities because being actively employed provides greater financial resources and may positively or negatively affect entrepreneurial actions (Foo et al., 2005). Further, nationality

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pertains to personal identity and cultural values which also can shape entrepreneurs' intentions and actions (Steffens et al., 2012; Vogel et al., 2014).

Regarding gender in entrepreneurship, Protogerou et al. (2017) indicate that female entrepreneurs tend to attempt less high-risk actions. As entrepreneurship itself is highly risky, Chen et al. (1998) show that male students have higher levels of entrepreneurship intention than female students. As Foo et al. (2005) mention the extant literature emphasize that females value cooperation and are more prone to collaboration than men, and Protogerou et al. (2017) suggest that female representation in the startup management may help boosting the opportunities. Chen et al. (1998) do not find significant support for the impact of age and gender on entrepreneurial self-efficacy, yet age becomes significant regarding financial self-efficacy. Moreover, the results show that education (presence of college degree) has no significant influence on entrepreneurial self-efficacy. However, it is found that educational attainment (presence of university degree) is positively related to entrepreneurial activities (Protogerou et al., 2017). Furthermore, Smith and Hannigan (2015) analyze the effect of educational institutes that entrepreneurs graduated from on accelerators' selection decisions. They find that the startups with founders who graduated from educational institutions that have ties to the accelerators are preferred in selection.

Table 2: Summary of Previously Studied Entrepreneur Characteristics

Entrepreneur Characteristics		Previous Studies
Personal Knowledge	Educational background	Chen et al. (1998); Foo et al. (2005); Vogel et al. (2014)
	Educational level	Foo et al. (2005); Hisrich & Jankowicz (1990); Protogerou et al. (2017); Vogel et al. (2014)
	Functional background	Chowdhury (2005); Yusubova et al. (2019)
	Industry experience	Carpentier & Suret (2015); Hisrich & Jankowicz (1990); Protogerou et al. (2017)
	Managerial experience	Carpentier & Suret (2015); Feeney et al. (1999); Hisrich & Jankowicz (1990); Vogel et al. (2014)
	Startup experience	Bruneel et al. (2012); Carpentier & Suret (2015); Steffens et al. (2012); Vanaelst et al. (2006); Zhang (2011)
	Technical expertise	Hisrich & Jankowicz (1990); Vogel et al. (2014)
Personal Attitudes	Commitment	Cardon et al. (2017a); Cassar & Friedman (2009); Lumpkin & Ireland (1988)
	Creativity	Aerts et al. (2007); Lumpkin & Ireland (1988); Kakati (2003)
	Credibility / honesty	Feeney et al. (1999)
	Enthusiasm	Cardon et al. (2017a)
	Flexibility / openness	Feeney et al. (1999); Pauwels et al. (2016)
	Passion	Cardon & Kirk (2015); Chen et al. (2009); De Mol et al. (2019); Mitteness et al. (2012)
	Persistence	Cardon & Kirk (2015); Lumpkin & Ireland (1988)
	Realistic perspective	Feeney et al. (1999); Hisrich & Jankowicz (1990); Kakati (2003)
	Self-efficacy	Bandura (1997); Cardon & Kirk (2015); Cassar & Friedman (2009) ;Chen et al. (1998); Martinez et al. (2018)

Table 2 (continued)

Demographic Factors		
	Age	Chen et al. (1998); Chowdhury (2005); Foo et al. (2005); Steffens et al. (2012)
	Educational attainment	Protogerou et al. (2017)
	Employment status	Foo et al. (2005); Visintin and Pittino (2014)
	Gender	Chen et al. (1998); Chowdhury (2005); Foo et al. (2005); Protogerou et al. (2017); Steffens et al. (2012); Vogel et al. (2014)
	Nationality	Steffens et al. (2012); Vogel et al. (2014)

2.5.2   Team Characteristics in Selection

As the existing literature points out, the team itself is an important selection criterion (Feeney et al., 1999; Pauwels et al., 2016; Smith & Hannigan; 2015). For this reason, there are many studies that examine the effect of team characteristics on both team selection and team performance. The findings of these studies can be reviewed as characteristics related to team diversity, team knowledge, and team quality. Table 3 demonstrates studies examining entrepreneurial team characteristics reviewed in section 2.5.2.

2.5.2.1 Team diversity

There are many studies exploring and testing the impact of team diversity on both entrepreneurial performance and selection or investment decisions. Most of the entrepreneur characteristics, reviewed in the previous section, are subject to research on entrepreneurial team diversity. It is found that team heterogeneity has an overall positive influence on external funding decisions (Vogel et al., 2014) and on team performance in the long term (Steffens et al., 2012). However, some studies (e.g. Foo et al., 2005) show that the effect of team diversity differentiates according to the type of diversity. Therefore, these studies examine team characteristics regarding entrepreneurial team diversity by looking at task-related diversity (or functional diversity) and non-task-related diversity (or relations-oriented and demographic diversity) (Chowdhury, 2005; Foo et al., 2005; Vogel et al., 2014).

In the literature, the non-task-related diversity of the teams is studied as demographic diversity and relationship-oriented diversity. Non-task diversity corresponds to the differentiation of the team members in terms of demographic attributes such as age, gender, nationality, and employment status, as well as differentiation of the team members in terms of motivational and behavioral attributes such as passion and cognition (De Mol et al., 2019; Foo et al., 2005; Vanaelst et al., 2006; Vogel et al., 2014). Entrepreneurs who are homogenous in age and gender are likely to have common experiences expectations, so they

tend to team-up with each other (Foo et al., 2005; Steffens et al., 2012; Vogel et al., 2014). Accordingly, Steffens et al. (2012) assume that homogeneous teams will perform well in the short term. However, contrary to expectations, neither age nor gender homogeneity has a significant effect on performance, but it has been observed that age diversity within teams positively affect long-term performance. Similarly, the empirical study of Chowdhury (2005) shows that team effectiveness is not significantly affected by age and gender diversity, yet has a negative correlation with age heterogeneity. Moreover, demographic diversity does not affect both team commitment and team level cognitive comprehensiveness. According to these findings, it is possible to say that characteristics related to team quality are independent of the demographic differences of team members.

Furthermore, Foo et al. (2005) claim that non-task diversity harms the efficiency of the team because of that demographic diversity increases the probability of in-team conflict, and thus team outcomes can be negatively affected. Confirming their arguments, the authors find that heterogeneous entrepreneurial teams in terms of age and employment status get lower evaluations in business idea competition. The reason behind the negative effect of diversity may be the communication problems caused by non-mutual interests and priorities of different age groups and members with different employment status within the team. However, by focusing on academic status, Visintin and Pittino (2014) conclude that the presence of both academic and non-academic members within university-based spin-off companies enhances performance. In other words, the balance in terms of academic status within an academic startup is required for successful commercialization of scientific outputs.

Foo et al. (2005) state that gender diversity has no important influence on external evaluations of the teams that are mostly heterogeneous, but male-dominated. However, based on a field experiment, balanced teams in terms of gender tend to outperform male-dominated ones (Hoogendoorn et al., 2013). Similarly, Vogel et al. (2014) find that gender-diverse teams are more successful at attracting venture capital. In addition, venture capitalists tend to invest in heterogeneous teams rather than male-dominated teams. But still, the authors observe that venture capital providers tend to invest in homogeneous male teams rather than all-female teams. The findings of Protogerou et al. (2017) can explain the tendency of capital providers towards all-male teams. Protogerou et al. (2017) state that teams with high female representation tend to avoid high-risk taking and consequently operate in low-tech or service sectors. The fact that male entrepreneurs are more prone to take risks shows that they are likely to become successful in high-tech startups where radical innovation performance is higher (Protogerou et al., 2017). Furthermore, Vogel et al. (2014)

observe a positive relationship between national diversity and venture capital investments since the capital providers may perceive national diversity within an entrepreneurial team as a better understanding of customer and market opportunities.

Entrepreneurial passion is one of the most studied topics both at the individual and team level. In most of the studies, the diversity of entrepreneurial passion among team members corresponds to team passion diversity (Cardon et al. 2017b; De Mol et al., 2019) which is associated with motivational and behavioral heterogeneity of an entrepreneurial team. Cardon et al. (2017b) suggest that behaviors and perceptions of each individual shape team passion diversity. According to De Mol et al. (2019), entrepreneurial passion diversity indicates emotional and behavioral diversity of entrepreneurial teams and has an overall negative relationship with team outcomes. The authors discuss the negative consequences of passion diversity, and in particular, the in-team differentiation of passion intensity (Cardon et al., 2017b). The variety of passion focus within the team is likely to limit effective decision making, shared goal orientation and strategic actions in case of possible obstacles related to the startup (De Mol et al., 2019).

The fact that some team members experience intense passion, while others feel lower levels indicates the intensity heterogeneity of passion within team which leads to emotional and cognitive conflicts between members, harms social cohesion of the team, and reduces startup performance (De Mol et al., 2019). Furthermore, the variety of perceptions on strategic orientation among team members forms cognitive diversity (Vanaelst et al., 2006) since each member has his/her own perception of how the venture should function to succeed. The authors state that higher levels of cognitive heterogeneity bring cognitive conflict within the team and have mixed effects on performance. In other words, cognitive conflict is sometimes needed for better strategic decisions in order to accomplish goals and to increase venture performance. Stating the same variable as cognitive comprehensiveness, Chowdhury (2005) indicates that the presence of diverse perspectives and perceptual differences contribute to team effectiveness by improving the strategic decision making ability of the teams.

There are many studies analyzing the impact of task-related diversity of entrepreneurial teams. Variables related to task-related diversity are education, experience, functional skills and expertise of team members. In most studies, it is stated that the task-related differences of entrepreneurial team members are positively related to team outcomes since the presence of diversified perspectives, knowledge and unique skills within a team is associated with effective performance and competence of the venture (Eisenhardt, 2013). As Shane and Venkataraman (2000) state, the "information corridor" shaped by an individual's

accumulation of knowledge is unique. Therefore, coexistence of entrepreneurs with distinctive knowledge stocks in an entrepreneurial team creates a knowledge-based diversity which allows the team to complement each other and enables them to attain unique entrepreneurial opportunities.

For instance, Foo et al. (2005) argue that task-related diversity contributes to team effectiveness. Regarding its impact on venture selection, Vogel et al. (2014) observe a positive significant effect of tasks-related diversity on the investment decision of capital providers. In the literature, education background and education level are among the most studied types of task-related diversity. The presence of members who receive training in different fields corresponds to educational diversity of an entrepreneurial team that brings complementary skill sets, constructive conflicts and balanced decision making (Vogel et al., 2014). Educational level diversity combines different skill sets required for an entrepreneurial team because complex conceptual abilities are acquired in higher education, while the lower levels bring in practical based abilities (Foo et al., 2005; Protogerou et al., 2017).

Foo et al. (2005) state that diverse teams in terms of educational background and educational level comprise various perspectives and knowledge, and therefore outperform in the external evaluation of business ideas. Similarly, venture capital providers are willing to invest more in heterogeneous teams in terms of the education field and education level (Vogel et al., 2014). On the other hand, empirical findings of Zhou et al. (2015) point out that neither diverse education majors nor differences in educational level within a team make a significant contribution to entrepreneurial team performance. Furthermore, the diversity of entrepreneurial teams in terms of experience is another important type of task-related diversity. Experiences shape individuals' functional expertise and task-related skills. Therefore, experiential heterogeneity brings diverse perspectives, complementary skill sets, and thus efficiency to entrepreneurial teams (Eisenhardt, 2013; Vanaelst et al., 2006; Thiess et al., 2016). Zhou et al. (2015), which suggest that heterogeneity in terms of experience and expertise should be considered in entrepreneurial team formation since such teams tend to utilize market opportunities better.

According to Zhou et al. (2015), teams with higher levels of functional specialty diversity abound in human capital and thus tend to demonstrate better entrepreneurial performance. Addressing the same variable as functional expertise diversity, Protogerou et al. (2017) stress the coexistence of multiple expertise areas within a team which contributes to innovative performance and R&D intensity of new ventures. Moreover, the authors suggest that new

ventures are likely to benefit from members' distinct occupational experiences (e.g. firm owner, employee, self-employed, civil servant, faculty member etc.) by bringing a variety of practices, norms, and routines together which enable the venture to innovate productively. Failing to support this argument, their empirical results indicate that occupational background diversity is not significantly correlated with innovativeness, yet improves R&D expenditure of new ventures (Protogerou et al., 2017). As another indicator of experiential diversity, Chowdhury (2005) analyses the effect of functional background heterogeneity on team quality in addition to team performance. There is no significant effect of diversity of the field each individual is most experienced within (e.g. finance, marketing or engineering) both on team performance and on commitment and cognitive comprehensiveness of the team (Chowdhury, 2005). Furthermore, industry experience diversity is associated with successful outcomes because "teams with some members with extensive industry experience and others without it often bring diverse points of view" (Eisenhardt, 2013, p.808). On the other hand, Thiess et al. (2016) find that the industry experience heterogeneity does not contribute to team performance. The authors attribute the reason for this unexpected finding to the possibility that members with different levels of industrial experience may have difficulties in shared decision making and responding rapidly against problems.

Focusing on the diversity of leadership experience, Vogel et al. (2014) observe that capital providers predominantly select teams in which members have different levels of leadership experience because the presence of members with high leadership experience in the team is associated with advanced managerial skills and with intra-team balance. According to Thiess et al. (2016), heterogeneity in terms of management and startup experience (consisting of both experienced and inexperienced members) leads nascent entrepreneurial teams to effectively evaluate market opportunities with creative and innovative solutions and consequently perform better than homogenous teams. Similarly, it is found that more heterogeneous teams in terms of startup experience perform better in the long run, yet still, when entrepreneurs with similar experience forms a team and the startup is led by the one who has the most entrepreneurial experience (Steffens et al., 2012). Similarly, Vanaelst et al. (2006) state that entrepreneurs are disposed to form homogeneous teams in terms of entrepreneurial experience, but teams become more heterogeneous as the startup evolves because entrepreneurial teams tend to attract new members according to the startups' functional needs in the later stages (Yusubova et al., 2019).

2.5.2.2 Team knowledge

The literature examining the knowledge of entrepreneurial teams focuses on the characteristics of the teams regarding their managerial competencies and capabilities. The expertise and experience of teams shape the strategic and functional abilities that are indicators of team-level knowledge (Hackett and Dilts, 2004a; 2008). There are different findings on the impact of team-level expertise and experience on team performance and team selection. In addition to "team" itself being the primary selection criterion (Feeney et al., 1999; Pauwels et al., 2016; Smith & Hannigan; 2015), the criteria that evaluate and screen knowledge of the team are also taken into consideration by the mechanisms (e.g. incubators, accelerators, investors, etc.). For example, based on the empirical study using data from the two leading accelerators operating in the United States, Smith and Hannigan (2015) emphasize that the technical expertise of entrepreneurial teams is an important selection criterion. The technical expertise of the teams is a critical success factor (Lumpkin & Ireland, 1988) that represents the acquisition of knowledge required to survive the new ventures (Bergek & Norrman, 2008).

According to Hackett and Dilts (2004a), technical expertise is an in-demand managerial characteristic because these teams are expected to outperform others in the incubator. The authors emphasize the importance of management expertise as well as technical expertise in their following study (Hackett & Dilts, 2008). Management expertise is associated with the ability to transform an idea to a viable business (Feeney et al., 1999) and bring in the capability of entrepreneurial strategy formation (Carpentier & Suret, 2015). In addition to these two criteria, new ventures' expertise in marketing, sales, and finance are considered to be complementary managerial characteristics (Bergek & Norrman, 2008; Lumpkin & Ireland, 1988; Yin & Luo, 2018) which enable the new ventures to deploy available resources and to develop competitive strategies (Kakati, 2003). Yin and Luo (2018) emphasize that the technology expertise criterion is critical in the initial selection stage of accelerators in order to measure the technical ability of startups. The balanced combination of the team's technological expertise with other managerial characteristics is the key success factor of high-tech startups (Kakati, 2003).

Experience of the entrepreneurial team is another characteristics related to team knowledge which shapes the hard-skills (e.g. technical, management, marketing, sales and financial skills) of the team (Aerts et al., 2007; Lumpkin & Ireland, 1988; Vyakarnam & Handelberg, 2005). Entrepreneurship, by its nature, provides new ventures a rapidly changing dynamic environment with full of uncertainties, and therefore incubators determine team experience

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as an important selection criterion, assuming that experienced teams can cope better with the challenging situations (Bruneel et al., 2012). In other words, presence of the experience related to the sector in which teams are operating and management experience in the team are associated with positive incubation outcomes (Bergek & Norrman, 2008; Hackett & Dilts, 2004a, 2008). Examining the selection criteria of the accelerators, Yin and Luo (2018) state that the technical experience of the team at the primary selection and presence of prior startup experience in the team during the final decision stage are important criteria.

Furthermore, investors tend to reject teams lacking startup experience due to slower startup growth as against to teams having greater startup experience; teams with limited industry experience in which the startup operating because of the inefficacy in the market analysis and in the utilization of market opportunities; inexperienced teams in management due to the lack of effective strategy formulation (Carpentier & Suret, 2015; Hisrich & Jankowicz, 1990). According to Thiess et al. (2016), the heterogeneity of teams in terms of management and startup experience prevails the effect of average management and startup experience of entrepreneurial teams on performance. The authors state that as heterogeneity increases, the performances of teams with both low and high management and startup experience on average improve noticeably. Along with the experiential diversity, teams with members who have collective working history are likely to effectively manage the uncertain and challenging situations (Eisenhardt, 2013). Therefore, Vyakarnam et al. (1999) suggest that entrepreneurial teams formed by individuals with prior joint work experience are more successful because "a full understanding of a person's style, trustworthiness, competencies, fit, etc. can be gleaned from experience of working together" (p.160).

2.5.2.3 Team attitudes

The characteristics of entrepreneurial teams regarding their quality are associated with the cognitive, behavioral and motivational competencies of the teams, so the quality of the teams is one of the important factors affecting their performance (Cardon et al., 2017b; De Mol et al., 2019). According to Eisenhardt (2013), entrepreneurial teams become effective if they manage to be quick, contradictory, but also harmonious. Cognitive characteristics of teams enable effective teamwork by shaping critical competencies of entrepreneurial teams such as problem solving, decision making and evaluating opportunities (De Mol et al., 2015). Cognition at the team level defined as "a collective perspective or a collective knowledge structure at the team level that guides the direction of the venture" (West, 2007, p.78) shapes task/non-task-oriented skills and competencies of entrepreneurial teams and has a positive and significant impact on team performance (Chen et al., 2017; De Mol et al., 2015; West,

2007). One of the characteristics that indicate team level cognitive competence is the team efficacy, which is explained as having the necessary skills and collective belief to turn the inputs into successful entrepreneurial outcomes (Esfandiar et al., 2019).

Creativity of entrepreneurial teams is a characteristic that indicates the quality of team outcomes as one of the success criteria associated with cognitive competence at the team level (Aerts et al., 2007; De Mol et al., 2015; Lumpkin & Ireland, 1988). Creative teams can take advantage of niche market opportunities (Vyakarnam et al., 1999), make creative decision-making, and formulate innovative strategies (Chowdhury, 2005). Accordingly, such teams that offer creative solutions and develop creative products / services are advantageous in venture capital decisions. Along with creativity, team awareness is also an important success factor that allows teams to make better use of both market opportunities and available resources (Aerts et al., 2007; Lumpkin & Ireland, 1988). Aware teams tend to set shared and clear goals that bring in success (Vyakarnam et al., 1999), and, capital providers prefer teams with a goal-oriented mindset (Hisrich and Jankowicz, 1990).

The team's ability to act together in line with shared goals is determined by its behavioral and motivational characteristics (Vyakarnam & Handelberg, 2005). According to Foo et al. (2006), social cohesion and open communication increase the survival of the teams, which is an important success criterion for both incubators and accelerators (Pauwels et al., 2016; Schwartz & Göthner, 2009), by enhancing effective information exchange and collaboration within the team. Interpersonal conflict and lack of communication within the team negatively affect the outcomes (De Mol et al., 2019), so it is crucial that the team is in harmony, has shared goals and vision on common ground (Vyakarnam et al., 1999; Vyakarnam & Handelberg, 2005). Team entrepreneurial passion is another collective property of teams that "encapsulates the collective identity and shared emotions of the team independently from individual team members' identities or emotions" (Cardon et al., 2017b, p.288). As the average passion at the team level enhances, conflicts within the team tend to decrease, while positive attitudes and collaboration within the team increase, thereby improving team performance (Cardon et al, 2017a, 2017b; Mitteness et al., 2012). De Mol et al. (2019) find that the average team passion does not contribute to startup performance. The authors suggest that higher levels of team passion can be ineffective when teams move away from reality and awareness.

Entrepreneurial team passion shapes team commitment as another motivational and behavioral characteristic that demonstrates team quality (Cardon et al., 2017b). Team commitment to the venture, its values, group goals, and common vision (De Mol et al., 2015;

Vyakarnam and Handelberg, 2005) positively influences team performance because a committed team is ready to exert oneself together against challenges (Chen et al., 2017). According to Chowdhury (2005), "teams must create an environment of trust and loyalty for improving team commitment" (p.728) which brings in team effectiveness. In addition to intra-team characteristics, teams' communicative and behavioral abilities with the outer world indicate team quality and are considered as critical. For example, one of the accelerator managers in the sample of Pauwels et al. (2016) indicates their preference in venture selection in favor of strong teams that can interact well during the acceleration program. Similarly, venture capitalists seek collaborative teams that are easy to work with (Hisrich & Jankowicz, 1990).

Table 3: Summary of Previously Studied Entrepreneurial Team Characteristics

Team Characteristics		Previous Studies
Team Knowledge	Collective working history	Eisenhardt (2013); Feeney et al. (1999); Vyakarnam et al. (1999)
	Industry experience	Bergek & Norrman (2008); Carpentier & Suret (2015); Hackett & Dilts (2004a; 2008)
	Managerial experience	Bergek & Norrman (2008); Carpentier & Suret (2015); Hackett & Dilts (2004a; 2008); Thiess et al. (2016)
	Management expertise	Bergek & Norrman (2008); Carpentier & Suret (2015); Feeney et al. (1999); Hackett & Dilts (2008); Kakati (2003); Lumpkin & Ireland (1988); Yin & Luo (2018)
	Startup Experience	Bergek & Norrman (2008); Hackett & Dilts (2004a; 2008); Thiess et al. (2016); Yin & Luo (2018)
	Technical expertise	Bergek & Norrman (2008); Hackett & Dilts (2004a; 2008); Lumpkin & Ireland (1988); Smith & Hannigan (2015)
	Technology expertise	Kakati (2003); Yin & Luo (2018)
Team Attitudes	Awareness	Aerts et al. (2007); Lumpkin & Ireland (1988); Vyakarnam et al. (1999)
	Commitment	Cardon et al. (2017b); Chen et al. (2017); Chowdhury (2005)
	Creativity	Chowdhury (2005); De Mol et al. (2015); Lumpkin & Ireland (1988); Vyakarnam et al. (1999)
	Harmony	De Mol et al. (2019); Eisenhardt (2013); Vyakarnam et al. (1999); Vyakarnam & Handelberg (2005)
	Openness / collaboration	Aerts et al. (2007); Foo et al. (2005); Hisrich & Jankowicz (1990); Pauwels et al. (2016); Schwartz & Göthner (2009); Vyakarnam & Handelberg (2005)
	Passion	De Mol et al. (2019); Cardon et al. (2017b); Mitteness et al. (2012)
	Realistic perspective	Hisrich & Jankowicz (1990); Vyakarnam et al. (1999)
	Team cognition / Collective-efficacy	Chen et al. (2017); Chowdhury (2005); De Mol et al. (2015); Esfandiar et al. (2019); West (2007)

Table 3 (continued)

Team Diversity	Educational background & level diversity	Foo et al. (2005); Protogerou et al. (2017); Vogel et al. (2014); Zhou et al. (2015)
	Functional background diversity	Chowdhury (2005); Eisenhardt (2013); Protogerou et al. (2017); Zhou et al. (2015)
	Industry experience diversity	Eisenhardt (2013); Thiess et al. (2016)
	Managerial experience diversity	Thiess et al. (2016); Vogel et al. (2014); Zhou et al. (2015)
	Startup experience diversity	Steffens et al. (2012); Thiess et al. (2016); Vanaelst et al. (2006)
	Age diversity	Chowdhury (2005); Foo et al. (2005); Steffens et al. (2012)
	Cognitive diversity	Chowdhury (2005); Vanaelst et al. (2006)
	Employment status diversity	Foo et al. (2005); Visintin and Pittino (2014)
	Gender diversity	Chowdhury (2005); Foo et al. (2005); Hoogendoorn et al. (2013); Protogerou et al. (2017); Steffens et al. (2012); Vogel et al. (2014)
	National diversity	Steffens et al. (2012); Vogel et al. (2014)
	Passion diversity	De Mol et al. (2019); Cardon et al. (2017b)

2.6   Takeaways from the Literature Review

The literature review has important results and inferences that shape the later parts of this thesis. First of all, acceleration programs adopting a critical and competitive selection mechanism differentiating from classical incubator format are more successful. Accordingly, the competitive selection mechanism highlights some characteristics of startups, entrepreneurs, and entrepreneurial teams. These characteristics are grouped under idea-focused and entrepreneur/ team-focused selection approaches proposed by Bergek and Norrman (2008). While the viability of the idea, the market, and the profit potential are prominent in the idea-focused selection approach; knowledge-based competence, behavioral and motivational attributes of entrepreneurs and entrepreneurial teams are considered in the entrepreneur/ team-focused selection approach.

Although the criteria of both selection approaches are important in acceleration format, the characteristics related to the entrepreneur and the team precede the characteristics regarding the idea (Feeney et al., 1999; Pauwels et al., 2016; Smith & Hannigan; 2015). Both selection approaches, by laying more emphasis on entrepreneur/ team-focused selection, are examined in this thesis. In entrepreneur/ team-oriented selection approach, the characteristics of both entrepreneurs and entrepreneurial teams appear to be critical. It is possible to categorize these characteristics as knowledge-based competence and behavioral competence. The task-related characteristics of entrepreneurs, such as education, experience and expertise,

determine their personal knowledge-based competence. Likewise, non-task-related characteristics such as passion, self-efficacy, commitment and demographic factors at the individual level determine the behavioral and motivational competence of entrepreneurs.

Unlike individual-level entrepreneurial characteristics, team-level characteristics correspond to collective competencies, and both task-related and non-task-related diversity of entrepreneurial teams. While most of the existing studies focus on entrepreneurial characteristics at either team level or individual level, this thesis examines team and entrepreneur characteristics together based on the selection criteria of acceleration programs. Moreover, some of the current studies aim to analyze entrepreneurial team characteristics with entrepreneur focused examinations. In order to avoid the confusion here, the following sections of this thesis examine the individual-level characteristics and team-level characteristics separately. Accordingly, the review of the literature allows me to understand how the importance of individual and team level entrepreneurial characteristics differentiates for different mechanisms for startup selection. For instance, team-level characteristics appear as more effective selection criteria in accelerators and investors while individual-level characteristics considered more in incubators. The literature examining entrepreneur and entrepreneurial team characteristics based on the selection criteria of the accelerator mechanism is limited. In addition, there are no studies examining the acceleration programs in Turkey and the entrepreneurs and entrepreneurial teams that benefit from these programs.

While the literature aiming to discover the selection criteria of similar mechanisms (e.g. incubators, accelerators, investors) focuses on qualitative methods, studies examining the effects of these criteria on entrepreneurial performance employ empirical methods. In other words, while some of these studies aim to explore critical selection criteria and entrepreneurial characteristics, the rest of them aim to explain the effects of these criteria and characteristics. Such empirical studies enable me to learn the measurement of entrepreneurial characteristics and to obtain indicators of team characteristics to examine whether such characteristics contribute to entrepreneurial performance in the quantitative part of this thesis (section 4.2). This thesis adopts a qualitative approach to explore entrepreneurial characteristics according to the selection criteria of the acceleration programs and uses data and empirical methods to examine the impact of these characteristics on performance. However, by combining both exploratory and explanatory research approaches, this thesis provides a more comprehensive examination which differs from most existing studies.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter begins with a brief introduction of the historical development of incubators, technoparks, and accelerators in Turkey in order to understand the context of the sample examined in this thesis. Section 3.1 briefly describes the mixed-methods research design of this thesis. Sections 3.2 and 3.3 explain the data collection and analysis methods employed in qualitative and quantitative parts of this thesis respectively. Both the qualitative and quantitative data analyzed in this thesis are obtained from a TUBITAK project[3]. The last section of Chapter 3 introduces the measurement and descriptions of variables employed in the quantitative data analysis.

Technology-based entrepreneurship started with innovation-oriented software initiatives in the 1980s, and continued to develop in the 1990s with the arrival of internet and global mobile technology in Turkey (Cansız, 2013). The establishment of Small and Medium Enterprises Development Organization of Turkey (KOSGEB) as a public initiative in 1990, and then the establishment of Technology Development Foundation of Turkey (TTGV) as a public-private cooperation initiative aimed at technology development and the introduction of technology-based entrepreneurship support programs in Turkey. Public support for technology and innovation-oriented SMEs started with the establishment of Technology Development Centers (TEKMERs) in cooperation of KOSGEB with universities in the early 1990s. With a variety of financial and business development supports, TEKMERs, with main objectives such as establishing new technology-based ventures, supporting the innovative activities of existing SMEs, and commercializing R&D outputs, function as incubators for small and new businesses (Akçomak & Taymaz, 2004).

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[3] Beyhan, B. (2020). Girişimcilik desteklerinde seçim süreçlerinin incelenmesi ve seçim-performans ilişkinin analizi: Türkiye'de kuluçka ve hızlandırma programları örneği (Project No. 115K204). TUBITAK. Unpublished final report.

As of the enactment of the Technology Development Zones law in the early 2000s, Technoparks, the majority of which are affiliated with universities, started to be established. By functioning similar to the incubation mechanism, Technoparks are science parks that aim to foster the establishment of technology-based enterprises by reinforcing the creation of entrepreneurship and innovation ecosystem to consolidate university-industry cooperation (Demirhan et al., 2019). According to the statistics shared by the Ministry of Industry and Technology as of the end of March 2020[4], there are 84 Technoparks, 69 of which are active and the rest are under development. With the establishment of Technology Transfer Offices (TTOs) affiliated to universities in the following years, knowledge and technology transfer started to develop between the university and industry. Technology Transfer Offices Support Program introduced by TUBITAK in 2012 mainly aims to foster the production and commercialization of the knowledge and technology required by the industry at universities to support innovation and entrepreneurship in Turkey.

Incubation and acceleration programs carried out by universities, TTOs, NGOs, private companies and business institutions, as well as incubation centers within the Technoparks, have recently started to become widespread in Turkey, especially in Istanbul, Ankara, and Izmir (Demirhan et al., 2019). In addition to the basic office, material, financial and business supports provided by the incubators, acceleration programs in Turkey offer various trainings, mentorship and networking supports to the early-stage technology-based startups. As of the end of 2018, there are 57 active acceleration programs in Turkey[5]. The qualitative data used in this thesis were collected from 14 acceleration programs in which 4 of them functions similar to incubation programs[6]. Furthermore, the quantitative data were collected from 122 technology-based startups within these 14 programs carried out by universities, Technoparks, TTOs, private companies, and business institutions.

3.1 Mixed-Methods Research Design

This thesis has a mixed-methods research approach that enables researchers to integrate both qualitative and quantitative research forms (Creswell, 2009). Mixed-methods research contains "philosophical assumptions, the use of qualitative and quantitative approaches, and the mixing of both approaches in a study" (Creswell, 2009, p.4). In order to capture the

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[4] Source:
https://www.sanayi.gov.tr/assets/pdf/istatistik/TGB_MART_2020_%C4%B0statistiki_Bilgiler.pdf
accessed on 07.06.2020

[5] Source: https://www.invest.gov.tr/en/library/publications/lists/investpublications/the-state-of-turkish-startup-ecosystem.pdf accessed on 07.06.2020

[6] All of the programs are mentioned as acceleration programs in this thesis.

complexity of entrepreneurial team formation and entrepreneur/ entrepreneurial team characteristics according to the selection criteria of accelerators; the qualitative approach is employed. Accordingly, the quantitative approach is used to examine the effect of critical entrepreneur/ entrepreneurial team characteristics on performance. Therefore, the mixed-methods research approach enables me to explore entrepreneur/ entrepreneurial team characteristics with qualitative methods, and analyze the effect of explored characteristics on performance with quantitative methods.

Furthermore, a sequential mixed methods strategy enabling to "elaborate on or expand on the findings of one method with another method" (Creswell, 2009, p.14) is employed in this thesis. As one of the sequential mixed methods strategy types, the sequential exploratory strategy is employed since the quantitative data are collected according to the preliminary analysis of the qualitative data collected (Creswell, 2009) in the first stage of TUBITAK project. Primarily, qualitative data were collected through interviews with the managers of acceleration programs. According to the preliminary analysis, the themes highlighted by selection criteria and critical entrepreneur/ entrepreneurial team characteristics are determined. In the quantitative data collection phase, data are collected from the startups through conducting surveys structured by taking into consideration the prominent themes identified in the qualitative stage. Finally, both the qualitative and quantitative research findings are associated, combined, and compared.

3.2 Qualitative Data Collection and Data Analysis

Qualitative data collection and data analysis methods are used to examine entrepreneur/ entrepreneurial team characteristics and team formation according to the selection criteria of the acceleration programs operating in Istanbul and Ankara. For this purpose, a list of active acceleration programs operating in Istanbul and Ankara was created and 14 of them were selected within the scope of the TUBITAK project. Qualitative data was collected by conducting in-depth semi-structured interviews with the managers of 14 acceleration and incubation programs, which differ in terms of business models, selection criteria and the services they provide. The semi-structured interview content consists of questions about general information about the programs, the selection process and the selection criteria, the services provided to the ventures, performance criteria and performance measurement. The interviews were carried out by the project researchers and all of the interviews were recorded with the implicit approval of the interviewees. The duration of the interviews, 12 of which are face to face and 2 of which are done via Skype, ranges from 40 to 90 minutes. After each

interview, the entire transcripts of the voice recordings were turned into text files (Beyhan, 2020).

In this thesis, the content analysis method is applied to the 150-pages transcription of the interviews. The content analysis method is one of the methods used to draw meaningful results from qualitative data and it aims to find consistency, prominent main themes, and patterns between different cases (Corbin & Strauss, 2008; Patton, 2002). As emphasized by Patton (2002), the analysis of qualitative data is inductive, especially in the early stages and this is especially important to analyze the collected data clearly and without prejudice. Accordingly, inductive method is applied in this thesis to discover patterns and themes of the interview data regarding selection approaches, and entrepreneur and team characteristics. I used the QDA Miner program to analyze the 150-pages transcription of the interviews. Appendix A indicates the codebook obtained from QDA Miner[7]. First of all, the two main selection approaches formed by the themes brought up by the sentences and expressions of accelerator managers emerged as the main themes (Beyhan, 2020; Beyhan et al., 2020). These two main themes are the idea-oriented and entrepreneur/ entrepreneurial team-oriented selection approach, as in line with the study of Bergek and Norrman (2008). Themes emerging under these two selection approaches, and the sentences and opinions belonging to the sub-themes are listed in Table 13 (Chapter 4, Section 4.1.1).

In other words, firstly, the sentences and expressions that the accelerator managers indicate regarding their selection approaches were coded. Then, the coded data were classified by the sub-themes to which they belong according to their conceptual correspondences and similarities. As a result of reorganizing these sub-themes, the main themes were determined as the idea-oriented and entrepreneur/ entrepreneurial team-oriented selection approaches. Furthermore, to capture the complexity of the entrepreneurial team formation based on the selection criteria of accelerators, the entrepreneur/ team-oriented selection approach is elaborated in detail by focusing on entrepreneur and team characteristics. Figure 3 (Chapter 4, section 4.1.1) summarizes the resulting patterns, themes and codes. Table 4 provides brief information about the profiles and structures of the acceleration programs interviewed. As stated, the acceleration programs interviewed are located in Ankara and Istanbul. While three of these programs are completely private, one is supported by a private company, and the other is supported by multiple institutions consisting of universities and private companies. The main sponsors of the remaining nine programs are universities, and although they

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[7] Figure 3, Table 13, and Table 14 (Chapter 4, section, 4.1) are created based on the codebook demonstrated in Appedix A.

Table 4: Structure of Acceleration Programs Interviewed

Prog-ram	Location	Application period	Participants per period	Selection committee	Selection process	Program length
A	Istanbul	Once a year	10-15	program director and employees	Filtering, face-to-face interviews, selection	Until the exit
B	Ankara	Once a year	6-7	2 academics and 1 industry expert	Filtering, face-to-face interviews, selection	16 weeks
C	Istanbul	Three cycles a year	4	5 person jury consisting investors, academics and business professionals	Filtering and selection	3 months
D	Istanbul	Five periods a year	up to 12	Filtering: program director, 1 mentor & Selection: investors, entrepreneurs, business professionals, program director	Filtering, face-to-face interviews, selection	5 weeks
E	Istanbul	Three cycles a year (year-round open)	50-70	program director, business development manager, marketing adviser, 1-2 mentors	Filtering, presentations to jury, selection	8 weeks +
F	Istanbul	Once a year	30-40	no selection committee (implementation of multi-staged online testing)	Applicants are subjected to multi-staged online personality inventory, intelligence, and competence tests	14 weeks
G	Istanbul	Two cycles a year (year-round open)	6-8	Filtering: program directors & Selection: program directors, angel investors, venture capital fund managers, business professionals, entrepreneurs, mentors	Filtering, presentations to jury, selection	6 months
H	Ankara	Once a year	flexible	Filtering: program directors & Selection: 40 person jury consisting mentors, program graduates, program directors	Filtering, presentation to jury, selection	1 year
I	Istanbul	Once a year	20-25	Filtering: program directors & Selection: mentors, investors, representatives from program supporters	Filtering, jury assessment, presentation, selection	3 months
J	Istanbul	Once a year	10	Filtering: program directors & Selection: 3 academics, mentors, representatives from program supporters	Filtering, presentations to jury, selection	9 months
K	Istanbul	Two cycles a year	up to 15	Filtering: program directors & Selection: mentors, investors, representatives from program partners, business professionals	Filtering, screening, presentations to jury, selection	4 to 6 months
L	Ankara	Year-round	up to 10	program director and employees	Filtering, face-to-face interviews, selection	Until the exit
M	Ankara	Once a year	100	5 person jury consisting academics, entrepreneurs and representatives from program supporters	Filtering, jury assessment, presentation, selection	6 months
N	Istanbul	Year-round	flexible	5 person jury consisting academics, program director, technopark director, TTO director	Filtering, presentations to jury, selection	1 year

periodically benefit from public and private funds, their general activities are supported by a university. The acceleration programs differ in terms of application period, number of participants, selection process, and program length. All programs accept applications online.

3.3 Quantitative Data Collection and Data Analysis

Quantitative data collection and data analysis methods are used to examine the effect of entrepreneur/ entrepreneurial team characteristics on the performance of technology-based startups. For this purpose, I analyze quantitative data within the scope of the TUBITAK project. A questionnaire was conducted to the startups that were graduated or already benefit from 10 of the 14 acceleration programs interviewed[8]. Face-to-face as well as online survey answers were collected from a total of 122 startups. Accordingly, quantitative data analyses are based on the data provided from the 122 questionnaire forms.

The questionnaire form consists of four main sections which are general questions about the startup, entrepreneur/ entrepreneurial team characteristics, relations with acceleration programs, innovativeness, and performance. The content of the questionnaire was formed by taking into consideration the themes identified regarding entrepreneur/ entrepreneurial team-oriented selection approaches of the acceleration programs in the qualitative stage. In other words, the content of the questionnaire has been determined according to these themes that emerged in qualitative data analysis in order to understand and analyze the effect of entrepreneur/ entrepreneurial team characteristics on the performance of the startups. Furthermore, the questionnaire aims to measure some factors (such as entrepreneurial passion, persistence, and self-efficacy) that have not been investigated before in the field of entrepreneurship in Turkey. For this reason, the questionnaire was prepared based on recent studies (see Table 5) using the scales that have been statistically tested for reliability within the entrepreneurship literature.

In order to measure the human capital of entrepreneurial teams, entrepreneur/ entrepreneurial team characteristics, relationships with acceleration programs, evaluation and impact of the services provided by the programs, and innovativeness; the scales that have been statistically tested for reliability in recent research were adapted and taken as examples. Table 5 demonstrates the adapted scales and studies. While the existing studies in performance measurement mainly focus on indicators such as survival and growth rates, different success criteria were also taken into consideration in the questionnaire. For example, questions on

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[8] Quantitative data covers 10 out of 14 of the acceleration programs interviewed because one of the programs did not allow to distribute the questionnaire to the entrepreneurs, and the answers to the questions collected from three programs were by and large missing and could not be used.

whether the startup has launched a new product, made the first sales, made patent applications, or received investment were added by the project researchers.

Table 5: A List of the Adapted Studies and Scales to the Questionnaire Form

Scale	Adapted from
Human capital	Ganotakis (2012)
Entrepreneurial passion	Cardon and Kirk (2015)
Entrepreneurial persistence	
Self-efficacy	McGee et al. (2009)
Causation	Chandler et al. (2011)
Effectuation	
Collective-efficacy	Wu et al. (2017); Senyard et al. (2014)
Innovativeness	Senyard et al. (2014)
Trust to the program	Khan et al. (2014)
Team common history	
Sufficiency of services	Hackett and Dilts (2008)
Usage of services	
Resource utilization	
Program effect	
Source: Adapted from Beyhan (2020)	

The expressions used in all questions were translated into Turkish by the project assistants, and these translations were checked by the project researchers. After this process, all the translated statements and questions were re-translated into English by people out of the project team. The final translation was re-checked by the project researchers and it was examined whether there were any meaningful differences between the text translated into English and the original expressions. In this way, the reliability of the translation has been tested. Afterwards, the questionnaire was sent to academicians and experts in order to determine whether the questions were understandable. In addition, a number of questionnaires were sent to the managers of the acceleration programs interviewed to receive their comments, ideas, and suggestions. As a result of all the feedback process, 10 entrepreneurs were piloted with the formed questionnaire, and thus the comprehensibility of the questionnaire was tested (Beyhan, 2020).

Considering that this thesis questions the relationship between entrepreneurial characteristics and startup performance in accelerators, quantitative data analysis aims to examine the effect of individual-level and team-level entrepreneurial characteristics highlighted by interviewed acceleration programs on performance. For the quantitative data analysis, I examine the effect of entrepreneurial characteristics on performance indicators using STATA software. To obtain indicators regarding entrepreneurial characteristics and performance from the survey data, I perform exploratory factor analysis (EFA) on items with five-point Likert

scale questions measuring individual-level and team-level entrepreneurial characteristics and effect of acceleration programs. Table 6, Table 7, and Table 8 provide the EFA results and obtained indicators.

Table 6: Exploratory Factor Analysis on Program Effect Items

Program-related dependent variable	
Program Effect	**Factor loadings**
prog effect_1	0.6426
prog effect_2	0.7655
prog effect_3	0.7433
prog effect_4	0.8387
prog effect_5	0.6565
prog effect_6	0.6098
prog effect_7	0.4294
prog effect_8	0.7517
prog effect_9	0.6647
Eigenvalue	*4.24907*
Proportion	*0.8403*
KMO	*0.8231*
Cronbach's alpha	*0.8774*

Note: Items under each construct can be found in Appendix B.
Note: Kaiser-Meyer-Olkin (KMO) values 0.60 to 0.69 mediocre; 0.70 to 0.79 middling; 0.80 to 0.89 meritorious; 0.90 to 1.00 marvelous.
Note: Cronbach's alpha values 0.50 to 0.59 poor; 0.60 to 0.69 questionable; 0.70 to 0.79 acceptable; 0.80 to 0.89 good; more than 0.90 excellent.

Table 7: Exploratory Factor Analysis on Causation, Effectuation, and Collective-   efficacy Items

Entrepreneurial Team Characteristics			
Causation	**Factor loadings**	**Collective-efficacy**	**Factor loadings**
causation_1	0.6156	collective ef_1	0.3846
causation_2	0.4867	collective ef_2	0.5647
causation_3	0.7189	collective ef_3	0.6152
causation_4	0.749	collective ef_4	0.5857
causation_5	0.7015	collective ef_5	0.5831
causation_6	0.4332	collective ef_6	0.6286
causation_7	0.5402	collective ef_7	0.7589
causation_8	0.2162	collective ef_8	0.3523
causation_9	0.1833	*Eigenvalue*	*2.62354*
Eigenvalue	*2.74557*	*Proportion*	*0.9868*
Proportion	*0.8305*	*KMO*	*0.8070*
KMO	*0.7311*	*Cronbach's alpha*	*0.7689*
Cronbach's alpha	*0.7449*		
Effectuation	**Factor loadings**		
effectuation_1	0.5018		
effectuation_2	0.5594		
effectuation_3	0.7224		
effectuation_4	0.5950		
effectuation_5	0.6509		
effectuation_6	0.5708	*Note*: Items under each construct can be found in Appendix B.
effectuation_7	0.4841	*Note*: Kaiser-Meyer-Olkin (KMO) values 0.60 to 0.69 mediocre; 0.70
Eigenvalue	*2.42457*	to 0.79 middling; 0.80 to 0.89 meritorious; 0.90 to 1.00 marvelous.
Proportion	*0.9841*	*Note*: Cronbach's alpha values 0.50 to 0.59 poor; 0.60 to 0.69
KMO	*0.7699*	questionable; 0.70 to 0.79 acceptable; 0.80 to 0.89 good; more than
Cronbach's alpha	0.7705	0.90 excellent.

Table 8: Exploratory Factor Analysis on Passion, Persistence, Self-efficacy, and Intention to Implement Items

Entrepreneur Characteristics

Passion	Factor loadings	Persistence	Factor loadings
passion_1	0.614	persist_1	0.6326
passion_2	0.7303	persist_2	0.7960
passion_3	0.2427	persist_3	0.6111
passion_4	0.5442	*Eigenvalue*	*1.40714*
passion_5	0.7009	*Proportion*	*1.2001*
passion_6	0.6048	*KMO*	*0.6068*
passion_7	0.6511	*Cronbach's alpha*	*0.7484*
passion_8	0.6437	**Self-efficacy**	**Factor loadings**
passion_9	0.603	self ef_1	0.4765
passion_10	0.6095	self ef_2	0.6439
passion_11	0.7403	self ef_3	0.4772
Eigenvalue	*4.24373*	self ef_4	0.5712
Proportion	*0.8096*	self ef_5	0.6411
KMO	*0.8165*	self ef_6	0.6786
Cronbach's alpha	*0.8568*	self ef_7	0.5721
Intention to Implement	**Factor loadings**	self ef_8	0.4238
implement_1	0.6332	self ef_9	0.458
implement_2	0.6494	self ef_10	0.3082
implement_3	0.5127	*Eigenvalue*	*2.87893*
implement_4	0.4439	*Proportion*	*0.7944*
implement_5	0.4638	*KMO*	*0.7324*
implement_6	0.3258	*Cronbach's alpha*	*0.7855*
implement_7	0.7637		
implement_8	0.8541		
implement_9	0.7669	*Note*: Items under each construct can be found in Appendix B.	
Eigenvalue	*3.50475*	*Note*: Kaiser-Meyer-Olkin (KMO) values 0.60 to 0.69 mediocre; 0.70 to 0.79 middling; 0.80 to 0.89 meritorious; 0.90 to 1.00 marvelous.	
Proportion	*0.8051*		
KMO	*0.7713*	*Note*: Cronbach's alpha values 0.50 to 0.59 poor; 0.60 to 0.69 questionable; 0.70 to 0.79 acceptable; 0.80 to 0.89 good; more than 0.90 excellent.	
Cronbach's alpha	*0.8368*		

As stated earlier in this section, scales of different studies in the literature are adapted to measure entrepreneurial characteristics and performance related to acceleration programs (see Table 5). Accordingly, each set of questions in the questionnaire measures a specific construct. Although it is stated in the literature that confirmatory factor analysis (CFA) is suitable for constructed latent variables, the low number of observations poses a problem for CFA in this thesis. Due to both the number of observations limitation and the design of the survey form measuring each construct separately, I perform EFA for each construct separately by including items belonging to a construct together. As any of the Kaiser-Meyer-Olkin (KMO) values are not less than 0.6 (see Table 6, Table 7, and Table 8), the results are adequate to obtain indicators from EFA. In addition to the KMO test, each construct can be explained by the results obtained from the first factor that have a valid proportion of variance higher than 0.8 (except self-efficacy with 0.79) as demonstrated in Table 6, Table 7, and Table 8.The effects of the indicators obtained by EFA are tested on different outcome variables. One of these outcome variables is the program effect shown in Table 6 obtained

by EFA. The effect of individual-level and team-level entrepreneurial characteristics on program effect is examined by OLS models. Other performance indicators, which are new product, first sale, and external financing, are binary outcome variables (described in section 3.4.1 and in Table 9). The effects of entrepreneur and team characteristics on binary outcome variables are examined with probit models. Section 4 presents marginal effects as well as the coefficients of the probit models because marginal effects in probit model are easier to interpret to examine the influence of entrepreneurial characteristics on startup performance.

3.4 Measurement of Variables Used In Quantitative Part

The quantitative analysis in this thesis aims to analyze the impact of entrepreneur characteristics and entrepreneurial team characteristics on startup performance. Accordingly, the characteristics of entrepreneur and entrepreneurial teams are independent variables; performance indicators are dependent variables; and factors related to acceleration programs are control variables. Table 9 briefly defines dependent, independent, and control variables. Table 10 and Table 11 demonstrate descriptive statistics and correlation matrix of the variables. For robustness analysis, this thesis uses additional variables to examine the impact of other team characteristics on performance. Table 12 demonstrates the measurement and definitions of variables employed only for the robustness analysis.

3.4.1 Dependent Variables

This thesis focuses on several dependent variables to measure the performance of entrepreneurial teams. Since there are early-stage startups in the sample, other performance criteria that may affect startup survival and viability are taken into consideration instead of survival and growth rates. Furthermore, as Cornelius and Bhabra-Remedios (2003) state, while the presence of long-term data of corporate and large-scale companies enables financial performance measurement; analysis based on financial data may be inconvenient in performance research of new and small-scale enterprises in terms of scaling, comparison, and growth calculations.

Therefore, the performance indicators measured by the questions yes/no or with/without, which do not contain any statistical data regarding financial or volume values of startups are employed as dummy dependent variables in this thesis. In addition to the market-related and funding-related performance of startups, this thesis aims to examine the effects of entrepreneur and team characteristics on resource and service usage/ utilization provided by acceleration programs. Therefore, the indicators measured by the Likert scaled questions (represented in Appendix B) aimed at evaluating the impact of acceleration programs and

services provided are employed as a dependent variable as well. Table 9 defines the dependent variables briefly.

Table 9: Variable Definitions

Variable	Definition
Dependent variables	
New product	Dummy = 1 if the startup has developed a new product/service
First sale	Dummy = 1 if the startup has realized the first sale of product/service
External financing	Dummy = 1 if the startup has received angel investment, VC investment, or public support
Program effect	The average of 9 items representing effect of acceleration programs
Independent variables	
Entrepreneur Characteristics	
Passion	The average of 11 items representing entrepreneurial passion
Persistence	The average of 3 items representing entrepreneurial persistence
Self-efficacy	The average of 10 items representing self-efficacy
Implement	The average of 9 items representing intention to implement
Entrepreneurial team characteristics	
Causation	The average of 9 items representing causation approach
Effectuation	The average of 7 items representing effectuation approach
Collective-efficacy	The average of 8 items representing collective-efficacy
Control variables	
Location	Dummy = 1 if the startup is located in Istanbul; = 0 if the startup is located in Ankara
Type dummies	Three different dummies indicating the startup is in which type of acceleration program: Type1 = Program F, Program G, Program J, and Program L Type2 = Program D, Program E, and Program M Type3 = Program B, Program K, and Program N

Note: Dependent variable program effect and independent variables passion, persistence, self-efficacy, causation, effectuation, and collective-efficacy consist of 5-point Likert scaled questions (1 = not suitable 5 = very suitable) represented in Appendix B.

3.4.1.1 New product

It is among the expectations of the accelerators that the startups launch a new product or service they are developing during the program (Yin & Luo, 2018). Moreover, the transformation of the proposed entrepreneurship project or the first prototype offered into a viable and marketable final product or service is associated with successful performance outcomes of technology-based startups (Kakati, 2003). Accordingly, "new product" is a dummy dependent variable that measures whether the startups have developed a new product or service during the acceleration program. According to Figure 1, 88% of the startups answered the questionnaire have stated that they released a new product or service to the market.

3.4.1.2 First sale

Whether developed final product or service met the first customers in the market is another indicator of startup performance (Kakati, 2003; Yin & Luo, 2018). Accelerators assist startups to commercialize and launch their product or service in the market and consequently expect them to start sales during the program (Hoffman & Kelley, 2012; Pauwels et al., 2016). While most of the previous studies employ changes in sales volume in performance analysis; this is not convenient for this thesis because the quantitative data is collected from early-stage startups whose priority is to prove their viability in the market. As one of the factors affecting the startup viability in the market, presence of the first sale is employed as a dummy dependent variable that indicates whether the startups have realized their initial sales. As can be seen from Figure 1, more than 60% of the startups answered the questionnaire have made the first sale.

3.4.1.3 External financing

Acceleration programs support startups not only to achieve operational progress in the market but also to access external financial resources (Crişan et al., 2019). Accordingly, the fact that startups are funded through external financial resources appears as one of the performance indicators that point to the success of both startups and accelerators (Smith & Hannigan, 2015). Furthermore, the extensive literature examining the factors affecting external financing highlights the impact of entrepreneur and entrepreneurial team characteristics (Smith & Hannigan, 2015; Zhang, 2011). Therefore, external financing is employed as one of the dependent variables to examine entrepreneur and team characteristics on performance.

As Drover et al. (2017) state, the most common entrepreneurial external financing sources are venture capitalists, corporate venture capitalists, angel investors, or governmental agencies. Correspondingly, the startups are asked whether they funded by angel investors, venture capitalists, or public institutions such as TUBITAK and KOSGEB. Thus, external financing is a dummy dependent variable indicating whether the venture received angel investment, venture capital investment, or public support. Figure 1 indicate that almost 60% of the startups answered the questionnaire have obtained angel investment, venture capital investment, or public funding.

3.4.1.4 Program effect

The literature highlights that entrepreneur and team characteristics are among the factors affecting the utilization of the startups from the acceleration programs. Different

entrepreneur and team characteristics lead to diverse degrees of use of particular services and resources provided (Bruneel et al., 2012; Peters et al., 2004). In other words, startups that differ due to diverse entrepreneurial characteristics also differ in benefiting from the resources provided by the programs. The study of Hackett and Dilts (2008) is one of the most comprehensive studies using scales that achieve a high degree of reliability to examine the program effect. Therefore, these scales are adapted in this thesis to measure impact of acceleration programs. Startups are asked to score 9 statements from 1 (not suitable) to 5 (very suitable) that measure the degree of impact of services, resources and opportunities offered by acceleration programs. The program effect indicator, measured by five-point Likert scale questions (represented in Appendix B), is first analysed by EFA demonstrated in Table 6. Considering the ease of interpretation, program effect is measured as the average of 9 items representing evaluation of acceleration programs by startups. Accordingly, Figure 2 includes the average of the program evaluation items answered by startups. The average score given to the contribution of the program is slightly higher than 3 out of 5.

3.4.2 Independent Variables

Several independent variables are employed in this thesis to measure the effects of entrepreneur and entrepreneurial team characteristics. Some of these indicate entrepreneurial characteristics at the individual level, while others indicate entrepreneurial characteristics at the team level. These indicators, shaped in light of the literature review and qualitative analysis, aim to examine the effects of individual-level and team-level entrepreneurial characteristics. Both individual-level and team-level entrepreneurial characteristics measured by five-point Likert scale questions (represented in Appendix B) are first analysed by EFA demonstrated in Table 7 and Table 8. Considering the ease of interpretation each independent variable below is the average of indicators that defines a variable. Figure 2 includes the average of each entrepreneurial characteristics items answered by startups. Additionally, Table 9 includes the definitions of independent variables.

3.4.2.1 Causation

According to Chandler et al. (2011), planned behaviors and actions in the entrepreneurship process are associated with causation attitude which affects the process of entrepreneurial teams discovering and implementing entrepreneurial opportunities. To examine the planned behaviors of entrepreneurial teams such as awareness, analysis ability, realistic perspective, and team vision; causation approach studied by Chandler et al. (2011) is adapted. As one of the independent variables, causation aims to measure the ability of the teams to determine

their entrepreneurial strategies and actions considering opportunities and market situations according to their planned behaviors. Startups are asked to score 9 statements from 1 (not suitable) to 5 (very suitable) that measure their behaviors and actions shaping causation approach of entrepreneurial teams. Causation is measures as the average of 9 items indicating team-level planned behaviors. In light of the literature review, causation is expected to have negative impact on market-related performance and external financing performance since causation has negative relationship with uncertainty (Chandler et al., 2011). On the other hand, qualitative results reveal that causation is a critical entrepreneurial characteristic that enables teams to achieve entrepreneurial outcomes. Additionally, planned teams are expected to utilize less from the program as they have already determined their future actions, and thus less open to experimentation with the program. Therefore, I expect to find that entrepreneurial teams acting more upon planned behaviors are less likely to positively evaluate the acceleration programs' impact.

3.4.2.2 Effectuation

Flexible behaviors and experimental actions are crucial in the uncertain nature of entrepreneurship and associated with effectuation attitude which affects the process of entrepreneurial teams discovering and implementing opportunities (Chandler et al., 2011). To examine the flexible behaviors and experimental actions of entrepreneurial teams such as flexibility, openness, collaboration, and ability to keeping pace with uncertainties; the effectuation approach studied by Chandler et al. (2011) is adapted. As one of the independent variables, effectuation aims to measure the ability of the teams to determine their entrepreneurial strategies and actions considering opportunities and market situations according to their flexible attitudes and experimental decision making. Accordingly, startups are asked to score 7 statements from 1 (not suitable) to 5 (very suitable) that measure behaviors and actions shaping effectuation approach of entrepreneurial teams. Effectuation construct is measured as the average of 7 items indicating flexible behaviors and experimental actions of entrepreneurial teams. In light of both the literature review and the qualitative results, I expect to find a positive effect of effectuation on market-related performance and external financing performance since effectuation is expected to have positive relationship with uncertainty (Chandler et al., 2011). Likewise, I expect to find that more flexible entrepreneurial teams that are open to take experimental actions are more likely to positively evaluate the accelerators' benefit. In other words, flexible and experimental teams are expected to have best acceleration outputs since they tend to keep up

with the program better, and thus are more likely increase their performance by better utilizing the program.

3.4.2.3 Collective-efficacy

Collective-efficacy indicates that the team has the necessary set of skills to shape entrepreneurial opportunities, resource utilization, and decision-making processes, thereby indicating their collective belief in transforming inputs into outcomes effectively (Esfandiar et al., 2019; West, 2007). Similarly, the term bricolage refers to the ability of entrepreneurial firms to combine existing and alternative resources in the face of problems, to use them effectively, and thus create opportunities (Senyard et al., 2014; Wu et al., 2017). Accordingly, the scales measuring bricolage developed and studied by Senyard et al. (2014) and Wu et al. (2017) are adapted to measure collective efficacy. Startups are asked to score 8 statements from 1 (not suitable) to 5 (very suitable) that measure team-level ability and effectiveness on resource allocation to create entrepreneurial opportunities. Therefore collective-efficacy is measured as the average of 8 items. I expect to find a positive effect of collective-efficacy on market-related performance and on external financing performance. Besides, I do not expect a particular impact of collective-efficacy on the evaluations of program effect. More efficacious teams may evaluate the program effect lower since their competencies and ability of collective progress enable them to progress and achieve on their own, which make such teams less likely to evaluate the contribution of the acceleration programs on their performance higher. On the other hand, the ability of efficient resource allocation may lead entrepreneurial teams to benefit more efficiently from the supports provided and thus, evaluate the program effect higher.

3.4.2.4 Passion

In addition to the existing literature emphasizing the various effects of entrepreneurial passion, interviewed acceleration programs also highlight the importance of entrepreneurial passion as one of the entrepreneurial characteristics at the individual level. Entrepreneurs' attitudes, such as self-effort, enthusiastic feelings, and high positive emotions towards inventing, founding, and developing, represent entrepreneurial passion (Cardon & Kirk, 2015). As being the most comprehensive study in the current literature and also tests the reliability scales measuring entrepreneurial passion, the study of Cardon and Kirk (2015) is taken as an example. Entrepreneurs are asked to score 11 statements from 1 (not suitable) to 5 (very suitable) that measure passionate attitudes of entrepreneurs. Passion is measured as the average of 11 items indicating individual level passion for inventing, founding, and

developing. Considering both the literature review and statements of accelerator managers interviewed, I expect to find a positive effect of individual-level entrepreneurial passion both on market-related, program-related, and external financing performance indicators since entrepreneurial passion at the individual level is expected to bring several cognitive and motivational consequences that lead entrepreneurs to succeed consequently (Cardon & Kirk, 2015; De Mol et al., 2019).

3.4.2.5 Persistence

Similar to passion, entrepreneurial persistence is an important entrepreneur characteristic leading to achieve goals and positive outcomes in risky and uncertain processes inherent in entrepreneurship. Behaviors related to entrepreneurs' self-identity such as insistence, non-giving up, continuity to pursue goals, and positive emotions regarding achievement expectancy shape the attitude of entrepreneurial persistence (Cardon & Kirk, 2015). Accordingly, the scales used by Cardon and Kirk (2015) are adapted to measure persistent behaviors of entrepreneurs at the individual level in this thesis. Entrepreneurs are asked to score 3 statements from 1 (not suitable) to 5 (very suitable) measuring entrepreneurial persistence as the average of these indicators. Persistent entrepreneurs are expected to achieve positive outcomes because of higher levels of insistence, continuity to pursue goals, and high achievement expectancy (Cardon & Kirk, 2015). Therefore, I expect to find a positive effect of individual-level entrepreneurial persistence both on market-related, program-related, and external financing performance indicators.

3.4.2.6 Self-efficacy

Self-efficacy plays an important role in the emergence of entrepreneurial intentions and brings in both task-related and non-task related competencies. Entrepreneurs with high levels of self-efficacy demonstrate more devotion to tasks, more willingness to pursue efforts, more resistance against challenging situations; and thus are likely to achieve successful entrepreneurial outcomes (Chen et al., 1998). The scale of entrepreneurial self-efficacy used in the study of McGee et al. (2009) is adapted to measure self-efficacy at the individual level. Accordingly, entrepreneurs are asked to score 10 statements from 1 (not suitable) to 5 (very suitable) measuring their ability to research for opportunities, planning, marshaling, and networking. Self-efficacy is measured as the average of these 10 items. Considering both the literature review and acceleration programs interviewed, I expect to find a positive effect of entrepreneurial self-efficacy both on market-related and external financing performance indicators. On the contrary, it is expected that entrepreneurs who are more self-efficacious

are highly competent and willing to achieve outcomes by his/her own (Bandura, 1997; Martinez et al., 2018), and thus less likely to utilize the resources offered by the programs. In short, I expect that more efficacious entrepreneurs are less likely to positively evaluate accelerators' impact.

3.4.2.7 Intention to implement

Entrepreneur's motivational attitudes in terms of founding and running an entrepreneurial firm and managing the non-top-management team shapes entrepreneurial intentions at the individual-level (Cassar & Friedman, 2009; Martinez et al., 2018). Such attitudes are stated as necessary entrepreneurial attributes leading successful entrepreneurial outcomes (Martinez et al., 2018). The scale used in the study of McGee et al. (2009) is adapted to measure individual-level entrepreneurial intentions towards founding, running and managing a startup. Accordingly, entrepreneurs are asked to score 9 statements from 1 (not suitable) to 5 (very suitable) measuring their willingness to implement people and finance. Intention to implement construct is measured as the average of these 9 items. I expect to find a positive effect of individual-level intentions to implement both on market-related and external financing performance indicators since entrepreneurial intention is considered as a critical characteristic that enables entrepreneurs to achieve entrepreneurial outcomes (Cassar & Friedman, 2009; Martinez et al., 2018). Besides, I do not expect a particular impact on the evaluations of program contribution.

3.4.3 Control Variables

According to Salkind (2010), control variables are not main predictors, but can be considered as secondary or third factor that have the potential to impact results. Therefore, control variables are determined in order not to ignore the effects related to the acceleration programs in which the startups are located. Table 9 provides brief descriptions of control variables.

3.4.3.1 Location

Location is one of the control variables indicating that whether the startup is admitted to an acceleration program in Istanbul or Ankara. Istanbul and Ankara are two dynamic cities in which different conditions, opportunities, and facilities are presented for startups. In order to test possible effects of location factor on performance indicators, this variable is employed as a dummy variable where Istanbul equals to 1 and Ankara equals to 0.

3.4.3.2 Type

Type indicates the type of acceleration program. The variable type is obtained based on the qualitative data collected from the acceleration programs interviewed. In their systematic literature review on accelerators, Crişan et al. (2019) explain the operation and the support mechanism of accelerators with four different mechanisms as validation, learning, access and growth, and innovation support. Validation mechanism focuses on simple outputs such as consolidating and verifying the entrepreneurial project by intervening with the fundamental services such as workshops and meetings (Crişan et al., 2019) provided by all of the 14 accelerators interviewed. Learning mechanism also focuses on basic outcomes such as skill acquisition, learning by experimentation, or business and technical knowledge development by intervening with learning-oriented services such as training or geek camps that are offered at different levels by accelerators interviewed.

The access and growth mechanism targets middle-high level outcomes such as product development, product release, or investment attraction, with more market and growth oriented service interventions such as cohort-based selection, intensive mentoring, networking and access to financing (Crişan et al., 2019) that are offered at different levels by acceleration programs interviewed. Innovation support mechanism targets high-level outputs such as market creation, market success, or financial profitability by focusing on the production of advanced technologies and innovation-oriented products and services through interventions such as financial, technical or technology transfer support (Crişan et al., 2019) that are not much on the locus of acceleration programs in Turkey.

In light of these four support mechanisms, 14 acceleration and incubation programs interviewed are categorized based on the mechanisms learning and access and growth since all of the interviewed programs have validation mechanism and none of them are innovation support oriented. Three types of accelerators obtained based on the qualitative data of interviewed programs. Type 1 indicates the highly access and growth mechanism oriented acceleration programs which are Program A, Program F, Program G, Program I, Program J, and Program L. Type 2 includes acceleration programs that function between both learning and access and growth mechanisms as Program C, Program D, Program E, Program H, and Program M. Type 3 represents learning mechanism-focused acceleration programs that are Program B, Program K, and Program N. There are programs functioning similar to incubation programs among Type 2 and Type 3. Therefore, type the categorical control variable is employed as three different dummy control variables as described in Table 9.

Table 10: Descriptive Statistics

	Mean	Std. Dev.	Min	Max
Dependent Variables				
New product	.883	.323	0	1
First sale	.606	.491	0	1
External financing	.585	.495	0	1
Program effect	3.034	.952	1	5
Independent Variables				
Passion	4.424	.547	1	5
Persistence	4.261	.717	2	5
Self-efficacy	4.138	.523	2.8	5
Intention to implement	3.939	.688	2.3	5
Causation	4.085	.521	2.56	5
Effectuation	3.462	. 764	1.43	5
Collective-efficacy	4.142	.484	3	5
Control Variables				
Location	.713	.454	0	1
Type1	.197	.399	0	1
Type2	.492	.502	0	1
Type3	.311	.465	0	1
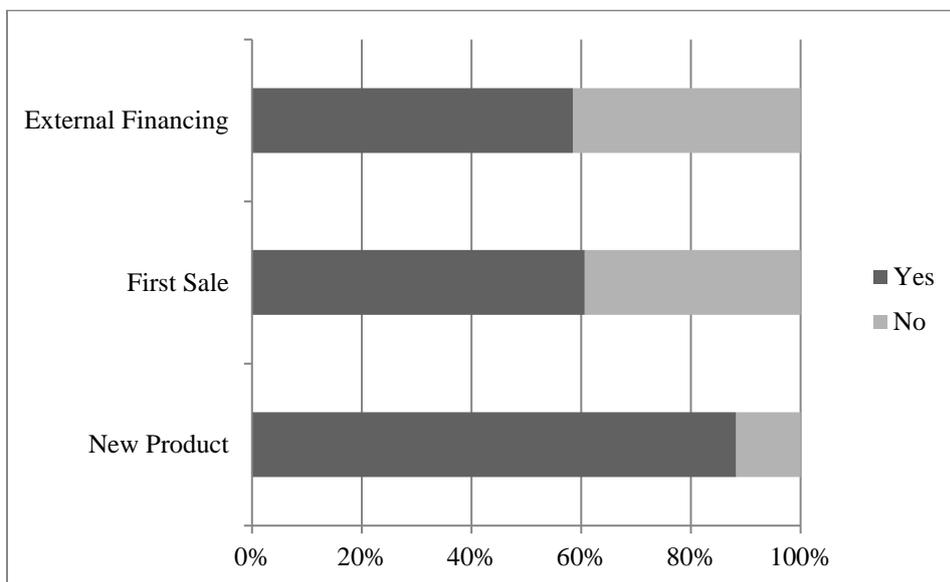
Figure 1: Distribution of Startups by New Product, First Sale, and External Financing
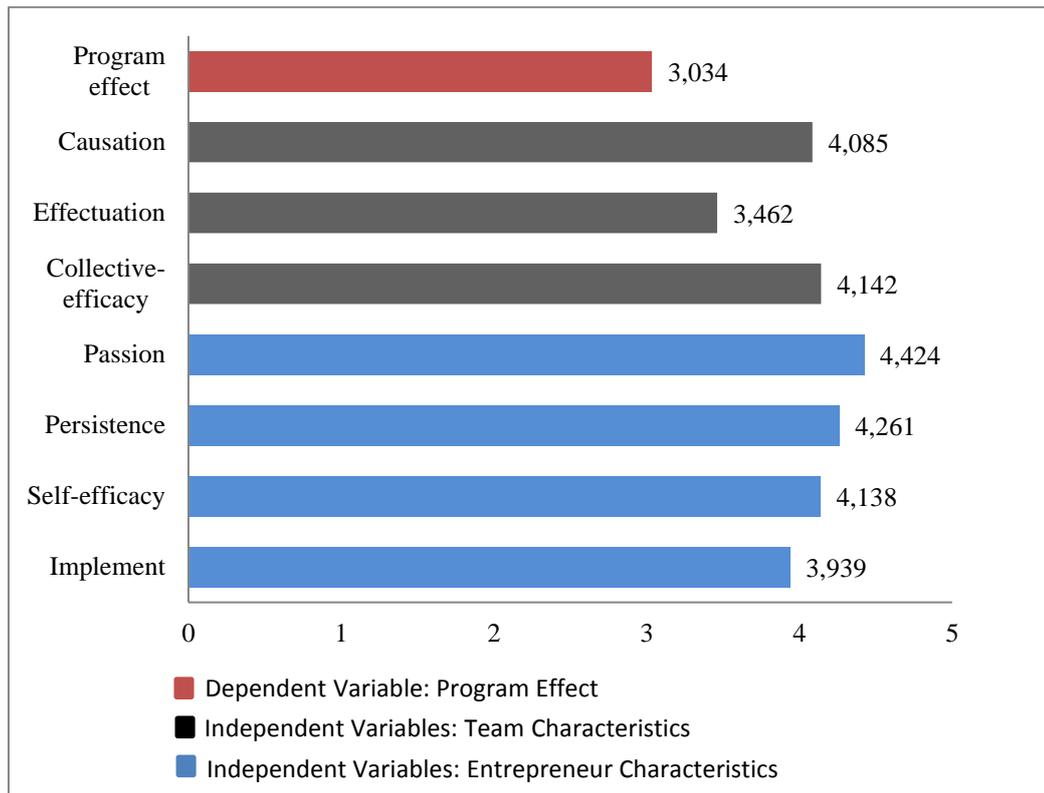
Figure 2: Average of the Variables Obtained from Five-Point Likert Scale Questions

3.4.4 Variables for Robustness Analysis

There are additional variables indicating team characteristics obtained from the questionnaire (represented in Appendix B) for robustness analysis. The scales measuring human capital used in the study of Ganotakis, P. (2012) is adapted to the questionnaire form. The data collected on the human capital of entrepreneurial teams enable to obtain indicators representing demographic, education, and experience related features of entrepreneurial teams. Team size, demographic diversity, educational diversity, and team experience are among these indicators, which are frequently highlighted by the existing studies reviewed in Chapter 2 and by the managers of acceleration programs interviewed. Therefore such indicators are employed in robustness analysis to examine the impact of additional team characteristics on performance indicators. Table 12 briefly explains the measurement and definition of these variables.

Table 11: Correlation Matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	New product	1.00														
2	First sale	-0.02	1.00													
3	External finance	0.03	0.03	1.00												
4	Program effect	-0.12	0.10	0.11	1.00											
5	Passion	0.07	-0.24**	-0.02	0.25**	1.00										
6	Persistence	0.02	0.02	-0.04	0.36***	0.40***	1.00									
7	Self-efficacy	0.13	-0.15	-0.01	0.29***	0.45***	0.45***	1.00								
8	Implement	0.00	-0.03	0.18*	0.27***	0.39***	0.27***	0.66***	1.00							
9	Causation	0.05	-0.03	0.02	0.48***	0.43***	0.43***	0.60***	0.48***	1.00						
10	Effectuation	0.06	0.12	-0.07	0.09	0.08	0.14	0.20**	0.13	0.03	1.00					
11	Collective-efficacy	-0.07	-0.02	-0.08	0.24**	0.38***	0.35***	0.34***	0.23**	0.44***	0.22**	1.00				
12	Location	0.04	-0.11	-0.19*	0.19*	0.29***	0.26***	0.44***	0.27***	0.30***	-0.01	0.12	1.00			
13	Type 1	0.08	0.02	-0.19*	0.04	0.05	0.18*	0.21**	0.10	0.17*	-0.06	-0.09	0.27***	1.00		
14	Type 2	-0.13	-0.02	-0.06	0.02	-0.01	-0.03	-0.21**	-0.18*	-0.14	0.13	0.06	-0.43***	-0.49***	1.00	
15	Type 3	0.08	0.01	0.23**	-0.05	-0.04	-0.11	0.06	0.12	0.01	-0.09	0.01	0.23**	-0.33***	-0.66***	1.00

*$p<0.10$ **$p<0.05$ ***$p<0.01$

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Table 12: Variable Definitions for Robustness Analysis

Variable	Definition
Team size	Representing size of the entrepreneurial team (number of founders of the startup)
Average age of team	The sum of each founder's age divided by the number of founders within the team
Female representation	Dummy = 1 if the team has one or more females
Age diversity	Dummy = 1 if all the founders are not in the same age group
Sex diversity	Dummy = 1 if there are both female and male in the team
Educational level diversity	Dummy = 1 if all the founders have not attained the same degree of education
Educational background diversity	Dummy = 1 if all the founders have not attained education from the same faculty
Engineer representation	Dummy = 1 if the team has one or more founders with engineering background
PhD degree	Dummy = 1 if the team has one or more founders with PhD degree (or PhD student)
Startup experience	Dummy = 1 if one or more founders in the team have previous startup experience
Industry experience	None = The team has *zero* years of industry experience on average Moderate = The team has *five or fewer* years of industry experience on average Extensive = The team has *more than five* years of industry experience on average
Technical experience	None = The team has *zero* years of technical experience on average Moderate = The team has *three or fewer* years of technical experience on average Extensive = The team has *more than three* years of technical experience on average
Marketing experience	None = The team has *zero* years of marketing experience on average Moderate = The team has *two or fewer* years of marketing experience on average Extensive = The team has *more than two* years of marketing experience on average
Manager experience	None = The team has *zero* years of managerial/executive experience on average Moderate = The team has *two or fewer* years of managerial experience on average Extensive = The team has *more than two* years of managerial experience on average

Note: While creating categorical experience variables, firstly, I calculated the average experience for each type of experience (the sum of each founder's years of experience divided by the number of founders within the team). To determine the degree/the category of each teams' experience; I followed the study of *Carpentier & Suret (2015)*. For each type of experience, I ranked the teams according to their average experience and determined the median values. Teams with average experience above the median value have *extensive* experience; Teams that are equal to or below the median value have *moderate* experience; Teams with zero years of experience has *none* experience.

CHAPTER 4

RESULTS

This chapter consists of two main sections presenting qualitative results and quantitative result. The first section includes the results of the analysis of qualitative data based on the interviews with acceleration programs. In the second section, I present the results examining how critical entrepreneur characteristics in determining entrepreneurial performance.

4.1 Qualitative Results

4.1.1   Selection

All of the acceleration programs interviewed differ in terms of business models, selection criteria and the services they provide. All of them accept online applications and filter these applications based on certain criteria key to their objectives and structure. The final selection decision is made by a selection committee consisting of program executives, mentors, entrepreneurs and academicians. Except program F, the selection mechanisms and processes of all remaining acceleration programs are similar (see Table 4, section 3.2). The selection mechanism of Program F differs from the others. There is no selection committee in this program because candidates are subject to multi-staged online tests and candidates who successfully complete these tests are admitted to the program.

Supporting the finding of Hoffman and Kelley (2012), all the acceleration programs mention that they are careful in selecting the projects and entrepreneurs/ teams that they can contribute to and make difference. For instance, the manager of Program A states that "we try to support a project that we can contribute". Similarly, the manager of Program D emphasizes that "we do not choose projects that we think we will not contribute". Therefore, the limited duration of acceleration programs forces them to carry out a careful selection to attract high-potential startups that can gain acceleration and achieve rapid growth (Cohen & Hochberg, 2014; Yin & Luo, 2018). The executives of the acceleration programs state that the selection committees decide by mainly considering the project idea, market

opportunities, the team, and the structure of the team. For example, program managers make the following statements: "project structure, team structure, and team vision are three important criteria" (Program H); "team, idea and market are crucial" (Program J); "we first look at the team and the market" (Program L). Accordingly, it is possible to classify the selection approaches of the accelerators as idea-oriented and entrepreneur/ team-oriented (Bergek and Norrman, 2008). As summarized in Figure 3, there are many criteria under these two selection approaches.
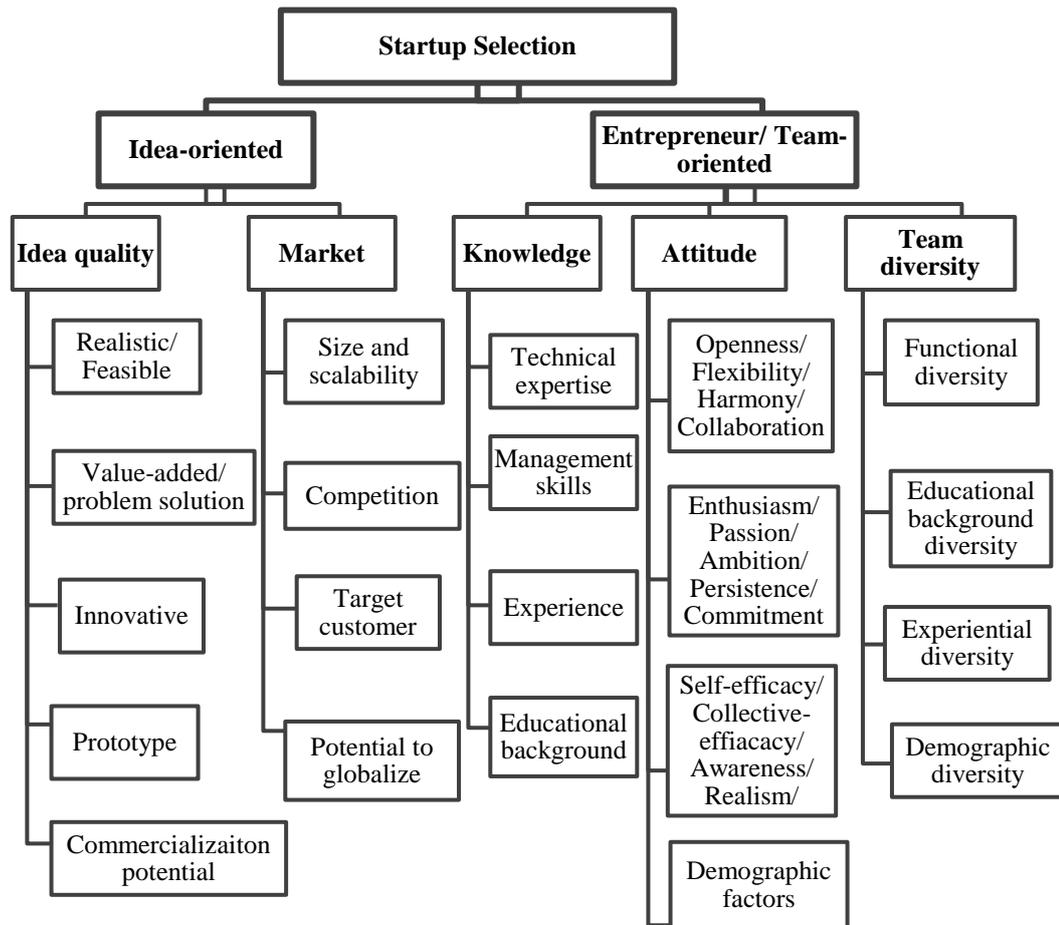
Figure 3: Tree of Codes, Sub-Themes, and Themes of Selection

Source: Adapted from Beyhan (2020); Beyhan et al. (2020))

4.1.1.1 Idea-oriented selection

Some of the selection criteria specified by the acceleration programs are related to the characteristics of the project idea. Existing studies specify that the idea related selection concept includes criteria such as uniqueness, innovativeness, and sustainability to measure the quality of idea; relative advantage, competitiveness, accessibility to customers, and

sector to figure out market opportunities (Bruneel et al., 2012; Hackett & Dilts, 2008; Lumpkin & Ireland, 1988; Yin & Lou, 2018). As in line with the literature, acceleration programs are searching for feasible, realistic, and innovative ideas that have the potential of commercialization, and that fix a problem by adding value. In Table 13, the explanations and thoughts of the program managers regarding these criteria are given. All the acceleration programs expect feasible and realistic project ideas that can be turned into viable businesses. Therefore, Program I asks for a prototype as a key criterion, and most of the accelerators look upon the presence of a prototype as an advantage (see Table 13). Considering that acceleration programs support startups for a short period of time (Cohen, 2013), it is understood why the presence of the prototype is important for selection.

Accordingly, the program managers interviewed state that they avoid R&D projects with a long time to market because of the lack of rapid commercialization potential. Acceleration programs want to allocate limited time to market-oriented services such as business model development, sales and marketing support. For instance, the manager of Program K mentions that "The duration of the program is between 4 and 6 months. At this time, we want to get a result from the entrepreneur. If the R&D process is long, they cannot benefit from the support we provide". Moreover, the accelerator managers highlight the importance of criteria related to the project's market potential such as size, scalability, competitiveness, customers and its potential to globalize. Table 13 shows quoted remarks and opinions of the program managers on market-related criteria. Market size and scalability are considered as important criteria for the project to be competitive, sustainable and open to global markets. Unlike most of the programs, which indicate that they are careful to choose ideas with a sufficiently large market, the manager of the Program K states that "we prioritize projects for which any market was not created before". In the case of Program K, the uniqueness and innovativeness of the project bring in the creation of a new market thus creates provides a competitive advantage and address unsatisfied needs.

4.1.1.2 Entrepreneur/Entrepreneurial team-oriented selection

All the acceleration programs interviewed emphasize the essence of selection criteria related to entrepreneurs and entrepreneurial teams. The entrepreneur/ team-focused selection approach aims to measure the potential of entrepreneurs and entrepreneurial teams (Yin & Luo, 2018). Therefore, the capabilities of entrepreneurs and entrepreneurial teams are considered by all acceleration programs. Most of them state that even if the idea is bad, presence of a good team affects the selection process and the outcome of the evaluation. Accelerator managers have similar arguments, saying that good teams will succeed in any

case, but bad teams cannot get any results even if the idea is good. Accordingly, program managers make the following statements: "if the team is bad, we don't select the project to the program" (Program C); "the idea is bad, but if the team is very good, we choose that team saying that they will succeed somehow" (Program G). Therefore, most programs want to meet teams face to face, regardless of the idea. For instance, the manager of program H states that "we bring a very large percentage of applicants to the presentation stage because it is important for us to see people and the teams".

First of all, most programs state that they choose entrepreneurial teams consisting of at least two people rather than individual entrepreneurs. The absence of an entrepreneurial team for most programs is the reason for the elimination. According to the manager of the Program J, "having a team is not a bonus; it's something that has to be". The fact that the team consists of more than one person is not only important in terms of having different qualifications within the team, but also appears to be a feature that should be taken into account in terms of task sharing and running multiple functions simultaneously and quickly. Therefore, the number of people in the entrepreneurial team, the distribution of their abilities and the harmony within the team, how long the team has known each other or how they met are carefully evaluated by the acceleration programs (see Table 13). Although the acceleration programs emphasize the importance of qualifications of the teams, they make discourses on the criteria related to the characteristics of both the team and the entrepreneurs. Manager of the Program H states that "team and the individuals within the team are important".

According to acceleration programs interviewed, the success of an entrepreneurship project depends on the qualifications of teams and entrepreneurs. These qualifications of teams and entrepreneurs reveal two sub-themes in terms of selection criteria as competency and attitudes. Table 13 summarizes the expressions and opinions of interviewed accelerator managers on competency-related and attitude-related characteristics of entrepreneurs and teams. The competency of entrepreneurs and teams is associated with task-related characteristics such as experience, expertise, and education. Task-related competency and functional abilities acquired by teams and entrepreneurs are considered as critical criteria by the acceleration programs. Most of the program managers try to estimate the presence of the core competencies by questioning the experience, expertise, and education relevant to the sector or field in which the current startup is operating.

Besides the task-related competencies, the acceleration programs consider the coordination and organization of these competencies within teams that are shaped by motivational, behavioral, and communicational skills. Such non-task-related skills determine the quality of

entrepreneurs and entrepreneurial teams. Motivational, behavioral, and communicational characteristics of teams and entrepreneurs are carefully evaluated by the acceleration programs such as the harmony, loyalty, entrepreneurial passion, how long the team has known each other, or how they met (See Table 13). Demographic factors are also included in non-task-related characteristics. Job status and gender appear as prominent demographic criteria. Acceleration programs state that they prefer entrepreneurs who are not currently working in another job. In addition, some program managers state that they demand more women entrepreneurs and give priority when the applicants are women entrepreneurs.

4.1.2 Entrepreneur Characteristics

Managers of all acceleration programs frequently emphasized the importance of personal characteristics of both team members and founders. The acceleration programs carefully evaluate hard and soft skills that indicate personal competence and personal quality. Table 14 contains the remarks, explanations, and considerations of the program managers about characteristics and criteria regarding competence and attitudes at the individual level.

4.1.2.1 Personal knowledge

As acceleration programs accept technology-based entrepreneurship projects, technical expertise and skills are the critical selection criteria. Therefore, technical expertise is the most frequently emphasized feature of individual competence by accelerator managers. While technical expertise is assessed at the team level for most programs, some programs require at least one of the founders to have the technical specialization related to the sector or field in which the startup is operating. Both educational background and prior experiences of entrepreneurs play role in shaping their technical expertise. Therefore, acceleration programs also question individuals' educational and experiential characteristics.

Accordingly, program managers make the following statements: "we ask for their background" (Program G); "she/he should have a technical background with relevant education, if not, should have relevant experience" (Program J); "education and the field of expertise are important" (Program K). Some of the program managers hesitate over technical competence if entrepreneurs whose educational background does not match the current startup. For instance, manager of the Program K states that "when someone who graduated from social sciences comes with a project in electronics, we question his/her technical competence". Most programs state that relevant sector experience and entrepreneurship experience is valuable. Since the team members or founders with relevant experience are regarded as to accelerate the progress of the startup, relevant experience appears as the most

demanded type of experience. Therefore, most acceleration programs pay attention to whether the experiences of founders and team members experience well-suit to the current startup. According to the manager of Program N, "it makes sense if her/his background matches with the current project".

Likewise, it is stated that people with startup experience are likely to progress faster than others. Nevertheless, most programs state that experience is not as decisive as technical expertise. Accordingly, most managers state that work experience is not important and required since they accept students as well to the programs. In fact, the manager of program K demands that "the entrepreneurs to have never worked in corporate companies if possible" because the experience in corporate business life affects the expectations and understanding of entrepreneurship adversely. Some programs also state that entrepreneurship experience is not a sought-after feature, as they already offer entrepreneurship training. In other words, if entrepreneurs have acquired the necessary command and expertise in the technical field, their experiential and educational characteristics remain in the background.

4.1.2.2 Personal attitudes

The motivational, behavioral, and communicative characteristics of entrepreneurs demonstrate their personal attitudes. Accelerator managers interviewed indicate that openness is one of the most important criteria associated with behavioral and communicative characteristics. Since the acceleration programs want to achieve startup growth through the services they provide during the program, they expect entrepreneurs, who are open to both sharing their own ideas and getting ideas from others, will benefit from these services better and utilize the program process. Manager of the program K mentions that "the entrepreneur must be open to criticism in order to contribute each other". Many program managers call entrepreneurs who are closed to sharing and getting ideas as conservatives and argue that these entrepreneurs are less likely to benefit from the program and the facilities. In addition, accelerator managers indicate that projects change and evolve during the acceleration process, and therefore they demand to work with open and flexible entrepreneurs. For instance, the manager of Program D emphasizes that "we are looking at whether his/her mentality is open to change, because the project may not prosper as initially intended".

Furthermore, program managers state that they want to see enthusiastic, passionate, and ambitious entrepreneurs who can convince acceleration programs during the selection. Most of the program managers state that such entrepreneurs are more successful in overcoming difficulties in achieving success, thereby accomplish successful outcomes as a result of the

program process. According to the manager of Program L, "we want competence, passion, and dedication". Stating that persistent and ambitious entrepreneurs have higher passion and enthusiasm towards their startup, acceleration programs are careful to select successful entrepreneur candidates with these motivational characteristics. In other words, according to most of the program managers, people who are passionate, enthusiastic, persistent, and ambitious about entrepreneurship will continue to try until they succeed, even if the proposed project will fail. As the manager of Program M states, "she/he is obsessed with the business; we say she/he will do it no matter what".

Additionally, some acceleration programs try to measure the self-efficacy of the entrepreneurs as well as their motivational characteristics by giving small assignments to the entrepreneurs during the selection process. Manager of the Program F states that "there is a list of homework. It matters how much he/she can do and how long she/he continues to do". Interviewed programs state that entrepreneurs' beliefs in themselves and in their competencies are required characteristics to realize the project. Commitment is also a characteristic indicating personal quality that is considered by almost all acceleration programs. Acceleration programs define and measure commitment in several different ways. One of them is the fact that entrepreneurs dedicate themselves to the startup and consider entrepreneurship as a full-time career plan. As the manager of Program M mentions, "entrepreneurship should be adopted as a career plan". Most program managers state that they demand entrepreneurs to participate in the program full-time. Therefore, continuity is an important selection criterion for acceleration programs that provide short-term support. Manager of the Program F emphasizes that, "she/he must be there full time, and if she/he is a student, has to spend a certain amount of time".

Other definitions of accelerator managers regarding commitment are related to the risks entrepreneurs took to start their business. Accordingly, some acceleration programs pay attention to whether the entrepreneur spends her/his own money for the startup, what she/he has sacrificed, or what she/he risks. Taking personal risks or using equity resources to realize the startup provides information on entrepreneurs' commitment and motivation to start and continue their business. Accordingly, program managers make the following statements: "if she/he did not give anything, did not waive her/his salary or sold something and put it there" (Program J); "we do not want to introduce an entrepreneur who wants to meet with investors and does not want to spend her/his own resources on her business idea" (Program K); "we look at what she/he can give up for her/his own business" (Program M).

Table 13: Analysis of the Interviews: Codes, Sub-Themes, and Themes of Selection

Statements from the interviews	Codes	Sub-themes	Themes
can it be commercialized (E); a ready prototype takes the project far front (J); if it doesn't involve innovation and pursue in the existing market we eliminate (K); is it innovative? (C); at least we look for a prototype (I); the prototype shows that that idea or product can be put into practice (I); what problem it addresses is very important for us (A); does the idea really fix a problem? (L); we look at whether it will provide added value (B); whether it brings innovation and solve a problem (D); is there any intellectual property right? (M); we question the feasibility of the idea (N)	Feasible/Realistic, Value-added, Problem solution, Innovative, Prototype, Commercialization potenial	Idea quality	Idea-oriented
to enter a crowded market, spending money for this is meaningless (D); how big is the market? how many competitors? whose problem does it solve? (G); we question the market potential of the project (N); once we see it is scalable…we say yes this is it (J); we do not take projects that is only for the Turkish or the local market, for technology startups Turkish market is really small (I); either the market is big or there are less competitors (A); is there a sufficiently large market? who are the targeted customers? (M); is the solution suitable for the customers? (M); can it fit in the foreign markets? (B); is it sustainable? can it be expanded globally? (L)	Size and scalabilty, Competition, Target customer, Potential to globalize	Market	
they talk about a technology business, but do they have relevant background, experience (D); is the person technically educated? or business-based? (B); what do they want to do? do they have experience to do it (H); we definitely pay attention to the expertise of the team (K); we want the nuclear competence within the team (L); we expect the team to be competent in the technical field (N); it is important to know the sector (M); there are two criteria in the team; the number, and the other is whether there is a task or responsibility distribution within the team. (I); necessary technical background is very important (J)	Expertise, Experience, Education	Knowledge	Entrepreneur / Team-oriented
we look whether they are open to change their mindset (D); we look at team harmony (A); do they think on it? made research about it? improved? (H); do they want to stick their neck out? (G); will they give importance to the business? (J); people who also have high social skills and can interact well (J); we are trying to choose people who are aware of and want improve oneself (A); you see the passion but there is no plan, they really want to do it, get accomplished (L); it matters how well the team knows each other. can they really accomplish something together? (M); what are the life expectations of the team, we start from this before the business idea (K); we ask if they are working in another job (I); we want to see a woman entrepreneurs (E); we positively discriminate women because we want more women entrepreneurs (G); if women apply, I give priority (D)	Motivational, Behavioral, Communicational, Demographic factors	Attitude	

Source: Adapted from Beyhan et al. (2020)

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4.1.3   Team Characteristics

The characteristics of entrepreneurial teams are also among the criteria that are critically considered in the selection. Most of the acceleration programs interviewed emphasize the significance of factors related to the competence and attitudes of entrepreneurial teams and the diversity of these factors within teams. Table 14 includes the remarks, explanations, and considerations shared by the program managers interviewed regarding the characteristics at the team level that are classified under the sub-themes of team competence, team quality, and team diversity.

4.1.3.1 Team knowledge

All of the programs interviewed mention the presence of the necessary technical expertise in the team as one of the key criteria. Team-level technical expertise points to the acquisition of know-how and technical skill-set, and presence of a good command in the specific technology, and the industry in which they operate. Therefore, technical expertise affects the entrepreneurial team's capacity to innovate, and thus brings in competitive advantage in the market. Since accelerators want to spend the limited program time by focusing on management and market related problems, program managers state that inadequate entrepreneurial teams in terms of technical capability cannot utilize the limited duration efficiently. For this reason, acceleration programs consider the acquisition of technical skill-sets and sufficient technical specialization in the team as crucial characteristics. As most of the program managers make similar statements, the manager of program G underlines that "technical competence of the team is very important, it is really essential".

Accelerators state that technical competence of the team is often more important than business and market related competencies. The purpose of the accelerator format is to enable technology-based startups to access to the market and to be successful within. For this reason, acceleration programs provide services such as market entry, customer and market identification, business model development, product or service development, network connections, and investor relations. Accordingly, the absence of the managerial abilities of the teams is not a reason for elimination, but entrepreneurial teams with these abilities are likely to grow faster and gain competitive advantage as program managers mentioned. According to the manager of Program J, "They have no idea how much money they can make. The final product may be finished, but we also see highly technical-oriented teams that do not care much about how to make money, to whom to sell." Although it is an ideal situation for an entrepreneurial team to have both technical and managerial skills,

interviewed programs frequently emphasize that this is a very rare situation. Therefore, managerial competence is not a requirement for most programs, while some program managers question teams' managerial skills during selection and require at least some managerial knowledge.

Most acceleration programs indicate that a relevant industry experience and entrepreneurship experience in teams are advantageous in terms of choice because it is stated that experienced teams find more important and realistic problems and bring more effective and demanding solutions to these problems. Yet, the team-level experience is not a decisive selection criterion as technical expertise. In particular, it is stated that the average startup experience in the team provides a relative advantage and that such teams are able to accelerate their startup effectively. Almost all managers of the acceleration programs state that collective experience is one of the most important factors of competence at the team level. Most of the programs interviewed want to find out if the team has worked together and met each other before because of those teams with collective experience have a lower risk of having problems both on task-related and non-task-related issues. Manager of the Program A states that "From where and how many years are they friends? Did they work together? Are they studying in the same department?"

4.1.3.2 Team attitudes

Collective behavioral, motivational and communicative features at the team level are indicators of team quality. Among these characteristics, collaboration and harmony emerge as the most important and most demanded criteria. Regarding team harmony, program managers make the following statements: "we look at the harmony within the team" (Program A); "can the team work together in harmony?" (Program E); "we look at the integrity and harmony of the team" (Program H). Accelerator managers state that they choose teams that are open criticism and exchange ideas, prone to cooperation, and easy to work with during the program. As the manager of Program D mentions, "if the team does not want to try it, if they go their own way, this is not suitable for us".

Moreover, it is stated that team harmony affects both intra-team collaboration and collaboration of the team with the accelerator and with other teams. For instance, manager of the Program G states that "we want teams accepted to the program to interact with each other as well". Since the acceleration programs want to choose teams that are able to make mutual contributions, they eliminate conservative and stubborn teams. Furthermore, it is stated that realistic and highly aware teams are more successful in making the right decisions, using the

available resources more efficiently and evaluating the opportunities better. Manager of the program L mentions that "good teams can see a unique, new, and disparate problem and thus make a difference in market competition". At this point, the characteristics regarding team quality dominate the criteria related to the idea.

Almost all accelerator managers highlight the essence of entrepreneurial passion, enthusiasm, and persistence at the team level which are critical motivational and behavioral characteristics that effect selection decisions. According to the managers interviewed, the enthusiasm, passion and persistence of the team are indicators of how much they focus on the startup. How much and how long the entrepreneurial team wants to continue this business is one of the indicators of these characteristics. Interviewed programs state that these motivational characteristics bring in traction to teams by providing determination to effort, eagerness to accomplish, and endurance. For instance, program managers make the following statements: "we look at how much the team focuses on this business, we say these kids will do something for sure" (Program D); "it is important to us how much they insist on continuing this business" (Program G); "we are looking for teams that say we will, we will" (Program L).

Most program managers state that the enthusiasm and passion of the entrepreneurial teams are noticed during the presentation. Accordingly, some of the acceleration programs try to measure how persistent, enthusiastic and efficacious they are by giving some small homework to the applicants during the selection process. For example, manager of the Program J explains that "we give some homework; the seriousness of the team there shows us how passionate and willing they are to the project". Furthermore, collective efficacy of teams is one of the influential factors to convince accelerators. It is stated that the team's collective confidence in their own competences and their collective belief in effectuation have a positive effect on selection decisions. As the manager of the Program G states that "there should be technical competence, motivation, belief and willingness to succeed together in the team".

Unlike commitment at the individual level, team commitment refers to the loyalty of team members to each other and collective loyalty to the team's decisions, goals and values. Most of the acceleration programs interviewed emphasize that the commitment of the team to each other, to their goals and to the startup are important criteria. It is stated that the team's constant participation in the program, their desire to overcome difficulties together, and their collective effort for the startup are indicators of team commitment. Most acceleration programs require teams to participate in the program as a whole and concentrate on the

startup together. For instance, program managers make the following statements: "we look at how much the team focused on the startup" (Program D); "we look at how much time the team devotes to the project" (Program F); "continuity is important, for example, there was a team from Ankara, they failed because they could not continue the program full-time and they were our least successful team" (Program I).

4.1.3.3 Team diversity

Although the acceleration programs interviewed do not make direct explanations, they have explanations pointing to team diversity. Educational background diversity is among one of the most frequently mentioned. Most programs state that they try to select entrepreneurial teams consisting of different educational backgrounds. It is stated that the presence of individuals from different disciplines in the team will reinforce the technical capacity of the team. In addition, there are explanations regarding experiential diversity. For example, some programs pay attention to the presence of people in the team with both experienced in the technical field, in marketing or sales, and in the sector in which the startup is operating. In fact, some programs recommend entrepreneurial teams to include members with different backgrounds, as they value to teams with individuals from different backgrounds.

Regarding educational and experiential diversity, program managers make the following statements: "if two friends with same features and same background came, we do not lean towards this" (Program C); "we attach great importance to having at least one technical founder and another founder who knows the sector in the team" (Program D); "we are looking at whether a sales person within the team, presence of someone other than engineers" (Program M). There are remarks and considerations of accelerator managers associated with functional diversity. Most programs attach importance to the distribution of tasks that are specific within the team. In other words, it is important that the functional areas of the individuals in the team are clear and separate from each other. Further, the presence of task sharing and separation of functional roles within the team are specified as key criteria by some programs (see Table 14).

Most of the acceleration programs pay attention to whether there are any members other than technical staff in the team because as the separation of functional area and task in the team increases, it is expected that the members of the team will be able to complement each other better. Accordingly, manager of the Program K states that "Are the functional areas clear? When a technical question is asked, does the team turn to one person? Or are they all talking at once? Since the resources are limited, the tasks can be shared, but we generally want the

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definitions related to the functional areas to be clear". Stating that they are trying to choose teams with people acquired different functional features and abilities, program managers state that they recommend recruiting new members to teams that do not have functional diversity. Accordingly, functional diversity appears as an important team characteristic since such teams are expected to benefit the limited program duration without losing their main focus.

Gender diversity in entrepreneurial teams is one of the types of demographic diversity. Some of the programs interviewed provide explanations about the gender distribution of entrepreneurial teams. Program managers state that there are female members in the teams, but the number of women entrepreneurs or women founders is very low. Regarding gender diversity, program managers make the following statements: "not only because we did not choose, women entrepreneurs have fewer applications" (Program A); "the number of women is less, generally not as a founding partner but as a team member" (Program D); "there are women in the teams, but there are two teams in which the founders are women" (Program G). Still, stating that the number of female members is not high enough and the number of male entrepreneurs and male team members is much higher, some program managers highlight that they attach importance to the representation of women entrepreneurs in the teams (see Table 14).

According to the manager of Program J, "When it comes to starting a business, the rates are low. Maybe we can say men are more inclined to take risks." It is stated that women generally undertake non-technical duties and are highly successful as salespeople, marketers, or designers in entrepreneurial teams. For example, manager of the Program E mentions that "women attempt to more social startups, while men think more technically". According to the director of Program H, "there is a tendency that teams with women members or founders to be more open to communication, collaboration, and sharing". Most of the programs interviewed associate the low number of women entrepreneurs with the presence of low numbers of technically educated, specialized, and experienced women. As another reasoning, manager of the Program D underlines that "Having too many male examples also has a very important effect. There are very few examples of women entrepreneurs."

Table 14: Analysis of the Interviews: Codes, Sub-Themes, and Themes of Entrepreneur/Team-Oriented Selection

Statements from the interviews	Codes	Sub-themes	Themes
is he/she technically specialized to do the current project? (A); if it is a technology start-up, the founder should have technology background (I); the project is technical, but she/he studied psychology, then we ask, how are you going to do this? (D); experienced ones has a background, familiar to the market, knows the market needs, and progress faster accordingly (E); entrepreneurship experience is more valuable than corporate experience (K)	Technical expertise, Educational background, Work/ relevant/ startup experience	Personal knowledge	Entrepreneur characteristics
if he/she doesn't want to try and is stubborn it isn't good for us (G); open to sharing his/her own ideas? open to get someone's opinion? if too closed to both, not fit for us (H); although this business failed, we question whether he/she wants to become an entrepreneur in order to accomplish (M); is the entrepreneur ambitious? enthusiastic? (J); we want them to be full-time entrepreneurs and give their full energy (A); the kid truly dedicated himself (D)	Openness, Enthusiasm Passion, Persistence, Ambition, Self-efficacy Commitment	Personal attitudes	
we want a solid team with required technological and technical expertise (K); it is software project, but there is no software engineer in the team. technical expertise is important (G); perfect if the team is experienced in the relevant industry (L); whether they have built their income models well (K); will they also be able to do marketing and sales? (J); we look for if there is any sales experience among them (A); did they work together at a startup (G); have they worked together before? (E); they met in the business life and formed a good team (C)	Technical expertise, Management skills, Collective experience, Team startup experience	Team knowledge	Team characteristics
ideal team is collaborative (H); we reject if the team is very dreamer and conservative (H); the more the team work in harmony the long-lasting it will be (M); are they open to change? have flexible mindset? (D); the team must be excited about and believe in the startup (C); when the business starts to get serious, less passionate members can pull team down or slow down the process (K); it is very important for us whether they have dedicated part of their lives to this project (I); how loyal is the team to each other? are there disagreements (K); the team should be willing to step up to the plate together (G)	Collaborative teams, Openness, Team harmony, Team passion, Persistence, Team commitment, Awareness, Realism, Collective efficacy	Team attitudes	
if two mechanical engineers come, we say, find an industrial engineer, financier, business administrator (C); we look at the number of how many people are technical-based, how many are business-based (A); we want IT specialist, business developer, software developer to be separate from each other within team (K); one hacker, one hustler and a designer is a complete team for us (G); some walk alone but we try guide them; take a seller, a designer (E); a chemist, a computer engineer, etc. harmonization of the team is important (M); there should be at least a woman in each entrepreneurial team (D); the more diverse the team, complement each other, is the team that shines, we try to choose them (C)	Functional diversity, Experiential diversity, Educational diversity, Demographic diversity	Team diversity	

Source: Adapted from Beyhan et al. (2020)

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4.1.4   Takeaways from the Qualitative Results

As a result of the interviews with the managers of the acceleration programs, important findings are obtained regarding both the venture selection and entrepreneurial characteristics. First of all, selection approaches of acceleration programs are categorized into two as idea-oriented and entrepreneur/ team-oriented. These two selection approaches are not separate from each other. Accordingly, all the programs interviewed select startups according to several criteria under these selection approaches. Under the idea-oriented selection approach, there are criteria indicating the quality of the idea of the entrepreneurship project and its market-related quality. Under the entrepreneur/ team-oriented selection approach, there are criteria indicating the competence and attributes of both entrepreneurs and entrepreneurial teams. Most of the programs highlight that the criteria related to the entrepreneur/ team-oriented selection approach are more important than the criteria related to the idea-oriented approach. Moreover, often the emphasis is placed especially on the tendency of good teams to be accepted into programs, even if the idea is bad.

Both the individual and team level characteristics emphasized in the interviews are collected under two categories as competence and attitudes. While the characteristics that point to individual competence highlight the attributes that shape the knowledge-based competencies of entrepreneurs such as experience and education, the characteristics that point to individual attitudes include passion, persistence, commitment, and self-efficacy. Furthermore, frequently emphasized knowledge-based competencies of entrepreneurial teams include factors such as average experience, technical expertise, and educational diversity of the team. Team attitudes that point to their motivational, behavioral, and communicational quality such as harmony, openness, flexibility, and team-efficacy, and demographic characteristics shaping the human capital of the team are among the team-level characteristics frequently emphasized by the acceleration programs. Although acceleration programs have explanations regarding both team-level and individual-level characteristics, explanations indicating importance of team-level characteristics become prominent.

Such findings from the qualitative analysis are important in feeding quantitative analysis. According to the qualitative findings, entrepreneur and entrepreneurial team characteristics signal startup performance. The quantitative part basically examines whether such expectations of accelerator managers are in fact true. Since the importance of team-level characters is especially emphasized in the qualitative findings, the effect of team characteristics on performance is expected to be stronger compared to the individual-level characteristics.

4.2 Quantitative Results

This section presents quantitative analysis results examining the impact of individual-level and team-level entrepreneurial characteristics on startups' market-related, finance-related, and program-related performance. The effects of the characteristics are examined with 4 different models for each dependent variable. In the first model, only team characteristics are used; in the second model, entrepreneur characteristics are included; in the third model, entrepreneur characteristics and team characteristics are included together; in the last model, both team characteristics and entrepreneur characteristics are employed together with the control variables. These models aim to test the impact of entrepreneurial characteristics on the performance of early-stage ventures. The expected impact of each independent variable is mentioned in section 3.4.2. Interviewed acceleration programs especially emphasize the importance of entrepreneurial team characteristics. Therefore, these models also aim to examine whether the individual-level characteristics or team-level characteristics are more influential on performance in addition to the effect of each independent variable. Only statistically significant models at $p<0.01$, $p<0.05$, or $p<0.1$ are reported in the following sections.

4.2.1   Effects of Entrepreneur Characteristics and Entrepreneurial Team Characteristics on Market-Related Performance

The impacts of individual-level and team-level entrepreneurial characteristics are primarily examined on the market-related performances of early-stage enterprises. The probit models demonstrated in Table 15 are used to analyze the effects of entrepreneurial characteristics on new product and first sale performance both of which are dummy variables. Considering both the literature review and the qualitative results, the positive effects of both team characteristics and entrepreneur characteristics on the new product and first sale performances of the startup are expected. Contrary to expectations, none of the probit models explaining individual-level and team-level entrepreneurial characteristics on new product performance are statistically significant as the p-values indicate. In other words, this finding tells us that neither team characteristics nor entrepreneur characteristics are able to explain the variance in new product releases to the market.

Nevertheless, the pseudo-r-squared of the model analyzing the impact of team characteristics equals 0.0266 which is smaller than the model's including entrepreneur characteristics (equals to 0.0509). I apply joint significance test in order to control whether the group of individual level or group of team level characteristics have influence on new product

performance. In other words, I control whether the coefficients of entrepreneur characteristics (as passion, persistence, self-efficacy, and implement) or the coefficients of team characteristics (as causation, effectuation, and collective-efficacy) are equal to zero together as apart from each other. However, results of the joint significance tests applied to column 1 in Table 17 indicate that neither the group of team characteristics (Prob > chi2 = 0.380) nor the group of entrepreneur characteristics (Prob > chi2 = 0.239) explains the performance on new product releases.

Focusing on the dependent variable first sale, probit models explaining the effect of entrepreneur characteristics (column 1 in Table 15), including all entrepreneurial characteristics (column 2 in Table 15), and including both team and individual level characteristics with control variables (column 3 in Table 15) are significant. Considering the emphasis of acceleration programs on team characteristics, the probit results indicate that the data cannot identify a significant effect of team characteristics, but provide a sufficient impact of individual-level entrepreneurial characteristics on the first sale (column 1 in Table 15). Supporting this, results of the joint significance tests applied to column 3 in Table 15 (or see column 2 in Table 17) indicate that the group of entrepreneur characteristics (Prob > chi2 = 0.0165) is better in explaining the performance on first sales, than the group of team characteristics (Prob > chi2 = 0.2881) at 0.05 threshold.

Looking at the model explaining first sale performance with entrepreneur characteristics (column 1 in Table 15), while persistence (ß= 0.446) is positive significant, passion (ß= -0.959) and self-efficacy (ß= -0.793) are negative significant. Considering the model including all characteristics and (column 2 in Table 15) and the model with control variables (column 3 in Table 15), effectuation among team characteristics becomes statistically significant as expected, and entrepreneur characteristics maintain similar results except persistence that becomes statistically insignificant. One unit increase in an entrepreneurial team's level of effectuation corresponds to a 0.308 and a 0.320 rise in the z-score for making the first sale in models 2 and 3 in Table 15 respectively. Based on the marginal effects of entrepreneurial characteristics (see column 2 in Table 17), higher levels of passion and self-efficacy have negative impact, unlike the expectations. The findings indicating that one unit rise in both passion and self-efficacy decrease the probability of making the first sale are rather unexpected because these two individual-level characteristics are regarded as critical personal attributes that lead entrepreneurs to success, but apparently not according to our results.

Table 15: Probit Results for Explaining Market and Finance Related Performance with Entrepreneur and Entrepreneurial Team Characteristics

	Dependent Variables			
	First Sale			External Financing
	(1)	(2)	(3)	(4)
Control Variables				
Location			-0.212	
			(0.355)	
Type 1			0.170	
			(0.400)	
Type 3			0.0665	
			(0.349)	
Independent Variables				
Team Characteristics				
Causation		0.383	0.370	
		(0.356)	(0.356)	
Effectuation		0.308*	0.310*	
		(0.183)	(0.185)	
Collective-efficacy		0.00593	0.0290	
		(0.328)	(0.331)	
Entrepreneur Characteristics				
Passion	-0.959**	-1.085***	-1.069**	-0.188
	-0.391	(0.416)	(0.426)	(0.385)
Persistence	0.446*	0.363	0.354	0.0264
	-0.248	(0.248)	(0.251)	(0.230)
Self-efficacy	-0.793*	-1.023**	-0.947**	-0.647*
	-0.437	(0.437)	(0.443)	(0.376)
Implement	0.451	0.442	0.421	0.733***
	(0.279)	(0.279)	(0.280)	(0.257)
Constant	4.156***	3.401**	3.190*	0.726
	(1.527)	(1.693)	(1.780)	(1.564)
Observations	94	94	94	94
Pseudo R-squared	0.0897	0.117	0.121	0.0539
Wald chi2	10.35	16.52	16.47	8.271
Prob > chi2	0.0350	0.0207	0.0870	0.0822

Robust standard errors in parentheses | *** $p<0.01$, ** $p<0.05$, * $p<0.1$

4.2.2 Effects of Entrepreneur Characteristics and Entrepreneurial Team Characteristics on Obtaining External Finance Performance

The external financing performance refers to whether the early-stage ventures have received angel investment, venture capital investment, or public funding. Considering both the literature review and the qualitative results, the positive effects of both team characteristics

and entrepreneur characteristics on the likelihood of receiving angel investment, venture capital investment, or public funding are expected.

First of all, considering the results of the joint significance tests applied to column 3 in Table 17, neither the group of team characteristics (Prob > chi2 = 0. 0.493) nor the group of entrepreneur characteristics (Prob > chi2 = 0.126) explains the external financing performance. In addition, the probit model including entrepreneur characteristics is the only statistically significant model explaining external financing performance at 0.10 threshold (Prob > chi2 = 0.0822) as in column 4 in Table 15. Focusing on the probit model demonstrated in column 4 in Table 15, intention to implement is positive significant as expected while self-efficacy is negative significant contrary to expectations. Accordingly, one unit increase in an entrepreneur's level of intention to implement corresponds to a 0.733 rise in the z-score for probability of obtaining external financing. However, one unit increase in an entrepreneur's level self-efficacy indicates a 0.647 decrease in the z-score for probability of obtaining external financing. The insignificance of probit models, except the one including individual level characteristics, indicates that the data are not able to explain the variance in obtaining external financing with team-level, and all entrepreneurial characteristics. Yet, we can say that the expectations on the positive influence of entrepreneur characteristics are partially met focusing on the marginal effects of variables (see column 3 in Table 17) since only higher levels of intention to implement increases the probability of obtaining external financing.

Focusing on model 3 in Table 17, which has the p-value for the chi-square less than 0.05, locating in an accelerator operating in Istanbul decreases the probability of obtaining external financing by 0.324 and being admitted to an acceleration program in Type 3 versus Type 2 increases the probability by 0.288. In other words, the startups locating in an Ankara-based accelerator and the startups within an accelerator in Type 3 accelerator, rather than Type 2, are more likely to obtain angel investment, venture capital investment, or public funding. The positive impact of Ankara is interesting since the entrepreneurial financing alternatives and options are broader in Istanbul. In order to control the unexpected impact of Ankara on the probability of obtaining external financing, I also examine the marginal effects of same probit models by changing the dependent variable as investment performance. The dummy dependent variable investment performance indicates whether the startup has received an angel investment or venture capital investment excluding public support. Probit results on the likelihood of obtaining angel investment or venture capital investment point to the significant impact of neither Location nor Type 3. Accordingly, it is

possible to relate the positive significant effect of Ankara on the likelihood of obtaining external finance with the public funding options. Likewise, the positive effect of Type 3 versus Type 2 on the likelihood of external financing may also be associated with being funded through public supports. As the accelerators belong to Type 3 do not offer services that make access to investors easier, public supports may become the only external financing alternative for startups. Even in some cases (Programs B, D, E, K, and N) entrepreneurs are advised to apply public grants provided by the TUBITAK BIGG program.

4.2.3 Effects of Entrepreneur Characteristics and Entrepreneurial Team Characteristics on Acceleration Program-Related Performance

The program-related performance indicates startups' evaluation of the impact of acceleration programs on their performance. Therefore, the OLS models demonstrated in Table 16 aim to analyze the effects of individual-level and team-level entrepreneurial characteristics on the program effect. Contrary to the expectations of overall positive impact of all entrepreneur characteristics as on market-related and external financing performances, some entrepreneurial characteristics are expected to affect program-related performance differently. For instance, entrepreneurial passion and entrepreneurial persistence are expected to affect the program effect evaluations positively, self-efficacy is expected to affect negatively, and no particular impact of intention to implement is expected. Considering team level characteristics, teams having higher levels of effectuation approach are expected to evaluate the program effect positively, while teams with higher levels of causation attitude are expected to evaluate the program effect lower. Additionally, no particular impact of collective-efficacy is expected since such teams may either less utilize the programs because of the collective progress ability or more utilize the programs because of the ability of efficient resource allocation. Supporting the emphasis of acceleration programs on the importance of team characteristics this time, results of the joint significance tests applied to column 4 in Table 16 indicate that program effect is predicted better by the group entrepreneurial team characteristics (Prob > F = 0.032), rather than the group of individual-level characteristics (Prob > F = 0.266) at 0.05 threshold.

As demonstrated in Table 16, all OLS models are statistically significant at the 0.01 threshold. Focusing on models including team characteristics (columns 1, 3, and 4 in Table 16), collective-efficacy and effectuation do not have statistically significant impact, and the causation has positive impact on the evaluations of program effect, contrary to expectations. The insignificance of collective-efficacy is partially expected since the collective competency might allow teams to progress and to be willing to achieve on their own that

leads them to less utilize from the services provided by programs. On the other hand, the ability of efficient resource allocation might lead them to create opportunities by utilizing better from the services provided by programs. The insignificance of effectuation is also worth mentioning since almost all of the acceleration programs interviewed frequently emphasized that more flexible, open, and collaborative teams (indicating effectuation attitude) benefit from the program better, and thus the program enhances their performance. Additionally, the program effect is expected to increase by 0.838 in model 1, by 0.764 in model 3 and by 0.765 in model 4 when the causation increases by one unit. The positive impact of causation is the exact opposite of the expectations because the causation approach is stated as the planned behaviors and actions of entrepreneurial teams which are the opposite of effectuation approach representing flexible attitudes and experimental actions of teams. The unexpected results are discussed further under Chapter 5.

Focusing on models 2, 3 and 4 in Table 16, the insignificant relationships between the characteristics passion and self-efficacy with program effect are unexpected. Considering the literature and the qualitative results, the higher the entrepreneurial passion is expected to increase the utilization from acceleration programs while self-efficacious entrepreneurs are expected to utilize less from programs due to the abilities of self-progress, self-effort, and willingness to achieve on her/ him own. On the other hand, the positive significant impact of entrepreneurial persistence on the evaluations of program contribution and the statistical insignificance of intention to implement meet the rest of the expectations on individual-level characteristics. The OLS results indicate that one unit increase in the persistence is expected to increase startups' evaluations on the contribution of the acceleration programs to their performance by 0.385 based on model 2, by 0.281 in model 3 and by 0.295 based on model 4 (see Table 16). These results are consistent with the literature and the qualitative results. Furthermore, persistent entrepreneurs are expected to evaluate the program effect higher by utilizing more from the acceleration programs to achieve goals and successful outcomes in any case. Considering the risky and uncertain processes inherent in entrepreneurship, higher levels of insistence, non-giving up, continuity to pursue goals, and positive emotions regarding achievement expectancy may lead to efficient use of the acceleration programs in order to minimize risky and uncertain situations. Therefore, such persistent entrepreneurs may evaluate the contribution of accelerators on their performance higher by benefiting more from the services offered with the desire to achieve goals and succeed.

Table 16: OLS Results for Explaining the Impact of Acceleration Programs with Entrepreneur and Entrepreneurial Team Characteristics

	Program Related Dependent Variable			
	Program Effect			
	(1)	(2)	(3)	(4)
Control Variables				
Location				0.207
				(0.254)
Type 1				-0.270
				(0.244)
Type 3				-0.163
				(0.249)
Independent Variables				
Team Characteristics				
Causation	0.838***		0.764***	0.765***
	(0.203)		(0.266)	(0.267)
Effectuation	0.0723		0.0568	0.0456
	(0.120)		(0.120)	(0.126)
Collective-efficacy	0.0650		0.000321	-0.0308
	(0.195)		(0.190)	(0.193)
Entrepreneur Characteristics				
Passion		0.119	-0.0438	-0.0855
		(0.233)	(0.213)	(0.211)
Persistence		0.385**	0.281**	0.295**
		(0.154)	(0.130)	(0.133)
Self-efficacy		-0.000224	-0.267	-0.309
		(0.289)	(0.310)	(0.315)
Implement		0.235	0.162	0.188
		(0.190)	(0.185)	(0.179)
Constant	-0.915	-0.0740	-0.836	-0.526
	(0.942)	(1.020)	(1.075)	(1.135)
Observations	94	94	94	94
R-squared	0.233	0.163	0.264	0.277
F	8.21	4.39	5.13	4.42
Prob > F	0.0001	0.0028	0.0001	0.0001

Robust standard errors in parentheses | *** $p<0.01$, ** $p<0.05$, * $p<0.1$

4.2.4 Comparing the Effects of Entrepreneur and Entrepreneurial Team Characteristics on Market-Related, Finance-Related, and Program-Related Performance

In order to examine whether the impact of each individual-level and team-level entrepreneurial characteristic differentiates according to performance indicator, the models

explaining each performance indicator with all individual-level and team-level entrepreneurial characteristics and control variables are compared. Table 17 demonstrates the comparisons in which marginal effects of coefficients in probit models in column 3 in Table 15, column 4 in Table 16, and insignificant models could not explain performances on new product and external financing with all entrepreneurial characteristics. The models indicated in Table 17 have p-values as follows: i) Prob > chi2 = 0.264 in column 1, ii) Prob > chi2 = 0.087 in column 2, iii) Prob > chi2 = 0.159 in column 3, and iv) Prob > F = 0.0001 in column 4. Although probit models demonstrated in columns 1 and 3 are statistically insignificant, interpretations made through the marginal effect of each entrepreneurial characteristics in order to compare the impact of each input variable on different performance indicators. Among the team characteristics, causation has a positive and significant impact in the model explaining the contribution of the acceleration programs to the performance of startups with entrepreneurial characteristics (see column 4 in Table 17) while effectuation indicate a positive significant impact only on the likelihood of making the first sale. These results indicate that the impact of team characteristics on the performances of early-stage startups are not as effective as the interviewed acceleration programs mention. Besides, the result indicates that teams having one level higher of causation attitude positively evaluate the contribution of the program by 76%, which is contrary to expectations. The positive impact of causation is not consistent with both the literature and the qualitative results. The possible explanations of the unexpected results on team-level characteristics are discussed in Chapter 5.

Focusing on passion and persistence as among the individual-level entrepreneurial characteristics, it is expected that higher levels of passion and persistence increase the likelihood of new product releases, making the first sale, obtaining external financing, and lead to higher evaluations on the contribution of acceleration program. The marginal effect of entrepreneurial passion is only statistically significant in predicting the performance on making the first sale (see column 2 in Table 17). However, one unit increase in entrepreneurial passion decreases the probability of making the first sale by approximately 40%, contrary to expectations since passion is expected to lead entrepreneurs to succeed in the market due to the strong positive feelings towards achieving goals Furthermore, higher levels of entrepreneurial persistence increase the evaluations of the program effect by 0.295 (column 4 in Table 17). Persistent entrepreneurs have positive emotions towards achievement expectancy that may lead them to benefit the programs efficiently in order to minimize risky and uncertain situations. Therefore, higher levels of insistence, non-giving up, and continuity to pursue goals may lead entrepreneurs to achieve market success.

Considering the impact of self-efficacy, it is expected that entrepreneurs who are more self-efficacious are more likely to release a new product to the market, make the first sale, and obtain external financing, while to evaluate the contribution of acceleration program lower.

However, the impact of one unit increase in entrepreneurial self-efficacy increases the likelihood of the new product release to the market by nearly 17%, as expected, while decreases stronger the likelihood of making the first sale by 36%, contrary to expectations. The reverse impact of self-efficacy is interesting since both the new product and the first sale indicates market performance. It is expected that entrepreneurs who are more self-efficacious are highly competent and willing to achieve success in the market, and thus more likely to make the first sales, as they are more likely to release new product. Furthermore, the marginal impact of intention to implement is statistically significant and positive in predicting the likelihood of obtaining external financing while negative in predicting the likelihood of new product releases, by partially meeting the expectations (columns 1 and 3 in Table 17). Accordingly, the impact of one unit rise in the intentions of implementing people and finance increases the probability of obtaining external financing by approximately 29% while it slightly decreases the likelihood of new profuct releases by nearly 10%, contrary to expectations.

Among the control variables, the marginal impact of Type 3 is positive significant on both the probability of new product releases and obtaining external financing. While startups locating within an acceleration program in Type 3, rather than Type 2, are approximately 10% more likely to release a new product to the market, are nearly 29% more likely to obtain angel investment, venture capital investment, or public funding. In other words, locating within a Type 3 accelerator increases the likelihood of obtaining external financing by around 19% more than the likelihood of new product releases. The findings on the positive influence of Type 3 are interesting since acceleration programs belonging to Type 3 offer limited market-oriented services and access to financing than the programs in Type 2. Accordingly, the stronger influence of Type 3 on external financing may be related to public funds because Programs B, K, and L in Type 3 are among the programs advice startups to apply for public grants. Moreover, the higher consideration of R&D intensity and feasibility of the proposed entrepreneurial project in selection by the programs in Type 3 may be influential in determining the performance on new product releases of startups to the market.

Table 17: Comparing Dependent Variables

	Dependent Variables			
	New Product	First Sale	External Finance	Program Effect
	Marginal effect	Marginal effect	Marginal effect	OLS
	(1)	(2)	(3)	(4)
Control Variables				
Location	-0.0699	-0.0793	-0.324**	0.207
	(0.0508)	(0.131)	(0.137)	(0.254)
Type 1	0.0740	0.0632	-0.208	-0.270
	(0.0590)	(0.146)	(0.158)	(0.244)
Type 3	0.0957*	0.0251	0.288**	-0.163
	(0.0499)	(0.131)	(0.131)	(0.249)
Independent Variables				
Team Characteristics				
Causation	0.0295	0.140	0.110	0.765***
	(0.0808)	(0.135)	(0.153)	(0.267)
Effectuation	0.0443	0.118*	-0.0753	0.0456
	(0.0316)	(0.0704)	(0.0808)	(0.126)
Collective-efficacy	-0.0851	0.0110	-0.158	-0.0308
	(0.0677)	(0.126)	(0.133)	(0.193)
Entrepreneur Characteristics				
Passion	0.0795	-0.406**	-0.00111	-0.0855
	(0.0639)	(0.161)	(0.150)	(0.211)
Persistence	-0.0268	0.135	0.0580	0.295**
	(0.0491)	(0.0952)	(0.0913)	(0.133)
Self-efficacy	0.167*	-0.360**	-0.131	-0.309
	(0.0887)	(0.167)	(0.165)	(0.315)
Implement	-0.103*	0.160	0.289***	0.188
	(0.0538)	(0.106)	(0.110)	(0.179)

Robust standard errors in parentheses | *** $p<0.01$, ** $p<0.05$, * $p<0.1$

4.2.5   Robustness Analysis

Besides the individual- level and team-level entrepreneurial characteristic and control variables employed as main input variables in Table 17, additional variables indicating demographic, educational, and experiential characteristics of entrepreneurial teams are obtained from the quantitative data (see Table 12, section 3.4.4). The variables obtained are the team characteristics frequently studied in the literature and emphasized by the acceleration programs interviewed. The impacts of all variables described in Table 12 are examined on all dependent variables. These variables indicate team-level characteristics. To be clear, the entrepreneurial team indicates the top-management team consisting of founders of the startup. Employing these variables as main input variables lead to decreases in the numbers of observations in the main models. Therefore, these variables are employed in

robustness analysis in order to examine their impact on performance indicators. All of the variables employed in robustness analysis are included separately (one-by-one) to the models with controls, individual-level and team-level characteristics. To be clear, the variables employed in robustness analysis, which are described in Table 12, are included separately to the probit models demonstrated in columns 1, 2, and 3 in Table 17, and to the OLS model demonstrated in column 4 in Table 17. The results are summarized in Table 18, where each cell is the marginal effect of the associated robustness variable.

Team size has a positive and significant impact only on the likelihood of obtaining external financing. Focusing on the demographic characteristics of the teams, the representation of female founders in team does not indicate a significant impact on any of the dependent variables. On the other hand, the average age of the team has a negative and significant impact on the likelihood of obtaining external financing and on the evaluations of the program contribution. This result is interesting since it is expected that the higher average age of the team indicates higher levels of experience within the team which is expected to increase the performance of startups. Among the educational characteristics of the team, the representation of founders with engineering background within teams is one of the characteristics that show the necessary technical knowledge is in the team. Yet, engineer representation has no statistically significant impact on any of the dependent variables. As another education-related factor, education level is frequently examined in the literature. Therefore, the representation of founders with PhD degree (or as PhD students) aims to examine whether the educational level has an impact on performance. The presence of PhD degree or PhD student within the team has a positive and significant impact only on the probability of obtaining external financing.

In addition to the impact of demographic and educational factors, diversity of these factors are among the most frequently studied characteristics in the literature and among the characteristics mentioned by interviewed acceleration programs. Therefore, age diversity, sex diversity, educational background diversity, and educational level diversity are employed to examine whether team diversity contributes to the performance. However, neither variables indicating demographic diversity (age diversity and gender diversity), nor educational diversity perform a statistically significant impact on the dependent variables.

Focusing on variables related to the experience of the team, five different variables are obtained which are startup experience, industry experience, technical experience, marketing experience, and managerial experience. In order to examine the impact of experience level, industry experience, technical experience, marketing experience, and management

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experience are categorized as described in Table 12 (in section 3.4.4). The data on the startup experience of the founders remain inadequate to create the categorical startup experience variable because almost all of the teams have a couple of years of entrepreneurship experience on average. Therefore, I obtain the startup experience as a binary variable to examine whether the presence of startup experience contributes to performance. However, the startup experience variable becomes insufficient to predict dependent variables since 95% of the startups in the sample indicate the presence of startup experience within the team. Accordingly, Table 18 demonstrates the impacts of categorized experience variables on dependent variables new product, first sale, and external finance. The program effect dependent variable is excluded from Table 18 since the data cannot identify the effects of experience variables on the evaluations of the program contribution.

Looking at Table 18, one unit increase in the extensive marketing and managerial experience variables increases the probability of new product releases to the market. Similarly, one unit increase in extensive marketing experience of the team, versus zero years of industry experience, increases the probability of making the first sale by nearly 34% and the marginal effect of extensive managerial experience, versus inexperience, is positive in predicting the likelihood of making the first sale. The positive impacts of extensive marketing and managerial experience are expected since both extensive marketing and extensive managerial experience bring in business expertise that shapes the market success of the team. Furthermore, the marginal effect of extensive industry, moderate industry, extensive marketing, and extensive managerial experiences, rather than zero years of experience in each, are negative in predicting the probability of obtaining external financing. The negative impacts are unexpected, yet consistent with the result indicating a negative marginal effect of the average age of the team on external financing. According to the literature review, it is expected that teams with higher average age, which indicates higher levels of average experience of the team, and teams with higher levels of experience are more likely to obtain angel investment, venture capital investment, and public funding. However, the negative impact of experience may be related to the level of education when we consider the positive impact of the PhD degree variable on the possibility of obtaining external financing. The founders who prefer to do PhD may have limited or no experience of the industry, marketing, and managerial.

Accordingly, I also test the same probit models that include categorical experience variables, average age, and PhD degree, by changing the dependent variable as investment performance. The dummy dependent variable investment performance indicates whether the

startup has received an angel investment or venture capital investment excluding public support. Probit results on the likelihood of obtaining angel investment or venture capital investment sustain the similar negative marginal impacts of average age and extensive industry, marketing, and managerial experience. According to qualitative findings, some of the acceleration programs indicate that higher levels of experience, which indicate higher average age of the team, lead to less commitment and dedication that may negatively impact the startup performance. However, the marginal effect of PhD degree on the likelihood of obtaining angel investment or venture capital investment becomes negative. Considering some of the programs advise entrepreneurs to apply public grants, age and education level are important criteria to obtain monetary support from TUBITAK BIGG program. In order to benefit from BIGG program, it is required to have an undergraduate or graduate degree maximum 10 years ago. Accordingly, the increasing age has a negative effect and the presence of PhD degree has a positive effect can be associated with public funds.

According to these results, it is possible to state that both inexperienced or limited experienced teams and younger teams are more likely to obtain angel investment, venture capital investment, or public funding. On the other hand, the positive marginal effect of the PhD degree on the likelihood of obtaining external financing and its reverse marginal impact on the angel or venture capital investment performance can be associated with public funds. The possible explanations of these results are further discussed in Chapter 5. Lastly, categorical technical experience variable does not have a statistically significant effect on any of the performance indicators because the technical experience is another factor indicating that the team has the necessary technical knowledge and expertise, in addition to technical education. Accordingly, almost all of the acceleration programs interviewed emphasize the significance of the technical expertise of the teams. However, neither engineer representation, nor technical experience variables perform a statistically significant impact on the performance indicators.

Table 18: Robustness Analysis with Experience Variables

	Dependent Variables		
	New Product	First Sale	External Financing
	(Marginal effects)	(Marginal effects)	(Marginal effects)
Extensive industry experience	0.105	0.345	-0.993***
	(0.151)	(0.287)	(0.00632)
Moderate industry experience	0.192	0.142	-0.974***
	(0.175)	(0.312)	(0.0232)
Extensive technical experience	-0.0556		-0.210
	(0.134)		(0.383)
Moderate technical experience	0.0648		-0.0218
	(0.109)		(0.358)
Extensive marketing experience	0. 0857*	0.336***	-0.573***
	(0.0520)	(0.128)	(0.128)
Moderate marketing experience	0.112	0.103	0.0648
	(0.0685)	(0.152)	(0.184)
Extensive manager experience	0.0882*	0.356***	-0.538***
	(0.0527)	(0.126)	(0.151)
Moderate manager experience	0.0255	0.201	-0.0331
	(0.0668)	(0.155)	(0.187)

Note : Robust standard errors in parentheses | *** $p<0.01$, ** $p<0.05$, * $p<0.1$| N=89 in each model | Only statistically significant models at $p<0.01$, $p<0.05$, or $p<0.1$ are demonstrated
Note: I added each type of categorical experience variables (explained in Table 12) separately to the Probit models represented in columns (1), (2), (3), and OLS model represented in column (4) in Table 17 as independent dummy variables. Reported results indicate marginal effects of each experience variable.

CHAPTER 5

DISCUSSION

This chapter begins with conceptual implications of both qualitative and quantitative findings. The next section discusses the possible policy implications of the results for the government and possible practical implications for both accelerators and entrepreneurs. The final section explains the limitations of this thesis and the future research topics accordingly.

5.1 Conceptual Implications

The selection criteria of acceleration programs allow them to evaluate whether the accelerator can make a difference to the startup (Hoffman & Kelley, 2012). In line with the literature, the qualitative findings reveal that the selection criteria of accelerators are grouped under two selection approaches as idea-oriented and entrepreneur/ team-oriented (Bergek & Norrman, 2008). Further, the impact of criteria related to the entrepreneur/ team-focused approach, which indicates entrepreneurial characteristics, becomes stronger than the considerations of idea quality, market features, and profit potential of an entrepreneurial project. Among entrepreneur/ team-related criteria, the team itself appears as one of the critical selection criterion (Pauwels et al., 2016; Smith & Hannigan; 2015). Moreover, there is a tendency of good teams to be accepted into programs, even if the idea is bad. This tendency reveals the importance that interviewed acceleration programs place on entrepreneurial team characteristics.

Throughout the literature review, it is seen that most of the studies focus on entrepreneurial characteristics at either team level or individual level and such studies intend to analyze entrepreneurial team characteristics with entrepreneur-focused examinations. In contrast, this thesis aims at exploring the entrepreneurial characteristics at the individual-level and team-level separately. Accordingly, this thesis mainly examines the impact of motivational and behavioral entrepreneurial characteristics at both the individual-level and team-level, revealed separately in both the qualitative and quantitative analysis, on startup performance. Considering individual-level and team-level characteristics, qualitative findings indicate that

acceleration programs put more emphasis on the entrepreneurial team characteristics. Contrary to qualitative results and the literature, the empirical findings reveal that individual-level characteristics have greater influences on startup performance. However, this result supports the main findings of De Mol et al. (2019) indicating that individual-level motivational and behavioral characteristics lead entrepreneurs to achieve positive outcomes, rather than team-level characteristics.

The combination of different perspectives, talents, and know-how in entrepreneurial teams (Eisenhardt, 2013; Vanaelst et al., 2006) causes teams to perform better than solo entrepreneurs. However, the difference in the intensity and focus of motivational and behavioral attitudes among entrepreneurs within the team does not maintain the same positive effect, even causes negative performance outcomes (De Mol et al., 2019). According to De Mol et al. (2019, p.14), "team members are more likely to become entrenched in their perspectives in order to reinforce their identities, rather than to be open-minded in working through differences in perspectives". In other words, while higher levels of individual-level attitudes are likely to bring in positive outcomes, it is more likely to harm team cohesion and raise conflict among team members thus may render negative outcomes. Therefore, the consolidation of the self-identity and personal values becomes effective on performance when there is a single founder, rather than an entrepreneurial team. Yet, the individual-level characteristics indicating motivational and behavioral attitudes do not perform an overall positive impact on performance, as again being inconsistent with the qualitative findings.

Quantitative findings reveal that entrepreneurs who have greater passion and self-efficacy are less likely to make the first sale of the product or service launched. Although these results are unexpected as to qualitative findings, there are possible explanations provided by the literature, contrary to the common positive perception on entrepreneurial passion, and self-efficacy. Recent studies assert that entrepreneurial passion may not have an overall positive impact and can be harmful when entrepreneurs move away from reality and awareness because of obsessive passion (Cardon & Kirk, 2015; De Mol et al., 2019). Likewise, although self-efficacy provides the overall motivational and cognitive advantage to entrepreneurs, Chen et al. (1998) remind that there is a possibility of going away from reality when self-efficacy causes overconfidence (Hmieleski & Baron 2008). Overconfidence harms the effectiveness of entrepreneurs in processes that require continuous development and learning (Trevelyan, 2008), which are inherent in entrepreneurship, by causing extreme optimism, unrealistic goals, expectations, and denial of

poor performance (Feeney et al., 1999; Hmieleski & Baron 2008). This situation is especially harmful in later entrepreneurial stages such as entrepreneurial strategy development or operational decision making (Trevelyan, 2008). Accordingly, obsessive passion and overconfidence may limit entrepreneurs to be aware of market conditions, needs, and competitors, to discover entrepreneurial opportunities, and to decide and act on time, and thus to achieve the first sale in the market.

Remembering the importance of team-level characteristics highlighted by acceleration programs, quantitative results confirm that team-level characteristics affect the program-related performance of startups. The fact that group of team-level characteristics affect program-related performance but not market and finance-related performance, means that the emphasis of programs on team-level characteristics works out for accelerators in practice as well since they also aim at selecting startups that they can contribute to. Furthermore, qualitative findings indicate that accelerators primarily intend to select open, flexible, collaborative, and experimental entrepreneurial teams (indicating effectuation attitude) that are easy and efficient to work with, rather than conservative and stubborn teams that are less likely to utilize the program. However, quantitative findings do not confirm that effectuation attitude affects program-related performance. Moreover, the causation attitude representing planned attitudes of entrepreneurial teams such as realistic perspective, awareness, and goal-orientation appear as other critical characteristics considered by acceleration programs. Accordingly, quantitative findings reveal that entrepreneurial teams that act upon planned behaviors evaluate the contribution of acceleration programs higher. Both the causation and effectuation attitudes measured in this thesis are adapted from the scales studied by Chandler et al. (2011). While the causation attitude is mostly associated with planned behaviors and actions that managers take against uncertain processes; the effectuation attitude is mostly associated with experimental, flexible, and unplanned behaviors and actions that entrepreneurs take to adapt uncertain and risky processes of entrepreneurship (Chandler et al., 2011).

In the study of Chandler et al. (2011), the causation attitude and effectuation attitude are considered as two alternative approaches. Although the positive impact of causation and the insignificance of effectuation partially support the qualitative findings, these results can be considered as inconsistent with the conceptualization of Chandler et al. (2011). Simply, we can say that qualitative results show that the causation and effectuation approaches are not alternative attitudes, but complementary to each other. Considering the conceptualization of Chandler et al. (2011), we can think that flexible and experimental teams are able to have

best acceleration outputs since they tend better to keep up with the program, while planned teams are not able to utilize better from the program as they have already determined future actions. In contrast, quantitative results reveal that teams with higher causation attitude evaluate the contribution of the program to their performance more positively. This result may indicate that causative teams actually utilize better the resources and services provided because of the planned actions they take to create entrepreneurial opportunities and to guarantee their progress, by minimizing uncertainties. Accordingly, such teams may evaluate the contribution of acceleration programs higher as they benefit better the program against the uncertain and risky processes of entrepreneurship. Therefore, we can say that causation attitude is also inherent in entrepreneurship since not all processes require adaptation to uncertainty, but some require precaution to uncertainty.

Regarding results obtained from robustness analysis, there are noteworthy findings on the influence of average age, education level, team diversity, and team experience. Qualitative results support the current studies indicating a positive association between team diversity and performance as diversified perspectives, knowledge, and unique skills coexist together within a team (Eisenhardt, 2013; Vanaelst et al., 2006). On the other hand, quantitative results reveal the insignificant relationship between demographic diversity and performance (e.g. Chowdhury, 2005; Steffens et al., 2012), while they are inconsistent with the literature specifying the positive effects of educational diversity on performance (e.g. Foo et al., 2005; Protogerou et al., 2017; Vogel et al., 2014).

Moreover, the presence of a PhD degree within the team has a positive impact on the likelihood obtaining external finance (including public funds), while it has a negative impact on investment performance (excluding public funds). Therefore, we can say that the public funds appear as important entrepreneurial financing options for teams with PhD degree or PhD student representation. Considering public funds in Turkey focus on high-technology or R&D based projects, such teams may tend to be more R&D intense or high-technology focused since the higher education brings in complex specialization and functionality knowledge which lead to enhanced innovative activities (Foo et al., 2005; Protogerou et al., 2017; Vogel et al., 2014). Yet, quantitative results reveal the negative impact of average age and higher levels of experience of teams. The negative impacts of categorical experience types are consistent with the negative impact of average age, yet inconsistent with the literature arguing that teams with higher experience are more likely to receive investment being better at market analysis, utilizing market opportunities, and effective strategy formulation (Carpentier & Suret, 2015; Hisrich & Jankowicz, 1990). Basically, the results

indicate that younger teams, who are less experienced accordingly, are better at obtaining angel investment, venture capital investment, or public funding in Turkey. Further, we also can relate this situation with the positive impact of the presence of PhD degree since such teams may have relatively limited experience and be relatively younger than extensively experienced peers. Accordingly, the public funding appears as a strong source of entrepreneurial financing in Turkey, especially for younger teams with PhD degree presence and with limited experience accordingly.

5.2 Policy Recommendations

Quantitative results indicate that factors related to acceleration programs (section 4.2.2.), and factors related to entrepreneurial teams such as age, education level, and experience (represented in section 4.2.5.) are among the indicators that affect startup performance in obtaining external financing. Further, these results are explained with or related to the public funding factor. For example, the positive impact of Ankara and Type 3 acceleration programs on obtaining external financing is related to public funds provided by the government (i.e., TUBITAK). Similarly, public funding appears as the main source of finance for younger, less experienced teams, or teams with PhD degree representation. According to these results, it is possible to say that angel investment and venture capital investment are relatively weaker finance sources for startups, and the public funding is a relatively stronger source of funding for startups in the Turkish entrepreneurial ecosystem. Supporting this result, TUBITAK and KOSGEB granted more than 32 Million Dollars of support in total to 985 idea-stage startups and 983 early-stage startups in 2019 (Startups.watch, 2020). On the other hand, there were 99 startups (none of them are idea-staged) funded through angel investment or venture capital investment in 2019 equivalent to 103 Million Dollars (Startups.watch, 2020). Although the number of local actors and mechanisms providing angel investment and venture capital investment to entrepreneurial firms has increased since 2010, the volume of investment provided to startups is relatively inadequate to the growth of the ecosystem (Startups.watch, 2020). Especially in the case of idea-stage and early-stage startup finance the government (mainly through TUBITAK and KOSGEB) is a main source of entrepreneurial finance in Turkey. Moreover, startups that need to benefit from the support programs (as acceleration and incubation programs) are weaker than those that do not benefit from these programs (Yu, 2019). Accordingly, the startups that do not need to be supported by such programs in the ecosystem are likely to get the majority of angel or venture capital investments. Therefore, public funding may become the main source of financing for startups in such programs.

If we focus on the current investment actors and mechanism other than the government, it is possible to say that there is a market failure in which angel and venture capital investing remain insufficient for the entrepreneurial ecosystem. In such an ecosystem, government intervention by financial policy instruments (Borras & Edquist, 2013) to deal with market failure serves on the purpose (Metcalfe, 2005). However, an ecosystem where the role of the government as the main source of entrepreneurial financing can undermine the development of the startup investment market is not sustainable. Therefore, the government should ensure the development of the dynamic investment market, through regulatory policy instruments (Borras & Edquist, 2013) functioning as a facilitator, rather than a fixer (Mazzucato, 2011). The government agencies currently provide privileges and monetary subsidies for private investors. For example, the angel investor certification has been provided by the Ministry of Treasury and Finance since 2013 and currently, there are more than 500 accredited angel investors benefiting from tax incentives in equity investments (Startups.watch, 2020). Further, regulatory policy instruments for the establishment of venture capital funds have been developed in 2018. Tech-InvesTR is the venture capital funds support program functioning as a financial policy tool established by the cooperation of TUBITAK and the Ministry of Treasury and Finance (Startups.watch, 2020). There are currently 5 venture capital funds supported by this program[9]. Although such policy tools reduce the uncertainty within the ecosystem by facilitating the increase in the private entrepreneurial investment actors and mechanisms, remains insufficient to create a risky and competitive environment that allows the creation of a dynamic investment market. Therefore, the government should first undertake the equity investor role to enable the creation of the necessary risky and competitive investment market (Mazzucato, 2011). After the creation of a dynamic investment market, the establishment of soft policy instruments is recommended, such as networking or competitions, to ensure the maintenance of risky and competitive environment.

In addition to mechanisms undertaking the main investor role, such as angel investors or venture capital investors; it is also important that the public (the citizens) is included in the ecosystem as small investors. Crowdfunding is such a mechanism in which entrepreneurs are able to obtain capital from the public, as an alternative to traditional venture capital investment mechanisms (Mollick, 2014). The legal infrastructure of equity-based crowdfunding has been started to form recently in Turkey, yet still in its infancy. However, in order to ensure the trust between startups, the public, and the crowdfunding platforms, the

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[9] Source: https://www.hmb.gov.tr/duyuru/tech-investr-programi-kapsaminda-yapilan-basvurulara-iliskin-duyuru accessed on 07.08.2020.

government's legal regulations and promotional practices that will make these platforms transparent are required. Therefore, a policy mix aiming at both the establishment of regulatory, financial, and soft policy tools (Borras & Edquist, 2013) would facilitate the entry barriers for both crowdfunding platforms as an intermediary to the investment, public as the funder and platform user, and the entrepreneurial projects to be proposed in the platforms. For example, the government could provide tax incentives, subsidies, and credit facilities to both agents to boost the initial investment environment, through financial policy tools. In addition, ensuring the collaboration between crowdfunding platforms and acceleration programs through soft policy instruments may allow the acceleration programs to offer broader access to investors.

Returning to direct monetary supports provided by TUBITAK and KOSGEB, public supports in Turkey have the high-technology orientation or focus on R&D based entrepreneurial projects as mentioned before. Although qualitative findings indicate that most of the acceleration programs are oriented towards projects whose R&D process is finished or short, whose prototype is ready, and whose rapid time to market is possible, quantitative results reveal that public funds aimed at supporting R&D projects are the strongest source of external finance for startups. The fact that governmental supports are the most active source is expected due to the insufficient investment market in the Turkish entrepreneurial ecosystem, but it does not serve the purposes of accelerators in terms of criteria related to the entrepreneurial project mentioned. In other words, public funds supporting R&D activities provided by governmental agencies such as TUBITAK and KOSGEB do not serve the needs of startups that are close to launching to the market. Considering the needs of such startups the establishment of new or revised public supports having market criteria intensity will increase the number of startups that can achieve the new product releases to the market or make the first sale of the product launched.

To be clear, the government could establish new financial policy tools (or revise the existing supports) aiming to support market entry or market activities of later-stage startups that have already complete the R&D process and need to be funded to operate in the market. Different than the TUBITAK BIGG support program, the new financial policy tool could focus on supporting the startups with little monetary supports for shorter terms. The short-term financial support having stronger market-focused criteria such as customer segmentation or competitor analysis, rather than R&D-focused criteria, may allow idea generating startups to overcome the barriers to operate and progress in the market. In that way, entrepreneurial activities could be enhanced and the survival of startups can be strengthened. Although such

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financial policy tools enable to boost market survival and viability of startups initially, such an intervention of government by direct monetary support is not sustainable. In fact, although the investments of the existing actors and mechanisms in the ecosystem are insufficient, almost all of these investments fund less risky projects that have short time-to-market, have completed the R&D process, and operate in familiar markets. Thus, prolonged financial supports may lock the entrepreneurial ecosystem into the startups and ideas that are less risky, have short time-to-market, and suitable for fast commercialization.

Accordingly, there are limited mechanisms and actors supporting R&D intense, innovative, or high-technology entrepreneurial projects other than public funds in the current entrepreneurial ecosystem in Turkey. Such projects apply to public funds through various mechanisms connected to TTOs or technoparks within universities. The shutdown of TEKMERs, which function similar to incubation mechanism, reveals the tendency of acceleration-oriented supports for later staged startups that are less risky and more likely to achieve market success. Thus, startups, those are not ready to be accelerated yet, struggle in financing R&D and commercialization. Therefore, the creation of such mechanisms, similar to TEKMERs, aimed at supporting R&D, innovation, and high-tech intense projects could ensure the ecosystem function in balance. In an ecosystem where public support is the main source of funding innovative and entrepreneurial activities, mechanisms similar to TEKMERs enabling enhanced university-industry-government cooperation could help to develop and generate actors and mechanisms to support innovative and entrepreneurial activities. The creation of such mechanisms through regulative and financial policy implementations of government support the transformation of research outputs produced in universities into advanced technologies required by the industry.

Considering recent research on the entrepreneurial ecosystems, whether the system we refer to as the Turkish entrepreneurial ecosystem is an "ecosystem" is quite open to discussion. According to Stam and Spigel (2016), framework and systemic conditions are two main components of an entrepreneurial ecosystem that mutually feeds entrepreneurial activities and value creation. World Economic Forum (2013) describes accessible markets, human capital, financing, support systems, regulatory infrastructure, education, major universities as catalysts, and cultural support as key components of entrepreneurial ecosystems. While framework conditions consist of legal and physical infrastructure, institutions, accessible markets, culture, and demand; networks, leadership, financing, human capital, knowledge, education, and support mechanisms are among the elements of systemic conditions (Stam & Spigel, 2016; WEF, 2013). Considering the current state of framework conditions in Turkey,

the lack of developed legal and physical infrastructure, the inadequacy of almost all actors and mechanisms to adopt entrepreneurship culture, especially the inefficiency and lack of informal institutions such as NGOs, and the presence of barriers to access markets are striking.

Although large human capital and the increasing number of actors and mechanisms for funding and supporting entrepreneurship in Turkey create advantages, lack of quality is problematic. The compromise on the quality of key systemic elements in Turkey limits to take advantage of the human capital potential and growing support and funding mechanisms. Focusing on quantity, rather than quality limits the adoption of entrepreneurship culture by startups, actors, and mechanisms. The fact that entrepreneurs rather than firms are the key actor, startups at the center as distinct from small, medium, and large enterprises, and prioritize the focus on entrepreneurial knowledge, besides the market and technical knowledge in an entrepreneurial ecosystem (Stam & Spigel, 2016) describes the focus and nature of solid entrepreneurship culture that is an important component of entrepreneurial ecosystems. Yet, there is no such a perspective, necessary infrastructure, and sufficient conditions in Turkey to create and adopt the entrepreneurship culture. In that sense, one of Turkey's key failures is inconvenient conditions for the adoption of the entrepreneurship culture.

It would be more efficient to focus on the formation and sustainability of entrepreneurial ecosystems after the establishment and development of a solid entrepreneurship culture, which is one of the core elements of an entrepreneurial ecosystem. Achieving active interaction and cooperation between the state, industry, and universities, which are the main actors of innovation systems, can lay the groundwork for the establishment of entrepreneurship culture in Turkey. Nevertheless, it should not be forgotten that even the effective interaction and cooperation of the main actors required for the proper functioning of the innovation system in Turkey is insufficient. For this reason, the necessary dynamic interaction and collaboration between the government, universities, and industry, which are responsible for the adoption of entrepreneurship culture in Turkey, should be ensured. In addition, establishing and sustaining the entrepreneurship culture is the responsibility of also NGOs in industrialized economies having well-functioning national innovation systems. Therefore, another important factor is the activation of civil society organizations and NGOs that can initiate the creation and spread of entrepreneurship culture in the society.

5.3 Practical Implications

There are inconsistencies between quantitative and qualitative findings. First, assuming that presence of an entrepreneurial team (rather than a solo entrepreneur) lead to better performance outputs, accelerator programs focus more on team-level characteristics. However, quantitative results reveal that entrepreneurial team characteristics do not have significant impact on the likelihood of new product releases, making the first sale, and obtaining external financing that determine the venture as well as accelerator success. At this point, acceleration programs should review their selection criteria that tend to select ventures with entrepreneurial teams, but could consider selecting individual entrepreneurs as well. The main reasons behind the emphasis on the entrepreneurial team are the presence of diverse perspectives, different knowledge stocks, particular skills, as well as the insufficiency of a single person for all tasks. Accordingly, acceleration programs can maintain the team orientation by distinguishing the selection criteria of top-management teams and non-top-management teams of the startups (Yusubova et al., 2019). This distinction makes programs also possible to select promising ventures with a single founder, but also with the non-management team in which multiple members having different perspectives, skill sets, and knowledge stocks can function efficiently.

The significant contribution of the accelerator type on the market-related performance and obtaining external investment reveals the importance of idea-oriented selection criteria that are stated as less important than entrepreneur/ team-related criteria. Most of the programs in Type 3 function similar to incubation programs that consider the characteristics of entrepreneurship project (i.e., the idea, market, innovativeness) in selection more than the entrepreneurial characteristics. Therefore, the impact of locating in a Type 3 program reveals the advantage of considering R&D intense entrepreneurial projects in selection and determines the market success and external financing performances of startups. Further, the consideration of R&D intensity by such programs enables them to have more startups publicly funded. In addition, it is possible to state that the acceleration programs in Type 1, which offer startups to access to investors, are not actually able to fulfill this function effectively. In addition to the inadequacy of the investment climate, we can say that access to investors is not among the priorities of such acceleration programs since they already make small capital partnerships with selected ventures. However, in order to feed the market for investment, accelerators should provide more investor-oriented services to startups, to organize various activities to increase interactions with investors, and to increase the number of private investors as mentors.

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Although qualitative findings show that programs in Type 2 have a careful selection mechanism, quantitative results suggest that programs in Type 2 do not contribute to startup performance in practice. Accordingly, it is possible to say that the programs in Type2 are not as selective as they mention in practice, that is, they do not place particular importance on the quality of the startups as much as they indicate. Quantitative findings support the conclusion that the programs in Type 2 compromise the quality of the startup they select; as such programs do not contribute any of the performance indicators. The fact that these programs accept a large number of startups brings along the results of the startup quality loss and thus the failure of these startups to perform well. According to these findings, it is important that the programs in Type 2 both reduce the participant quotas and review the selection criteria. The formation of a more careful selection mechanism is expected to fewer the number of participants and higher the quality of admitted startups. Therefore the services provided could be used more efficiently by the selected startups, and thus such programs could contribute to the startup performance.

Furthermore, passion and self-efficacy are the individual-level characteristics negatively affecting the likelihood of making the first sales. In light of the literature, the reasons behind the negative impact are obsessed passion (Cardon & Kirk, 2015; De Mol et al., 2019) and overconfidence (Chen et al., 1998; Hmieleski & Baron 2008). The presence of excessive levels of these attitudes may limit entrepreneurs to be aware of market conditions, needs, and competitors, to discover entrepreneurial opportunities, and to decide and act on time, and thus to achieve positive outcomes. Therefore, it is important for entrepreneurs to be aware that positive emotion intensity provides both motivational and behavioral advantage (Cardon & Kirk, 2015; Chen et al., 1998; De Mol et al., 2019), but excessive attitudes can lead to negative performance outcomes (De Mol et al., 2019; Hmieleski & Baron 2008; Trevelyan, 2008). Regarding team- level characteristics, results reveal that teams who are more aware, realistic, and goal-oriented are likely to perform better within the program. This result is important since some of the acceleration programs interviewed prioritize the teams that are more flexible, open, and experimental. Entrepreneurial teams should consider that acceleration programs demand the ability of experimentation, flexibility, and openness; but also that awareness, goal orientation, and realistic perspective contribute to their performance.

5.4 Limitations and Future Research

One of the main limitations of this research is the limited number of observations employed in the quantitative part. The unfilled questions by startups limited obtaining higher

observations, and thus the quantitative findings. There may be cultural reasons that Turkish startups do not want to provide their data on financial or operational performance. Therefore, the performance indicators do not indicate growth or actual numbers; rather indicate the categories that represent performance. Future research could consider this and try to collect actual data. Additionally, the indicators on market-related performance employed in the quantitative part can be revised with indicators focusing on earlier performances of ventures since the sample consists of early-stage startups located in accelerators. Therefore, future research could employ different performance indicators focusing on the creation of entrepreneurial opportunities, entrepreneurial decision-making, or interactions with investors to explain better the startup performance with entrepreneurial characteristics.

Another limitation of the small number of observations is not being able to apply Confirmatory Factor Analysis (CFA) to the program effect dependent variable and all entrepreneurial characteristics measured by five-point Likert scale questions. Further, it limits to employ more input variables indicating competence-related entrepreneurial characteristics and especially additional control variables. Small sample also limits the examination of the mediation effect of some entrepreneurial characteristics, for example focusing on passion as the mediator between persistence and self-efficacy relationship as studied by Cardon & Kirk (2015).

There are high correlations among independent variables representing entrepreneurial characteristics. Thus, the models employed in the quantitative part could not provide decisive results to explain the impacts of groups of individual and team level characteristics and to differentiate the impact. The fact that both accelerator managers and the startups could not differentiate similar entrepreneurial characteristics, such as passion and persistence or self-efficacy and intention to implement, might lead to confusion in exploring entrepreneurial characteristics and explaining them as in the form of highly correlated variables. Therefore, future research could focus on distinct entrepreneurial characteristics rather than similar and correlated characteristics such as passion, persistence, and self-efficacy. The individual-level characteristics and team-level characteristics are not representing the same attitude at both levels in the quantitative part. For example, passion is an entrepreneur characteristic and there is not a team-level passion or passion diversity indicating the impact of passion at both levels. Therefore, the measurement of each entrepreneurial characteristic both at the individual and team level could bring in better examinations. Future research could consider the measurement of the attitudes at both levels, and make the comparisons and explanations accordingly.

Considering the negative impacts of passion and self-efficacy characteristics revealed in the quantitative part, similar empirical analyzes should be employed with variables indicating degrees of these attitudes. Therefore, obtaining the impact of the degree of attitudes would lead to better understanding and explain the reason behind the negative impacts. For example, an examination aimed at explaining the particular impacts of low passion, medium passion, high passion, and obsessive passion would able to sufficient to explain such a negative impact. Therefore, analyzing the differences in the degrees of both individual-level and team-level characteristics in future studies will provide better explanations for assumptions made in this thesis and in the literature.

REFERENCES

Aernoudt, R. (2004). Incubators: Tool for entrepreneurship? Small Business Economics, 23, 127-135. doi:10.1023/B:SBEJ.0000027665.54173.23

Aerts, K., Matthyssens, P., & Vandenbempt, K. (2007). Critical role and screening practices of European business incubators. Technovation, 27, 254–267.

Akçomak, I.S., & Taymaz, E. (2004). Assessing the Effectiveness of Incubators: The Case of Turkey. Ankara: METU Economic Research Center.

Bandura, A. (1997). Self-Efficacy: The Exercise of Control. W.H. Freeman and Company, New York.

Barbero, J. L., Casillas, J. C., Ramos Garcia, A., & Guitar, S. (2012). Revisiting incubation performance: how incubator typology affects results. Technological Forecasting and Social Change, 79, 888–902. doi:10.1016/j.techfore.2011.12.003

Bergek, A., & Norrman, C. (2008). Incubator best practice: A framework. Technovation, 28(1-2), 20–28. doi:10.1016/j.technovation.2007.07.008

Beyhan, B. (2020). Girişimcilik desteklerinde seçim süreçlerinin incelenmesi ve seçim-performans ilişkinin analizi: Türkiye'de kuluçka ve hızlandırma programları örneği (Project No. 115K204). TUBITAK. Unpublished final report. Retrieved from http://research.sabanciuniv.edu/40036/2/115K204_Proje_Rapor_Revizyon_20_12_19(2).pdf

Beyhan, B., Çetindamar, D., & Akçomak, İ.S. (2020). Selection in accelerators: The case of Turkey. Unpublished manuscript.

Bollinghoft, A., & Ulhoi, J.P. (2005). The networked business incubator – leveraging entrepreneurial agency? Journal of Business Venturing, 20(2), 265-290. doi:10.1016/j.jbusvent.2003.12.005

Borrás, S., & Edquist, C. (2013). The choice of innovation policy instruments. Technological forecasting and social change, 80(8), 1513-1522.

Bruneel, J., Ratinho, T., Clarysse, B., & Groen, A. (2012). The Evolution of Business Incubators: Comparing demand and supply of business incubation services across different incubator generations. Technovation, 32(2), 110-121. https://doi.org/10.1016/j.technovation.2011.11.003

Cansız, M. (2013). Türkiye'nin Yenilikçi Girişimcileri: Teknoloji Geliştirme Bölgeleri Örneği, Yayın No.2850. Ankara: T.C. Kalkınma Bakanlığı.

Carayannis, E. G., & Von Zedtwitz, M. (2005). Architecting gloCal (global–local), real-virtual incubator networks (G-RVINs) as catalysts and accelerators of entrepreneurship in transitioning and developing economies: lessons learned and best practices from current development and business incubation practices. Technovation, 25(2), 95–110. doi:10.1016/s0166-4972(03)00072-5

Cardon, M. S., & Kirk, C. P. (2015). Entrepreneurial passion as mediator of the self-efficacy to persistence relationship. Entrepreneurship Theory and Practice, 39, 1027–1050.

Cardon, M. S., Mitteness, C., & Sudek, R. (2017a). Motivational Cues and Angel Investing: Interactions among Enthusiasm, Preparedness, and Commitment. Entrepreneurship Theory and Practice, 41(6), 1057–1085. https://doi.org/10.1111/etap.12255

Cardon, M. S., Post, C., & Forster, W. R. (2017b). Team Entrepreneurial Passion: Its Emergence and Influence in New Venture Teams. Academy of Management Review, 42(2), 283–305. doi:10.5465/amr.2014.0356

Carpentier, C., & Suret, J.M. (2015). Angel group members' decision process and rejection criteria: A longitudinal analysis. Journal of Business Venturing, 30(6), 808–821. doi:10.1016/j.jbusvent.2015.04.002

Cassar, G., & Friedman, H. (2009). Does self-efficacy affect entrepreneurial investment? Strategic Entrepreneurship Journal, 3(3), 241–260. doi:10.1002/sej.73

Chandler, G. N., DeTienne, D. R., McKelvie, A., & Mumford, T. V. (2011). Causation and effectuation processes: A validation study. Journal of Business Venturing, 26(3), 375–390. doi:10.1016/j.jbusvent.2009.10.006

Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? Journal of Business Venturing, 13(4), 295–316. doi:10.1016/s0883-9026(97)00029-3

Chen, M.H., Chang, Y.Y., & Chang, Y.C. (2017). The trinity of entrepreneurial team dynamics: cognition, conflicts and cohesion. International Journal of Entrepreneurial Behavior & Research, 23(6), 934–951. doi:10.1108/ijebr-07-2016-0213

Chen, X., Yao, X., & Kotha, S. (2009). Entrepreneurial passion and preparedness in business plan presentations. Academy of Management Journal, 52, 199–214.

Chowdhury, S. (2005). Demographic diversity for building an effective entrepreneurial team: Is it important? Journal of Business Venturing, 20, 727–746.

Clarysse, B., Wright, M., Lockett, A., Velde, E.V., & Vohora, A. (2005). Spinning out new ventures: a typology of incubation strategies from European research institutions. Journal of Business Venturing, 20(2), 183–216.

Cohen, S. (2013). What Do Accelerators Do? Insights from Incubators and Angels. Innovations: Technology, Governance, Globalization, 8, 19-25. doi:10.1162/INOV_a_00184

Cohen, S., Fehder, D. C., Hochberg, Y. V., & Murray, F. (2019). The design of startup accelerators. Research Policy, 48(7), 1781–1797. doi:10.1016/j.respol.2019.04.003

Cohen, S., & Hochberg,Y.V. (2014). Accelerating startups: The Seed Accelerator Phenomenon. Available at SSRN 2418000. doi:10.2139/ssrn.2418000

Corbin, J., & Strauss, A. (2008). Basics of qualitative research: Techniques and procedures for developing grounded theory (3rd ed.). Sage Publications, Inc. https://doi.org/10.4135/9781452230153

Cornelius, B., & Bhabra-Remedios, R. (2003). Cracks in the egg: improving performance measures in business incubator research. 16th Annual Conference of Small Enterprise Association of Australia and New Zealand (pp. 1-19). Australia: University of Ballarat.

Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approaches (3rd ed.). Sage Publications, Inc.

Crişan, E. L., Salanţă, I. I., Beleiu, I. N., Bordean, O. N., & Bunduchi, R. (2019). A systematic literature review on accelerators. The Journal of Technology Transfer. doi:10.1007/s10961-019-09754-9

De Mol, E., Cardon, M. S., de Jong, B., Khapova, S. N., & Elfring, T. (2019). Entrepreneurial passion diversity in new venture teams: An empirical examination of short- and long-term performance implications. Journal of Business Venturing, 105965. https://doi.org/10.1016/j.jbusvent.2019.105965

De Mol, E., Khapova, S. N., & Elfring, T. (2015). Entrepreneurial Team Cognition: A Review. International Journal of Management Reviews, 17(2), 232–255. doi:10.1111/ijmr.12055

Der Foo, M., Wong, P.K., & Ong, A. (2005). Do others think you have a viable business idea? Team diversity and judges' evaluation of ideas in a business plan competition. Journal of Business Venturing, 20(3), 385–402. doi:10.1016/j.jbusvent.2004.04.001

Demirhan, D., Temel, S., & Durst, S. (2019). The Role of Public Entrepreneurship Programs in Fostering Technology-based Entrepreneurship: A Turkish Case Study. Dana, L.-P. & Ratten, V. (Ed.) Societal Entrepreneurship and Competitiveness, Emerald Publishing Limited, 5-28. https://doi.org/10.1108/978-1-83867-471-720191003

Drover, W., Busenitz, L., Matusik, S., Townsend, D., Anglin, A., & Dushnitsky, G. (2017). A Review and Road Map of Entrepreneurial Equity Financing Research: Venture Capital, Corporate Venture Capital, Angel Investment, Crowdfunding, and Accelerators. Journal of Management, 43(6), 1820–1853. https://doi.org/10.1177/0149206317690584

Eckhardt, J.T., Shane, S., & Delmar, F. (2006). Multistage Selection and the Financing of New Ventures. Management Science, 52(2), 220-232. https://doi.org/10.1287/mnsc.1050.0478

Eisenhardt, K. (2013). Top management teams and the performance of entrepreneurial firms. Small Business Economics, 40 (4), 805–816.

Esfandiar, K., Sharifi-Tehrani, M., Pratt, S., & Altinay, L. (2019). Understanding entrepreneurial intentions: A developed integrated structural model approach. Journal of Business Research, 94, 172-182. doi:10.1016/j.jbusres.2017.10.045

European Comission. (2002). Benchmarking of business incubators, Brussels.

Feeney, L., Haines, G. H., & Riding, A. L. (1999). Private investors' investment criteria: Insights from qualitative data. Venture Capital, 1(2), 121–145. doi:10.1080/136910699295938

Foo, M.D., Sin, H.P., & Yiong, L.P. (2006). Effects of team inputs and intrateam processes on perceptions of team viability and member satisfaction in nascent ventures. Strategic Management Journal, 27(4), 389–399. doi:10.1002/smj.514

Ganotakis, P. (2012). Founders' human capital and the performance of UK new technology based firms. Small Business Economics, 39 (2), 495-515. https://doi.org/10.1007/s11187-010-9309-0

Giordano Martinez, K.R., Fernandez-Laviada, A., & Herrero Crespo, A. (2018). Influence of Business Incubators Performance on Entrepreneurial Intentions and Its Antecedents during the Pre-incubation Stage. Entrepreneurship Research Journal, De Gruyter, 8(2), 1-15. doi: 10.1515/erj-2016-0095

Grimaldi, R., & Grandi, A. (2005). Business Incubators and New Venture Creation: An Assessment of Incubating Models. Technovation, 25, 111-121. doi:10.1016/S0166-4972(03)00076-2

Hackett, S. M., & Dilts, D. M. (2004a). A real options-driven theory of business incubation. The Journal of Technology Transfer, 29(1), 41–54. doi:10.1023/B:JOTT.0000011180.19370.36

Hackett, S. M., Dilts, D. M. (2004b). A systematic review of business incubation research. Journal of Technology Transfer, 29, 55–82. doi:10.1023/B:JOTT.0000011181.11952.0f

Hackett, S.M., & Dilts, D.M. (2008). Inside the black box of business incubation: Study B-scale assessment, model refinement, and incubation outcomes. Journal of Technology Transfer, 33(5), 439-471. doi:10.1007/s10961-007-9056-9

Hisrich, R. D., & Jankowicz, A. D. (1990). Intuition in venture capital decisions: An exploratory study using a new technique. Journal of Business Venturing, 5(1), 49–62. doi:10.1016/0883-9026(90)90026-p

Hmieleski, K. M., & Baron, R. A. (2008). When does entrepreneurial self-efficacy enhance versus reduce firm performance? Strategic Entrepreneurship Journal, 2(1), 57–72. doi:10.1002/sej.42

Hoffman, D.L., & Radojevich-Kelley, N. (2012). Analysis of Accelerator Companies: An Exploratory Case Study of Their Programs, Processes, and Early Results. Small Business Institute® Journal, 8(2), 54-70.

Hoogendoorn, S., Oosterbeek, H., & Van Praag, M. (2013). The Impact of Gender Diversity on the Performance of Business Teams: Evidence from a Field Experiment. Management Science, 59(7), 1514–1528. doi:10.1287/mnsc.1120.1674

Kakati, M. (2003). Success criteria in high-tech new ventures. Technovation, 23(5), 447-457. https://doi.org/10.1016/S0166-4972(02)00014-7

Khan, M.S., Breitenecker, R.J., & Schwarz, E.J. (2014). Entrepreneurial team locus of control: diversity and trust. Management Decision, 52 (6), 1057-1081. https://doi.org/10.1108/MD-06-2013-0349

Lumpkin, J. R., & Ireland, R. D. (1988). Screening Practices of New Business Incubators: The Evaluation of Critical Success Factors. American Journal of Small Business, 12(4), 59–81. https://doi.org/10.1177/104225878801200404

Mazzucato, M. (2011). The Entrepreneurial State, London: Demos.

McGee, J. E., Peterson, M., Mueller, S. L., & Sequeira, J. M. (2009). Entrepreneurial self-efficacy: Refining the measure. Entrepreneurship Theory & Practice, 33(4), 965–988. https://doi.org/10.1111/j.1540-6520.2009.00304.x

Metcalfe J.S. (2005). Systems Failure and the Case for Innovation Policy. In: Llerena P., Matt M. (eds) Innovation Policy in a Knowledge-Based Economy. Springer, Berlin, Heidelberg.

Mitteness, C., Sudek, R., & Cardon, M.S. (2012). Angel investor characteristics that determine whether perceived passion leads to higher evaluations of funding potential. Journal of Business Venturing, 27(5), 592–606. doi:10.1016/j.jbusvent.2011.11.003

Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. Journal of Business Venturing, 29 (1), 1-16. doi:10.1016/j.jbusvent.2013.06.005

Navis, C., & Glynn, M. (2011). Legitimate Distinctiveness And The Entrepreneurial Identity: Influence On Investor Judgments Of New Venture Plausibility. The Academy of Management Review, 36(3), 479-499. Retrieved from www.jstor.org/stable/41319182

Patton, M. Q. (2002). Qualitative Research & Evaluation Methods (3rd ed.). Sage Publications, Inc.

Pauwels, C., Clarysse, B., Wright, M., & van Hove, J. (2016). Understanding a new generation incubation model: the accelerator. Technovation, 50-51, 13-24. doi:10.1016/j.technovation.2015.09.003

Peters, L., Rice, M., & Sundararajan, M. (2004). The role of incubators in the entrepreneurial process. Journal of Technology Transfer, 29, 83-91. doi:10.1023/B:JOTT.0000011182.82350.df

Protogerou, A., Caloghirou, Y., & Vonortas, N.S. (2017). Determinants of young firms' innovative performance: Empirical evidence from Europe. Research Policy, 46(7), 1312-1326. https://doi.org/10.1016/j.respol.2017.05.011

Salkind, N. J. (2010). Encyclopedia of research design (Vols. 1-0). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781412961288

Schwartz, M., & Göthner, M. (2009). A Multidimensional Evaluation of the Effectiveness of Business Incubators: An Application of the PROMETHEE Outranking Method. Environment and Planning C: Government and Policy, 27(6), 1072–1087. https://doi.org/10.1068/c0897b

Senyard, J., Baker, T., Steffens, P., & Davidsson, P. (2014). Bricolage as a path to Innovativeness for resource-constrained new firms. Journal of Product Innovation Management, 31 (2), 211-230. https://doi.org/10.1111/jpim.12091

Shane, S., & Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research. The Academy of Management Review, 25(1), 217-226. doi: 10.2307/259271

Stam, E., & Spiegel, B. (2016) Entrepreneurial Ecosystem, Utrecht School of Economics Discussion Paper No: 16-13.

Startups.watch. (2020). The State of Turkish Startup Ecosystem. Retrieved from https://www.invest.gov.tr/en/library/publications/lists/investpublications/the-state-of-turkish-startup-ecosystem.pdf

Steffens, P., Terjesen, S., & Davidsson, P. (2012). Birds of a feather get lost together: New venture team composition and performance. Small Business Economics, 39, 727–743.

Thiess, D., Sirén, C., & Grichnik, D. (2016). How does heterogeneity in experience influence the performance of nascent venture teams?: Insights from the US PSED II study. Journal of Business Venturing Insights, 5, 55–62. doi:10.1016/j.jbvi.2016.04.001

Trevelyan, R. (2008). Optimism, overconfidence and entrepreneurial activity. Management Decision, 46 (7), 986-1001. https://doi.org/10.1108/00251740810890177

Vanaelst, I., Clarysse, B., Wright, M., Lockett, A., Moray, N., & S'Jegers, R. (2006). Entrepreneurial Team Development in Academic Spinouts: An Examination of Team Heterogeneity. Entrepreneurship Theory and Practice, 30(2), 249–271.

Visintin, F., & Pittino, D. (2014). Founding Team Composition and Early Performance of University-Based Spin-Off Companies. Technovation, 34(1), 31–43.

Vogel, R., Puhan, T. X., Shehu, E., Kliger, D., & Beese, H. (2014). Funding decisions and entrepreneurial team diversity: A field study. Journal of Economic Behavior & Organization, 107, 595–613. doi:10.1016/j.jebo.2014.02.021

Vyakarnam, S., Jacobs, R., & Handelberg, J. (1999). Exploring the formation of entrepreneurial teams: The key to rapid growth business? Journal of Small Business and Enterprise Development, 6(2), 153-165.

Vyakarnam, S., & Handelberg, J. (2005). Four Themes of the Impact of Management Teams on Organizational Performance: Implications for Future Research of Entrepreneurial Teams. International Small Business Journal, 23(3), 236–256. doi:10.1177/0266242605052072

WEF. (2013). Entrepreneurial ecosystems around the globe and company growth dynamics, World Economic Forum.

West, G. P. (2007). Collective Cognition: When Entrepreneurial Teams, Not Individuals, Make Decisions. Entrepreneurship Theory and Practice, 31(1), 77–102. doi:10.1111/j.1540-6520.2007.00164.x

Wiggins, J., & Gibson, D.V. (2003). Overview of US Incubators and the Case of the Austin Technology Incubator. International Journal of Entrepreneurship and Innovation Management 3 (1.2), 56-66.

Winston Smith, S., & Hannigan, T. J. (2015). Swinging for the fences: How do top accelerators impact the trajectories of new ventures? Paper presented at the DRUID15, Rome. Retrieved from https://conference.druid.dk/acc_papers/5ntuo6s1r5dvrpf032x24x5on5lq.pdf

Wu, L., Liu, H., & Zhang, J. (2017). Bricolage effects on new product development speed and activity: the moderating role of technological turbulence. Journal of Business Venturing, 70, 127-135. http://dx.doi.org/10.1016/j.jbusres.2016.08.027

Yin, B., & Luo, J. (2018). How Do Accelerators Select Startups? Shifting Decision Criteria Across Stages. IEEE Transactions on Engineering Management, 65(4), 574-589. doi:10.2139/ssrn.2735465

Yu, S. (2016). How Do Accelerators Impact the Performance of High-Technology Ventures? Management Science. Available at ISSN 1526-5501. https://doi.org/10.1287/mnsc.2018.3256

Yusubova, A., Andries, P., & Clarysse, B. (2019). Entrepreneurial Team Formation and Evolution in Technology Ventures: Looking Beyond the Top Management Team. Journal of Small Business Management. doi:10.1111/jsbm.12539

Zhang, J. (2011). The advantage of experienced start-up founders in venture capital acquisition: evidence from serial entrepreneurs. Small Business Economics, 36, 187–208. https://doi.org/10.1007/s11187-009-9216-4

Zhou, W., & Rosini, E. (2015). Entrepreneurial team diversity and performance: toward an integrated model. Entrepreneurship Research Journal, De Gruyter, 5 (1), 31–60

A. QDA MINER CODEBOOK

- **selection**
  - **selection_idea**
    - **market**
      - competitiveness
      - customer
      - globalize
      - market_size
    - **idea_quality**
      - commercialization
      - feasible
      - innovative
      - problem
      - prototype
      - value_added
  - **selection_team/entr**
    - team
    - **attitudes**
      - behavioral
      - communicational
      - demographic
      - motivational
    - **knowledge**
      - education
      - experience
      - expertise
- **characteristics**
  - **team_characteristics**
    - **team_knowledge**
      - avg_startup_experience
      - collective_experience
      - managerial_skills
      - tech_expertise_team
    - **team_attitudes**
      - awareness_team
      - collaborative_team
      - collective-efficacy
      - commitment_team
      - harmony_team
      - open_teams
      - passion_team
      - persistence_team
      - realistic_team
    - **team_diversity**
      - demographic_diversity
      - educational_diversity
      - experience_diversity
      - functional_diversity
  - **entr_characteristics**
    - **personal_knowledge**
      - educ_background
      - relevant_experience
      - startup_experience
      - tech_expertise_entr
      - work_experience
    - **personal_attitudes**
      - ambition_entr
      - commitment_entr
      - enhusiasm_entr
      - openness_entr
      - passion_entr
      - persistence_entr
      - self-efficacy

KULUÇKA VE HIZLANDIRMA PROGRAMLARI START-UP ARAŞTIRMASI

Kuluçka ve hızlandırma programlarının sayısında ve bu programlara başvuran ve dahil olan start-up sayılarında son yıllarda ciddi oranda artış yaşanmaktadır. Özellikle teknoloji start-up'larının durumları ve ülke ekonomisine sağlayacakları potensiyel katkı göz önünde bulundurulduğunda bu tür programlara dahil olan start-up'ların ve start-up'lar ile kuluçka/hılandırma programları arasındaki ilişkinin araştırılması özel bir önem taşımaktadır. Bu araştırma kuluçka / hızlandırma programlarının içinde halen yer alan ve / veya bu programların süresini tamamlamış / mezun olmuş start-up'ları daha iyi anlamayı, programlar ile start-up'lar arasındaki ilişkiyi ve programlar tarafından hayata geçirilen uygulamalarının start-up'lara katkısını incelemeyi hedeflemektedir.
Bu anket çalışması, "Girişimcilik desteklerinde seçim süreçlerinin incelenmesi ve seçim - performans ilişkisinin analizi: Türkiye'de kuluçka ve hızlandırma programları örneği" başlığını taşıyan ve TÜBİTAK tarafından "115K204" proje numarası ile desteklenen araştırma projesi kapsamında kuluçka ve hızlandırma programlarına şu an dahil olan ya da daha önce bu programları tamamlayan start-up'lar ile yapılmaktadır.
Anketi oluşturan soruları cevaplamak yaklaşık 30 dakikanızı alacaktır. Elde edilecek veriler KESİNLİKLE GİZLİ tutulacak, girişiminize ilişkin bilgiler kimseyle paylaşılmayacak ve elde edilen bilgiler sadece bilimsel araştırma, analiz ve makalelerde kullanılacaktır.

Yardımlarınız için şimdiden teşekkür ederiz.

Sorularınız için bizlerle iletişim kurmaktan lütfen çekinmeyiniz
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START-UP İLE İLGİLİ GENEL SORULAR

1. Firmanızı kurdunuz mu?

☐ **Evet**   ☐ **Hayır**

2. Kuluçka / hızlandırma programını tamamladınız mı?

☐ **Evet**   ☐ **Hayır**

3. Birden fazla kuluçka/hızlandırma programına katıldınız mı?

☐ **Evet**   ☐ **Hayır**

4. Tamamladığınız ya da halen devam ettiğiniz kuluçka/hızlandırma programını / programlarını yazınız.

…………………………………………………………………………………………………..

5. Firmanın şu anki adresi kuluçka / hızlandırma programının yürütüldüğü adresten farklı mı?

☐ **Evet**   ☐ **Hayır**   ☐ **Firma henüz kurulmadı**

6. Girişimcilik ekibi kaç kişiden oluşmaktadır?

....

7. **Girişim ekibindeki kurucu ortaklar içn lütfen aşağıdaki soruları cevaplayınız.**

	Kurucu 1	Kurucu 2	Kurucu 3	Kurucu 4
Yaş				
Cinsiyet	[ ] Kadın [ ] Erkek	[ ] Kadın [ ] Erkek	[ ] Kadın [ ] Erkek	[ ] Kadın [ ] Erkek
Eğitim durumu	[ ] Lisans [ ] Yüksek Lisans [ ] Doktora	[ ] Lisans [ ] Yüksek Lisans [ ] Doktora	[ ] Lisans [ ] Yüksek Lisans [ ] Doktora	[ ] Lisans [ ] Yüksek Lisans [ ] Doktora
Kurucu eğitimine devam ediyor mu?	[ ] Evet [ ] Hayır	[ ] Evet [ ] Hayır	[ ] Evet [ ] Hayır	[ ] Evet [ ] Hayır
Lisans eğitiminin alındığı alan	[ ] Sosyal Bil. [ ] Fen Bil. [ ] Mühendislik	[ ] Sosyal Bil. [ ] Fen Bil. [ ] Mühendislik	[ ] Sosyal Bil. [ ] Fen Bil. [ ] Mühendislik	[ ] Sosyal Bil. [ ] Fen Bil. [ ] Mühendislik
Lisans üstü eğitiminin alındığı alan	[ ] Sosyal Bil. [ ] Fen Bil. [ ] Mühendislik	[ ] Sosyal Bil. [ ] Fen Bil. [ ] Mühendislik	[ ] Sosyal Bil. [ ] Fen Bil. [ ] Mühendislik	[ ] Sosyal Bil. [ ] Fen Bil. [ ] Mühendislik
Sektör deneyimi (yıl)				
Teknik alandaki iş deneyimi (yıl)				
Satış-pazarlama deneyimi (yıl)				
Yöneticilik deneyimi (yıl)				
Girişimcilik deneyimi (yıl)				

8. Start-up ekibinize kuluçka/hızlandırma programına girdikten sonra yeni bir ortak katıldı mı?

☐ **Evet**   ☐ **Hayır**

9. Katıldıysa aşağıdaki kararlarda kuluçka program yöneticilerinin yönlendirmeleri ne ölçüde etkili oldu?
(1 = Hiç etkili olmadı, 2= Etkili olmadı, 3. Ne etkili oldu ne de olmadı, 4= Etkili oldu, 5= Çok etkili oldu)

	1	2	3	4	5
Yeni bir kişinin ekibe dahil edilmesi kararında					
Bu kişinin bulunması ve seçilmesinde					

10. Aşağıdaki ifadeleri start-up ekibinizi göz önünde bulundurarak değerlendiriniz

	EVET	HAYIR
Kurucu ortaklardan en az biriyle şirketi kurmadan önce birlikte çalıştım.		
Kurucu ortaklardan en az biri start-up kurmadan önce de arkadaşımdı.		

11. Girişimcilik sürecinizi göz önünde bulundurduğunuzda aşağıdaki ifadelerin sizi ne ölçüde ifade ettiğini belirtiniz.
(1= Hiç etmiyor, 2= Etmiyor, 3=Ne ediyor ne etmiyor, 4= Ediyor, 5= Çok ediyor)

	1	2	3	4	5
Henüz karşılanmamış müşteri/kullanıcı ihtiyaçlarının çözümü için yeni yöntemler bulmak heyecan vericidir.					
Var olan ürünlerin / hizmetlerin nasıl daha iyi bir hale getirilebileceğini bulmak beni motive eder.					
Yeni fırsatlar keşfetmek için pazarı araştırmak beni gerçekten heyecanlandırır.					
Problemlere yeni çözümler geliştirmek kişiliğimin önemli bir parçasıdır.					
Yeni bir şirket kurmak beni heyecanlandırır.					
Kendi şirketimin sahibi olmak bana enerji verir.					
Bir işin kurucusu olmak kişiliğimin önemli bir parçasıdır.					
Ürünlerimi / hizmetlerimi pazarlamak için doğru insanları bulmaktan gerçekten hoşlanırım					
Benim işim için çalışacak doğru insanları bir araya getirmek heyecan vericidir					
Start-up firmamızı daha iyiye götürmek için kendimi ve çalışanlarımı daha iyisini yapmaya zorlamak beni motive eder.					
Start-up firmayı büyütmek ve geliştirmek kişiliğimin önemli bir parçasıdır.					

GİRİŞİMCİLİK TUTKUSU, BAĞLILIK VE ÖZ YETERLİLİK

12. Girişimcilik sürecinizi göz önünde bulundurduğunuzda aşağıdaki ifadelerin sizi ne ölçüde ifade ettiğini belirtiniz.
(1= Hiç etmiyor, 2= Etmiyor, 3=Ne ediyor ne etmiyor, 4= Ediyor, 5= Çok ediyor)

	1	2	3	4	5
Diğerleri bana karşı çıksa da zor projeler üzerinde çalışmaya devam ederim.					
Diğerleri bıraksa bile ben çalışmakta ısrar ederim.					
İşim ne kadar zor olsa da pes etmeyeceğim					

13. Girişimcilik sürecinizi göz önünde bulundurduğunuzda aşağıdaki ifadelerde belirtilen yeteneklerin size ne derece uygun olduğunu düşünüyorsunuz?
(1= Hiç uygun değil, 2= Uygun değil, 3=Ne uygun ne değil, 4= Uygun, 5= Çok uygun)

	1	2	3	4	5
Bir ürün / hizmet için yeni bir fikir bulmak (beyin fırtınası yapmak)					
Yeni bir ürün / servis için ihtiyacı belirlemek					
Müşteri ihtiyaç ve isteklerini tatmin eden bir ürün tasarlamak					
Yeni bir ürün / servis için müşterinin taleplerini tahmin etmek					
Yeni bir ürün / servis için rekabetçi bir fiyat belirlemek					
İşime başlayabilmek için gerekli başlangıç (start-up) fonlarını ve işletme sermayesini tahmin etmek					
Yeni bir ürün / servis için etkili bir pazarlama / reklam kampanyası tasarlamak					

14. Girişimcilik sürecinizi göz önünde bulundurduğunuzda aşağıdaki ifadelerde belirtilen yeteneklerin size ne derece uygun olduğunu düşünüyorsunuz?
(1= Hiç etmiyor, 2= Etmiyor, 3=Ne ediyor ne etmiyor, 4= Ediyor, 5= Çok ediyor)

	1	2	3	4	5
Yeni bir iş için vizyonuma ve planlarıma inanan ve onlarla özdeşleşen diğer kişileri kazanmak					
Bilgi ve enformasyon edinmek amacıyla başkalarıyla iletişim kurmak					
İş fikirlerimi açık ve net olarak anlatmak					
Çalışanları denetlemek.					
Çalışanları işe almak					
İşimdeki çalışanlara görev ve sorumluluk atamak					
Gündelik problemler ve krizlerle etkili bir şekilde başa çıkmak					
Çalışanlarıma ilham vermek, cesaretlendirmek ve motive etmek					
Çalışanlarımı yetiştirmek					
İşimin mali kayıtlarını organize etmek ve devamlılığını sağlamak.					
İşimin finansal varlıklarını yönetmek					
Mali bilançoları okumak ve yorumlamak					

15. Girişimcilik ekibinizi ve ortaklaşa yaptıklarınızı göz önünde bulundurduğunuzda aşağıdaki ifadelerin size ne derecede uygun olduğunu belirtiniz**.**
(1= Hiç uygun değil, 2= Uygun değil, 3=Ne uygun ne değil, 4=Uygun, 5= Çok uygun)

	1	2	3	4	5
Fırsatları uzun dönemli analiz ettik ve bize en iyi getiriyi sağlayacağını düşündüğümüz fırsatı seçtik.					
Kaynaklardan ve yeteneklerden en iyi şekilde faydalanacağımız bir strateji geliştirdik.					
Hedef pazarları araştırdık ve seçtik, ve anlamlı bir rekabet analizi yaptık					
İş stratejileri tasarladık ve planladık.					
Hedeflere ulaştığımızdan emin olmak için kontrol süreçleri organize ettik ve uyguladık.					
Yapmak istediğimiz şey için açık ve tutarlı bir vizyonumuz vardı.					
Üretim ve pazarlama çalışmalarımızı tasarlayıp planladık.					
Bu işi faaliyete geçirmek için kullandığım nihai ürün / hizmet orijinal konseptime/fikrime oldukça benziyordu.					
Karar verme sürecimiz büyük ölçüde beklenen getiriler tarafından yönlendirilmektedir.					

16. Girişimcilik ekibinizi ve ortaklaşa yaptıklarınızı göz önünde bulundurduğunuzda aşağıdaki ifadelerin size ne derecede uygun olduğunu belirtiniz.
(1= Hiç uygun değil, 2= Uygun değil, 3=Ne uygun ne değil, 4= Uygun, 5= Çok uygun)

	1	2	3	4	5
Bu işi faaliyete geçirmek için kullandığım nihai ürün / hizmet orijinal konseptimden / fikrimden oldukça farklıydı.					
Girişimcilik sürecine ilk başladığımızda, bu sürecin nasıl sonuçlanacağını görmek/ tahmin etmek imkansızdı.					
Yaptığımız işin (ürün/hizmet) yeni fırsatlar ortaya çıktıkça değişmesine / dönüşmesine izin verdik					
Elimizdeki kaynakları ve imkanları değerlendirdik ve farklı seçenekler hakkında düşündük.					
Farklı ürün / hizmetler ve / veya iş modelleri ile deney yaptı					
Çok esnek bir şekilde başladık ve beklenmedik fırsatlar ortaya çıktıkça onlardan yararlanmaya çalıştık.					
Belirsizliği azaltmak amacıyla müşteriler, tedarikçiler ve diğer organizasyon ve kişilerle azımsanmayacak sayıda anlaşmalar yaptık.					

17. Girişimcilik ekibinizi ve ortaklaşa yaptıklarınızı göz önünde bulundurduğunuzda aşağıdaki ifadelerin size ne derecede uygun olduğunu belirtiniz.
(1= Hiç uygun değil, 2= Uygun değil, 3=Ne uygun ne değil, 4=Uygun, 5= Çok uygun)

	1	2	3	4	5
Mevcut kaynaklarımızı kullanarak, yeni sorunlara uygulanabilir çözümler bulma kabiliyetimiz olduğundan eminiz.					
Mevcut kaynaklarımızla, geniş çeşitlilikteki sorunlarla başkalarından daha iyi şekilde baş edebiliriz.					
Yeni bir probleme veya fırsata yanıt vermede faydalı olabilecek gibi görünen mevcut herhangi bir kaynağı kullanırız.					
Yeni sorunlar veya fırsatlar ile uğraşırken, uygulanabilir bir çözüm bulacağımızı varsayarak harekete geçeriz.					
Yeni sorunlarla, kendi mevcut kaynaklarımız ile ucuza edinebileceğimiz diğer kaynakların bir kombinasyonunu kullanarak uğraşırız.					
Şaşırtıcı çeşitlilikteki yeni sorunlarla kendi mevcut kaynaklarımızı birleştirerek uğraşırız.					
Yeni sorunlarla karşılaştığımızda, kendi mevcut kaynaklarımızdan uygulanabilir çözümleri bir araya getiririz					
Yeni sorunların üstesinden gelmek için, özünde bu sorunların üstesinden gelmek üzere tasarlanmamış olan kaynakları birleştiririz.					

İNOVASYON VE PAZARA ÇIKMA HIZI

18. Sektörünüz için tamamen yeni olan bir ürün / hizmet mi sağlayacaksınız?

☐ **Evet**   ☐ **Hayır**

19. A. Eğer tamamen yeni değilse, sağladığınız ürün/hizmet diğer firmaların daha önce sunduğu ürün/hizmetlerle karşılaştırıldığında önemli ölçüde geliştirilmiş midir?

☐ **Evet**   ☐ **Hayır**

B. Ürün tüm dünya için mi yoksa sadece aktif olacağınız şehir/bölge/ülke için mi tamamen yenidir?

☐ **Aktif olunan yerlerde yeni**   ☐ **Tüm dünyada yeni**

20. A.Diğer firmaların tamamen ihmal ettiği müşterilere veya hedef pazarlara mı odaklanacaksınız?

☐ **Evet**   ☐ **Hayır**

B. Müşteri ve hedef pazar seçimleriniz diğer işletmelerin uyguladığından belirgin derecede farklı mı?

☐ **Evet**   ☐ **Hayır**

C. Bu, diğer firmaların hiçbirinin odaklanmadığı ya da diğer firmaların çoğunun hizmet vermekte başarısız olduğu müşterilere odaklanacağınız anlamına mı geliyor?

☐ **Çoğu firmanın hizmet vermekte başarısız olduğu müşteriler**

☐ **Hiç bir firmanın odaklanmadığı müşteriler**

21. Pazara çıkma / müşteri ile buluşma sürenizi göz önünde bulundurduğunuzda aşağıdaki seçeneklerden size en uygun olanını işaretleyiniz.

☐ **Hedeflediğimiz zamandan çok daha önce**

☐ **Sektör ortalamasından daha hızlı**

☐ **Beklediğimizden çok daha hızlı**

☐ **Tipik ürün geliştirme süresinden daha hızlı**

KULUÇKA / HIZLANDIRMA PROGRAMI İLE İLİŞKİLER

22. İçinde bulunduğunuz ya da tamamladığınız kuluçka / hızlandırma programı ile ilişkinizi gözönünde bulundurduğunuzda aşağıdaki ifadelerin bu ilişkiyi ne derece ifade ettiğini belirtiniz.

(1= Hiç etmiyor, 2= Etmiyor, 3=Ne ediyor ne etmiyor, 4= Ediyor, 5= Çok ediyor)

	1	2	3	4	5
İşle ilgili sorunları program yürütücüleri ile özgürce konuşmak konusunda rahat hissederim ve onların her zaman beni dinlemek istediklerini bilirim.					
Sorunları, program yürütücüleri ile paylaşırsam, yapıcı ve önemseyen şekilde karşılık vereceklerini bilirim.					

23. Bulunduğunuz kuluçka / hızlandırma programını göz önünde bulundurduğunuzda, <u>program içindeki girişimciler açısından</u> aşağıdaki ifadelerin ne ölçüde uygun olduğunu belirtiniz.

(1=Hiç uygun değil, 2= Uygun değil, 3=Ne uygun ne değil, 4= Uygun, 5= Çok uygun)

	1	2	3	4	5
Program yürütücüleri, katılımcılara işlerini nasıl yapacaklarına karar vermeleri konusunda özgürlük ve bağımsızlık verilir.					
Girişimciler, atılacak bir adımın onlar için en iyisi olduğunu düşünüyorlarsa, program yürütücüleri onlara yalnız başına davranma yetkisi ve sorumluluğu verir.					

24. İçinde yer aldığınız kuluçka/hızlandırma programını göz önünde bulundurduğunuzda, aşağıdaki ifadelerin kuluçka/hızlandırma programına ne ölçüde uygun olduğunu düşünüyorsunuz?

(1= Hiç uygun değil, 2= Uygun değil, 3=Ne uygun ne değil, 4=Uygun, 5= Çok uygun)

	1	2	3	4	5
Programın her bir katılımcı için standart prosedürleri vardır.					
Program yürütücüleri her bir katılımcı için verilen hizmetlerin sunulma şeklini değiştirir.					
Her bir katılımcıya sunulan hizmetler benzerdir					
Program yürütücüleri bir hizmet geliştirmeden önce start-up'a ihtiyaçları konusunda danışır.					
Her bir katılımcının ihtiyaçları önceden fark edilerek bu ihtiyaçlara en uygun hizmetler sağlanır.					

25. A. İçinde yer aldığınız ya da tamamladığınız kuluçka/ hızlandırma programı aşağıda sıralanan hizmet yeterliliklerini ne ölçüde sağlamaktadır.

(1= Hiç , 2= Nadiren, 3=Bazen, 4= Sık, 5= Çok sık)

	1	2	3	4	5
Katılımcılara idari destek hizmetlerine erişim sağlama					
Katılımcılara yönetimsel bilgi/ uzmanlığa erişim sağlama					
Katılımcılara sermaye kaynaklarına erişim sağlama (ör. Risk sermayedarları, melek yatırımcı).					
Katılımcılara avukatlara erişim sağlama (hukuk danışmanı).					
Katılımcılara muhasebecilere erişim sağlama (finansal danışman).					
Katılımcılara danışmanlara erişim sağlama					
Katılımcılara akıl hocalarına (mentör) erişim sağlama					
Katılımcılara pazarlama uzmanlarına erişim sağlama					
Katılımcılara yerel üniversite irtibatlarına erişim sağlama					
Katılımcılara müşterilere erişim sağlama					
Katılımcılara tedarikçilere erişim sağlama					
Katılımcılara firma ağlarına erişim sağlama					
Katılımcılara kamu fonuna erişim sağlama					
Katılımcılara yüksek kaliteli girişimcilik eğitimlerine erişim sağlama					
Katılımcılara uluslararası pazarlara ve uzmanlığa erişim sağlama					

B. İçinde yer aldığınız ya da tamamladığınız kuluçka / hızlandırma programı tarafından sağlanan aşağıdaki hizmetlerden siz / girişiminiz ne ölçüde yararlanmaktadır.

(1= Hiç, 2= Nadiren, 3=Bazen, 4= Sık, 5= Çok sık)

	1	2	3	4	5
Katılımcılara idari destek hizmetlerine erişim sağlama					
Katılımcılara yönetimsel bilgi/ uzmanlığa erişim sağlama					
Katılımcılara sermaye kaynaklarına erişim sağlama (ör. Risk sermayedarları, melek yatırımcı).					
Katılımcılara avukatlara erişim sağlama (hukuk danışmanı).					
Katılımcılara muhasebecilere erişim sağlama (finansal danışman).					
Katılımcılara danışmanlara erişim sağlama					
Katılımcılara akıl hocalarına (mentör) erişim sağlama					
Katılımcılara pazarlama uzmanlarına erişim sağlama					
Katılımcılara yerel üniversite irtibatlarına erişim sağlama					
Katılımcılara müşterilere erişim sağlama					
Katılımcılara tedarikçilere erişim sağlama					
Katılımcılara firma ağlarına erişim sağlama					
Katılımcılara kamu fonuna erişim sağlama					
Katılımcılara yüksek kaliteli girişimcilik eğitimlerine erişim sağlama					
Katılımcılara uluslararası pazarlara ve uzmanlığa erişim sağlama					

26. Kendi takımınızı ve kuluçka /hızlandırma programının verdiği hizmetleri göz önünde bulundurduğunuzda aşağıdaki ifadeler sizin fikrinizi ne ölçüde ifade etmektedir?

(1= Hiç etmiyor, 2= Etmiyor, 3=Ne ediyor ne etmiyor, 4= Ediyor, 5= Çok ediyor)

	1	2	3	4	5
Start-up şirketimiz, program yürütücülerinden alınan tavsiyeler üzerine hareket eder.					
Start-up şirketimiz, sunulan tüm eğitimlerden tam fayda sağlar.					
Program yürütücüleri, start-up şirketimizin değişen ihtiyaçlarını karşılayabilecek esneklikte hizmetler sunar.					
Ortamımız keyifli ve besleyicidir (katkı sağlayıcıdır)					
Start-up şirketimiz, aynı programda arkadaş olduğumuz katılımcılarından elde edilen bilgiden faydalanır					
Start-up şirketimiz, diğer program katılımcılarının bilgilerinden faydalanmayı öğrenir.					
Start-up şirketimiz, arkadaş olduğumuz diğer katılımcılarından aldığı tavsiyeler üzerine hareket eder.					
Program yürütücüleri, bizi networklerinden (şebeke irtibatlarından) biriyle tanıştırdığında, bu tanışmanın sunduğu fırsatı en üst düzeye kullanırız.					

27. Kuluçka/ hızlandırma programının girişiminize sağladığı katkılarını göz önünde bulundurduğunuzda aşağıdaki ifadeler sizin fikrinizi ne ölçüde ifade etmektedir?

(1= Hiç etmiyor, 2= Etmiyor, 3=Ne ediyor ne etmiyor, 4= Ediyor, 5= Çok ediyor)

	1	2	3	4	5
Program sayesinde ismimiz daha fazla duyuldu.					
Program sayesinde pazara daha hızlı çıkabildik.					
Program sayesinde ilk müşterilerimizi bulduk.					
Program sayesinde stratejik ortaklıklar kurabildik.					
Program sayesinde ürün/hizmetimizi önemli ölçüde geliştirdik.					
Programı sayesinde iş modelimizi önemli ölçüde geliştirdik.					
Programın verdiği destek olmasa şirket kuramazdık.					
Programın verdiği destek olmasa şu anki satış rakamımıza ulaşamazdık.					
Program desteği olmasa yatırım alamazdık.					

28. İçinde yer aldığınız kuluçka/hızlandırıcı programının sağladığı işbirlikleri kapsamında aşağıdaki paydaşlarla bir araya gelme sıklığınızı belirtiniz.

(1= Hiç, 2= Nadiren, 3=Bazen, 4= Sık, 5= Çok sık)

	1	2	3	4	5
Kuluçka/hızlandırıcı programının yürütücüleri ile ne sıklıkta bir araya geliyorsunuz?					
Kuluçka/hızlandırıcı programındaki mentörler ile ne sıklıkta bir araya geliyorsunuz?					
Kuluçka/hızlandırıcı programındaki diğer firmalar ile ne sıklıkta bir araya geliyorsunuz?					
Kuluçka/hızlandırıcı programındaki diğer firmalar ile ne sıklıkta bir araya geliyorsunuz?					

29. Aşağıdaki ifadeleri firmanıza uygunluk durumuna göre evet ya da hayır olacak şekilde cevaplandırınız.

	EVET	HAYIR	Ek bilgi
Girişim/firma bir ürün ya da hizmet geliştirdi mi?			
Girişim/firma ilk satışını gerçekleştirdi mi?			
Girişim/firma fon sağlamak amacıyla yatırımcılarla ilişki kurdu mu?			
Girişim/firma melek yatırımcıdan fon aldı mı?			
Girişim/firma risk sermayesi yatırımı aldı mı?			
Girişim/firma TÜBİTAK, KOSGEB gibi kamu kurumlarından fon aldı mı?			
Girişimin/firmanın finansal değerlemesi yapıldı mı? Finansal değerleme yapıldıysa kaç TL?			
Girişim/firma kuluçka/hızlandırıcı merkezinden ödül (birincilik ödülü, yurtdışı seyahat ödülü vs) aldı mı?			
Girişim/firma fikri mülkiyet hakkı başvurusu yaptı mı?			

30. Son üç yıldaki çalışan sayınızın bir önceki yıla göre değişimini belirtiniz. Girişim/Firma yeni kurulmuşsa kurulduğu yıldan itibaren çalışan sayınızdaki değişimi yıllara göre belirtiniz.

	ARTTI	SABİT KALDI	AZALDI
2015			
2016			
2017			

31. Son üç yılda cironuzun bir önceki yıla göre değişimini belirtiniz. Girişim/Firma yeni kurulmuşsa kurulduğu yıldan itibaren cironuzdaki değişimi yıllara göre belirtiniz.

	ARTTI	SABİT KALDI	AZALDI
2015			
2016			
2017			

ANKETİMİZİ DOLDURDUĞUNUZ İÇİN ÇOK TEŞEKKÜR EDERİZ !!!!!

C.   APPROVAL OF ETHICS COMMITTEE

Bahçeşehir Üniversitesi
Bilimsel Araştırma ve Yayın Etiği Komisyonu

10 Şubat 2015

Sayı: 2015/6
Konu İşletme Mühendisliği Bölümü öğretim üyesi Yrd. Doç. Dr. Berna BEYHAN BOZKIRLIOĞLU Tübitak-3501 proje önerisi başvuru formu

Bahçeşehir Üniversitesi Rektörlüğüne,

İlgi: : Mühendislik ve Doğa Bilimleri Fakültesi Dekanlığının 5 Şubat 2015 tarih ve 75538006-108.02-1108 sayılı yazısıyla Rektörlükçe Bilimsel Araştırma ve Yayın Etiği Komisyonumuza gönderilen proje önerisi

Bilimsel Araştırma ve Yayın Etiği Komisyonu'nun 10 Şubat 2015 tarihli toplantısında; Mühendislik ve Doğa Bilimleri Fakültesi İşletme Mühendisliği Bölümü öğretim üyesi Yrd. Doç. Dr. Berna BEYHAN BOZKIRLIOĞLU'nun yürüteceği **"Girişimcilik desteklerinde, girişimci seçim süreçlerinin incelenmesi ve seçim-performans ilişkisinin analizi"** adlı Tübitak-3501 proje önerisine ilişkin başvuru incelenmiştir. Ekteki komisyon raporunda belirtildiği gibi bu araştırmanın Bilimsel Araştırma ve Yayın Etiği Yönergesi'ne aykırılık içermediği anlaşılmıştır.

Saygılarımla arz ederim.

Prof. Dr. Gülsen Güneş
Komisyon Başkanı
Bilimsel Araştırma ve Yayın Etiği Komisyonu

Bahçeşehir Üniversitesi
Bilimsel Araştırma ve Yayın Etiği Komisyonu

RAPOR

Bilimsel Araştırma ve Yayın Etiği Komisyonu'nun 10 Şubat 2015 tarihli toplantısında aşağıda tanımı verilen araştırma projesi incelenmiş, bilimsel araştırma ve yayın etiğine aykırı unsur içermediği anlaşılmıştır.

Proje Adı : "Girişimcilik Desteklerinde, Girişimci Seçim Süreçlerinin İncelenmesi ve Seçim-Performans İlişkisinin Analizi"

Proje Yürütücüleri : Yrd. Doç. Dr. Berna BEYHAN BOZKIRLIOĞLU

Rapor Tarihi : 10 Şubat 2015

Prof. Dr. Niyazi Berk
İktisadi İdari ve Sosyal Bilimler Fakültesi

Prof. Dr. Gülsen Güneş
Hukuk Fakültesi

KATILAMADI.

Prof. Dr. H. Kadircan Keskinbora
Tıp Fakültesi

Prof. Dr. Oktay Özcan
Mühendislik Fakültesi
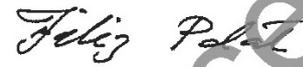
Prof. Dr. Filiz Polat
Eğitim Bilimleri Fakültesi

Doç. Dr. Metehan Irak
İktisadi İdari ve Sosyal Bilimler Fakültesi

KATILAMADI.

Doç. Dr. Yeşim Ulusu
İletişim Fakültesi

Yrd. Doç. Dr. Mehmet Değirmenci
Sağlık Bilimleri Fakültesi

KATILAMADI.

Yrd. Doç. Dr. İrem Maro Kırış
Mimarlık ve Tasarım Fakültesi

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D. TURKISH SUMMARY / TÜRKÇE ÖZET

Schumpeter'e göre, bir ekonomideki girişimcilerin inovasyon üretkenliği, sürdürülebilir ekonomik büyümeyi mümkün kılmaktadır (Aerts vd., 2007). Dünya ekonomisinin belirsiz koşullarını, özellikle de COVID-19 sonrası süreci göz önünde bulundurduğumuzda, girişimci firmaların hayatta kalması ve yeni girişimlerin yaratılmasının desteklenmesi daha da önemli hale geldi. Lumpkin ve Ireland (1988) ekonomilerde sınırlı kaynakları etkin kullanan başarılı girişimlerin oluşma ve hayatta kalma olasılığını artıran mekanizmalara duyulan ihtiyacı vurgulamaktadır. Kuluçka ve hızlandırma, yeni ortaya çıkan firmaların girişimci ekosistemlerdeki yenilikçi faaliyetlerini desteklemeyi amaçlayan mekanizmalar arasındadır. Türkiye'de 1990'lı yıllarda inkübasyon mekanizmasına benzer şekilde işleyen TEKMER'lerin kurulmasıyla girişimci ve yenilikçi faaliyetlere yönelik destekler başlamıştır. Girişimcilik ekosistemi o zamandan itibaren hızlı bir şekilde gelişti. Hızlandırma, girişimci firmaların pazarda başarılı olmak için büyümesine yardımcı olmayı ve hayatta kalmalarını artırmayı amaçlayan nispeten yeni bir olgudur. Hızlandırıcılar, inkübatörlerden hedefleri, operasyonel özellikleri ve girişimci firmalara sunulan hizmetler açısından farklılaşır. İnkübatörler tarafından sağlanan temel ofis, malzeme, finansal ve iş desteklerine ek olarak, Türkiye'deki hızlandırma programları erken aşama teknoloji tabanlı girişimlere çeşitli eğitim, rehberlik, ağ destekleri ve hatta finansman sağlamaktadır. 2018 yılı sonu itibariyle, Türkiye'de 2010 yılından bu yana yaklaşık 9 kat artış gösteren 57 aktif hızlandırma programı bulunmaktadır[10]. Türkiye'deki girişimcilik ekosisteminde bulunan erken aşama girişimlere pazar odaklı destek sağlayan hızlandırma programı sayısındaki bu denli bir artış girişim başarısını, ve dolaylı olarak hızlandırıcı başarısını, etkileyen çeşitli etkenlerin araştırılması ihtiyacını oluşturmaktadır.

Hızlandırıcıların seçim mekanizması, hem girişimlerin hem de hızlandırıcıların başarısını etkileyen faktörler arasındadır, çünkü hızlandırma formatı belirli hedeflerine göre dikkatli bir seçim mekanizması sayesinde programa en uygun erken aşama girişimlerin kabulü üzerine kurulmuştur (Cohen & Hochberg, 2014). Hedefleri hızlı büyüme, kârlılık ve pazar başarısına odaklandığından, hızlandırıcılarda rekabetçi ve agresif bir seçim mekanizması vardır (Cohen

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[10] Kaynak: https://www.invest.gov.tr/en/library/publications/lists/investpublications/the-state-of-turkish-startup-ecosystem.pdf 07.06.2020 tarihinde erişildi

& Hochberg, 2014; Yin & Luo, 2018). Bu nedenle, iyi biçimlendirilmiş bir seçim süreci, hızlandırma programlarının sunduğu kaynaklardan yararlanması en olası olan, en uygun, ve en umut verici girişimci firmaları kabul etmelerini sağlar. Buna göre, hızlandırıcılar başarılı olmaları ve programdan yararlanma olasılığı en yüksek olan girişimci firmaları seçmektedir. Mevcut literatürde hızlandırıcıları inceleyen çalışmalardan bazıları, hızlandırıcıların seçim mekanizmalarının analizini de içermektedir. Bu tür çalışmalar hızlandırıcıların seçim kriterleri hakkında ipuçları vermektedir, ancak seçim kriterlerini özellikle incelememektedir (örneğin Cohen & Hochberg, 2014; Hoffman & Kelley, 2012; Pauwels vd., 2016; Winston Smith & Hannigan, 2015).

Yin ve Luo (2018) tarafından yapılan yeni bir araştırma, hızlandırıcıların seçim mekanizmasının akademik literatürde kapsamlı bir şekilde işlenmediğini, fakat inkübatörlerin ve yatırımcıların seçim mekanizması hakkında çeşitli araştırmalar olduğunu göstermektedir. Bu tez, girişim seçimi yapan hızlandırıcıların yanı sıra inkübatörler ve yatırımcılar gibi mekanizmaların seçim kriterlerini inceleyen literatürü de gözden geçirmektedir. Bergek ve Norrman'ın (2008) da belirttiği gibi, literatürde incelenen seçim kriterlerini fikir odaklı seçim ve girişimci/takım odaklı seçim yaklaşımları altında sınıflandırmak mümkündür. Fikir odaklı yaklaşımda girişimci projeyle ilgili, fikrin uygulanabilirliği, pazar ve kâr potansiyeli gibi kriterler vardır. Öte yandan, girişimci/girişimci ekiplerin seçiminde yeterlilik, itici güçler ve girişimcilerin veya girişimci ekiplerin niteliklerini belirten kriterler değerlendirilmektedir (Bergek & Norrman, 2008; Yin & Luo, 2018). Hızlandırıcıların girişimci/ekip odaklı seçim kriterlerine dayanan bu tez, girişimci karakteristiklerinin hızlandırıcılarda girişim performansını nasıl etkilediğini incelemeyi amaçlamaktadır.

Girişimci/takım odaklı seçim kriterleri, bir girişimci ekibi oluşturan kurucuların bireysel özelliklerine odaklanmaktadır. Bireysel düzeydeki girişimci karakteristikleri girişimcilerin davranışsal ve motivasyonel yeterliliklerini şekillendiren tutku, öz-yeterlik, bağlılık gibi kişisel niteliklerin (Cardon & Kirk, 2015; Cardon vd., 2017a; Chen vd., 1998; Chen vd., 2009) ve demografik faktörlerin (Chowdhury, 2005 ; Der Foo vd., 2005; Vogel vd., 2014) yanı sıra girişimcilerin kişisel bilgiye dayalı yeterliliklerini şekillendiren eğitim, deneyim ve uzmanlık gibi özelliklerini içerir (Carpentier & Suret, 2015; Der Foo vd., 2005; Lumpkin & Ireland, 1988; Protogerou vd., 2017; Vogel vd., 2014; Zhang, 2011). Bireysel düzey girişimci özelliklerinin aksine, girişimci ekip özellikleri, bir girişimci bir ekipteki tüm kurucuların kolektif yetkinliklerini oluşturan takım düzeyindeki niteliklere karşılık gelir (Chen vd., 2017; West, 2007). Ekip düzeyinde tutku, bağlılık, uyum ve etkinlilik ya da

ekibin farkındalığı, esnekliği ve açıklığı gibi ekip çalışmasını etkileyen tutumlar, girişimci bir ekibin motivasyonel, davranışsal ve iletişimsel yeterliliğini etkiler (Aerts vd., 2007; Cardon vd. ., 2017b; De Mol vd., 2015, 2019; Esfandiar vd., 2019; Vyakarnam vd., 1999; Vyakarnam & Handelberg, 2005).

Ayrıca, girişimci bir ekibin ortalama deneyimi, kolektif deneyimi, teknik uzmanlığı ve iş uzmanlığı, ekip düzeyindeki bilgiye dayalı yetkinliği belirleyen görevle ilgili özellikler arasındadır (Bergek & Norrman, 2008; Eisenhardt, 2013; Hackett & Dilts, 2004a , 2008; Lumpkin & Ireland, 1988; Yin & Luo, 2018). Girişimci bir ekip içinde kurucuların kişisel özelliklerinin farklılaşması, takım çeşitliliğini gösterir. Bir takımda farklı bakış açılarının, çeşitli bilginin ve benzersiz becerilerin varlığı, girişimin etkin performansı ve yeterliliği ile ilişkilendirilir (Eisenhardt, 2013; Vanaelst ve ark. 2006). Ekibin görev ile ilgili çeşitliliği eğitim seviyesi, eğitim alanı çeşitliliği (Der Foo vd., 2005; Protogerou vd., 2017; Vogel vd., 2014) ya da deneyimsel çeşitliliğe işaret ederken (Chowdhury, 2005; Thiess vd., 2016; Zhou vd., 2015); ekibin görevle ilgili olmayan çeşitliliği ise yaş, cinsiyet çeşitliliği (Chowdhury, 2005; Der Foo vd., 2005; Steffens vd., 2012), tutku çeşitliliği (Cardon vd., 2017b; De Mol vd., 2019) veya bilişsel çeşitliliğe (Chowdhury, 2005; Vanaelst vd., 2006) işaret eder.

Bu tezde, nitel yöntemler kullanarak bireysel ve ekip düzeyindeki girişimci karakteristiklerini inceleyen literatürü ve bu karakteristiklerin hem girişim seçimi hem de girişim performansı üzerindeki etkilerini ampirik olarak inceleyen çalışmaları gözden geçirmektedir. Bu tezin hızlandırıcılarda girişimci karakteristikleri ile girişim performansı arasındaki ilişkiyi sorguladığı göz önüne alındığında, bu krakteristiklerin sonuç değişkenleri üzerindeki etkisini açıklayan çalışmalarda girişimci özellikleri keşfeden araştırmalarda kullanılan keşif yaklaşımları ve açıklayıcı yaklaşımların kombinasyonu araştırma sorusunun yanıtlanmasına olanak tanımaktadır. Literatür taraması boyunca, çalışmaların çoğunun ya ekip düzeyinde ya da bireysel düzeyde girişimci özelliklere odaklandığı görülmektedir. Ayrıca, girişimci özellikleri inceleyen mevcut çalışmalardan bazıları, bireysel düzeydeki analizlerden elde edilen sonuçlarla girişimci ekipler üzerinde çıkarımlar yapmaktadırlar. Başka bir deyişle, girişimci özelliklerin bireysel düzeyde araştırılması veya açıklanması ve daha sonra bulguların girişimci ekipler üzerinden tartışılması bu tür çalışmalarda karışıklığa yol açmaktadır. Bu çalışmaların aksine, bu tez öncelikle Türkiye'deki hızlandırma programlarının seçim kriterlerine göre bireysel ve ekip düzeyindeki girişimci özellikleri nitel araştırma yöntemleriyle keşfermeyi amaçlamaktadır. Bireysel ve ekip düzeyinde özelliklerin ayrı ayrı keşfi, bireysel girişimcilerin, girişimci ekiplerin ve girişimci özelliklerin kapsamlı ve net bir şekilde anlaşılmasını sağlayan bu tezin ilk katkısıdır. Ayrıca, bu tez, nicel

araştırma yöntemleri kullanarak bu bireysel ve ekip düzeyinde özelliklerin hızlandırma performansı üzerindeki etkisini açıklamayı amaçlamaktadır. Buna göre, ampirik analiz kısmında da bireysel ve takım düzeyinde özelliklerin birbirinden ayrı olarak incelenmesi, bu tezin girişimci karakteristiklerinin girişimci performansı üzerindeki farklı etkilerini açıklamaya yarayan ilave katkısıdır.

Buna göre, bu tez, araştırmacıların hem nitel hem de nicel araştırma formlarını entegre etmelerini sağlayan karma yöntem araştırma yaklaşımına sahiptir (Creswell, 2009). Hızlandırıcıların seçim kriterlerine göre girişimci takım oluşumunun karmaşıklığını ve girişimci / girişimci takım özelliklerini keşfetmek için; nitel araştırma yaklaşımı benimsenmektedir. Buna göre, kritik girişimci / girişimci ekip özelliklerinin performans üzerindeki etkisini incelemek için nicel araştırma yaklaşımı benimsenmektedir. Bu nedenle karma yöntem araştırma yaklaşımı, girişimci / girişimci ekip özelliklerini nitel yöntemlerle keşfetmeye ve keşfedilen özelliklerin performansa etkisini nicel yöntemlerle analiz etmeye olanak sağlamaktadır. Ayrıca, bu tezde bir yöntemin bulgularını başka bir yöntemle detaylandırmayı veya genişletmeyi sağlayan sıralı karma yöntemler stratejisi kullanılmıştır (Creswell, 2009). Sıralı karma yöntem strateji türlerinden biri olan sıralı keşif stratejisinde, toplanan nitel verinin ön analizine göre nicel veri toplanmaktadır (Creswell, 2009). Gerekli incelemeleri yapabilmek için bu tez 115K204 nolu TÜBİTAK[11] projesi kapsamında toplanan nitel ve nicel veriyi analiz etmektedir. Sıralı keşif stratejisine uygun olarak, öncelikle nitel veri hızlandırma programları yöneticileriyle görüşülerek toplanmıştır. Mülakatların ön analizlerine göre seçim kriterleri ve kritik girişimci / girişimci ekip özellikleri olarak vurgulanan ana temalar ortaya çıkmaktadır. Nicel veri toplama aşamasında da nitel aşamada öne çıkan temalar dikkate alınarak yapılandırılmış anketler yoluyla girişimlerden veri toplanmıştır.

Nitel veri, İstanbul ve Ankara'da faaliyet gösteren 14 aktif hızlandırma programının[12] yöneticileriyle yapılan yarı yapılandırılmış derinlemesine mülakatlar yoluyla toplanırken; nicel veriler, görüşülen bu hızlandırma programlarından hali hazırda yararlanan veya mezun olan 122 girişimciye uygulanan anketler aracılığıyla toplanmıştır. Nitel veriler, seçim yaklaşımları, girişimci ve ekip karakteristikleri ile ilgili görüşme verilerinin örüntülerini ve temalarını keşfetmek için QDA Miner programı kullanılarak analiz edilmiştir. Ayrıca, nicel

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[11] Beyhan, B. (2020). Girişimcilik desteklerinde seçim süreçlerinin incelenmesi ve seçim-performans ilişkinin analizi: Türkiye'de kuluçka ve hızlandırma programları örneği (Proje No. 115K204). TÜBİTAK. Yayınlanmamış final raporu.

[12] 14 program arasında, kuluçka mekanizmasına benzer şekilde işleyen programlar da vardır. Bundan sonra, tüm bu programlar hızlandırıcı olarak belirtilmektedir.

veriler, girişim performansını görüşme verilerinden elde edilen bireysel ve ekip düzeydeki girişimcilik karakteristikleri ile açıklamak amacıyla Stata programı kullanılarak analiz edilmektedir. Bu doğrultuda, girişimci özelliklerinin yeni kurulan işletmelerin piyasaya, finansmana ve programla ilgili performansına etkileri probit ve OLS modeller kullanılarak analiz edilmektedir.

Hızlandırma programlarının yöneticileri ile yapılan görüşmeler sonucunda hem girişim seçimi hem de girişimcilik özelliklerine ilişkin önemli bulgular elde edilmiştir. Öncelikle hızlandırma programlarının seçim yaklaşımları Bergek ve Norrman (2008) tarafından da belirtilmiş olduğu gibi fikir odaklı ve girişimci / ekip odaklı olarak ikiye ayrılır. Bu iki seçim yaklaşımı birbirinden ayrı değildir. Buna göre, görüşülen tüm programlar, her iki seçim yaklaşımları altındaki çeşitli kriterlere göre girişimleri seçmektedir. Fikir odaklı seçim yaklaşımı altında, girişimcilik projesi fikrinin kalitesini ve projenin pazarla ilgili özelliklerini gösteren kriterler bulunmaktadır. Girişimci / takım odaklı seçim yaklaşımı altında, hem girişimcilerin hem de girişimci takımların yetkinlik ve niteliklerini gösteren kriterler bulunmaktadır. Görüşülen programların çoğu, girişimci / takım odaklı seçim yaklaşımıyla ilgili kriterlerin fikir odaklı yaklaşımla ilgili kriterlerden daha önemli olduğunu vurgulamaktadır. Dahası, fikir kötü olsa bile, özellikle iyi takımların programlara kabul edilme eğilimine vurgu yapılmaktadır.

Görüşmelerde vurgulanan hem bireysel hem de ekip düzeyindeki girişimci karakteristikleri, bilgi temelli yeterlilik ve tutumlar olarak iki ana kategori altında toplanmaktadır. Bireysel yeterliliğe işaret eden özellikler, deneyim ve eğitim gibi girişimcilerin bilgi temelli yetkinliklerini şekillendiren nitelikleri vurgularken, bireysel tutumlara işaret eden özellikler tutku, sebat, bağlılık ve öz-yeterlik olarak ortaya çıkmaktadır. Ayrıca, girişimci ekiplerin sık sık vurgulanan bilgiye dayalı yetkinlikleri, ekibin ortalama deneyimi, teknik uzmanlığı ve eğitim çeşitliliği gibi faktörleri içerir. Uyum, açıklık, esneklik ve ekip etkinliği gibi motivasyonel, davranışsal ve iletişimsel niteliklerine işaret eden ekip tutumları ile ekibin insan sermayesini şekillendiren demografik özellikler, hızlandırma programlarında sıklıkla vurgulanan ekip düzeyindeki karakteristikler arasındadır. Hızlandırma programlarının hem ekip düzeyinde hem de bireysel düzeydeki karakteristiklere ilişkin açıklamaları olsa da, girişimci ekip karakteristiklerinin önemini belirten açıklamalar öne çıkmaktadır. Esneklik, açıklık, deneysellik ve işbirliği öncelikli aranan takım karakteristikleridir. Görüşme yapılan programlar özellikle bu tür özellikleri yüksek olan girişimci takımların programlardan daha iyi fayda sağlayacaklarını ve böylece performanslarını iyileştireceklerini sıkça

vurgulamaktadırlar. Bunlara ek olarak, programların neredeyse hepsi farkındalığı yüksek, gerçekçi bakış açısına sahip ve planlı takımların da özellikle tercih edildiğini belirtmektedir.

Nitel analizden elde edilen bu tür bulgular, nicel analizi beslemektedir. Nitel bulgulara göre, girişimci ve girişimci ekip özellikleri girişim performansını belirleyen ve şekillendiren kritik etkenler arasındadır. Nicel kısım temelde hızlandırıcı yöneticilerinin bu tür beklentilerinin ve vurgularının gerçekte doğru olup olmadığını incelemektedir. Takım düzeyindeki karakterlerin önemi özellikle nitel bulgularda vurgulandığı için, girişimci ekip karakteristiklerinin girişim performansına etkisinin bireysel düzeydeki karakteristiklere göre daha güçlü olması beklenmektedir.Nicel kısımda kullanılan değişkenler nitel bulgular ışığında belirlenmiştir. Girişimcilik tutkusu (entrepreneurial passion), sebat (entrepreneurial persistence), öz-yeterlilik (self-efficacy) ve uygulama niyeti (intention to implement) bireysel girişimcilerin davranışsal ve motivasyonel kapasitelerini gösteren karakteristikler olarak belirlenmiştir ve nicel kısımda bireysel karakteristikleri temsil eden bağımsız değişkenler olarak kullanılmaktadır. Buna ek olarak nedensellik (causation), başarma / gerçekleştirme (effectuation) ve kolektif yeterlilik (collective-efficacy) girişimci takımların davranışsal ve motivasyonel kapasitelerini gösteren karakteristikler olarak belirlenmiştir ve nicel kısımda takım düzeyindeki karakteristikleri temsil eden bağımsız değişkenler olarak kullanılmaktadır.

Girişim performansını gösteren yeni ürün, ilk satış, dış finansman ve program katkısı göstergeleri ise bağımlı değişkenler olarak kullanılmaktadır. Girişimlerin pazara yeni ürün sürüp sürmedikleri ve ilk satışlarını yapıp yapmadıkları piyasaya ilişkin performanslarını gösterirken, dışsal finansman girişimlerin melek yatırımı, risk sermayesi yatırımı ya da komu fonu kaynaklarının en az birisinden finansman elde edip etmedikleri göstermektedir. Program katkısı bağımlı değişkeni girişimlerin bulunduklar hızlandırma programlarının sunduğu servislerin ve kaynakların performanslarına etkisini ve katkısını değerlendirdikleri bir performans göstergesidir. Daha yüksek program katkısı değerlendirmesi girişimlerin sağlanan kaynaklardan daha iyi yararlanarak performanslarına katkıda bulunduğunu belirtmektedir. Bunlara ek olarak, "konum" (İstanbul ya da Ankara) ve "tip" değişkenleri girişimlerin bulunduğu hızlandırma programları ile ilgili etkileri göz ardı etmemek için kontrol değişkenleri olarak belirlenmiştir. Tip, görüşülen programlardan toplanan nitel verinin Crişan vd. (2019) tarafından incelenen öğrenme (learning) ve erişim ve büyüme (access and growth) mekanizmaları baz alınarak analiz edilmesiyle oluşturulan üç farklı kukla değişkeni gösterir. Tip 1 yüksek erişim ve büyüme (access and growth) mekanizmasına yönelik hızlandırma programlarını temsil eder. Tip 2 hem öğrenme

(learning) hem de erişim ve büyüme (access and growth) mekanizmaları arasında işlev gören hızlandırma programlarını içerir. Tip 3 daha çok öğrenme mekanizması odaklı hızlandırma programlarını temsil eder. Tip 2 ve Tip 3 arasında kuluçka programlarına benzer şekilde işleyen programlar bulunur.

Nicel analizler ile öncelikle bireysel düzeydeki ve takım düzeyineki girişimci karakteristikleri gruplarının erken aşama girişimlerin performansı üzerindeki etkisi test edilmiştir. Her bir bağımsız değişken için hem bireysel düzeydeki hem de takım düzeyindeki girişimci karakteristiklerinin ve kontrol değişkenlerinin dahil olduğu modellere uygulanan ortak anlamlılık testi (joint significance test) sonuçları takım karakteristikleri grubunun (nedensellik, gerçekleştirme ve kolektif yeterlilikleri birlikte ististiksel olarak anlamlı ya da değil olacak şekilde) sadece girişimlerin program ile ilgili performansları üzerinde etkin olduğunu ortaya koymaktadır. Nitel sonuçların ve literatürün aksine, ampirik bulgular bireysel düzeydeki özelliklerin başlangıç performansı üzerinde daha büyük etkiye sahip olduğunu ortaya koymaktadır. Ancak bu sonuç De Mol vd. (2019)'nin ana bulguları ile örtüşerek, bireysel düzeydeki motivasyonel ve davranışsal özelliklerin, girişimcilerin ekip düzeyindeki karakteristiklerinden daha olumlu sonuçlara yol açtığını göstermektedir. Girişimci ekiplerde farklı bakış açılarının, yeteneklerin ve teknik bilginin bir arada bulunması ekiplerin bireysel girişimcilerden daha iyi performans göstermesine neden olur (Eisenhardt, 2013; Vanaelst vd., 2006). Ancak bir girişimci ekibi oluşturan kurucu girişimciler arasındaki motivasyonel ve davranışsal tutumların yoğunluğundaki ve odağındaki farklılık aynı olumlu etkiyi sürdürmemekte, hatta olumsuz performans sonuçlarına neden olmaktadır (De Mol vd., 2019). Başka bir deyişle, bireysel düzeydeki tutumların daha yüksek seviyelerde olması olumlu sonuçlar doğurabilirken, takım uyumuna zarar verme ve takım üyeleri arasında çatışma yaratma olasılığını da beraberinde getirerek olumsuz sonuçlar doğurabilir. Bu nedenle, öz kimlik ve kişisel değerlerin pekiştirilmesi, girişimci bir ekipten ziyade tek bir girişimci (bireysel girişimci) olduğunda performans üzerinde etkili olur.

Yine de takım karakteritiklerine ayrı ayrı odaklandığımızda takımların esnekliğini, açıklığını ve işbirlikçiliğini gösteren başarma / gerçekleştirme (effectuation) tutumunun pazara yeni ürün sürme olasılığı üzerinde pozitif etkiye sahip olduğu görülmektedir. Literatürün aksine, takımların farkındalık, gerçekçilik ve planlı davranışlarını gösteren nedensellik tutumu nitel bulguları da destekleyecek şekilde girişimlerin program ile ilgili performanslarına katkıda bulundunluğunu ortaya koymaktadır. Nedensellik (causation) tutumu daha çok planlı davranışlar ve yöneticilerin belirsiz süreçlere karşı bulundukları eylemlerle ilişkilendirilirken;

başarma/gerçekleştirme (effectuation) tutumu çoğunlukla girişimcilerin belirsiz ve riskli girişimcilik süreçlerine uyum sağlamak için bulundukları deneysel, esnek ve planlanmamış davranışlar ve eylemlerle ilişkilendirilmektedir (Chandler vd., 2011). Chandler vd. (2011), nedensellik (causation) tutumu ve başarma/gerçekleştirme (effectuation) tutumunu iki alternatif yaklaşım olarak değerlendirmektedir. Nedenselliğin olumlu etkisi nitel bulguları kısmen desteklese de, bu sonuç Chandler vd. (2011)'nin kavramsallaştırmasıyla tutarsız olarak değerlendirilebilir. Basitçe, nitel ve nicel bulguların nedensellik ve başarma/gerçekleştirme yaklaşımlarının alternatif tutumlar değil, birbirlerini tamamlayıcı olduklarını gösterdiğini söyleyebiliriz. Bu sonuç, nedensel ekiplerin, belirsizlikleri en aza indirerek girişimcilik fırsatları yaratmak ve ilerlemelerini garanti altına almak için gerçekleştirdikleri planlı eylemler nedeniyle, sağlanan kaynakları ve hizmetleri daha iyi kullandıklarını gösterebilir. Buna göre bu ekipler, girişimciliğin belirsiz ve riskli süreçlerine karşı programdan daha iyi yararlandıkları için hızlandırma programlarının katkısını daha yüksek değerlendirebilirler. Bu nedenle, nedensellik tutumunun (causation) aslında girişimciliğin de doğasında olduğunu söylememiz mümkün çünkü bütün süreçler belirsizliğe uyum sağlamayı gerektirmez, ancak bazıları belirsizliğe karşı önlem almayı gerektirir.

Nicel sonuçlar bazı bireysel düzeydeki girişimci karakteristiklerinin beklenen etkilerini göstermektedir. Örneğin sebatın (persistence) program ile ilgili performans üzerindeki pozitif etkisi, öz-yeterliliğin (self-efficacy) pazara yeni ürün sürme olasılığını arttırması ve uygulama niyeti (intention to implement) yüksek olan girişimcilerin dışsal finansman bulmalarının daha olası olması bireysel girişimci karakteristiklerinin beklenen etkileri arasındadır. Ancak nicel analizler hem literatürde hem de nitel bulgularda başarılı sonuçlarla ilişkilendirilen bireysel düzeydeki tutku (entrepreneurial passion) ve öz-yeterliliğin (entrepreneurial self-efficacy) ilk satış performansı üzerindeki olumsuz etkilerini öne çıkarmaktadır. Son araştırmalar, girişimcilik tutkusunun saplantılı hale geldiği zaman girişimcilerin gerçeklik ve farkındalıktan uzaklaştıklarında genel olumlu bir etkiye sahip olmayabileceğini ve hatta zararlı olabileceğini ileri sürmektedir (Cardon & Kirk, 2015; De Mol vd., 2019). Benzer şekilde, öz-yeterlik girişimcilere genel motivasyonel ve bilişsel avantaj sağlasa da Chen vd. (1998) öz-yeterliğin aşırı özgüvene neden olduğunda gerçeklikten uzaklaşma durumuna yol açabileceğini hatırlatır (Hmieleski & Baron, 2008). Aşırı özgüven, girişimciliğin doğasında var olan sürekli gelişim ve öğrenme gerektiren süreçlerde, aşırı iyimserliğe, gerçekçi olmayan hedeflere, beklentilere ve düşük performansın reddine neden olarak girişimcilerin etkililiğine zarar vermektedir (Feeney vd., 1999; Hmieleski & Baron 2008; Trevelyan, 2008). Bu durum, özellikle girişimcilik stratejisi geliştirme veya operasyonel karar alma gibi sonraki girişimcilik aşamalarında zararlıdır

(Trevelyan, 2008). Buna göre, takıntılı tutku ve aşırı özgüven, girişimcilerin pazar koşullarının, ihtiyaçlarının ve rakiplerinin farkında olmalarını, girişimcilik fırsatlarını keşfetmelerini, zamanında karar verip harekete geçmelerini ve böylece pazarda ilk satışı gerçekleştirmelerini sınırlayabilir.

Girişimci karakteristiklerinin etkilerine ek olarak, Tip 3 ve Konum finansman ile alakalı performans üzerindeki etkisi dikkat çekicidir. Ankara merkezli bir hızlandırıcıda bulunan girişimlerin ve Tip 2 yerine Tip 3'e dahil olan hızlandırıcıdaki girişimlerin melek yatırımı, risk sermayesi yatırımı veya kamu finansmanı elde etme olasılığının daha yüksek olduğu görülmektedir. İstanbul'da girişimci finansman alternatifleri ve seçenekleri daha geniş olduğu için Ankara'nın olumlu etkisinin bulunması dikkat çekicidir. Ankara'nın dış finansman sağlama olasılığı üzerindeki beklenmedik etkisini kontrol etmek için, bağımlı değişkeni yatırım performansı olarak değiştirerek lokasyon ve tip değişkenlerinin etkisini kontrol ettim. Kukla bağımlı değişken "yatırım performansı", bir girişimin melek yatırımı veya risk sermayesi yatırımı (kamu fonu hariç) alıp almadığını gösterir. Melek yatırımı veya risk sermayesi yatırımı elde etme olasılığına ilişkin sonuçlar, ne lokasyonun ne de tip 3'ün anlamlı bir etkisine işaret etmemektedir. Buna göre, Ankara'nın dış finansman elde etme olasılığı üzerindeki olumlu ve anlamlı etkisini kamu finansmanı seçeneği ile ilişkilendirmek mümkündür. Benzer şekilde, Tip 3'ün dış finansman elde etme olasılığı üzerindeki olumlu etkisi de kamu destekleriyle finanse edilmekle ilişkilendirilebilir. Tip 3 kapsamındaki hızlandırıcılar yatırımcılara erişimi kolaylaştıran hizmetler sunmadığından, kamu destekleri erken aşama girişimler için tek dış finansman alternatifi olabilir. Bu pozitif etkinin diğer bir nedeni de görüşme yapılan programlardan bazılarının girişimcilere TÜBİTAK BİGG programı tarafından sağlanan kamu hibelerinden yararlanmalarını tavsiye etmeleri olabilir.

Hükümet dışındaki mevcut yatırım aktörlerine ve mekanizmasına odaklanırsak, melek ve risk sermayesi yatırımlarının girişimcilik ekosistemi için yetersiz kaldığı bir piyasa başarısızlığının mevcut olduğunu söylemek mümkün. Böyle bir ekosistemde, piyasa başarısızlığının üstesinden gelmek için hükümetin mali politika araçları aracılığıyla (Borras & Edquist, 2013) müdahalesi amaca hizmet eder (Metcalfe, 2005). Bununla birlikte, girişimcilik finansmanının ana kaynağı rolünü üstlenen hükümetin rolünün öz sermayeyatırım pazarının gelişimini zayıflatabileceği bir ekosistem sürdürülebilir değildir. Bu nedenle hükümet, bir düzeltici (fixer) yerine kolaylaştırıcı (facilitator) olarak işlev gören düzenleyici politika araçlarıyla dinamik yatırım piyasasının gelişimini sağlamalıdır (Mazzucato, 2011). Devlet kurumları şu anda özel yatırımcılar için ayrıcalıklar ve çeşitli finansal yardımlar sağlamaktadır. Örneğin, melek yatırımcı sertifikası Hazine ve Maliye

Bakanlığı tarafından 2013 yılından beri verilmektedir ve şu anda 500'den fazla akredite melek yatırımcı öz sermaye yatırımlarında vergi teşviklerinden yararlanmaktadır (Startups.watch, 2020). Ayrıca, risk sermayesi fonlarının kurulmasına yönelik düzenleyici politika araçları 2018 yılında geliştirilmiştir. Tech-InvesTR, TÜBİTAK ile Hazine ve Maliye Bakanlığı işbirliği ile oluşturulan bir risk sermayesi fonları destek programıdır (Startups.watch, 2020). Şu anda bu program tarafından desteklenen 5 risk sermayesi fonu bulunmaktadır[13]. Bu tür politika araçları, özel girişimcilik yatırım aktörleri ve mekanizmalarındaki artışı kolaylaştırarak ekosistemdeki belirsizliği azaltmasına rağmen, dinamik bir yatırım piyasasının oluşturulmasına olanak tanıyan riskli ve rekabetçi bir ortam yaratmak için yetersiz kalmaktadır. Bu nedenle, hükümet gerekli riskli ve rekabetçi yatırım piyasasının yaratılmasını sağlamak için öncelikle öz sermaye yatırımcısı rolünü üstlenmelidir (Mazzucato, 2011). Dinamik bir yatırım piyasası oluşturulduktan sonra ise çeşitli politika araçları ile riskli ve rekabetçi ortamın sürdürülmesi sağlanmalıdır.

Melek yatırımcılar veya risk sermayesi yatırımcıları gibi ana yatırımcı rolünü üstlenen mekanizmalara ek olarak, halkın (vatandaşların) küçük yatırımcılar olarak ekosisteme dahil edilmesi de önemlidir. Kitle fonlaması, girişimcilerin geleneksel risk sermayesi yatırım mekanizmalarına alternatif olarak halktan sermaye elde edebildikleri bir mekanizmadır (Mollick, 2014). Hisse bazlı kitle fonlamasının yasal altyapısı Türkiye'de yeni oluşmaya başlamış, ancak henüz yapılandırılma aşamasındadır. Bu nedenle, girişimler, halk ve kitle fonlaması platformları arasındaki güveni sağlamak için hükümetin yasal düzenlemeleri ve bu platformları şeffaf hale getirecek çeşitli uygulamaları gerekmektedir. Ayrıca, çeşitli politika araçlarıyla kitle fonlaması platformları ve hızlandırma programları arasındaki işbirliğinin sağlanması, hızlandırma programlarının girişimlere daha geniş finansman erişimi sunmasına olanak sağlayabilir.

Türkiye'deki mevcut girişimcilik ekosisteminde kamu fonları dışında Ar-Ge yoğun, yenilikçi veya yüksek teknolojili girişimcilik projelerini destekleyen sınırlı mekanizma ve aktörler bulunmaktadır. Bu tür projeler, üniversitelerdeki TTO'lara veya teknoparklara bağlı çeşitli mekanizmalar aracılığıyla kamu fonlarından yararlanır. Kuluçka mekanizmasına benzer şekilde çalışan TEKMER'lerin kapatılması, daha az riskli ve pazar başarısı elde etme olasılığı daha yüksek olan hızlanabilecek girişimlerin desteklenmesi ve finanse edilmesi eğilimine neden olmaktadır. Bu nedenle, henüz hızlanmaya hazır olmayan girişimler, Ar-Ge aktivitelerini ve ticarileşmelerini finanse etme konusunda güçlük çekiyor. Bu nedenle,

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[13] Kaynak: https://www.hmb.gov.tr/duyuru/tech-investr-programi-kapsaminda-yapilan-basvurulara-iliskin-duyuru 07.08.2020 tarihinde erişildi

TEKMER'lere benzer şekilde işleyen Ar-Ge, inovasyon ve yüksek teknoloji yoğun projeleri desteklemeyi amaçlayan bu tür mekanizmaların oluşturulması, ekosistemin denge içinde işlemesini sağlayabilir. Kamu desteğinin yenilikçi ve girişimci faaliyetleri finanse etmenin ana kaynağı olduğu bir ekosistemde, TEKMER'lere benzer, gelişmiş üniversite-sanayi-hükümet işbirliğini sağlayan mekanizmalar, yenilikçi ve girişimci faaliyetleri desteklemek için aktörler ve mekanizmalar geliştirmeye ve üretmeye yardımcı olabilir. Devletin düzenleyici ve mali politika uygulamaları yoluyla bu tür mekanizmaların oluşturulması, üniversitelerde üretilen araştırma çıktılarının sektörün ihtiyaç duyduğu ileri teknoloji ürünlere ve servislere dönüştürülmesini desteklenmelidir.

Girişimcilik ekosistemleri üzerine yapılan araştırmalara bakıldığında, Türk girişimcilik ekosistemi olarak adlandırdığımız sistemin bir ekosistem olup olmadığı tartışmaya açıktır. Stam ve Spigel'e (2016) göre çerçeve ve sistemik koşullar, girişimcilik faaliyetlerini ve değer yaratmayı karşılıklı olarak besleyen bir girişimcilik ekosisteminin iki ana bileşenidir. Türkiye'deki çerçeve koşullarının mevcut durumu göz önüne alındığında, gelişmiş yasal ve fiziki altyapının eksikliği, hemen hemen tüm aktör ve mekanizmaların girişimcilik kültürünü benimsemedeki yetersizliği, özellikle STK'lar gibi resmi olmayan kurumların verimsizliği ve eksikliği dikkat çekicidir. Türkiye'deki geniş beşeri sermaye ve girişimciliği finanse etmek ve desteklemek için çoğalan aktörler ve mekanizmalar avantaj yaratsa da, niteliğin göz ardı edilmesi sorunlara yol açmaktadır. Türkiye'deki başlıca sistemik unsurların kalitesinden ödün vermek, insan sermayesi potansiyelinden ve artan destek ve finansman mekanizmalarından yararlanmayı sınırlandırmaktadır. Kaliteden ziyade niceliğe odaklanmak, girişimcilik kültürünün girişimler, aktörler ve mekanizmalar tarafından benimsenememesinin önündeki engeller arasındadır.

Girişimcilik ekosisteminin temel unsurlarından biri olan ve hatta diğer kilit unsurları etkileyen sağlam bir girişimcilik kültürünün oluşturulması girişimcilik ekosistemlerinin oluşumuna ön ayak olmaktadır. İnovasyon sistemlerinin ana aktörleri olan devlet, sanayi ve üniversiteler arasında aktif etkileşim ve işbirliğinin sağlanması, Türkiye'de girişimcilik kültürünün yerleşmesine zemin hazırlayabilir. Yine de bir ulusal yenilik sisteminin düzgün işlemesine olanak sağlayan aktörlerin gerekli etkileşiminin ve işbirliğinin Türkiye'de yetersiz olduğu göz ardı edilmemelidir. Bu nedenle, Türkiye'de girişimcilik kültürünün oluşturulmasından ve benimsenmesinden başlıca sorumlu olan devlet, üniversiteler ve sanayi arasında gerekli dinamik etkileşim ve işbirliği sağlanmalıdır. Bune ek olarak, iyi işleyen ulusal yenilik sistemlerine sahip sanayileşmiş ekonomilerde girişimcilik kültürünün oluşturulması ve sürdürülmesi de STK'ların da sorumluluğundadır. Bu nedenle Türkiye'de

toplumda girişimcilik kültürünün oluşmasını ve yayılmasını başlatabilecek sivil toplum kuruluşlarının faaliyete geçirilmesi bir diğer önemli faktördür.

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