Risk Factors in Start-Ups: An Evaluation

Yeni Kurulan Girişimlerin Risk Faktörleri: Bir Değerlendirme

Mustafa Halid KARAARSLAN [*]
Neilan SOYLU [**]

ABSTRACT

Start-ups are considered as the way to ensure high added value and competitiveness in economies around the world. While investments in start-ups and government incentives tend to increase, evaluation of start-ups risks is an important issue not only for increasing the return on the investment but also for the efficient use of resources. This study examines the specific risks of 23 start-ups operating in various sectors in Türkiye. Employing multiple case method, the start-ups' risk factors have been analyzed under four major dimensions (organization and human capital; technology and product; financials; marketing and implementation). Factors affecting the risk of start-ups have been assessed in depth according to their expected impact on funders' decisions. Findings reveal that issues like key personnel dependence and process efficiency must be carefully assessed as they have a critical role in the survival of start-ups. Due to lack of financial resources and the length of time needed to reach a positive cash flow, the start-ups' focus can be frequently shifted from their core operations to temporary income generating activities, which also increases the risk. Start-ups are set up subsequently to successfully completed R&D projects, therefore their founders mostly have an engineering background. However, although high R&D potential can be considered as having a risk decreasing effect, it is still their ability to efficiently manage financial resources and to adopt an appropriate marketing strategy to commercialize their products in order to generate cash flows and to attain a stable growth that actually determines their risk levels.

KEYWORDS

Risk Factors, Start-Ups, Valuation, Multiple Case Analysis, Venture Capital

ÖZ

Yeni kurulan girişimler, dünya ekonomilerde yüksek katma değer ve rekabet gücü sağlamanın yolu olarak görülmektedir. Yeni kurulan girişimlere yapılan yatırımlar ve devlet teşvikleri artma eğilimindeyken, yeni kurulan girişimlerin risklerinin değerlendirilmesi, sadece yatırımın geri dönüşünü artırmak için değil, kaynakların verimli kullanılması açısından da önemli bir konudur. Bu çalışmada, Türkiye'de çeşitli sektörlerde faaliyet gösteren 23 yeni kurulan girişimin spesifik riskleri incelenmektedir. Çoklu vaka analizi yöntemi kullanılarak, yeni kurulan girişimlerin risk faktörleri dört ana boyutta (organizasyon ve insan sermayesi; teknoloji ve ürün; finansal; pazarlama ve uygulama) ele alınmıştır. Yeni kurulan girişimlerin riskini etkileyen faktörler, fon sağlayıcıların kararları üzerinde beklenen etkilerine göre derinlemesine değerlendirilmiştir. Bulgular, kilit personel bağımlılığı ve süreç verimliliği gibi konuların, yeni kurulan girişimlerin hayatta kalmasında kritik bir role sahip oldukları için dikkatli bir şekilde değerlendirilmesi gerektiğini ortaya koymaktadır. Finansal kaynak yetersizliği ve pozitif bir nakit akışına ulaşmak için gereken sürenin uzunluğu nedeniyle, yeni kurulan girişimlerin sıklıkla ana faaliyetlerinden uzaklaşıp geçici gelir getirici faaliyetlere odaklanmaları sonucu risk artabilmektedir. Yeni kurulan girişimlerin başarılı bir şekilde tamamlanmış Ar-Ge projeleri sonucunda kurulmakta, bu nedenle kurucuları çoğunlukla mühendislik geçmişine sahiptir. Yüksek Ar-Ge potansiyelinin risk azaltıcı bir etkisi bulunmaktadır. Bununla birlikte, nakit akışı yaratmak ve istikrarlı bir büyüme elde etmek için finansal kaynakları etkin bir şekilde yönetme ve ürünlerini ticarileştirmek için uygun bir pazarlama stratejisi benimseme becerisi riski etkileyen en önemli faktörler olarak ortaya çıkmaktadır.

ANAHTAR KELİMELER

Risk faktörleri, Yeni Kurulan Girişimler, Değerleme, Çoklu Vaka Analizi, Girişim Sermayesi

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[*], Prof. Dr., Karabük University, Faculty Of Business, Department Of International Business, mustafahk@karabuk.edu.tr, ORCID: 0000-0003-2130-5076

[**] Dr. Öğr. Üyesi, Karabük University, Faculty Of Business, Department Of Entrepreneurship, neilansoylu@karabuk.edu.tr, ORCID: 0000-0002-1258-2701

INTRODUCTION

Start-ups have an important role in an economy as they drive innovation, create new jobs and boost growth (Damodaran, 2009:3-5). However, these young ventures with high growth potential are exposed to substantial uncertainties stemming from their fragile financial and organizational structures, which makes them vulnerable in their search for finance. A closer examination of the risk factors related to these aspects may contribute not only to a better understanding of investors' financing decisions and their valuation rationales but also may help founders to properly evaluate and minimize their risks, increasing, thus, the sustainability of their businesses in a competitive environment.

Unlike mature firms, young firms not only lack resources but also use them inefficiently due to the absence of managerial experience and well-established organizational routines, facing the greatest challenge for survival at their earliest stages (Thornhill & Amit, 2003). However, once they successfully managed their initial survival, these enterprises still must be able to simultaneously manage risks related to reaching profitability, to struggle against competition by generating sufficient sales and to deal with operational financing risk, which refers not only to the difficulty to find initial capital, but also to the necessity to reach a certain level of performance in order to obtain additional rounds of financing (Bamford & Douthett, 2013; Vesper, 1990). Within this struggle, the intangible nature of their assets, poor performance (limited revenues or even losses) as well as the absence of a financial history substantially limits their access to conventional sources of finance (Corelli, 2018; Damodaran, 2009).

Most of these start-ups target funding from early-stage investors (i.e., business angels, venture capitalists or other financing entities). However, a recent study of Gompers et al. (2020) reveals that only a limited number of the potential opportunities succeed to pass the sequential stages until they receive an offer by venture capitalists, suggesting that an extremely selective process based on a multitude of factors ultimately centered on risk and return considerations is conducted to choose from a large variety of businesses bearing substantial uncertainties but promising value. However, this (e)valuation process is challenging and still partially unclear as at its earliest stage, due to lack of resources, a firm's value is mostly driven by intangible features like entrepreneur's ideas and potential for future investment and growth opportunities or intellectual property, which are not reported in financial statements (Hand, 2005). Thus, a proper estimation of cash flows and growth is highly difficult due to the lack of data and to the great uncertainty of future revenues and earnings, while the determination of an appropriate discount rate is problematic due to the controversial nature of the cost of capital. Since these start-ups are not always part of a well-diversified portfolio, the cost of capital must incorporate not only the market risk but also the firm specific risk, serving as an instrument to compensate all sources of uncertainty (Damodaran, 2009). This is the reason for which start-up valuation by venture capitalists has been sometimes interpreted by researchers as a "guess" or "alchemy" (Miloud et al., 2012:152) pointing out that it is rather a multidimensional negotiation process, mostly relying on the rule of thumbs or the subjective assessment of both financial and "extra-financial" factors and risks (Hsu, 2004; Tyebjee & Bruno, 1984). To deal with this multitude of factors, early-stage investors usually adopt a holistic approach, assessing simultaneously multiple criteria to evaluate opportunities (Block et al., 2019), to properly value them and, ultimately, to decide on the percentage of their investment.

Which factors consider early-stage investors when assessing start-up risks and, implicitly, their value has been a challenging question, since it is well known that very high discount rates are practiced in start-up valuation. Investors primarily consider and appropriately adjust risk premium for probability of success; accordingly, in earlier (and, implicitly, riskier) stages of venture financing a higher rate is imposed, leading to lower valuations (Bhagat, 2014). The lack of liquidity (marketability) for these investments may also lead to additional discounts (Das, 2003; Kooli et al., 2003). Analogously, complementary to financial considerations, investors may attach value to various organizational and operational factors, like prior success (as a signal for future success), affiliation with reputable partners and previously established social networks, among others (Hsu, 2004) and consider not only observable characteristics of start-ups, but also assess their signaling value for unobservable quality (Hoenig & Henkel, 2015). As novice entrepreneurs are deprived of most of these characteristics, they may have to accept higher discount rates for their absence, which obviously will translate into lower valuations (Hsu, 2007). However, this has been a question of interest since the mechanism is not straightforward and a multidimensional assessment has to be made as it has been widely accepted that the venture capital rate of return is driven not only by risk factors, but also in a manner to compensate the investors' personal involvement and mentoring efforts, as value drivers in young enterprises (Cochrane, 2005; Smith et al., 2011).

Starting from the point that start-up value is determined as a result of an assessment of a multitude of factors upon uncertainties related to the generation of cash flows, growth and terminal value as fundamental components of "intrinsic valuation puzzle" (Damodaran, 2009:7), a deeper examination of sources of uncertainty (i.e., risk factors) and their effects should provide valuable information for a better understanding of the rationales behind the (e)valuation process of start-ups. Festel et al. (2013) provided a framework for assessing risk factors in start-ups and their influence on beta coefficient based on business plan data. Employing a similar but qualitative approach, this study attempts to provide an insight on a sample of start-ups from Türkiye examining factors of risk and to assess their role on a) The effective management of existing assets to generate cash flows; b) The ability to exploit the opportunities, to reinvest and grow; c) The circumstances to attain a stable growth and, thus, to reach a terminal value. The main contribution of this study is to uncover critical aspects of start-ups that might influence the risk premium required by investors in the emerging, high growing but still little explored Turkish entrepreneurial market.

This study is structured as follows. In the first section, a brief overview on the Turkish entrepreneurial ecosystem has been provided. In the second section a literature review has been conducted to uncover and select critical factors that affect risk premium in start-ups. Next section introduces the method employed, the sample and the risk assessment criteria. The subsequent section presents the findings, followed by a discussion to conclude the study.

1. TURKISH ENTREPRENEURIAL ECOSYSTEM

In Türkiye, the first generation of entrepreneurs achieving a successful exit tend to reinvest the funds to support other businesses. They are familiar with the entrepreneurship ecosystem and their profile is similar to worldwide angel investors'. In contrast, the 2nd and 3rd generation of traders and industrialists owning capital have less technical-entrepreneurial background, are more sensitive to risks and expect a faster return on investment. In these circumstances, it is very difficult for local enterprises to find long term financing. As the number of entrepreneurs reaching an exit increases and investors become more familiar with the entrepreneurship ecosystem, it is expected that a more rational approach to evaluate investment risks will be adopted.

The limited availability of funds owned by Turkish investors make it difficult for local enterprises to compete globally. Another constraint on Türkiye's fragile economy is its unpredictability, which is an important factor influencing investors' decisions to direct their funds to safer areas. In this environment, in 2019, 114 startups received an amount of 106 million USD investment, while in 2020, 165 startups raised 139 million USD investment (startups.watch, 2020). There are 30 foreign-funded VC firms which invested in Turkish startups (Invest, 2020), 22 business angel networks and 2600 business angels in Türkiye (EBAN, 2019).

The total funding of start-ups founded by Turkish entrepreneurs outside of Türkiye has been more than double when compared to the funding received by their domestic counterparts (Startupcentrum, 2020). To benefit from international funds, many Turkish entrepreneurs open branches or move their headquarters to countries where financing opportunities are higher, such as the USA and UK. In addition, Turkish citizens who work in or graduate from other countries may found enterprises abroad; yet, these enterprises are not connected much with Türkiye, excepting the founders' Turkish background.

Startups established in Türkiye are not yet able to fully benefit from investors as needed for their potential growth. Due to financial constraints, many entrepreneurs resort to applying for public funds by writing projects that can only cover a portion of their costs, which involves a lot of paperwork.

2. LITERATURE RESEARCH -RISK FACTORS IN STARTUP (E)VALUATION

From an investor's point of view, early-stage enterprises are subject to numerous risk factors. MacMillan et al. (1985) have revealed six categories of risk that venture capitalists have to manage when dealing with new ventures; competitive risk, bail out risk, investment risk, management risk and leadership risk, and implementation risk. Ruhnka and Young (1987, 1991) have identified major risks faced by venture capitalists in each of the five stages of venture development and have investigated how these risks are internally or externally determined. They have showed that while at seed and start-up stage risks are based mostly on technological failures, in later stages risks are related to marketing, ineffective management, inadequate financial control, competition and exit barriers, concluding that while at early stages risks are mostly internally determined, at later stages external risks substantially expand. Barney et al. (1989) and Koryak and Smolarski (2008) assessed the risks investors' face on two dimensions, i.e., agency risk and business risk. Fiet (1995) emphasized two particular types of risk (market risk and agency risk) venture capitalists take into consideration

when evaluating a deal. Kaplan and Stromberg (2004) provided an alternative classification of risks that VCs and entrepreneurs face; (1) internal risks, driven by information asymmetries with respect to entrepreneur and management team, (2) external risks, related to uncertainties external to the firm and (3) execution or implementation risk, referring to uncertainties related to the complexity of the venture and the founder's human capital. Proksch et al. (2016) assessed major risks associated with venture capital investments as agency risk, financial or liquidity risk, technology risk, market risk, human resources risk, internationalization risk and macro risk. This variety and complexity of risks that investors need to compensate for when dealing with early-stage enterprises consequently leads to major disagreements between investors and entrepreneurs when negotiating the price of the deal (Collewaert & Manigart, 2016).

A deeper insight in the extensive literature on venture investment decision and risk premium determinants reveals that criteria (despite their different roles and weights) are generally clustered on a few dimensions (Festel et al., 2013; Franke et al., 2008; Hoenig and Henkel, 2012; Sharma, 2015).

Organization and Human Capital (Founders, Team, Entrepreneur). Organizational factors related to the entrepreneur, founders, or team have been among the top criteria cited by early-stage investors (Bernstein et al., 2017; Kaplan & Stromberg, 2004; MacMillan et al., 1985; Sudek, 2006; Wessendorf et al., 2019) in their evaluation processes as they have been considered a primary source of agency risk due to "uncertain and incomplete relations between investor and investee" (Reid & Smith, 2002:7). The team has been found to be a critical factor both for the success and the failure of early-stage investments (Gompers et al., 2020); accordingly, team related factors had been a primary concern of start-up investors (Franke et al., 2008). Its composition and the completeness of the management team was found to positively affect start-ups' valuation (Miloud et al., 2012); inversely, the dependence upon one or a few key persons on technical or managerial issues would increase the risk premium as their loss negatively affects the future financial prospects of the young venture (Damodaran, 2009). Harrison and Mason (2017) provide evidence that business angels consider entrepreneurs' characteristics and experience as having a substantial effect on perceived risk. Accordingly, the absence of managerial capabilities of the entrepreneur has been pointed as a risk increasing factor (Tyebjee & Bruno, 1984). Further evidence shows that the entrepreneurs' experience and education in scientific and technical fields positively affects the growth of new technology-based firms (Colombo & Grilli, 2005); as a consequence, postgraduate (doctoral) degrees held by start-up founders may represent a signal effect for investors (Hsu, 2007). Evidence shows that experienced entrepreneurs have well-developed social networks, are more capable to enhance performance and are more focused to protect their own reputation, therefore, they are less associated with operating failure risk (Hsu, 2007). Similarly to entrepreneurial experience, enterprise age has an important role in risk assessment as younger firms have little available information to value, leading to high asymmetries between investors and the venture (Gompers, 1995). As the enterprise gets more mature, it accumulates human, social and organizational capital, gains experience and routines reducing its failure risk (Thornhill & Amit, 2003). Further, while growing, the venture may take advantage by affiliation with high reputable venture capitalists, as they provide not only reputational capital but also performance benefits and value-added potential (Hsu, 2004) and have an important role in decreasing the risk of the venture they earlier had invested in (Bamford & Douthett, 2013).

Technology and Product. Start-ups, by their nature, are highly exposed to technology risks, which arise not only from the technology itself but also from the venture's technical capabilities to develop the product (Teberga et al., 2018). Their technology is likely to be new and its employability or adaptability must be proven, which takes time that start-ups usually cannot afford (Mason & Harisson, 2004). Berk et al. (2004) highlight different sources of risk associated with the multi-staged process of technological products development (i.e., R&D projects) in start-ups; technical risks to successfully complete each successive stage, risks related to cash flows when the project is completed, risk of obsolescence and the difficulty to predict the success of each stage due to "learning by doing". Furthermore, due to the sequential nature of the process these risks may be combined causing the occurrence of other pertinent risks (i.e., manufacturing risk, financial risk etc.), leading to a more complex and difficult to assess process (Hartmann & Lakatos, 1998). Accordingly, start-ups' vulnerability to these risks has been paid a particular attention in the venture valuation context, with an appropriate adjustment of the discount rate for its presence.

Empirical evidence suggests that early stage investors facing "the risk of investing in projects with uncertain quality" (Cumming et al., 2005:78) attach importance to ventures' ability to protect the technology and to appropriate the returns of their innovations (Audretsch et al., 2012). In this context, a considerable role has been attributed to patents, highlighting two main functions: a productive function as an outcome of property rights and a quality signaling function (Hoenig & Henkel, 2015). Accordingly, patent applications have been found to have a positive effect on firm valuation (Hsu & Ziedonis, 2013; Greenberg, 2013) and a diminishing

effect of failure risk (Cao & Hsu, 2011) in start-ups. Audretsch et al. (2012) state that, complementary to patents' signaling effect, prototypes are indicators for start-up feasibility and reduce information asymmetries and uncertainty, therefore having a risk reducing effect. Festel et al. (2013), among other characteristics of start-ups, consider technology related features such as maturity, advantages, scientists' reputation and patent protection for the adjustment of beta coefficient.

Financials. The use of financial information and its relevance within the start-up investment appraisal process and the determination of risk-return levels has been found to vary across countries, being highly influenced by differences between structural differences in venture capital markets and corporate culture (Manigart et al., 2000). The concern on the relevance of financial statement information and non-financial information within start-up valuation context has been addressed both for the U.S. (Armstrong et al., 2006; Hand, 2005;) and European markets (Sievers et al., 2013). Hand (2005) provides evidence that while at earliest stage of financing (the first round) financial statements are value irrelevant vs. non-financial information, in later financing rounds, as firm gets more mature and opportunities are converted into tangible and intangible assets, revealed in balance sheets, the significance of financial information increases instead of non-financial information. Armstrong et al. (2006) bring supportive evidence for the relevance of financial statement information both in pre-IPO and post-IPO valuations, also reporting a decrease in the risk of loss associated with venture capital investments with progressive rounds of financing. Accordingly, as the probability of success progressively increases, in later financing stages a downward adjustment of risk is employed (Bhagat, 2014). However, regardless of the financing stage, empirical evidence suggests that on average balance sheet and income statement items provide sufficient information for start-up valuation (Sievers et al., 2013). Positive relations between equity values and some components (cash, non-cash assets and R&D expenses) of financial statements (Hand, 2005), reveal that before going public not only stock accounting items (with respect to their effect on risk) and revenues but also cost items like sales, marketing, general and administrative expenses and R&D expenses are value enhancing, as investors treat these items as "investments" for future revenue generation (Armstrong et al., 2006).

With respect to financial indicators, empirical evidence shows that ventures starting with higher initial capital are associated with both firm success (which translates into lower risk) and growth (Cooper et al., 1997), as high capital enables the firm to achieve economies of scale and consequently reduce the product costs or tolerate unprofitable operations in the infancy of the business (Duchesneau & Gartner, 1990). Though profitability has been seen less significant in early-stage companies, achieved profitability might be considered as a signal of "a healthy business model and a strong competitive position" (Block et al., 2019:344). Thus, the higher the level of profitability of a start-up, the lower the risk the investor encounters (Barney et al., 1989; Festel et al., 2013).

Marketing and Implementation. Implementation (or execution) risks are related both to the ability of the venture to resist against environmental threats (rising from rapid changing technology, macroeconomic conditions or high competition, according to Tyebjee and Bruno (1984) and to the strategy or business model adopted, implicitly bringing into focus *what* and *how* the venture does. There has been considerable debate in the venture capital context on the importance of business-related factors (*what; how*) versus the quality of team (*who*), with emphasis on the latter. However, Kaplan et al. (2009) suggest that early-stage investors should pay more attention to business related factors when assessing opportunities, as "inappropriate management is much more likely to be remedied by new management than a poor or inappropriate business idea is to be remedied by a new idea" (p.79). Thus, a proper assessment of the compatibility of businesses' existing resources with the competitive environment requirements is critical both for success and survival (Thornhill & Amit, 2003). Moreover, not only internal resources and opportunities, but also the external network of the venture is simultaneously considered by venture capitalists when valuing start-ups (Miloud et al., 2012). Indeed, Tyebjee and Bruno (1984) provide early evidence that, after managerial capabilities, the ability of the venture to resist against environmental threats has the highest effect on perceived risk by venture capitalists. Kaplan and Stromberg (2004) also report that execution difficulties are considered important by more than 50% of the venture capitalists in their sample. The presence of a realistic marketing plan that drives the start-ups' "route to market" (Maxwell et al., 2011) and a validated business model (Block et al., 2019) are also found to be critical factors in start-up risk assessment.

3. METHOD

The research has been applied to founders of start-ups in Türkiye. The start-up selection process started by searching and examining the websites both listing and reporting the enterprises and entrepreneurial activities; afterwards, lists were created. Subsequently, the enterprises to be examined within the scope of the research

were determined according to the list. Employing a judgemental sampling method, entrepreneurs operating in different sectors and having different business models were identified so as to provide sufficient diversity. The co-founders of these enterprises were invited to the research by sending e-mails and messages to their social media accounts. Semi-structured research forms were prepared for the research. A data collection technique called semi-structured interviews combines predetermined survey questions with interviewer-led open-ended follow-up questions, allowing respondents to elaborate on their initial responses with more detailed information (Ahlin, 2019). Ethical approval for this study was obtained from dated 04.11.2020 and numbered 2020/12. Research data were collected through 30 to 50 minutes of internet interviews in 2020. During the interview, additional questions were asked according to the answers given by the entrepreneurs. A total of 25 entrepreneurs who accepted the invitation for a meeting were interviewed and 2 of them were excluded from the sample as their enterprises were not suitable for the research purposes. Research data were collected from 23 entrepreneurs. The interviews were recorded with a voice recorder. During the interview, notes were taken and, subsequently, the recordings were listened to. The website of the enterprises, the entrepreneur's social media accounts and messages in various blogs, and the news about the venture in the media were scanned. The entrepreneurs' statements and other information were compared. Notes were prepared for each participant by matching the statements of the entrepreneurs with the information gathered from news and social networks. These notes were sent to the participants for review. Entrepreneurs were allowed to rearrange their interview notes in order to raise the reliability of data. Afterwards, the interview records were listened to again and were analyzed together with the interview notes employing multiple case analysis method. Multiple case studies are investigations that examine a particular phenomenon or group of phenomena, which can be conducted within a single organization or across multiple organizations (Stewart, 2012).

Table 1: Descriptive features of the enterprises.

	Sector	**Company age**	**Number of employees**	**Investment status**
1	Automotive	7	5	×
2	Bioplastic	3	5	✓
3	Data processing	2	4	×
4	Defense industry	2	11	×
5	Education	2	30	✓
6	Education	4	8	✓
7	Education	5	5	×
8	Education	1	2	✓
9	Employment brokerage service	1	5	×
10	Energy	2	7	×
11	Financial technologies	3	15	✓
12	Food	3	4	✓
13	Gaming and social media	6	60	×
14	Health	3	3	×
15	Health	5	2	×
16	Health	3	1	×
17	Image processing	3	10	✓
18	IT	6	30	×
19	Medicine	5	1	×
20	Simulation	5	2	×
21	Software Security	3	1	×
22	Subscription services	4	20	✓
23	Underwater devices	2	5	×

4. RISK ASSESSMENT CRITERIA SELECTION

Based on Festel et al. (2013)'s frame, assessment criteria for start-ups' risk evaluation were grouped under major dimensions (organization and human capital, technology and product, financials and marketing-

implementation) and were slightly modified upon the purpose of research with relevant risk criteria that had been previously reported in the existing literature. Risk factors have been defined and illustrated in Table 2.

Table 2: Specific risk factors in start-up evaluation

Main Dimension	Sub-dimension	Risk Factors
Organization and Human capital (Founders, Team, Entrepreneur)	Experience (Franke et al., 2008; Harrison & Mason, 2017)	Technical experience and/or knowledge, professionality, maturity (age)
	Completeness, Heterogeneity (Damodaran, 2009; Festel et al., 2013; Miloud et al., 2012; Wessendorf et al., 2019)	Key person/staff
		Solution Partnership; Alliances
	Competency (Festel et al., 2013)	Advisory board and consultants' technical education (Phd, master in field)
	Efficiency **(**Festel et al., 2013)	Process efficiency
	Age (Damodaran, 2009; Thornhill & Amit, 2003)	Firm age
Technology and Product	Maturity (Berk et al., 2004; Festel et al., 2013)	Stage of technology
	Superiority (Festel et al., 2013)	Superiority/advantages of the product
	Appropriability (Audretsch et al., 2012; Festel et al., 2013).	Patent protection, non-imitability
	Investments (Berk et al., 2004)	R&D investments
Financials	Capital (Duchesneau & Gartner, 1990; Gompers, 1995; Bhagat, 2014)	Initial capital
		Stage of financing (previous funding experience)
	Liquidity (Festel et al., 2013)	Liquidity, working capital
	Profitability (Barney et al., 1989; Block et al., 2019; Festel et al., 2013)	Profitability
Marketing and Implementation	Marketing (Maxwell et al., 2011; Festel et al., 2013)	Marketing communications, strategies
	External relationship (Hsu, 2004; Miloud et al., 2012)	External ties, social network

5. FINDINGS

Organization and Human Capital. Prior empirical evidence revealed that the risk decreases as the competence and experience of the management team and founders increases. The logical explanation behind these findings is that once financial planning and marketing skills develop with the accumulation of experience, the probability that the existing assets will be more effectively used to generate income, to be transformed into profit and, subsequently, into positive cash flows also increases. Likewise, with increased experience, growing opportunities will be better exploited and a sustainable growth will be easier attained. Among 23 entrepreneurs who participated in this study, 9 were found to have prior managerial experience, while 10 of them had prior technical experience before establishing the start-up. Entrepreneurs were aged between 24 and 53 years, with

an average of 34 years. Within the scope of the research, it was observed that entrepreneurs who previously gained technical experience after university graduation but lack business management experience are more likely to fail to manage marketing and financial issues. Likewise, entrepreneurs experienced in business administration feel deficient to monitor and to assess the productivity of technical employees. Operational and management risks are substantially reduced when the enterprise is managed by founders with expertise in different fields. These findings support prior findings that investors invest more easily when team members with business and engineering education cooperate (Franke et al., 2008). In only one start-up, management has been completely transferred to professionals. All other start-ups' founders were also the managers.

Colombo and Grilli (2005) found that the experience of technology start-ups founders' -especially in technical areas- has an impact on growth. Experience has a substantial effect on customers, affecting, therefore, sales volume and the growth rate. Young and inexperienced entrepreneurs have not yet built customer confidence and especially when buyers do not have product trial opportunities, when purchasing a durable product, when after-sales service is critical or when buying expensive products, they attach more importance to entrepreneur's experience. Customer confidence may, therefore, serve as a risk indicator for investors as it is closely related to sales performance. Accordingly, in order to get funding for their start-ups, entrepreneurs must first convince the investor that they can build customer confidence (loyalty) and can continue to grow by reaching a sufficient sales volume. The significance of age decreases when the entrepreneur's experience is perceived as providing confidence in his ability to perform the job.

Key personnel dependence is a critical issue in start-up evaluation and it must be properly managed as it might have substantial negative effects on both the operational efficiency, profitability and growth. It was noticed that entrepreneurs with technical background hold the most critical position in product development, positioning other employees as to give them support. Even if they lack managerial experience, entrepreneurs undertake the task of management. Meanwhile, until the enterprise reaches a certain scale, the entrepreneur prefers to do the marketing and sales himself, pointing out a high dependency not only in technical but also in organizational and strategic functions. It has been observed that entrepreneurs with technical background are more confident in financial matters than in marketing and they quickly learn the financial information about the valuation of the company. For this reason, their tendency to hire a professional responsible for finance is very low until the business reaches the scaling stage. The absence of a competent Chief Technology Officer (CTO) can lead to weaknesses in the realization of the basic value proposals of the enterprise, therefore CTO's are critical personnel for enterprises. Accordingly, investors should pay special attention to the fact that the CTO is a co-founder of the enterprise and has proven its capabilities. Entrepreneurs who do not have an engineering educational background but operate in the software business have a strong tendency to seek a CTO as a co-founder. If the CTO is not a co-founder, ventures are prone to experience serious difficulties. Entrepreneurs who are not qualified to evaluate technical staff face many deficiencies and delays in the development of the product may occur, causing substantial losses. When entrepreneurs cannot find a CTO as a co-founder, they reduce their risks by outsourcing the software development from external businesses.

Entrepreneurs are aware of the benefits of partnerships and seek solution partners before and after establishing their ventures. It has been observed that solution partnerships occur more frequently in areas that are considered to have a promising future in the market and in start-ups involving social responsibility. A start-up that produces renewable energy solutions has collaborated with an automotive enterprise for the energy supply of charging stations for electric cars. A bioplastic manufacturer has established a solution partnership with a white goods manufacturer and researched the use of bioplastics in white goods. A training start-up collaborated with an engine manufacturer. The solution partnership basically provides additional financial resources to start-ups and provides institutional guidance for future collaborations. At the same time, it creates the opportunity to increase growth potential by attracting potential customers or partners. Further, entrepreneurs also establish solution partnerships for product development, for marketing, for distribution and for technical support purposes. A special effort to find reputable partners in order to establish new connections and to get more information flow, to gain reputation and, ultimately, to raise the future prospect of the venture has been observed. For this purpose, entrepreneurs follow the events and try to create opportunities to meet prominent people in the community.

Start-up founders can manage their assets more efficiently, develop more effective solutions in the product development process and overcome financial and marketing problems when they have qualified people in their advisory boards. Most of the entrepreneurs meet new people and get useful advice and tips or even new offers through various entrepreneurship events, competitions and incubation centers while maturing their business idea. If entrepreneurs manage to develop long-term relationships with these people, they can engage them in advisory boards. Start-ups located outside of Istanbul generally seem to be more disadvantaged in terms of

qualified consultants. In some start-ups, it has been observed that the advisory board consists only of people with strong technical competencies, but having limited management and marketing knowledge, thus providing less marketing support. Substantial problems may arise in matters such as designing the business model, determining the market segment, positioning and pricing, which ultimately may translate into low revenues or may even threaten the survival of the start-up. In an extreme example, the entrepreneur has positioned her innovative product that solves the same problem as the counterpart of her competitors and asked for support from the competitors to deliver her product to the consumer. As a result, she was exposed to a negative reaction of the competitors. It has been observed that even the consultants with a high level of competency (i.e., doctoral degree) in the advisory boards can substantially support the development of the product, their contribution to the commercialization and marketing of the product was very reduced.

Process efficiency is one of the most important factors in the evaluation of long-term competitiveness and growth potential of the start-up. Entrepreneurs grasp the importance of efficiently using their existing resources for their financial success. They are extremely receptive to procedures that might simplify their production processes and increase their productivity. One enterprise, which commercializes agricultural information by processing satellite data, has focused its full attention on increasing its success in classifying and analyzing satellite data. However, it failed to generate automatic reports with a simplicity that can be understood by people other than expert analysts. The reports were the outcome of a high effort requiring process. Though, this start-up could not commercialize the developed data outside of a narrow customer group. In another start-up, disagreements between founders on task sharing after product development, lead to disruptions in the process. Most of the interviewed entrepreneurs claim that the efficiency of their products is of higher importance than their existing competitors. However, it has been observed that the process efficiency highly depends on the complementarity between the founders and employees of the start-up. A relevant example is a project-based B2B start-up established by three engineers, which experienced substantial financial difficulties, though they had previously developed many successful projects. One reason for this was the excess of flexibility to meet customers' demands, which in turn led to delays in project delivery or cost increases and, implicitly, lower profitability due to additional expenses. Another venture experienced serious problems (like failing to achieve any sales or huge revenue decline) in all of the three branches they opened abroad as processes had not been previously well defined.

The start-ups examined within the scope of the research have been operating for 1 to 7 years. Operating experience is an important indicator for investors as the start-up has proved the ability to survive, gained reliability and, therefore, it is associated with less risk. The maturity (age) of start-ups is a strong variable that affects consumer confidence, market and technological knowledge of the enterprise, financial status, and the quality of the institutions they are in contact with. Company age is more significant for enterprises producing durable products, as customers expect the company to survive during the product's life cycle. A device manufacturer stated that its customers preferred to rent the devices in the infancy of the enterprise, deciding to buy the products only after 3 years, when it has managed to survive and became a stable business. In another example, an entrepreneur who manufactured a medical semi-finished product stated that since the business was new in the market, institutions imposed additional documentary requirements which were not applicable to other suppliers. As a result, no agreement was reached. However, in software products, if the investment cost is not too high, the age of the start-up is of less importance.

The stage of technologies of start-ups has a great impact on their specific risks affecting, therefore, their financing opportunities. The ventures in the examined sample are at different levels of technology. There is a start-up that does not even have a prototype yet and works on autonomous vehicles, which will be commercialized only after many years of effort. Its founder is aware that he cannot find investors for his autonomous vehicle. For this reason, he has developed 2 different car models ready for production and has started testing in real conditions. He introduces the autonomous vehicle to investors as a vision of the future, mainly seeking investment for the launch of the other two models. Another start-up develops defense-based land vehicles. This start-up's product design, testing and acceptance to the defense ministry's inventory point to a very long and costly process. This start-up can continue its R&D activities uninterruptedly with the public incentives it receives. They have developed one product that meets the conditions to be accepted in the inventory of the Ministry of Defense and own other four finished products. The start-up which designs tools for underwater monitoring, has made its product commercializable only after about 3 years of work. Although the start-up has attempted to develop many products other than this product for 2 years, it has not been able to develop new products due to lack of funds. Since a start-up that discovers molecules and conducts pre-clinical research with the method developed by the entrepreneur himself does not have a molecule that has yet been successful in clinical tests, it is considered too risky for investors to invest. When technologies that have been

tested many times in other fields move to different sectors, investors tend to ignore technological risks and focus on market risk.

The main issue that entrepreneurs focus on is to differentiate their products from their competitors' and to design superior products. An underwater imaging device producer has upgraded the product into a modular system in order to differentiate the product from its competitors'. Thus, the product could be used with different equipment and the defective part could be easily replaced, reducing the repair process to a few hours for simple errors. He presents his entrepreneurial modular structure as the core value proposition of the product, as it substantially reduces a) the repair costs; b) the employee costs as fewer technicians are employed; c) delays in imaging projects delivering time; d) inventory costs as less spare parts must be kept and increases the availability time of the product during the year. A start-up in the field of financial technologies provided easy payment collection solutions via chatbot for online (social media) sellers with little technical knowledge. As a result of this differentiation, the start-up quickly dominated the target market and was able to get investments to expand abroad. If product differentiation opportunities are limited, start-ups make considerable efforts to improve after-sales services to differ from their competitors.

The findings of this research indicate that except for entrepreneurs operating in the automotive, bioplastics and pharmaceutical fields, little interest is paid to patent application issues. Start-ups operating in these three areas attach importance to patents due to sectoral trends and to the existence of a market where they can sell their patents. Entrepreneurs are reluctant to apply for patents because of slow patenting processes, the need to apply to many institutions to patent the invention around the world, the complex and expensive lawsuits in patent infringements and the disclosure of the content of the patented feature. Entrepreneurs are basically trying to increase their speed of commercializing innovations to avoid incurring losses from the imitation of their products. Thus, they always aim to be one step ahead of their competitors. However, this strategy is not always applicable as it requires more resources which entrepreneurs do not own.

In most of the start-ups, the focus is on the R&D department. Since start-ups are generally established as the successful outcome of various research projects, their strongest attributes are research and product development. During the establishment phase, the funds they can access easier are R&D funds provided by public institutions, allowing them to undertake continuous R&D activities. None of the start-ups included in the research were engaged in less R&D activity according to their scale. Each of them made intense efforts to develop new products or to improve the existing products. However, some of the entrepreneurs were so focused on R&D projects that they could not concentrate enough on marketing and sales increasing to reach profitability. Based on the findings of this research, it can be stated that it is rather the effort and the capacity of the entrepreneurs to commercialize their products than their R&D activities that actually reduces their risks.

Start-ups' access to capital in Türkiye is generally limited. There are several ways of obtaining initial capital. The first is the capital raised from the family. Only one enterprise was founded based solely on the capital received from the family. The two co-founders managed to establish an income-generating business only after 5 years of unsuccessful attempts, during which they were provided financial support by their families. The second way is to start a venture after accumulating capital by working for a few years. However, after a short time, entrepreneurs are searching for new financing since these resources are insufficient to sustain an enterprise for a long time. The third method is to obtain capital through projects prepared for public institutions. However, delays or cuts in the payments of these funds may occur, causing serious financing problems that threaten the survival of the enterprise. For example, one of the entrepreneurs that experienced payment cuts in public funding had to struggle to survive by focusing on non-core activities for financing purposes which, implicitly, led to operational problems that substantially affected the future prospects of the venture. The fourth method of initial capital acquisition is that the start-up receives investment during incorporation. This method is seen in a limited number of ventures as in Türkiye business angel funding has not yet reached the desired level. In addition, many entrepreneurs have mentioned the existence of investors who want to take over the business offering a lower valuation and consider the lack of experience or the financial difficulties the entrepreneur faces as an opportunity. If the entrepreneurs do not come from wealthy families, they have to put at risk living in lower standards than their peers who work individually for a while in paid jobs.

Within the scope of the research, 8 out of 23 start-ups received investments. Although most of the entrepreneurs were actively searching for capital, they could not access it. It has been observed that enterprises with access to capital have the potential to achieve a positive cash flow quicklier and reach a satisfactory market size. The use of raised funds served to rather growth than operational purposes; four of the start-ups used the funds to open offices abroad and enter new markets, two of them have increased their production capacity, one made use of funds for market penetration. Only one of the startups used the funds for business

establishment procedures. Among the examined enterprises, there are start-ups that received a maximum of 3 rounds of investment. Health industry start-ups with low prospects of cash flow generation potential shortly after investment and device-producers were found to be the most disadvantageous enterprises in finding investments. It has been determined that some of the entrepreneurs did not receive investment due to their negative opinions about investors. Post-investment concerns of entrepreneurs are related to a) losing the purpose (mission) of the venture after growth; b) meeting the investor's desires which may outstrip the value offered to the consumer; c) the investor's pressure to exit; d) the investor's requirements to increase paperwork in the venture; e) the exclusive focus on short-term financial performance which may negatively impact long term prospects. In addition, one entrepreneur noted that growing slowly and with its own resources is more in line with the long-term interests of the enterprise. An entrepreneur did not accept investment in his new start-up because he was frustrated by the investment offered in his previous venture. Enterprises that did not receive investment tried to cover the basic expenses of the enterprise by preparing projects for public institutions. Enterprises can grow slowly without investments. There are start-ups that could reach 30 and 60 personnel in 6 years without any investments. A startup that received rapid investment has reached 30 personnel in 2 years. By getting investment, entrepreneurs signal that they have a promising start-up for further investments and further can attract more qualified employees and retain them in enterprise providing payments and benefits.

Liquidity is one of the most critical factors for entrepreneurs' survival. Start-ups that can keep the cash flow under control can survive, while the others have to downsize to manage the costs or even to cease their operations. An entrepreneur had to convert a significant portion of his employees from full-time to part-time. It was observed that entrepreneurs had to face many difficulties and make compromises in order to keep the cash flow in balance: a) they had to accept additional requests of the customers even if they did not find it reasonable; b) they made all their expenses by using credit cards and tried to pay these debts by drawing consumer loans; c) they provide freelance work to other companies trying to get cash. When entrepreneurs think that their positive cash flows will occur in the distant future, they try to win prizes by participating in entrepreneurship competitions. More common are publicly funded projects to secure employee wages. It has been observed that the imbalance in cash flow, which entrepreneurs were caught the most unprepared for, emerged as a result of the miscalculation of the working capital required after the rapid growth of the enterprise. In certain sectors, entrepreneurs have to make payments to all suppliers in cash or in very short terms, while they can collect payments from customers only in the long run. An extreme example is that enterprises in the healthcare industry have to wait more than a year to receive payments, indicating that they can survive and sustain their activities only with high capital amounts. Start-ups that can collect payments in long term but suffer from capital insufficiency tend to focus primarily on exports. However, start-ups that do not have strong domestic sales references find it difficult to find customers abroad.

Though profitability is critical for the existence of any business, in start-up valuation context it is less significant (Block et al., 2019) as the enterprise focuses on growth opportunities. However, profitability is an important indicator for risk assessment. If the marginal cost is low, the enterprises can reach positive cash flows quickly, but a certain volume of sales must be achieved to be profitable. For this reason, the first focus of entrepreneurs in the early stages is reaching a positive cash flow rather than profitability. While profitability serves the purpose of increasing the valuation of the business in the medium term, entrepreneurs attach more importance to survival in the first stage. As start-ups develop and survival risks decrease, entrepreneurs shift their focus on profitability. Interviewed entrepreneurs basically wanted to achieve profitability for two purposes; to finance the growth of the enterprise with fewer investment rounds and to increase the bargaining power to sell less shares in return for the financing they needed.

Start-ups' founders engage in various marketing activities in order to resist market threats. Entrepreneurs make efforts to participate in competitions before commercializing their products and try to gain recognition by sharing their awards in the media. After commercialization, they try to increase their reputation in the entrepreneurship ecosystem participating as speakers in various entrepreneurship activities. Entrepreneurs operating in the field of bioplastics and renewable energy give speeches and make statements to popular media organizations that are not limited only to the entrepreneurship ecosystem. They are more successful in attracting media attention because they associate their start-ups with environmental awareness. A start-up that develops games and social media applications mostly uses advertisements to reach their customers. In order to massively direct users to their applications, word of mouth marketing is not sufficient. For corporate clients, the primary marketing communication is personal selling. Entrepreneurs often personally negotiate with customers, while the sales process can take up to a year. During this period, they persistently and consistently continue their activities. The image processing entrepreneur had to change the income model of the enterprise as a result of his incorrect assumptions about the customer. Entrepreneurs mostly undertake the activities of

marketing communication themselves. While extroverted entrepreneurs place more emphasis on public relations and personal selling, introverts tend to focus more on digital marketing activities that do not require human interaction. Marketing communication is effective in keeping the enterprise in the market, recruiting qualified personnel, finding investors and developing the social network.

Connections and social networks facilitate the activities of start-ups, having a positive effect on revenue generation. Therefore, entrepreneurs try to develop connections within the entrepreneurship ecosystem before establishing their ventures. One of the start-ups in the field of education was established by a group of students engaged in social responsibility projects. Due to their projects, the students had the opportunity to receive consultancy from academics around the world and get support from the managers of the country's largest institutions. After they set up the enterprise using their social network, they immediately had the opportunity to reach global brands and achieved a sufficient volume of sales in order to get stable cash flows. On the other hand, the entrepreneur who developed the underwater device, on the contrary, had no connections in the sector and it took a long time to create a network. An entrepreneur in the field of defense, though he had no previous sectoral experience, cooperated with well-established institutions in the development of the products and showed them as reference in order to market his products. Another entrepreneur stated that he encountered several difficulties in the certification process for his product as he had not enough social network. However, the social network is not, by far, a tool that can solve each problem. Although the entrepreneur in the automotive field had a worldwide developed social network, he did not succeed to find enough funds to commercialize his product.

6. DISCUSSION

Start-ups' specific risks have been examined under 4 main dimensions: organizational, technology and product, financial, and marketing activities. Findings section explored risk factors in detail emphasizing their role in the effective management of the existing assets and activities in order to generate cash flows, to grow and to remain at a stable growth rate. Since it is not possible to explain the variables in isolation from all other conditions, explanations have been made on the effects of the variables under different conditions. Although the study focused on the case of Türkiye, it shed light on risk characteristics of start-ups which might be similar in emerging countries.

Organizational factors substantially affect the investment risks of enterprises, as expected. Previous findings from the literature show that the probability of failure decreases as both the experience of entrepreneurs and the age of the enterprise increases (Thornhill & Amit, 2003; Damodaran, 2009). As the entrepreneur gains experience, the management efficiency of existing assets increases, having a direct impact on cash flows and the opportunities to grow are better exploited. It has been observed that the entrepreneur's experience has an impact on customer confidence. As the importance of purchasing and the expectation of after-sales services increases, the confidence of customers in inexperienced entrepreneurs and new ventures decreases, leading to low revenues and slow growth. Empirical evidence shows that the presence of key personnel is perceived as a risk factor by investors and an additional return is required for cash flow losses that may be associated with its loss (Damodaran, 2009). Entrepreneurs with an engineering background hold key positions in the venture and even if they lack experience, they undertake sales, marketing and financial management activities themselves. Non-engineering entrepreneurs make considerable efforts to find a permanent CTO, as its absence causes delays and errors in projects. Advisory boards are qualified to the extent of the entrepreneur's network. Findings reveal that enterprises that do not have an experienced advisory board can hardly exploit growth opportunities. Start-up founders are looking for partnership opportunities with institutions as they are aware of its benefits for the performance of the venture and of the positive effects on investor decisions (Miloud et al., 2012). Entrepreneurs take advantage of their solution partnerships to develop new products, to find customers, to provide references and to find investors. Since the presence of reputable solution partners adds extra-financial value (Hsu, 2004) and increases the growth expectations of the enterprise, entrepreneurs' efforts in this direction increase the opportunities of investment. A substantial effort to achieve process efficiency in start-ups has been observed. Though, two factors have been determined to obstruct the process efficiency of enterprises operating in B2B; the first is the impossibility to stand out against new additions to previously started projects, and the second is the inability to bring the product to the simplicity that customers can use it on their own. This situation negatively affects the cash flows, the growth and the terminal value of the start-ups. Enterprises with limited organizational and financial planning skills cannot succeed abroad. This negatively affects their profitability and, also limits the resources that they may create in future.

Prior empirical evidence showed that the level of technology developed by start-ups affects their risk level (Berk et al., 2004; Festel et al., 2013). It is well known that investors evaluate technological investments more selectively and demand higher risk premiums as long term for the development is required, additional costs may arise and the time of exit cannot be predicted (Berk et al., 2004; Mason & Harrison, 2004). Therefore, start-ups face many difficulties in finding finance for early-stage technologies. For this reason, entrepreneurs prefer to focus on more mature technologies that they can commercialize quickly to reduce their risks and raise funds to develop other technologies if they have the opportunity. They also make efforts to design products that are superior to competitors. Start-ups that have developed products that have proven to be superior to competitors have less risk and entrepreneurs can offer more attractive value propositions to the consumer. Entrepreneurs are reluctant to apply for patent protection due to slow and exhausting processes. In a highly competitive environment, start-ups try to stay ahead of their rivals by increasing the speed of commercialization of innovations, providing better service and by getting better market knowledge. It has been observed that the level of R&D activities in start-ups is high, but not income generating as a result of their reduced marketing capacity.

Sufficient initial capital gives the start-ups the flexibility to tolerate unpredicted situations (Duchesneau & Gartner, 1990), decreasing, thus, the risk. Sources of initial capital are the capital raised from the family, own savings from previous salaries, funds obtained by preparing projects for public institutions and funding from investors. If entrepreneurs do not come from wealthy families, it does not seem possible for them to start with a sufficient capital. It has been observed that a significant number of enterprises did not receive investment. There are both entrepreneurs that do not succeed to get funding despite their active search for financing and entrepreneurs that reject investment proposals due to their negative attitude towards the investors. Start-ups that raise investments generally use the funds to expand abroad and increase their capacity, thus they grow faster. However, whether there is a significant difference between the survival of start-ups that raise investment and those that do not, should be examined with further studies. One of the most important conditions for start-ups to survive and reduce their risks is liquidity. Entrepreneurs use many tactics to keep cash flow in balance, and in case they cannot generate revenues by selling products, they can spend their energy on operations other than the main activity of the enterprise. Findings reveal that the most unpredictable difficulties for entrepreneurs arise when they incorrectly anticipate the working capital they need during the growth phase. It has been observed that the entrepreneurs tried to reach a stable cash flow instead of focusing on profitability in the first years of the start-up. As they succeed to survive and attain a stronger financial position, they focus more on profitability to raise their bargaining power and to finance their growth.

Start-up founders mostly base their marketing communication on public relations activities at the establishment stage since they do not have advertising budgets. They use competitions, speeches and press interviews to increase their recognition among customers and to find investors. It has been noticed that when entrepreneurs can tell their stories correctly, they can get better investment and collaborate with large institutions. Social connections facilitate collaboration with institutions and, also, enable entrepreneurs to be aware of opportunities and to avoid the risks of the enterprise by receiving qualified feedback. By increasing their recognition, entrepreneurs can also contribute to lowering the risk premium by significantly reducing the asymmetric information between them and potential investors (Miloud et al., 2012). Entrepreneurs who do not have well-established networks have to deal with challenges until they develop connections. However, it is extremely wrong to assume that those with large social networks will automatically be successful, and it is necessary to carefully evaluate how far the social network will support the entrepreneur.

7. PRACTICAL IMPLICATIONS

Start-up risk evaluation is important not only to investors who aim to increase their wealth but also for public institutions who allocate funds in order to produce more economic benefits in the future and for entrepreneurs to manage their risks. Assessing the risks of start-ups is a difficult issue involving many uncertainties, so it needs to be carefully examined.

While evaluating the risks of the start-ups the requirements of the sector in which the enterprise operates and the entrepreneur's experience should be examined. Having co-founders with different competencies in the start-up will both reduce the risk of key personnel and the risk of role conflict. It has been observed that within sectors with high demand for high level competency personnel (i.e., CTO), its presence as a co-founder in the enterprise has a direct effect on the continuity of the enterprise. It should be questioned how enterprises can expand their organizational skills to foreign offices. The fact that the success of the enterprises is limited to the core country or a few countries may be the main obstacle to growth for the enterprise. International organizational skills should be tested before setting major venture-related goals.

Considering that the start-ups in Türkiye have limited access to capital, entrepreneurs need to start with more accessible products to reduce their risks. In order to develop high-tech products, which obviously have longer payback periods, it is not an option but a necessity for them to finance themselves with alternative products and activities that can generate income in the short term. When examining the methods of protecting the intellectual property of enterprises, trends within the sector should be also considered. It should be noted that the costs and benefits perceived by the entrepreneur regarding patents may differ from those perceived by the investor. The personnel and resources allocated to R&D activities should be evaluated for the success of the start-up. It should be evaluated to what extent the founders with strong R&D skills attach importance to finance and marketing, whether they will turn the products they developed into commercial success or focus on other R&D projects without generating commercial value from the first product. If the founders have limited marketing and financial management skills, involving professionals in this field will reduce the risk of the start-up.

It is necessary to examine how the start-ups acquired capital as well as the amount of their initial capital. Within the scope of the research, it was observed that the start-ups that had insufficient initial capital could hardly continue their activities. In this case, investors should pay attention to entrepreneurs' determination to struggle. How the entrepreneurs managed and made use of funds from previous investments is another issue. However, it should not be overlooked that although previous investments may serve as a signal, it will not guarantee that the funds from the next investment will be appropriately used. Entrepreneurs' views and expectations about the investor should also be analyzed.

The entrepreneurs' skills to improve their personal reputation, their ability to appear in the media and to present their start-up as an interesting story reduce the risks of the venture. Meanwhile, their network and partnerships with institutions, as a means to reach suppliers, investors and customers also positively affects their risk and, implicitly, their financing opportunities.

8. LIMITATIONS AND FUTURE RESEARCH

This study is one of the first studies attempting to examine specific risks of start-ups set up in Türkiye, it is therefore important. The research contains limitations as expected. The research was conducted while the COVID-19 outbreak, when uncertainty about how the pandemic would continue and affect economic activities was relatively high. For this reason, survival motivations of the entrepreneurs were more dominant. In the research, specific risk factors originating from the enterprise were examined. However, it must be admitted that macroeconomic conditions can also impact the magnitude of these risks. For this reason, this issue should be examined in future studies. Determining to what extent the risk factors arising from the venture with different financial positions affect each other will be very valuable information for investment. Investor and entrepreneur harmony is also an important risk factor that should be further investigated.

CONCLUSION

The specific risks of a start-up must be properly evaluated. Although this evaluation is mostly conducted by the investors for funding and valuation purposes, assessing the risks by the entrepreneur himself will minimize their effects. Thus, the survival prospects of the start-up will increase and its growth will be healthier. Another group that will benefit from evaluating the risks of start-ups will be public institutions that provide funds. By making a risk assessment, they can increase both the return of the funds they have given as incentives and their social benefits. Finally, institutions that will cooperate with the start-up need to evaluate the risks of the start-ups in order to determine the resources they will allocate for cooperation. In this way, these institutions can keep their own risks under control.

While evaluating the risks of the start-ups, there are difficulties in estimating the future risks by examining the reactions of the enterprise to past situations. For example, should an investor evaluate an entrepreneur that used the funds obtained from the previous investment in unproductive areas as riskier than an enterprise that has never received an investment? Did the entrepreneur learn from his previous failure? Is there a possibility of repeating the same mistake? On the other hand, let us assume that we are assessing the risk of a start-up that has done very well so far and it is in a phase of rapid growth. While past achievements have been dazzling, it is possible to overlook many factors that could restrict the growth of the start-up if the organizational skills of the enterprise are not carefully assessed.

There is less data for start-ups compared to corporate enterprises, due to their limited histories. For this reason, even if some multi-criteria decision-making methods were developed to evaluate the risks of start-ups, quantifying these criteria is often difficult due to both the insufficiency and the subjectivity of data available. The data of this study were analyzed using the case method and each start-up was evaluated in its own unique

conditions. According to case analysis, it is possible to make predictions about which risks may occur under different situations. In cases where uncertainty increases and the future is more unpredictable, employing more flexible risk assessment methods will yield better results in order to avoid risks and quickly evaluate opportunities.

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