# AN EXAMINATION OF THE EFFECT OF YFYI: TURKEY'S FIRST ENTREPRENEURSHIP COMPETITION

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# ABSTRACT

AN EXAMINATION OF THE EFFECT OF YFYI:
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The aim of this study is to investigate and examine the effect of Yeni Fikirler Yeni İşler (YFYI) Entrepreneurship Program on entrepreneurship. The study has two main aims:

a. Understanding and documenting the effect that YFYI has had with examples and survey-based statistics
b. Investigating whether there is a significant difference between the finalist that were awarded and those that did not receive any award

In accordance with this purpose, the teams participating in the program from 2005, when YFYI started, to 2018 were examined. The current job profiles of 370 program participants who got to the finals out of 972 participants were investigated. As a result of this research, a survey has been conducted to 127 finalists with an entrepreneurial background and 49 finalists who did not experience entrepreneurship. The purpose of this survey is to investigate whether there is a significant difference between award-winning vs. non-award-winning finalists and to gain knowledge and inferences about companies established after YFYI participation. The other outcome of the survey was

to assess whether the finalists who did not perceive themselves as an entrepreneur are more open to intrapreneurship and innovation. In addition to the survey, interviews were conducted with some YFYI finalists who founded a company and progressed successfully. Through these interviews, the stories of successful YFYI companies from the beginning to the present were conveyed. In this way, the founders' aim to apply for the YFYI, the supports they got within and after the program, and the problems they faced after the program were revealed. As a result of the study, it is concluded that the individuals participating in YFYI had an orientation towards entrepreneurship before the program; nevertheless, they were still happy to have taken part in the YFYI process. However, although YFYI increases the knowledge and the interest of the participants towards entrepreneurship, it was found that receiving an award from the program did not have a statistically significant effect on establishing a new company. It was revealed that the program contributes positively to the academicians, public and private sector employees, who did not choose entrepreneurship as a career path, to their openness to intrapreneurship and innovation in the institution they work.

**Keywords:** Entrepreneurship Contests, Start-up, Accelerator

# ÖZ

TÜRKİYE'NİN İLK GİRİŞİMCİLİK YARIŞMASI
YFYİ'NİN ETKİSİNİN İNCELENMESİ

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Bu çalışmanın amacı, Yeni Fikirler Yeni İşler (YFYI) Girişimcilik Programı'nın girişimcilik üzerindeki etkisini araştırmak ve incelemektir. Çalışmanın iki ana amacı vardır:

- YFYI'nin etkisini örnekler ve ankete dayalı istatistiklerle belgelemek
- Ödül alan YFYI finalistleri ile almayanlar arasında önemli bir fark olup olmadığını araştırmak

Bu amaç doğrultusunda, YFYİ'nin başladığı 2005'ten 2018'e kadar programa katılan ekipler incelenmiştir. Çalışmada 972 program katılımcısı içinden finale kalan 370 katılımcının güncel iş profilleri araştırılmıştır. Bu araştırma sonucunda girişimcilik geçmişi olan 127 ve girişimciliği deneyimlememiş 49 finaliste anket uygulanmıştır. Bu anketin amacı, ödüllü ve ödül almayan YFYI finalistleri arasında anlamlı bir fark olup olmadığını araştırmak ve program katılımı sonrasında kurulan şirketlerle ilgili bilgi edinmek ve çıkarımlarda bulunmaktır. Anketin bir başka çıktısı ise, kendini girişimci olarak tanımlamayan finalistlerin kurum içi girişimcilik ve yeniliğe daha yatkın olup olmadıklarını değerlendirmek olmuştur. Ankete çalışmasına ek olarak,

şirket kuran ve başarılı bir şekilde ilerleyen bazı YFYI finalistleriyle röportajlar yapılmıştır. Bu röportajlarla, başarılı YFYI şirketlerinin başlangıçtan günümüze kadar olan hikayeleri aktarılmıştır. Bu yolla, kurucuların YFYİ'ye başvurma amacı, yarışma içinde ve yarışma sonrasında aldıkları destek ve program sonrasında karşılaştıkları zorluklarla ile ilgili bilgiler edinilmiştir. Çalışma sonucunda YFYİ finalistlerinin girişimciliğe program öncesinde yönelimi olduğu ancak yine de YFYI sürecine katılmış olmaktan mutluluk duydukları sonucu çıkmıştır. Fakat, YFYI her ne kadar program katılımcılarının girişimciliğe yönelik bilgisinin ve ilgisinin artmasına destek olsa da programdan nakdi ödül almış olmanın yeni şirket kurma üzerinde istatiksel olarak etkisinin olmadığı ortaya çıkmıştır. Programın, girişimciliği kariyer yolu olarak seçmeyen akademisyen, kamu veya özel sektör çalışanlarının çalıştıkları kurumda kurum içi girişimciliğe ve yeniliğe daha açık olmalarına pozitif katkı sağladığı anlaşılmıştır.

**Anahtar Kelimeler:** Girişimcilik Yarışmaları, Girişimci, Hızlandırıcı

*To My Dear Mother Gül Bediz,*

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## LIST OF ABBREVIATIONS

BAI: Business Incubators and Accelerators

BIGG: TUBITAK 1512 Individual Young Initiative Program

CSAT: Customer Satisfaction Score

DFI: Development Finance Institutions

FI: Finance Institutions

GE: General Electric

GEM: Global Entrepreneurship Monitor

HBS: Harvard Business School

IEEE: Institute of Electrical and Electronics Engineers

KPI: Key Performance Indicator

KOSGEB: Small and Medium Enterprises Development Organization of Turkey

METU: Middle East Technical University

MVP: Minimum Viable Product

NBIA: National Business Incubation Association

NGO: Non-Governmental Organization

NPS: Net Promoter Score

NVC: New Venture Competition (Harvard Business School)

OSTIM: Middle East Industry and Trade Center

PE: Private Equity

TEA: Total Early-Stage Entrepreneurial Activity

TEB: Turkish Economy Bank

TUBITAK: The Scientific and Technological Research Council of Turkey

VC: Venture Capital

YC: Y Combinator

YFYI: New Ideas New Businesses Program

# CHAPTER 1

# INTRODUCTION

The common conclusion of many academic studies that entrepreneurship contributes to economic development by nurturing innovation, creating new markets, or expanding the existing market, and generating employment opportunities. Shane (2005) mentioned in his book *Economic Development through Entrepreneurship* that entrepreneurship is the right solution for policymakers to create jobs and increase per capita income growth.

The support mechanisms for entrepreneurship are rapidly developing and diversifying around the world. Innovation competitions, entrepreneurship events, accelerators, incubators, co-working spaces are the main support mechanisms for entrepreneurial success and growth.

Early research on entrepreneurial survival has shown that inadequate financial capital and financial constraints are associated with the durability of new ventures (Holtz-Eakin, Joulfaian, & Rosen, 1994).

The objective of this study is to investigate the effect of Turkey's first entrepreneurship competition, Yeni Fikirler Yeni İşler (YFYI), and the role of awards given to entrepreneurs in the success and durability of their ventures. Notably, the study has two main aims:

- Understanding and documenting the effect that YFYI has had with examples and survey-based statistics
- Investigating whether there is a significant difference between the finalist that were awarded and those that did not receive any award

Innovation and business plan competitions, start-up accelerators, and their working principles were examined within the scope of the literature review in Chapter 2. In this section, examples of successful accelerators from the world, and success criteria for the accelerators are investigated. This chapter also provides an overview of the entrepreneurship ecosystem in Turkey and general information about accelerators operating in Turkey. At the end of this chapter, the history of YFYI, its evaluation criteria, selection process, and its evolution over the years are explained.

Chapter 3 describes the research methodology by defining the purpose of the research study, explaining how data were acquired, and organized and clarifying the survey design.

Chapter 4 contains survey data analysis. In pre-screening of the data of YFYI participants, the finalist team members were examined in terms of their current working profiles, the companies they established, export numbers, and investment backgrounds. After the pre-screening, a survey was sent to both the finalists who have an entrepreneurial background and to the finalists who did not have entrepreneurial experience. Findings obtained from the survey results and statistical data analysis results are explained in this section.

Furthermore, in Chapter 5, interviews with successful start-up founders who graduated from YFYI were shared.

Chapter 6 concludes the study findings. In this section, along with the limitations faced during the study, critical take-aways for innovation competitions, accelerators, or university professionals were discussed and referenced for further research.

# CHAPTER 2

# LITERATURE REVIEW

## 2.1. Innovation and Business Plan Contests

Innovation competitions are time-limited competitions that are open to the public or to a specific target group to offer inventive solutions to specific problems in a particular area. Innovation competitions have led to many important discoveries in history. Margarine, canning of food, the human-powered flight came to life through innovation competitions (Adamczyk, Bullinger, & Möslein, 2012).

Many business plan contests not only provide a monetary award to turn the idea into a new business but also creates a learning environment by offering entrepreneurship education and workshops, and mentoring and networking support required for the success of those ventures. Well established business model competitions often partner with corporate sponsors with special award categories for specific solutions where these sponsors operate. Along with monetary awards, free usage of incubation space, if the organization has an incubation area, for a limited time or free professional service support can be offered as in-kind awards.

A study at RMIT University, Australia stated that the entrepreneurs, who participated in the innovation competitions, develop their entrepreneurial skills along with their networks, become more confident, and more likely to take risks (Russell et al., 2004).

Business plan competitions create an experiential learning environment for entrepreneurs as a result of their entrepreneurship workshops, educational seminars, and mentoring sessions. Such innovation competitions are also a driving force for entrepreneurs to learn and test their ideas/prototypes/products expeditiously and achieve fast results in a limited time frame. Moreover, the prizes won by judges'

appreciation increase the motivation of the participant entrepreneurs (Russell et al., 2008).

There is also growing amounts of research focusing on the university's role in entrepreneurship education and the creation of university-based programs and incubators as well as competitions. These researches are essential to highlight the links between universities, their impact on job and opportunity creation in their countries. [1]

The student-focused and university-led programs had also been researched mostly because the universities are generally funded fully or partially with public funds. It is easy to link the critical "taxpayers money" element in these programs, where justifying the awards given to a bunch of kids, is at most important. In the UK as a well-documented example by NESTA, the results of university programs leading to start-up and job creation had been spectacular, starting with almost 2.000 start-ups being created by recent graduates in 2008 to almost 4.600 start-ups created in 2014 with higher survival rates.[2]

These examples indicated that in the UK, the students had real-world experiences in these entrepreneurial events that helped them in their careers. It helped the university's purpose of creating an impact in the society, and it helped national interest with the increased number of companies that were created also built stronger employment opportunities in the country. In this perspective, broader research is required to methodically observe and repeat the research methods to public university programs to understand the effectiveness of the university-led incubators, accelerators, and business plan competitions for a transparent report of the use of taxpayers' money in the university ecosystems.

[1] https://ncee.org.uk/publications-previous-projects/

[2] https://www.nesta.org.uk/blog/supporting-student-entrepreneurship/

MIT 100K Entrepreneurship Competition and Harvard Business School New Venture Competition NVC are among the outstanding examples of university-led entrepreneurship competitions.

The MIT $100K Entrepreneurship Competition started with the name *MIT $10K* for the first time in 1990. The competition has continued to grow to 50K in 1996 and 100K in 2006 (Cheng, 2012). Today, the $100K Entrepreneurship Competition is composed of three different contests, namely PITCH, ACCELERATE, and LAUNCH. More than $ 350K is awarded through these three competitions. MIT PITCH is an Elevator Pitch Contest that the finalists present their ideas in 90 seconds and compete for 5.000 USD First Prize or 2.000 USD Audience Choice Award. MIT ACCELERATE, which started to be organized in 2012, is a program for early-stage enterprises that provides mentorship support with experts and experienced entrepreneurs, and financial support up to 1.000 USD. In order to participate in the competition, the team must have at least one co-founder affiliated with MIT and have not received funding other than equity or should not have received more than 150.000 USD investment. MIT LAUNCH is a comprehensive business plan contest with a 100.000 USD grand prize. It is anticipated that semi-finalists present their business plans along with their prototypes in the competition.

Harvard Business School's (HBS) New Venture Competition (NVC), started to be organized in 1997, an entrepreneurship competition where students can turn their business ideas into practice (Howell & Nanda, 2019). Since 1997, 5.704 students and alumni of HBS have participated in the competition, and a total of 2.655.000 USD has been awarded. Today, along with the 75,000 USD grand prize and the second prize of 25.000 USD, the competition offers the crowd favorite prize and the monetary and in-kind awards of the sponsors.[3]

[3] https://www.hbs.edu/news/releases/Pages/new-venture-competition-finale-2019.aspx

## 2.2. Accelerators

Most entrepreneurship professionals think '*Incubators'* was the proxy to accelerators having a much longer history dating back to the 1950s, and becoming a common practice in the 1980s, especially universities in the USA. The National Business Incubation Association (NBIA) had been established in 1985 and was primarily unifying the best practices in the industry (Rudy, Coppin, Konefal, & Shaw, 2007). Even in the relatively cheaper IT industry, the substantial costs of technology development should be remembered during this period before the emergence of accelerators. In this era before cloud computing, broadband internet, and 3D printing, building a start-up was a capital intensive task, most could not have been afforded without access to cheaper equipment and labs owned and operated by mostly university-based incubators. Therefore, there could not have been any form of acceleration shortening the graduation period to a couple of months instead of a couple of years average in incubators.

Most of these incubators were late to adapt to the changes in the technology and start-up requirements. The reason for this may be sunk costs like the equipment or the rental revenue-focused business models of the incubators. However, some other incubators have managed to operate parallel programs and allocate resources to their accelerators or began hosting other accelerators to create synergies.

In fact, there is a feeding loop between accelerators and incubators, where most of the graduates of accelerators cannot stand on their feet due to lack of early-stage financing in most US and European (as well as Turkish) Accelerators or Pre-Accelerators, therefore need a more extended period of incubation and proximity. Hence, most of the Pre-Accelerators and Accelerators offer free or subsidized desk space and access to mentors and infrastructure after the initial 3-6 month period is finalized. Those who become self-sufficient prefer to remain in the vicinity of the mentors as well as the social network of the incubators and become tenants as we had also seen among some YFYI Graduates.

### 2.2.1. What is Start-up Accelerators and How Do They Work?

The Accelerator phenomenon that has rocked the entrepreneurship field globally is the brainchild of a group of high-tech enthusiast start-up founders (geeks) who were led by Paul Graham and Jessica Livingston. They noticed that lack of mentoring together with lack of access to small test funding were bottlenecks for innovation to happen. Paul Graham and Jessica Livingstone quickly realized that the start-ups would generate more wealth in a much quicker way with 'adult supervision', and strong network effects in fundraising and customer acquisition, while organizing the first cohort in Boston where they were based before moving to Silicon Valley. Following the footsteps of the first accelerator Y Combinator (YC), starting mostly out of Silicon Valley and the US, there are now thousands of accelerators in multiple countries.

There had been multiple attempts to define and research incubators, the possible precursors to accelerators, and there are common theoretical grounds such as open innovation and social capital theory that can also be traced to accelerators (Hausberg & Korreck, 2017). However, there is also a growing body of research for accelerators' impact in the Start-up Ecosystem, as a new model of fast-paced wealth and opportunity growth.[4]

Accelerators are limited-time programs where ventures can test their ideas/products with the help of training and mentoring support in order to achieve sustainable, rapid growth. Acceleration programs are not designed to keep ventures alive. In essence, the intent is to expedite either growth or failure of the venture.

Typically, the accelerators give intensive training, mentorship, provide access to legal advice, networking, investment opportunities, and business development support to participant entrepreneurs. Some programs may also provide seed capital and office space additively.

[4] https://feld.com/archives/2018/03/academic-research-on-accelerators.html

Mentorship support can be given by experienced mentors, venture capitalists, angel investors, corporate executives, program graduates, and experienced entrepreneurs. In point of fact, not only successful entrepreneurs give mentoring support, but also entrepreneurs who have failed many times in their ventures may expand the horizon of program entrepreneurs. This high-level mentoring support has great importance for nascent entrepreneurs. Bluestein and Barrett (2010) mentioned that early, high-quality mentorship support is the key factor for start-up success.

Along with these, a group of start-ups enters cohorts, and learning from peers through relationships established in each batch is one of the critical gains of the acceleration program (Cohen, 2013).

Each cohort typically lasts about three months. At the end of each cohort, a public or private pitch event *Demo Day*, where investors, corporate executives, and other important actors of the entrepreneurship ecosystem are invited, is organized (Konezal, 2012).

As mentioned above, accelerators are generally limited duration programs. The limited duration speeds the testing phase of the product; developing a Minimum Viable Product which is defined by Eric Ries in 2011 as "a version of a new product, which allows a team to collect the maximum amount of validated learning about customers with the least effort" (Lenarduzzi and Taibi, 2016), testing product-market fit and identifying and validating the customer segments. Time limitation also maximizes the number of start-ups supported in each cohort of the acceleration program.

Accelerators should be financially sustainable, either being for-profit or non-profit. Accordingly, many accelerators require a small portion of the equity in participating ventures as a program fee, and those usually provide a seed capital (Cohen,2013). In the long run, the accelerator can profit from the start-up's exit if it integrated an investment mechanism to its business model. Therefore, start-ups pitch in front of the investors in Demo Day events, which are organized by the accelerators.

### 2.2.2. Successful Accelerators Around the World

The Y Combinator (YC) and TechStars, started in the early 2000s, are seen as the pioneers of today's accelerator models because of their focus on technology initiatives (Chang, 2013). Notable variations and niche's developed for are for Corporations (Techstars), Global Networks (500 Start-ups), Vertical Sectors (Hax Hardware Accelerator), or Vertical Business Models (Alchemist).

**Y Combinator** is the first start-up accelerator, which was founded by Paul Graham in 2005 in Cambridge, Massachusetts. Y Combinator created a new financing model for early-stage start-ups, has revolutionized start-up support programs. In this acceleration model, Y Combinator provides seed funding as well as mentoring support for each start-up selected in the program. In the first years of its establishment, YC made small investments (rarely more than USD 20.000) in return for 2-10 % stakes in the companies they fund (Andywu, 2011). Over the years, it has increased the amount of investment, but the amount of stake that the accelerator received remained almost the same. In September 2018, its investment model, which was 7% share for USD 120.000 in 2014, was announced as USD 150.000 that converts to 7% of the company (Clark, 2018). The combined valuation of the start-ups that graduated from YC, which has invested in 2.000 start-ups since 2005, has exceeded USD 100 billion (Y Combinator, 2019).

Two years later, as success stories begin to occur, **TechStars** founded by two investors; David Cohen and Brad Feld. Over the years, Techstars has reached an extensive network of over 1.500.000 founders, investors, mentors, and industry leaders. In each year, more than 300 companies are accepted to the program and receive USD 120.000 funding. According to the data published on their website, 87% of 1599 companies that Techstars invested in are either active or acquired (Techstars, 2019).

Cohen and Hochberg (2014), estimated that the total number of accelerators worldwide is over 2.000. According to the findings of Gust in the Global Accelerator

Report 2016, the number has increased rapidly to 10.000.[5] Considering the fact that entrepreneurship and its support mechanisms are developing rapidly at the level of government policies all over the world, it would not be wrong to assume that this figure increases with the same momentum.

### 2.2.3. Success Factors for Accelerators

The report prepared by UBI Global examines the value created by the business accelerators and incubators (BAI) for three areas; Ecosystem, Start-ups, and Incubation.

BAI Key Performance Indicators for Ecosystem

The value created by the accelerators and incubators to the ecosystem was examined under two subheadings: contribution to economic development and talent hunting.

Table 2.1: The business accelerator and incubators' KPIs

| Economic Development | Talent Hunting |
|---|---|
| Creating and sustaining employment<br>Revenues from sales<br>Graduates<br>Self-generated income | The number of accepted start-ups<br>Retention of graduate start-ups |

Source: Castillo, J. and Meyer, H., (2018)

BAI Key Performance Indicators for Start-ups

The performance measurement criteria of the value created by accelerators and incubators for start-ups are grouped under three headings: developing entrepreneurial competencies, facilitating access to investment, and developing a business network.

[5] http://gust.com/accelerator_reports/2016/global/

Table 2.2: The business accelerator and incubators' KPIs for Start-ups

| Developing Entrepreneurial Competencies | Facilitating Access to Investment | Developing a Business Network |
|---|---|---|
| Services provided<br>Mentoring hours provided | Total investment received<br>Average investment received<br>Total interest from seed investors | Partner engagement<br>Stakeholder engagement<br>Peer engagement |

Source: Castillo, J. and Meyer, H., (2018)

BAI Key Performance Indicators by Means of Incubation

The value created for incubation was considered in two subcategories: interest to the program and performance after incubation.

Table 2.3: The business accelerator and incubators' KPIs by means of Incubation

| Interest to the Program | Performance After Incubation |
|---|---|
| Domestic applications<br>International applications<br>Brand awareness for sponsorship<br>Self-generated income | Start-up survival rate (1-year)<br>Start-up survival rate (5-year)<br>Fast-growing graduated companies<br>Number of IPO companies |

Source: Castillo, J. and Meyer, H., (2018)

The periods, units, and weights of those KPIs can be examined in the below table prepared and depicted in the UBI Global Report.

| 21 KPIS (DIMENSIONS) | PERIOD | UNIT | WEIGHT | 7 SUBCATEGORIES | 3 CATEGORIES | 1 PIPS |
|---|---|---|---|---|---|---|
| 1. Jobs created & sustained (Workforce) | 1 yr | # | 6.7% | 1. Economy Enhancement (22.2%) | 1. Value for Ecosystem (33.3%) | Program Impact and Performance Score (100%) |
| 2. Sales revenue (Economic Output) | 1 yr | $ | 6.7% | | | |
| 3. Graduates (Economic Development) | 5 yrs | # | 4.4% | | | |
| 4. Self-generated revenue (Sustainability) | 1 yr | $ | 4.4% | | | |
| 5. Client startups accepted (Human capital - short term) | 1 yr | # | 6.7% | 2. Talent Retention (11.1%) | | |
| 6. Graduate retention (Human capital - long term) | 5 yrs | #, % | 4.4% | | | |
| 7. Services offered (Support) | 1 yr | # | 4.4% | 3. Competence Development (8.9%) | 2. Value for Client Startups (33.3%) | |
| 8. Coaching and mentoring hours (Guidance) | 1 yr | # | 4.4% | | | |
| 9. Total investment attracted (Funding - total) | 5 yrs | $ | 6.7% | 4. Access to Funds (11.1%) | | |
| 10. Average investment attracted (Funding - average) | 5 yrs | $ | 2.2% | | | |
| 11. Seed funding attraction (Funding - probability) | 1 yr | #, % | 2.2% | | | |
| 12. Partners (Business development) | 1 yr | # | 6.7% | 5. Access to Network (13.3%) | | |
| 13. Events (Stakeholder engagement) | 1 yr | # | 4.4% | | | |
| 14. Engaged alumni (Peer support) | 1 yr | #, % | 2.2% | | | |
| 15. In-state applications (Reputation - local/ regional) | 1 yr | #, #/ spot | 6.7% | 6. Program Attractiveness (15.5%) | 3. Value for Incubation Program (33.3%[6]) | |
| 16. Out-of-state applications (Reputation - national/global) | 1 yr | #, #/ spot | 4.4% | | | |
| 17. Sponsorship attraction (Brand) | 1 yr | $ | 4.4% | | | |
| 18. 1-year survival rate (Success - potential) | 10 yrs | % | 6.7% | 7. Post-incubation performance (17.8%) | | |
| 19. 5-year survival rate (Success - promise) | 10 yrs | % | 4.4% | | | |
| 20. High growth enterprises (Success - evidence) | 10 yrs | % | 6.7% | | | |
| 21. IPOs (Success - proof) | 10 yrs | # | 4.4% | | | |

Figure 2.1: KPIs for the evaluation of the university linked start-up incubators and accelerators' performance

Source: Castillo, J. and Meyer, H., (2018)

On the other hand, Fowle (2017) investigated the Critical Success Factors of Accelerators and summarized these studies, as described in Figure 2.2: Identified Critical Success Factors for Accelerators and its source.

**CSFs by Author**

| | Christianson | Miller & Bound | Huijegevoort | Radojevich-Kelley & Hoffman | Karimaa | Aulet |
|---|---|---|---|---|---|---|
| Links to sources of funding | ✓ | | | | | ✓ |
| Brand Value and Perceptions of Success | ✓ | | | | ✓ | |
| Business Expertise | ✓ | | | | | ✓ |
| Product Expertise | ✓ | | | | | |
| Startup financial support | ✓ | | | | | ✓ |
| Urgency created by time-limited programme | | ✓ | | | ✓ | ✓ |
| Quality of the programme | | ✓ | | | | ✓ |
| Internal networking | | | ✓ | | ✓ | |
| Mentorship | | | | ✓ | ✓ | |
| Action-orientation | | | | | ✓ | |

Table 1: List of Identified Critical Success Factors by Source

Figure 2.2: Identified Critical Success Factors for Accelerators and its source

Source: Fowle, M., (2017)

In the same study, Fowle (2017) concluded that a successful accelerator should have the following characteristics:

- Being close to the customers of participating start-ups
- Being in a cohort structure supporting group learning
- Having a strong network
- Giving the fund as a reward rather than giving it to everyone in general
- Having an investor network
- Strengthening its brand with innovative appearances and successful alumni stories
- Being highly selective when accepting start-ups to the program
- Having time-limited and high-quality programs and mentors.

Moreover, the success rates of accelerators can be evaluated by considering the continuation of the funding received and the survival of the enterprises. The acceleration programs increase the overall success rates of the enterprises due to the

fact that they are mentoring oriented and provide access to angel investors and venture capitalists (Radojevich-Kelley and Hoffman, 2012).

One theoretical model differing from VC financing literature states that graduating from an accelerator is a sort of validation mechanism for investors. If entrepreneurs participate in the acceleration programs before seeking investment, graduating from those programs can give an insight into the credibility of those start-ups to the investors (Kim and Wagman, 2014). Winston Smith, Hannigan, and Gasiorowski's study stated that start-ups supported by accelerators receive follow-on investments significantly earlier (Winston Smith, Hannigan, & Gasiorowski, 2013)

### 2.3. Entrepreneurship Ecosystem in Turkey

2005 was the first time an "entrepreneurship" competition in Turkey was launched as we had been documenting in this study. In the past 14 years, there had been slow but promising improvements in Turkey. The areas can be divided into funding availability, entrepreneurship supports, and international attention.

METUTECH-BAN was the first business angels network of Turkey founded in 2007 by the investors from METU and METU Technopolis. Also, the Tax Incentive Program for Angel Investors was launched in 2013 by Undersecretariat of Treasury of Turkey.[6]

Until 2013 there had not been a government initiative to create public backed first loss fund mechanisms like Yozma in Israel or Circular 331 in Lebanon. It was the first time private fund managers were encouraged to create VC funds with some guarantees from

[6] https://melekyatirimcilardernegi.org/business-angels-law-of-turkey/

the government budget.[7] This has changed with TUBITAK 1514 Techno-Venture Capital Support program for VC Funds in Turkey.[8]

The reforms that lead to the formation of the start-up ecosystem in Turkey can be examined in Figure 2.3 and Figure 2.4.

Figure 2.3: Reforms Affecting Start-up Ecosystem in Turkey (1982-2003)

Source: The Presidency of the Republic of Turkey Investment Office, (2019)

[7] http://www.hurriyetdailynews.com/unleashing-turkish-venture-capital-75622
[8] http://www.tubitak.gov.tr/sites/default/files/1514-2013-call.pdf

Figure 2.4: Reforms Affecting Start-up Ecosystem in Turkey (2003-2018)

Source: The Presidency of the Republic of Turkey Investment Office, (2019)

The Turkish Government has started to give importance to the field of technological entrepreneurship in parallel with the developments in the world and begin to develop technological entrepreneurship support mechanisms.

Government grants are one of the most important financial resources used by Turkish entrepreneurs to establish their companies to survive and continue their activities. The Scientific and Technological Research Council of Turkey (TUBITAK) and The Small and Medium Enterprises Development Organization (KOSGEB) and Regional Development Agencies are the leading institutions of Turkey providing financial

support to entrepreneurs and early-stage technology ventures.[9] In recent years, the number and types of entrepreneurship support given by these institutions have increased to meet the needs of entrepreneurs in Turkey.

TUBITAK has been and still is the main actor in providing education and funding to founders in Turkey. TUBITAK 1512 Individual Young Initiative Program (BIGG) is one of the most extensive capital support programs for technology entrepreneurs. With a change from controlling the curriculum mindset to an outsourced service provider-led education program model, the universities as implementing organizations are now developing their programs for TUBITAK BIGG and working with service providers to educate founders on their business models. The selected founders upon graduation are eligible for seed funding by TUBITAK. It is fair to say that without the support of TUBITAK, the growth of the entrepreneurship ecosystem would have stalled significantly.

GEM 2018 / 2019 report states that the rate of new early-stage initiatives in Turkey is in a downward trend since 2015. Even if Total Early-Stage Entrepreneurial Activity (TEA)[10] rate declined in Turkey, the percentage of TEA entrepreneurs operating in the technology sector is increased from 1,54% in 2016 to 5% in 2018. In the same report, Turkey is among the countries with high growth expectations among early-stage companies in terms of creating new business opportunities (Bosma & Kelley, 2018).

Turkey has a gender gap in the entrepreneurship ecosystem, with a high proportion of male start-up founders. According to the GEM Adult Population Survey (2018), the percentage of women founders of early-stage ventures in Turkey is less than half of the male founders. Turkey has the most significant male-female founder ratio difference between European and North American countries (Bosma & Kelley, 2018) (see Figure 2.5).

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[9] http://www.invest.gov.tr/en-US/infocenter/publications/Documents/The-State-of-Turkish-Start-up-Ecosystem-2019.pdf

[10] Total Early-Stage Entrepreneurship Activity (TEA) is defined as the period immediately after the establishment of a company.

Figure 2.5: Total Early-Stage Entrepreneurial Activity (TEA) Rates by Gender
Source: Bosma, N., & Kelley, D. (2018).

In Figure 2.6, the entrepreneurship ecosystem in Turkey is evaluated by GEM in terms of 12 different conditions affecting the entrepreneurial activity of a country.

Figure 2.6: Entrepreneurial Framework Conditions of Turkey

Source: Bosma, N., & Kelley, D. (2018).

Turkish Start-up Ecosystem Map report published by Start-ups Watch on May 28, 2019, categorized the institutions and organizations constituting the Turkish Entrepreneurship Ecosystem as follows.

1. FUNDING
    a. Business Angel Networks
    b. Business Angels
    c. Crowdfunding
    d. Fund of Funds / Grants
    e. FI/DFI
    f. Accelerator Funds

g. Tech Accelerator Funds (Early Stage; Reside in Turkey)
h. Local Investors and Venture Capitalists
i. Local GEs and PEs (Late Stage; Reside in Turkey)
j. Corporate Investors (Early Stage; Reside in Turkey)
k. Foreign Venture Capitalists (Early Stage; Actively Scanning Turkish Market)
l. Foreign GEs and PEs (Late Stage, Reside in Turkey)
m. Corporate Investors and GE and PE (Late Stage, Reside in Turkey)

2. SUPPORTING
    a. Accelerators (Run by Universities, Technology Transfer Offices, Technoparks, NGOs)
    b. Accelerators (Run by Banks)
    c. Accelerators (Privately Held)
    d. Mentor Trainers
    e. Living Labs
    f. Technoparks
    g. Government Supports
    h. Mentor Movement
    i. Media
    j. Community Centers
    k. NGOs and Organizations
    l. Deal Rooms / Investment Platforms
    m. Investor Analytics
    n. Start-up Friendly Companies

Turkish Entrepreneurship Ecosystem Timeline report shown in Figure 2.7 depicts the development of the entrepreneurship ecosystem in Turkey. As Figure 2.7 shows, the first entrepreneurial support mechanisms in Turkey are seen in the 2000s, and entrepreneurship support mechanisms have grown and improved in Tukey, especially after 2013.

Figure 2.7: Turkish Entrepreneurship Ecosystem Timeline (2000 – 2018)

Source: Start-ups.Watch (2018)

In the brand new report published by Start-ups Watch and Presidency of the Republic of Turkey Investment Office (2019), it is stated that there were only six accelerators before 2010 in Turkey. Although those programs, including YFYI, do not bear some of the characteristics of the acceleration programs specified in the literature, they have become role models for the new programs in the Turkish entrepreneurship ecosystem. The increase in the number of active accelerators operating in Turkey can be seen in Figure 2.8.

Figure 2.8: The Distribution of Accelerators in Turkey by Years

Source: Start-ups.Watch (2019)

Technology development zones, in other words, Technoparks or Technopolises are the areas that create synergy among technology start-ups by clustering the high-tech companies together and facilitate high technology export with the tax incentives given to the companies. METU Technopolis, established in 2001, is Turkey's first technopolis. From 2001 until the end of 2018, the number of technoparks established in Turkey has reached 81. The total export amount of companies residing in technoparks increased by 31% in 2018 compared to the previous year and reached 3.8 billion TL. [11]

METU Technopolis established Turkey's first business angel network, namely METUTECH-BAN and the first technology entrepreneurship competition, New Ideas New Businesses (YFYI). Shortly after the establishment of YFYI, in 2008, Turkey's first Animation Technologies and Game Development Center was initiated in METU Technopolis (see Figure 2.7).

[11] http://www.invest.gov.tr/en-US/infocenter/publications/Documents/The-State-of-Turkish-Start-up-Ecosystem-2019.pdf

### 2.3.1. Accelerators Operating in Turkey

As discussed in the 2.3. Entrepreneurship Ecosystem in Turkey, the ecosystem improved significantly in recent years, and new actors joined the ecosystem. According to the data obtained from the Start-ups Watch Platform, there are 37 active start-up accelerators that aim to support Turkish start-ups. The list for the accelerators with their operating locations is given in Table 2.5.

Table 2.4: Accelerators Supporting Turkish Start-ups

| **Accelerator** | **Location** |
|---|---|
| Albaraka Garaj | Istanbul / Turkey |
| Atom | Ankara / Turkey |
| BeeJet | Ankara / Turkey |
| BioIzmir | Izmir / Turkey |
| BTM | Istanbul / Turkey |
| CAP (Bilkent) | Ankara / Turkey |
| Code.YapıKredi | Istanbul / Turkey |
| eTohum | Istanbul / Turkey |
| Fincube | Istanbul / Turkey |
| Founder Institute Istanbul | Istanbul / Turkey |
| Gamers Qube | Istanbul / Turkey |
| Garanti Partners | Istanbul / Turkey |
| Growth Circuit | San Francisco / USA |
| Hackquarters | Istanbul / Turkey |
| InnoCampus | Istanbul / Turkey |
| Innogate | Istanbul / Turkey |
| Inovent | Istanbul / Turkey |
| ISO KOZA | Istanbul / Turkey |
| ITU Çekirdek | Istanbul / Turkey |

Table 2.5 (continued): Accelerators Supporting Turkish Start-ups

| | |
|---|---|
| Inventures | Istanbul / Turkey |
| Kadir Has iNEO | Istanbul / Turkey |
| KWORKS | Istanbul / Turkey |
| Lonca | Istanbul / Turkey |
| nüvEGE | Izmir / Turkey |
| ScaleUp | Istanbul / Turkey |
| Sente.link | Chicago / USA |
| Start-up Trakya | Kırklareli / Turkey |
| SuCool | Istanbul / Turkey |
| TEB Fintech Future Four | Istanbul / Turkey |
| TechUP | Eskişehir / Turkey |
| Teknoloji Türkiye | Istanbul / Turkey |
| TIM TEB Girişim Evi | Istanbul / Turkey |
| Türk Telekom Pilot | Istanbul / Turkey |
| Viveka | Ankara / Turkey |
| Win Global | Istanbul / Turkey |
| Workup | Istanbul / Turkey |
| YFYI | Ankara / Turkey |

### 2.3.2. History of New Ideas New Businesses

#### 2.3.2.1. About YFYI

Yeni Fikirler Yeni İşler – New Ideas New Businesses (YFYI) has been organized by METU Technopolis as a technology-based entrepreneurship competition since 2005. It is the first technology-based entrepreneurship competition that aims to support innovative technological ideas, increase awareness of entrepreneurship, and to

promote entrepreneurship among university students in Turkey. In other words, as stated in the booklet published in the first year of the competition, YFYI aims to transform the winning project into an innovative technology-based business with its supports and to create employment opportunities for a qualified workforce. In the same booklet, the following statements are listed among the achievements targeted for the project owners (YFYI, 2005).

- Being trained in the process of turning an idea into a business opportunity,
- Acquiring personal experience concerning the challenges, risks, and rewards of the entrepreneurship,
- Experiencing the value and importance of interdisciplinary, planned and target-oriented teamwork,
- Having a chance to benefit from the experiences of people who went through similar processes before,
- Ensuring that their projects are learned by other interest groups (such as venture capital companies, investors, and corporate companies). Thus, having the chance to be funded.

**Structure of YFYI between 2005 and 2010 (YFYI 1.0):**

The competition includes three stages: *Pre-Selection*, *Second Stage*, and *Final4 Stage*. The *Pre-Selection* phase is concluded by gathering the brief project proposals of the groups who register online, their evaluation by the jury, and the announcement of the first ten project proposals that are shortlisted. This stage aims to provide teams the opportunity to generate ideas, conduct patent research, and transform their ideas into project proposals.

Following the award ceremony organized for the ten teams that are entitled to go on to the *Second Stage*, the teams receive training on business plan preparation, product development, intellectual property rights, innovation, entrepreneurship, and financial modeling. As a result of these training sessions, the teams prepare project business

plans. The *Second Stage* constitutes the period where the teams acquire the most gains and work most intensively. At the end of this stage, four teams that receive the highest points determined by the jury members get entitled to the right to compete in the Final4.

The third and last stage is called the *Final4 Stage*. During this stage, four finalist groups that got entitled to the right to compete in the final present their projects publicly for the first time.
The teams that succeed in going on to the *Final4 Stage*, even if they do not win the competition, are provided with the support of METU and METU Technopolis, if they wish and are found suitable, they establish companies under the roof of METU Technopolis, and they can continue their activities by receiving many consultancy services.

Since the beginning of the YFYI, IEEE (Institute of Electrical and Electronics Engineers), one of the international student communities within METU, provided organizational support to the program. The announcements inside METU were made with outreach through email and connections too.

Awards and organizational expenses of the program are carried out with sponsorship agreements held every year. Beginning from 2007, 'thematic' fields, are also included and motivating awards were given in these fields. Thus, the competition has been enriched in the verticals seeking solutions to the specific sector problems where partner organizations in. Since the sponsorship agreements may vary each year, the categories may change in this direction in each year. During the years, the contest has supported the category-specific ideas that seek solutions to general, defense industry, information technologies, health, and energy problems with each category sponsors. The respected institutions and organizations, like the Undersecretariat of Defense Industry, Middle East Industry and Trade Center (OSTIM), Aselsan, Intel, Microsoft, General Electric, Turkish Economy Bank (TEB), Türk Telekom, Turkcell, Denizbank, Arçelik and Yedaş, sponsored the program in order to develop Turkish

entrepreneurship ecosystem and support innovation-based entrepreneurship both in corporate and start-up companies.

***Perks, Grants, Awards During YFYI 1.0***

The Elginkan Foundation has been the main sponsor with a cash reward of 50.000 TL to 100.000 TL as the grand prize since the first year of the competition, and category sponsors also offer various cash rewards in each batch. Between 2005-2007, Elginkan Foundation's grand prize was 50.000 TL. As of 2008, the competition has started to give the Defense Industry Special Award of 50.000 TL in addition to the grand prize. As the competition developed, the sponsorships it received and the cash awards it gave began to develop on a category basis.

Between 2005 to 2009, the winning team becomes entitled to use office space in METU Technopolis free of charge for three years along with the 50.000 TL Technology Award of the Elginkan Foundation.

**Structure of YFYI Between 2011 and 2014 (YFYI 1.1):**

The first prize was increased to 75.000 TL in 2008 to 100.000 TL in 2012. Since 2013, YFYI started to give in-kind awards in the final ceremony besides cash rewards such as mentoring and coaching, legal and technological consulting, intellectual property rights protection, and investor meetings. The applicant teams were no longer required to be a METU student or graduate.

**Structure of YFYI Between 2015 and 2016 (YFYI 2.0):**

Parallel to developments in the Turkish entrepreneurial ecosystem along with the global environment, the program evolved and turned out to be an acceleration program

providing comprehensive training and mentoring services in 2015. The evaluation criteria have begun to be based on team, market size, scalability, product-solution compatibility rather than high technology and innovativeness. The program duration has increased, the variety and quality of the training courses increased.

Program applications were opened for the first time this year to nascent technology companies that have developed their products or prototypes as well as university students and graduates who had an idea or prototype.

T-Jump San Francisco Incubation Center was established by METU Technopolis in late 2014 to increase technology export by creating internationally successful Turkish companies. In this context, T-Jump aims to facilitate the internationalization of Turkish companies, which has the marketing and sales departments in the USA and continue research and development in Turkey. The USA Camp award of YFYI giving by T-Jump, lasting about 2-weeks in San Francisco, includes entrepreneurship training and networking support with the potential partner and customer meetings as well as investor meetings.

Although YFYI began to gain some features of an acceleration program, the award mechanism, which is the characteristic of the competitions, has continued. Start-ups continue to be awarded as a result of the evaluation of the sponsors as a jury member at the final ceremony.

***Perks, Grants, Awards During YFYI 2.0***

The USA Camps organized by T-Jump San Francisco Center was the first-in-kind reward, and it continued with free usage of the San Francisco Incubation Center.

On top of the original office space and local sponsor awards, after 2014, YFYI Graduates started to add onto the award schemes as *'YFYI Graduate Sponsor',* and sponsorship pool increased as well as the international exposure award. There were

also thematic sponsors and awards on Health, IT, Consumer Goods, and Energy. Besides, service supports such as advertising, cloud, 3D printing, and business development supports were given to selected entrepreneurs as a special prize by the leading organizations sponsoring YFYI. It is in line with global developments from local generalist accelerators towards more verticals. A significant change was the addition of established company admissions, which increased and supported the impact base as well as the success story creation.

**Structure of YFYI Between After 2016 (YFYI 2.1):**

Since 2016 YFYI changed its focus to globalization and aimed to create globally successful companies. With the new model, YFYI was positioned as the first global acceleration program in Turkey. In this new model established with the globalization objective, it has collaborated with METU Technopolis and ODTU TEKNOKENT USA LLC and T-Jump Incubation Center in San Francisco (later renamed as Growth Circuit).

After 2016, with the establishment of the acceleration and investment company of ODTU TEKNOKENT, namely Growth Circuit, these global camps have become more effective, long-term (5-6 weeks) with respectable partners in Silicon Valley such as UC Berkeley Innovation Acceleration Group and Draper University.

#### 2.3.2.2. YFYI Metrics

YFYI has received around 10.000 business idea applications since 2005, around 530 of which have been accepted to the program, and around 160 of them have reached the final (later it is called Demo Day).

According to the data given by METU Technopolis Entrepreneurship Department, from 2005 to present, more than USD 2 million seed capital provided for the teams,

and more than 200 technology-based companies were established by YFYI. More than 750 people were employed, and more than 110 patent applications were made in these companies founded by YFYI.

It is remarkable that in the first two years of the competition, all of the four finalists were established a company. According to the LinkedIn preliminary search, the number of initiatives founded by the participants of YFYI by years is summarized in Table 2.6. The number of initiatives stated in Table 2.6 is the sum of the number of companies or projects that the participants specify as the co-founder on their LinkedIn profiles.

Table 2.6: Number of Initiatives by Years

| Year of Participation | Number of Initiatives |
|---|---|
| 2005 | 22 |
| 2006 | 16 |
| 2007 | 10 |
| 2008 | 11 |
| 2009 | 14 |
| 2010 | 30 |
| 2011 | 21 |
| 2012 | 17 |
| 2013 | 14 |
| 2014 | 62 |
| 2015 | 54 |
| 2016 | 60 |
| 2017 | 56 |
| 2018 | 34 |

#### 2.3.2.3. Selection and Judging Criteria of YFYI

Eligibility Criteria

In the first years, only METU undergraduate and graduate students were accepted to the competition. With this condition, more than half of the team members were required to be a METU student. In the following years, at least one of the team members was supposed to be a METU student according to the eligibility criteria of the competition. After 2010, the teams were no longer required to be a METU student or graduate.

Business Plan Evaluation Criteria

In the first years of the competition, business plans prepared after the training given during the competition were evaluated by the committee according to four criteria; quality and originality of the idea, market and competition, financing and team. The scoring information and subheadings of the criteria are detailed below (YFYI, 2005).

1. Quality and originality of the idea
   - Is it a technology-based idea?
   - Is it an innovative idea?
2. Market and Competition
   - Is it a marketable product or service? Is the initial market analysis well done?
   - Are competition analysis and competition strategy well determined?
   - Are the fundamental principles of marketing strategy identified?
   - Is pricing (market positioning) strategy defined?
   - Is the size, value, and the growth rate of the target market described?

3. Financing
   - Are the cost-profit projections made in the business plan for the next three years?
   - Is the cash requirement required for the first 12 months specified?
   - Is the total financial need for the project analyzed?
   - Are the financing items correctly identified?
   - Are sources of funding specified?

4. Team
   - Is the project team structured to include the required disciplines?
   - Are job responsibilities clearly identified?
   - Is there any study on project management?

The composition of the evaluation committee members and the evaluation criteria changed after the evolution of the YFYI into an acceleration program (YFYI 2.0). After 2014, the applications are evaluated by a pool of judges, including technology experts, academicians, successful start-up founders, and high-level executives of institutions. The following criteria are taken into consideration during the initial evaluation process for the admission of the applicants.

- Team (formal education, work experience, how long the team members have known each other)
- Innovativeness of the idea (cutting edge technology, future, and emerging technology)
- Technical applicability (feasibility, prototype level)
- Product-market fit, problem-solution fit
- Scalability and sustainability of the idea

After 2014, the global success potential of the idea became one of the evaluation criteria since the program gained a global perspective (YFYI 2.0).

#### 2.3.2.4. Content of the Program In Terms of Training and Mentoring

YFYI, which was initially designed as a business plan contest, was not a competition alone where technological business ideas are evaluated, and a monetary award is given at the end. In order to transform technology-based business ideas into a company, YFYI has organized training courses for the selected teams in the program since it was founded.

During the first years of YFYI, training courses focused on business plan writing for an average of 3 hours per day over a 20-day period. Specifically, the titles of the training courses are as follows; Innovation and Entrepreneurship, Business Plan Writing Techniques, Intellectual Property Rights and Its Legal Aspects, and Financial Modelling. Over the years, training content has been updated and improved.

As of 2014, YFYI has evolved from a business plan writing competition concept to an acceleration program that adopts a lean start-up methodology (YFYI 2.0). In 2015, the training curriculum, eligibility, and evaluation criteria were changed at YFYI by benchmarking the acceleration programs in the world. This year, entrepreneurs joined a Boot Camp, where intensive mentoring was provided along with Story Telling, Team, Customer Persona, Customer Interview, Media Usage, Funnel Metrics, Pitch Deck and Validation of Unique Value Proposition, Market Analysis, Hyper Responsive Buyers and A/B Testing, Minimum Viable Product, and Customer Journey Mapping training courses.

After 2016, the program, which was re-shaped with the perspective of globalization, started to provide global entrepreneurship training courses within the cooperation of UC Berkeley Innovation Acceleration Group and Draper University (YFYI 2.1).

#### 2.3.2.5. YFYI Final Ceremony

YFYI started as a competition with only one grand prize in 2005, and only four teams were eligible for the final ceremony. As of 2008, the special category awards were added, and 6+ teams started to pitch on the stage in the final ceremony. After 2014, the final ceremony grew over the years and was transformed into a Demo Day, where more than 15 teams pitch and more than thousands of people come to watch (YFYI 2.0). At this final ceremony, teams pitch their ventures in front of the ecosystem actors; business angels, venture capitalists, mentors, corporate executives, start-up founders, university students, and press.

#### 2.3.2.6. Evolution of YFYI: A Hybrid Model Combining the Competition and Acceleration

YFYI which is established by ODTU TEKNOKENT in order to raise awareness between Middle East Technical University students and support technological business ideas has evolved as Turkey's entrepreneurship and innovation competition which is open to all university students, graduates and newly established technology companies in Turkey.

At first, the competition was open only to METU students. In subsequent years, it was sufficient to have one METU student in the team to apply for the competition to spread the competition to other university students. At present, there is no requirement of being a METU student in the teams for the application.

In the first years of YFYI, one-month-long training and entrepreneurial seminars about writing a business plan, law, accounting, and presentation were given to participant teams. Over the years, the educational content has been enriched, and the mentoring period has been prolonged by taking into account world trends and participant ventures' needs.

The term accelerator began degrading in value due to overuse, and after so many old versions (mostly incubators and or business plan competitions) began calling themselves accelerators without changing much of their previous structure or mindset. After 2014, METU Technopolis positioned YFYI as an accelerator while although it does not meet all of the below criteria, most notably capital financing, defined by GAN Network. Whereas, in 2016, METU Technopolis established a separate investor and accelerator company, Growth Circuit, which has an international focused accelerator bearing most of the features of an accelerator. In this respect, it may be meaningful to position YFYI as a pre-program, creating a deal-flow to Growth Circuit Accelerator.

Global Accelerator Network GAN Criteria for Qualification of an Accelerator;[12]

- Operate a 3-6 month long program.
- Provide some seed capital to their founders.
- Take a small amount of equity (usually ~6%) and overall have terms that are favorable to entrepreneurs.
- Take no less than five and no more than 12 companies at a time.
- Surround those companies with 40-80 mentors.
- Have funding for a two-year runway of the program.
- Have physical space available for their program.
- Have a strong management team.

Although YFYI resembles an acceleration program with features such as giving training on entrepreneurship, mentoring, and networking support in a limited time frame, it is in the form of a competition in which there is an election process with judge assessment and an award ceremony for initiatives selected by the judge.

[12] https://www.gan.co/data/2019-infographic/

# CHAPTER 3

# METHODOLOGY

## 3.1. The Purpose of the Research

The entrepreneurship ecosystem in Turkey since the 2000s has expanded and developed with the participation of supporting organizations and institutions, universities, the technoparks, the private sector, and foundations. YFYI, which started to be organized in 2005, has played an essential role in the formation of the entrepreneurial ecosystem in Turkey and has been one of the structures supporting the development of this ecosystem for 13 years.

The main objectives of this study are to investigate the effect that YFYI has had with examples and survey-based statistics and examine whether there is a significant difference between awardees vs. finalists.

## 3.2. The Data

### 3.2.1. Acquiring and Organizing the Data

The study aims to investigate the effect of entrepreneurship competitions or programs on encouraging entrepreneurship in the case of the New Ideas New Businesses entrepreneurship program (YFYI). With this intention, information and data about the program have been requested from METU Technopolis, which is the organizer of the program, regarding the program application and participant data, training curriculum, eligibility and selection criteria, award-winning teams data and the data of the teams that established companies.

Within the 13 years of the program, since more than one data management system has been used for applications and program management, the documents and the information contained therein were stored in different formats in each cohort. Therefore, the data files retrieved from METU Technopolis have been examined separately for each cohort, and the below-mentioned information about the teams was filtered and standardized in a single file manually.

Informations below were examined for each cohort:

- The educational background of each team members who applied to the competition,
- team leader information,
- the category they applied and proceed,
- the project brief information,
- the finalist and the award-winning teams' information

The information obtained was sufficient for analyzing and gathering the general information of the entrepreneurial teams graduated from the YFYI program and continued their entrepreneurial journey, but did not include the information about the success of the established companies. For this reason, the current job profiles of the listed team members who reached the finals in YFYI have been analyzed individually on LinkedIn. With this analysis, each individual was grouped into nine different categories according to their job profiles and backgrounds. Those groups are;

a. Co-Founder / Founder
b. Employed
c. Academician
d. Ex-Founder, Now Employed
e. Ex-Founder, Now Academician
f. Ex-Employed, Now Co-Founder
g. Ex-Academician, Now Co-Founder
h. Co-Founder + Employed
i. Co-Founder + Academician

Through the preliminary LinkedIn search, it was determined that n=370 out of N=972 people who participated in the YFYI program between 2005 and 2018 got to the finals.

$m_1$=196 out n=370 experienced entrepreneurship by establishing a company after graduating from the YFYI program. 96,4% of these 196 people, 189 people in total, were reached via LinkedIn, the survey was sent, and $x_1$=127 samples were collected.

$m_2$=114 out n=370 people are those who have not experienced entrepreneurship after participating in the program. 101 out of 114 people were contacted, and $x_2$=49 samples were collected.

The total number of sample data was ($x_1$=127) + ($x_2$=49) = (X=176)

No information was found via an online search for m3=60 finalists out of n=370. The majority of those non-accessed people were women. It is estimated that the change of surname after marriage can be the reason for this.

An additional online survey has been prepared and sent to the finalists via LinkedIn for data enhancement and validation.

## 3.3. The Survey

### 3.3.1. Survey Design

In the Global Entrepreneurship Monitor report, early-stage entrepreneurial activity is defined as the period immediately after the establishment of the company.[13] Correspondingly, in this study, the person who founded a company is defined as the person who has an entrepreneurial background.

[13] https://www.gemconsortium.org/report/gem-2018-2019-global-report

In this respect, the program finalists were divided into two groups according to their entrepreneurial backgrounds:

a. Those who experienced entrepreneurship by establishing a company
b. Those who did not establish any company

The survey was sent to both groups. The aim of the survey is to find out the demographic information, additional information about the company they established (if they established), and to find out whether the YFYI program had a positive impact on their entrepreneurial stories or their perspectives on intrapreneurship and innovation.

The survey consists of five sections. In the first part, demographic characteristics of the subject such as age, gender, educational status, educational background, and current job profile were asked.

The second part of the survey was designed to find out if there is a link between the YFYI award decision mechanism and entrepreneurship. In this section, it was questioned whether the team received an award or not and established a company after the program.

The third part is the section where the participants are asked information about the company they founded after their graduation from the YFYI program. In this section, 15 questions investigating;

- the year of establishment of the company,
- where it was established,
- whether it is still active,
- the number of employees,
- the company's annual return in 2018,
- whether it received governmental support,
- whether it received investment,
- whether the company is working in a similar area with the YFYI project

- whether the participant has established more than one company

were asked.

The fourth part is investigating the opinions and suggestions of participants about YFYI and its contribution to their entrepreneurship or intrapreneurship career. On this part, there were questions designed to understand the entrepreneurialism in the individuals.

The last section is designed to learn general opinions and suggestions and contact information of the participant.

All sections and questions of the survey are available in APPENDIX C and D.

# CHAPTER 4

# ANALYSIS

## 4.1. Participant Characteristics

A total of 176 YFYI finalists participated in the survey. The results of the survey were analyzed under four different groups.

a. All finalists (X=176)
b. Finalists who have entrepreneurial background[14] ($x_1$=127)
c. Finalists who have no entrepreneurial background ($x_2$=49)
d. Companies established by the finalists after YFYI participation ($x_{1,1}$= 64)

According to the survey results, 30 of the survey respondents identified themselves as either entrepreneur or former entrepreneur among $x_2$=49 samples who predefined as finalists with no entrepreneurial background through LinkedIn pre-screening. However, in the same survey, these 30 people reported that they did not establish a company after participating in the YFYI. LinkedIn profiles of these 30 people have been re-examined to see if they established a company before YFYI, but no supporting information was found in this respect. Therefore, in this , these individuals were examined in the category of those who do not have an entrepreneurial background.

[14] In this study, the entrepreneurial background is regarded as having established a company.

### 4.1.1. Demographic and Job Profile Characteristics of All Participant Finalists

The characteristics like gender ratio, age distribution, education, and job profiles of all participants (X=176) are examined in this section. The gender ratio of survey respondents is found to be 13,1% Female and 86,9% Male (see Figure 4.1).

Figure 4.1: Gender Distribution of Survey Respondents

If we examine the gender ratio of those who have entrepreneurial backgrounds by establishing a company among the survey respondents, we can observe that the ratio of female entrepreneurs decreased to 9,9% (see Figure 4.2). According to the *Women Entrepreneurship Report* of Start-ups Watch (2019), the average ratio of female-founded start-ups in 2010 to 2018 is 14%.

Figure 4.2: Gender Distribution of Respondents Who Has Entrepreneurial Background

It can be observed that the majority of the respondents are aged between 25-34 from the Age and Gender Distribution graph (see Figure 4.3).

Figure 4.3: Age and Gender Distribution of Survey Respondents

According to the survey results, the respondents who have completed their undergraduate or graduate degrees are 85,2% of the total (see Figure 4.4).

Figure 4.4: Education Level of Survey Respondents

YFYI applications were only open to METU students in its first years. In the following years, this rule expanded to include at least one METU student in the team. After 2010, this rule was abolished entirely, and the program applications became open to every university graduate or student. Therefore, it is not surprising that the survey participants were mostly METU graduates (see Figure 4.5).

Figure 4.5: Distribution of Survey Respondents by University

YFYI aims to support entrepreneurs to realize their technology-based business ideas. In this respect, as can be seen from Figure 4.6, a significant majority of the participants, 61,9%, were engineering graduates. Fundamental Sciences rank second with 12,5%.

Figure 4.6: Distribution of Survey Respondents by Field of Education

154 of the survey participants stated that they have an entrepreneurial background, and 22 of the participants affirmed that they did not experience entrepreneurship professionally in their life (see Figure 4.7). However, 3 of these 22 survey respondents also stated that they established a company after YFYI. Therefore, these 3 people were examined in the category of those who have an entrepreneurial background in Section 4.1.2.

Figure 4.7: Responses of Survey Participants Regarding Their Entrepreneurship Experience

Out of 154 people who stated that they have entrepreneurial background, 70 of them defined themselves as '*Entrepreneur'*, 42 of them as '*Former Entrepreneur now White Collar'*, 19 of them as *'Academic Entrepreneur',* 6 of them as '*Former Entrepreneur now Academician'*, 6 of them as '*Serial Entrepreneur'*, 5 of them as '*Former White Collar now Entrepreneur'*, 2 of them as *'Former Public Official now Entrepreneur'*, 2 of them as *'Former Entrepreneur now Public Official'*, 1 of them as *'Former Academic Entrepreneur now White Collar'*, and 1 of them as *'Entrepreneur and White Collar'* (see Figure 4.8).

Figure 4.8: Responses of Survey Participants Regarding Their Job Profiles

### 4.1.2. Demographic and Job Profile Characteristics of Participants Who Have Entrepreneurial Background

The gender ratio of survey respondents who have an entrepreneurial background is 12,6% Female and 87,4% Male (see Figure 4.9). The data shows similar characteristics with the gender ratio of all survey participants (see Figure 4.1).

Figure 4.9: Gender Distribution of Survey Respondents Who Have Entrepreneurial Background

When the educational backgrounds of the participants with an entrepreneurial background are examined, a slight increase in the tendency of these people not to continue their higher education is observed (see Figure 4.10).

Figure 4.10: Education Level of Survey Respondents Who Have Entrepreneurial Background

72,4% of the survey participants with an entrepreneurial background still define themselves as *'Entrepreneur'*, *'Academic Entrepreneur'*, *'Serial Entrepreneur'*, '*Former White Collar Now Entrepreneur'*, *'Former Public Official Now Entrepreneur'* or *'Entrepreneur and White Collar'* and they actively continue their entrepreneurial journey. Within this group, although they established companies after YFYI, 3 people in total identified themselves as *'Freelancer'*, *'White Collar'*, or *'Academician'* rather than identifying themselves as former entrepreneurs (see Figure 4.11).

Figure 4.11: Responses of Survey Participants Who Have Entrepreneurial Background Regarding Their Job Profiles

### 4.1.3. Demographic and Job Profile Characteristics of Participants Who Have No Entrepreneurial Background

When the gender ratio of those who have no entrepreneurial background is examined, the female ratio is found to be slightly higher than those who have an entrepreneurial background (see Figure 4.12).

Figure 4.12: Gender Distribution of Survey Respondents Who Have Entrepreneurial Background

The rates of graduate and doctorate graduation are higher in the participants who have not experienced entrepreneurship after the participation of YFYI (see Figure 4.13). In this context, it can be said that YFYI finalists who do not experience entrepreneurship tend to continue their higher education.

Figure 4.13: Education Level of Survey Respondents Who Have No Entrepreneurial Background

61,2% of respondents call themselves *'Former Entrepreneur'* or *'Entrepreneur'* although they have not established any company before or after the program graduation according to the LinkedIn pre and post-screening and their survey results (see Figure 4.14). This ratio shows that more than half of the survey respondents who actually did not establish any company consider themselves as a real entrepreneur and confidently define themselves as an entrepreneur after graduation of YFYI. The ratio was calculated by summing the number of survey respondents who identified themselves as *'Former Academic Entrepreneur Now White Collar'*, *'Former Entrepreneur Now Academician'*, *'Former White Collar Now Entrepreneur'*, *'Entrepreneur'*, *'Academic Entrepreneur'* and *'Former Entrepreneur Now White Collar'*.

Besides, the results indicate that 63,3% of survey participants, who did not engage in entrepreneurship, currently work in the private sector (The ratio was calculated by summing the number of survey respondents who defined themselves as *'Former Academician Now White Collar'*, *'Former Academic Entrepreneur Now White*

*Collar'*, *'White Collar'* and *'Former Entrepreneur Now White Collar'*) (see Figure 4.14).

Figure 4.14: Responses of Survey Participants Who Have No Entrepreneurial Background Regarding Their Job Profiles

## 4.2. Characteristics of the Companies Established After YFYI

81 of all survey participants (X = 179) who recorded as either experienced or not experienced in entrepreneurship in LinkedIn pre-screening stated that they established a company after YFYI graduation. In other words, 46,0% of the survey respondents indicated that they had established a company after YFYI (see Figure 4.15). How this ratio changes among award-winning finalists are explained in Section 4.4.1.

Figure 4.15: Percentage of Survey Respondents Establishing a Company

The characteristics of 64 companies were obtained from 81 respondents/founders. The difference between the number of companies established and the number of founders is because some individuals are members of the same team and formed a company together.

According to the survey results, only 17,3% of the finalists of YFYI establish their first company with a project different from the project that they participated in the program (see Figure 4.16).

Figure 4.16: Distribution of Companies Founded by Respondents According to Their Field of Activity

The positive impact of government entrepreneurship supports for nascent companies is observed in Figure 4.17. A significant number of YFYI companies surveyed reported that they benefited from government funds.

Figure 4.17: Distribution of Established Companies Receiving Government Funds

In terms of investment, the scenario is the opposite of government support. This time we observe that the proportion of YFYI companies that did not receive any investment is 73,4%, which is quite large (see Figure 4.18).

Figure 4.18: Distribution of Established Companies Receiving Investment

The survey results show that 59,4% of the YFYI companies surveyed were established at METU Technopolis (see Figure 4.19). According to the answers given in the survey, 8 of 38 companies established in METU Technopolis were officially closed, 9 of them are inactive but not officially closed, and 21 of them are active and continue their commercial activities. The survey results show that 2 of the 21 active YFYI companies established in METU Technopolis have moved outside of the technology development zone, the rest continue their commercial activities in METU Technopolis. Any company established in METU Technopolis and moved to another technology development region was not observed.

Figure 4.19: Address of the First Company Established After YFYI

Figure 4.20: The Current Address of the First Company Established After YFYI

76,6% of the established YFYI companies still appear to be alive, but 18,8% of these companies are inactive but not officially closed. If we do not take into consideration to these companies, we can say that 57,8% of the companies surveyed are active and continue their business activities. To put it in numbers, according to the survey results, 37 of the 64 companies surveyed are active, whereas 12 of them are not active but not officially closed, and 15 of them were formally closed (see Figure 4.21).

Figure 4.21: The Status of the First Companies Established After YFYI

59,5% of the 37 companies established after YFYI, which are still active and continue their business operations, consist of 1-5 employees (see Figure 4.22).

Figure 4.22: Employee Numbers of the First Companies Established and Active After YFYI

The weighted average method was used to calculate the average number of employees of the surveyed active YFYI companies. The midpoint of the number of employees selected in the survey was used in the calculation. According to the results of the survey, the average number of employees of the active YFYI companies established between 2005 and 2018, when the YFYI program was carried out, was calculated as 7,65 by weighted average method (see Table 4.1). However, this calculation also includes nascent companies that do not have enough time to grow their employee number. Therefore, we used the weighted average method to determine the number of employees of the surveyed active firms established between 2005 and 2010. With this method, the average number of employees of active YFYI companies in 9+ years was found to be 26,75 (see Table 4.2).

Table 4.1: Weighted Average Calculation of Average Employee Number of Active YFYI Companies

| Employee # | Avg. Emp. # | # of Companies | % of Companies | Weighting Factor | Avg. Emp. # x Weighting F. |
|---|---|---|---|---|---|
| 0 | 0 | 1 | 3% | 0,03 | 0,00 |
| 1-5 | 3 | 22 | 59% | 0,59 | 1,78 |
| 6-10 | 8 | 8 | 22% | 0,22 | 1,73 |
| 11-20 | 15.5 | 5 | 14% | 0,14 | 2,09 |
| 20-50 | 35.5 | 0 | 0% | 0,00 | 0,00 |
| 51-100 | 75.5 | 1 | 3% | 0,03 | 2,04 |
| | | | | **Weighted Average** | **7,65** |

Table 4.2: Weighted Average Calculation of Average Employee Number of Active YFYI Companies Established Between 2005 – 2010

| Employee # | Avg. Emp. # | # of Companies | % of Companies | Weighting Factor | Avg. Emp. # x Weighting F. |
|---|---|---|---|---|---|
| 0 | 0 | 0 | 0% | 0,00 | 0,00 |
| 1-5 | 3 | 0 | 0% | 0,00 | 0,00 |
| 6-10 | 8 | 2 | 50% | 0,50 | 4,00 |
| 11-20 | 15.5 | 1 | 25% | 0,25 | 3,88 |
| 20-50 | 35.5 | 0 | 0% | 0,00 | 0,00 |
| 51-100 | 75.5 | 1 | 25% | 0,25 | 18,88 |
| | | | | **Weighted Average** | **26,75** |

### 4.3. Assessment of YFYI Participant Satisfaction Survey Questions

Participant satisfaction is a necessary criterion for acceleration programs, which are mainly carried out through sponsorships, and essential for their long term success. Within this scope, the participants were asked to express their opinions about the YFYI program with a 1-5 rating scale. This section of the survey consists of five statements for scoring:

1. 'I am glad that I participated in YFYI.'
2. 'After YFYI, my knowledge/interest and motivation towards entrepreneurship increased.'
3. 'I recommend YFYI to my friends.'
4. 'I would not be an entrepreneur if I did not participate in YFYI.' (Only the participants who have established a company after YFYI participation scored this statement.)
5. 'My experience at YFYI made me more open to innovation within the organization I work for.' (Only the participants who did not establish a company before scored this statement.)

In this section of the survey, the results were measured by calculating the Net Promoter Score (NPS) and the Customer Satisfaction Score (CSAT), which are the two most commonly used key performance indicators in order to monitor the satisfaction levels of the customers.

NPS is a measure of the general allegiance of the customer to the product or service. The NPS is calculated in the 1-5 scoring system, as described below.

Net Promoter Score (NPS) = (% Promoters) - (% Detractors).[15]

Promoters: Loyal participants who will more likely refer the program to others. Respondents counted in this group tend to give a score of 5.

Passives: Satisfied but unenthusiastic participants susceptible to competitive offers. Respondents in this group tend to give a score of 4.

Detractors: Dissatisfied participants who share negatives thoughts about the program. Detractors are the respondents who selected values 1 to 3. [16]

The NPS ranges from -100 to 100. Positive NPS is regarded as *'Good'*, over 30 means *'Great'*, and more than 70 is considered as *'Excellent'* (see Figure 4.23). A score over 70 implies that the customers are pleased and refer to the product or service by generating positive word-of-mouth.

[15] https://www.netpromoter.com/know/
[16] https://www.mysurveylab.com/en/help/survey-questions/net-promoter-score-nps/

Figure 4.23: NPS Benchmark[17]

CSAT is used to measure whether the customers are satisfied with the product or service. On a scale of 1 to 5, responses are evaluated according to the scores given by the respondents as follows; Very unsatisfied (1), Unsatisfied (2), Neutral (3), Satisfied (4), Very satisfied (5). It is measured by the percentage of the total number of *'Satisfied'* and *'Very Satisfied'* responses, divided by the total number of responses.[18] Table 4.3 summarizes the satisfaction levels of the respondents about the YFYI program. According to the CSAT analysis obtained from the YFYI participant satisfaction question, which is statement A in Table 4.3, YFYI finalists who participated in the survey are generally happy to participate in the program with CSAT: 85%.

Considering the high number of scores 4 and 5 given by the survey participants and 74% CSAT Performance Indicator, it is possible to say that YFYI increased the interest and motivation of the participants towards entrepreneurship (see Table 4.3, Statement B).

It is among the objectives of YFYI to promote entrepreneurship among university students, raise awareness of entrepreneurship, and support the transformation of

[17] https://www.retently.com/blog/good-net-promoter-score/

[18] https://www.questionpro.com/blog/csat-vs-nps-surveys/

innovative ideas into successful business models. From this perspective, it was expected that the scores for the statement D "*I would not be an entrepreneur if I did not participate in YFYI*" would be higher considering that the entrepreneurs who participated in YFYI experienced entrepreneurship for the first time. This result suggests that survey respondents apply to the program as self-motivated to become an entrepreneur. In addition to that, the statement was sent to the biased poll group, which consists of the YFYI finalists who have an entrepreneurship background to receive their assessments (see Table 4.3, Statement D).

When the statements B and D were examined together, it was understood that the participants of the program decided to be an entrepreneur before they apply to the program. However, it can be said that YFYI increased their motivation towards entrepreneurship.

According to the customer loyalty rates measured by NPS for the recommendation statement (Statement C), 77% of the survey participants reported that they could recommend YFYI by scoring 4 and 5. If we examine the result of NPS, which is one of the most used KPIs for customer loyalty calculation, we can state that the survey participants' loyalty to the YFYI program constitutes a positive scenario with NPS=31, but it is open for improvement (see Table 4.3, Statement C). Incubation supports given by METU Technopolis to the participants after the program, continuation of follow-up, mentoring and business development support after the program and the return of the graduates to the program for experience sharing and collaboration may increase the participants' loyalty to the program. These issues are open to further investigation and discussion.

CSAT=63% obtained from the analysis of the scores given by the individuals who did not establish any company after their participation in YFYI and continued their career as academic, private sector or public employee for the statement E;

*"My experience at YFYI made me more open to innovation within the organization I work for*".

This CSAT score point out that there is a positive relationship between the program participants' orientation towards intrapreneurship and their openness to innovation and their participation in the program (see Table 4.3, Statement E).

Table 4.3: Satisfaction of Respondents with YFYI Program

| **A) I am glad that I participated to YFYI** | | |
|---|---|---|
| **Scores** | **Percentage** | **Number** |
| 5 | 62% | 109 |
| 4 | 23% | 41 |
| 3 | 9% | 16 |
| 2 | 4% | 7 |
| 1 | 2% | 3 |
| CSAT: 85% | | |
| | | |
| **B) After YFYI, my knowledge / interest and motivation towards entrepreneurship increased** | | |
| **Scores** | **Percentage** | **Number** |
| 5 | 44% | 78 |
| 4 | 30% | 52 |
| 3 | 18% | 31 |
| 2 | 5% | 9 |
| 1 | 3% | 6 |
| CSAT: 74% | | |
| | | |
| **C) I recommend YFYI to my friends** | | |
| **Scores** | **Percentage** | **Number** |
| 5 | 54% | 95 |
| 4 | 23% | 41 |
| 3 | 10% | 17 |
| 2 | 8% | 14 |
| 1 | 5% | 9 |
| NPS: 31 CSAT: 77% | | |

Table 4.4 (continued): Satisfaction of Respondents with YFYI Program

| | | |
|---|---|---|
| **D) I would not be an entrepreneur if I did not participate in YFYI** | | |
| **Scores** | **Percentage** | **Number** |
| 5 | 6% | 8 |
| 4 | 6% | 8 |
| 3 | 8% | 10 |
| 2 | 22% | 28 |
| 1 | 57% | 73 |
| CSAT: 13% | | |
| | | |
| **E) My experience at YFYI made me more open to innovation within the organization I work for** | | |
| **Scores** | **Percentage** | **Number** |
| 5 | 29% | 14 |
| 4 | 35% | 17 |
| 3 | 22% | 11 |
| 2 | 12% | 6 |
| 1 | 2% | 1 |
| CSAT: 63% | | |

## 4.4. Data Analysis

### 4.4.1. Difference Between Awardees vs. Finalists

Whether the award mechanism of the YFYI program encourages entrepreneurship by means of company establishment is one of the research question that comes from the aims of this study. Within this framework, YFYI finalists were asked whether they received an award in the program finals and established a company after the program

in the survey. In the final ceremony of YFYI, the teams with the highest jury evaluation are given monetary and in-kind awards to encourage them to establish a company. For this reason, we expected that the rate of establishing company among those who receive awards are higher than those who are finalists who do not receive any awards.

According to the results of the survey, 54 of the 113 people who received awards in the YFYI final ceremony established a company, and the remaining 59 stated that they did not establish any company after the program. 27 out of 63 people who participated in the survey and did not receive an award in the YFYI final stated that they founded a company after YFYI (see Table 4.5: Distribution of Participants by Award Status and Company Establishment).

Table 4.5: Distribution of Participants by Award Status and Company Establishment

| **Award-Winning Survey Participants** | **Number** | **Percentage** |
|---|---|---|
| Established a company | 54 | 47,8% |
| Did not established any company | 59 | 52,2% |
| Total number of awarded participants | 113 | |
| **Non-Award-Winning Survey Participants** | **Number** | **Percentage** |
| Established a company | 27 | 42,9% |
| Not established any company | 36 | 57,1% |
| Total number of awarded participants | 63 | |

### 4.4.2. Two Proportion Z-Test Results

In this study, a two proportion hypothesis z test has been done in order to see if we have statistically significant evidence to indicate that there is a positive relationship between winning an award and establishing a company.

The null hypothesis ($H_0$) was identified as *'There is no difference between the participants of the survey who have won awards and found a new company'*. With this hypothesis, it is assumed that the true proportion of founders who received awards is

equal to that of non-awarded founders. An alternative hypothesis was set as *'The true proportion of award-winning company founders is higher than those not awarded'.*

$H_0$: $P_{\text{award-winning founders}} = P_{\text{non-award-winning founders}}$

$H_a$: $P_{\text{award-winning founders}} > P_{\text{non-award-winning founders}}$

Before performing the z-test, it was checked whether the following conditions were met:

- The majority of the population that we could reach have completed the survey
- The sample size is no more than 10% of the population.

Significance level was set as $\alpha = 0{,}05$

$$z = \frac{(\hat{P}_{\text{award-winning founders}} - \hat{P}_{\text{non-award-winning founders}})}{\sigma_{\hat{P}_{\text{award-winning founders}} - \hat{P}_{\text{non-award-winning founders}}}}$$

Z-Score was calculated as 0,63 (see APPENDIX A for the calculation details)

By looking at the Standard Normal Distribution Table given in APPENDIX B, the p-value was found as 0,2643.

$$p - value = P(z \geq 0{,}63) = 0{,}2643$$

Since the p-value=0,2643 is higher than the significance level $\alpha = 0{,}05$, we fail to reject our null hypothesis ($H_0$).

According to the survey results and two proportion z-test calculations, there is not enough evidence to indicate that *'The true proportion of award-winning company founders is higher than those not awarded'.*

### 4.4.3. Winning an Award and Being a Serial Entrepreneur

6 people identified themselves as serial entrepreneurs among 176 participants. The survey data show that 5 of these 6 entrepreneurs, 83%, were awarded in the YFYI final. Among the survey participants, some individuals did not identify themselves as *'Serial Entrepreneur'* but established more than one company after graduating from YFYI.

If we define serial entrepreneurship as establishing more than one company, the number of serial entrepreneurs in the sample population increases to 23 out of 176. The survey results indicate that 18 of these 23 people were awarded, and the remaining 5 people did not win an award in YFYI final.

# CHAPTER 5

# INTERVIEWS

## 5.1. ISSD

Çağrı Yüzbaşıoğlu, the co-founder of ISSD, reached the finals in the general and defense categories with two projects in 2010. Their defense project was about acoustic target detection and tracking for border security. They won the first prize with this project and received 50.000 Turkish Liras cash support. Whereas, due to the low number of actors working on the defense industry and the lack of appetite of those government-supported big enterprises for cooperation, the project discontinued. Their second project was on medical image processing. The common point of both projects was image processing, and image processing is still the company's core technology, although the company pivoted to a different field of activity as smart traffic management and control systems that have less regulation and faster certification process. ISSD's current flagship product is a dynamic traffic junction control units.

They founded their company in 2009, and in the second half of 2011, they started selling and commercializing their products. The company achieved rapid growth in 2013 and became the Turkish market leader in the sector in 2015. After 2015, they started to produce traffic control systems with the license plate recognition system they developed. In 2016, they became the domestic market leader in traffic management systems. After 2016, the company expanded its product network with traffic junction designs and traffic control centers. In 2019, they started to develop projects in the field of logistics. Today, they have a market share of 30% in traffic control systems.

They have 65 full-time workers in METU Technopolis and have a separate manufacturing company with 50 employees in OSTIM. Both companies have an

annual turnover of around 60 million TL, and %8 of this comes from overseas sales. They have made a strategic partnership with the importer company they work with.

**Their intention to apply YFYI:**

They have a company when they apply to YFYI. Mr. Yüzbaşıoğlu stated that there are three reasons for applying to YFYI. The number one reason to apply YFYI was to get an office space in METU Technopolis. Before the program, they were in Bilkent Cyberpark, and they wanted to move to METU Technopolis to reach its entrepreneurial ecosystem. However, there was no office space in METU Technopolis, especially for external applications. The second reason was the cash prizes given at the end of the competition, and the third reason was to benefit from the mentoring support.

**Supports given through YFYI process:**

They did not start a commercial operation when they applied to YFYI. Co-founders, as engineers, did not have any knowledge about business management. As Mr. Yüzbaşıoğlu stated, YFYI brought them a lot in terms of business management and gave invaluable mentoring support. The cash prize they won from the competition met their 6-month cash needs, which were very significant in terms of speeding their business. Mr. Yüzbaşıoğlu defined YFYI as a critical milestone for their success, and he continued: "Without the program, we would have been at some point, but we could not have achieved this success at this speed".

**The contribution of YFYI to the team after the program:**

YFYI's mentoring support, which was the most valuable asset for them, continued for years after the program. Besides, after YFYI, they moved their company to METU Technopolis and reached its enriched entrepreneurial network. In addition to that, Mr. Yüzbaşıoğlu emphasized that since METU is one best technical universities in Turkey, being recognized as a METU Technopolis company gives extra reputation especially for those who are working on a critical high technology field.

**Giving back to the ecosystem: Alumni Sponsorship**

ISSD is one of the companies sponsoring the program as a graduate start-up. Mr. Yüzbaşıoğlu attributes their decision to sponsor YFYI for the following aims:

- Paying back to the ecosystem in gratitude for the support they have gotten.

- Encouraging in-house entrepreneurship. Mr. Yüzbaşoğlu wants to increase entrepreneurship inside or outside of the company. He not only encourages his employees to become entrepreneurs but also becomes the first investor of the company founded by his employees. Thus, he cares about sponsoring an innovation competition and giving awards on that stage to create internal awareness towards entrepreneurship.

They invested in one of the YFYI start-ups, which was established as a spinoff of ISSD, and they are using the product of one of YFYI start-ups.

## 5.2. BTech

Kuntay Aktaş, the cofounder of Btech, participated in YFYI twice in 2014 and 2015. The first project he applied for YFYI was about 3D prostheses, which is still the main activity-area of BTech now. His second project was the navigation system for spine surgery. The team is currently continuing with both projects. Research and development activities of the navigation system project are continuing, but they commercialized the first project.

They also participated in the TeknoJump program of METU Technopolis twice, and through the program, they took mini MBA courses in the USA.[19] Mr. Aktaş stated that, as an engineer, he learned business development with Teknojump program. Before

[19] TeknoJump is the mini MBA program of METU Technopolis for early-stage start-ups focusing on global markets.

experiencing the USA with the Teknojump, all the teams expected to return from the USA by receiving an investment.

The company continues in the same field with its application to YFYI. However, they established a spin-off company with governmental funds and supports and wants to continue to establish more.

Established in 2014, the company's turnover in 2018 is around 3-5 million TL, and it is continuing to grow. The founding partners of the company met at METU Entrepreneurship Center's *'Find Your Cofounder'* event.

**Their intention to apply YFYI:**
At that time, they had just established their company in Hacettepe Technopolis, but they wanted to apply to METU Technopolis for office space to access the entrepreneurial ecosystem. However, they realized that as a newly established company, they did not have any answers to questions about the success figures of the company in the application form for METU Technopolis.

He stated that METU Technopolis, unlike other technoparks, has an ecosystem rather than a real estate-tenant relationship. In this respect, their intention to apply to YFYI is to be closer to the METU ecosystem, to have an office in METU Technopolis, to expand our network, and to increase our brand awareness. In those days, he thought their sales would increase if people heard the company at the YFYI final ceremony.

**Supports given through YFYI process:**
YFYI was a program for them where they got mentoring support and had the opportunity to be announced to the crowd at the final ceremony.

**The contribution of YFYI to the team after the program:**

- They used the prestige of being awarded from METU and its reputable sponsor institutions.

- Their mentor, who was General Electric (GE) Turkey's Business Development Director at that time, in the YFYI process, is now their partner.
- They benefited from YFYI's network.

**The problems they faced after YFYI:**

They have serious problems in terms of bureaucracy as a healthcare start-up. According to Mr. Aktaş, access to decision making authorities is quite tricky, especially in this sector. He overcame this challenge by establishing a youth branch of a health industry employer union.

He believes that YFYI program mentors must have experience in entrepreneurship and especially for healthcare start-ups, getting mentorship support from experienced mentors in the sector and with the entrepreneurial background is significant for start-ups' and then program's success. He would like to get mentoring from the person who knows the regulations in the sector and sales executives knowing how to sell the medical products to the market. Based on his own experience, he thinks that a small amount of cash assistance to the teams receiving the USA camp award from YFYI will comfort the teams economically.

**Giving back to the ecosystem: Alumni Sponsorship**

Btech is one of the graduate companies sponsored back to YFYI. Mr. Aktaş stated that the cash prize they received from YFYI met much of their needs in that period, like lifeline support, and for this reason, they want to give back and contribute to the ecosystem. He also declared that being a sponsor to YFYI is also useful for them to benefit from the program's network.

### 5.3. Mobilus

Özgür Deniz Önür, the co-founder of Mobilus, is a team member of one of the finalists that participated in the first year of YFYI.

The project they applied for was the electronic tourist guide with a GPS device connected via Bluetooth since access to smartphones was limited at that time. They failed to continue the project due to the lack of technological infrastructure (lack of GPS on the phones at that time), wrong pricing policy, and the lack of talented people in the team to produce content. Their second project was a location-based promotion for shopping malls that sends automatic campaign messages to the phones of the people when they are nearby to the store. However, since people keep the Bluetooth function off by default on their phones in those times, their second project was also failed to commercialize.

Their company started to do funded research projects on video scanning while they were working on video archiving at TUBITAK. With the know-how they gained from these projects, they started to produce IP cameras for home security. They made a sales agreement with Turkcell, which is the largest telecommunication service provider in Turkey, with this project.

When they realized that the money spent on a baby was higher, they focused on that market. They differentiated themselves from standard baby monitoring cameras with face recognition, conveying a summary record of the critical moments of the day, capturing the image of a baby when he or she is smiling like a memory collector. After that, they received a USD 400,000 seed investment from an angel investor in 2015, and they started to produce and sell their first products.

Then, they did a crowdfunding campaign with Turkey's crowdfunding platform, Arı Kovanı, and this followed by the Kickstarter campaign. Afterward, they got EU Horizon 2020 Phase II funding, which stands for a critical milestone for them. If they could not get that support, they could be in financial difficulties and even go bankrupt.

They started to work with a new manufacturer in China by using the cameras produced by this manufacturer instead of the ones they used to custom made. Their production costs have fallen dramatically, and their profit margins rose as a result of this decision, which leads them to be able to sell their products in *ebebek*, Turkey's first and the largest online store in baby products.

They have come to a break-even point nowadays and are about to close a new investment round. Mobilus has a monthly turnover of 250, 000 TL, which is increasing rapidly month over month and eight full time, and four part-time employees are working at Mobilus.

**Their intention to apply YFYI:**

In 2005, they applied to the competition as 4 Ph.D. students and TUBITAK employees who wanted to leave TUBITAK and start their businesses. They were looking for opportunities to start a new business. As an officer receiving a regular salary every month, they needed a push to get out of their comfort zone. YFYI was the incentive that they were looking for, and they applied to the competition with the thought that they would establish an office in METU Technopolis with a starting capital. Similar to the results of the survey, he chose to be an entrepreneur before YFYI but the competition.

**Supports given through YFYI process:**

As stated by Mr. Önür, the biggest gain they get from the program was to learn how to present a business idea. Although they did not win a cash prize in YFYI, they received free office support and founded the company in METU Technopolis.

**The contribution of YFYI to the team after the program:**

They received ongoing support not specifically from the YFYI team but from METU Technopolis in general. After YFYI, as they are one of the companies in Technopark, the management team of METU Technopolis organized business meetings for them and ease the process of renting a new office space in the Technopark area.

According to Mr. Önür, being a METU Technopolis company gives more credibility inside of Turkey, although it does not have a significant advantage abroad.

They also participated in the TeknoJump program organized by METU Technopolis to explore the USA Market. They decided to concentrate the product on one customer segment as a result of the feedback they got from the mentors in the USA. When they examined the sales of their two cameras, one is expensive, and the other one is cheaper, they realized that customers prefer the expensive cameras to watch their babies and the cheaper cameras were chosen for home and store security. Thereby they realized that the budget allocated was much higher in baby vertical and focused on the baby market.

**The problems they faced after YFYI:**

After YFYI, they established a company and started to produce IP cameras for home usage with the know-how gained from research and development projects they carried out for a while. At those times, they were working with manufacturers in China, and they encountered economies of scale problem. Based on their customer feedback, it was required to place large-scale orders to go for product revisions. Since they faced a considerable number of requests from users about the product, they decided to produce their camera, which brought out the need for initial capital. However, due to the high production costs and their strategy to focus on the software apart from the hardware, it did not last long, and they started to work with a Chinese manufacturer again.

While they have to ship the products they have sold through a crowdfunding campaign, they learned that the Chinese manufacturer they work with went bankrupt.

**Recommendation for the future success of YFYI:**

They think that it would be a good idea to create a strong investor network, especially for the Demo Day.

### 5.4. Sim4Crew

The interview was conducted with YFYI's first term winner, Ahmet Bahadır Özdemir.

In 2009, he also won another entrepreneurship competition *'Bir Fikrin Mi Var'* with his digital signage for shopping malls project and got 1 million TL investment from six angel investors. The project pivoted to digital display for café and restaurants. This time they had a sellable product; the number of screens they set reached up to 400-500. Although they set a high number of displays to contracted places, they had trouble getting advertisements to show on these screens since they did not know much about how the advertising sector works.

In 2012, he quit this business and moved to Izmit, where his relatives live. His relatives were selling food to ships in ports. He came up with the idea of building an online global warehouse network for ship supply management. He started this business with a starting capital of 600 TL with the idea of capturing ships with satellite messages before they come to the port. He started to send text messages to ships days before they come into the port, asking whether they need any supplies or food for the crew and explaining that they could supply their needs at the port. In a short period, he began to receive positive answers and earn a commission from each sale as an intermediary between warehouses and captains.

Meanwhile, he decided to continue his education at METU. He reached USD 30 million gross sales, which count USD 1.5 million commission income in 1.5 years. Then, he outsourced software that automates the messages he sends to ships manually. In this way, the robot could reach 500 ships in 5 minutes, while he could reach 100 ships manually in one day. He left the university again and continued to work.

In the meantime, he realized that there was always a common question from the ships he worked with. It was about arranging a local sim card for the countries where the ship would arrive. He recognized the fact that connectivity, which is easy and accessible for people living in the city, is a challenge for crew who arrives in a new

country every five or six days. He realized that the crew has to buy a local sim card for each country they visited. Based on the problem of the crew, he established a new business in the field of telecommunication, called Sim4Crew, with the idea of producing a global sim card that connects to every network in the world. He began the business by giving this sim card along with the food supplies to the ships that he worked with. When he started earning income from this business, he sold the warehouse network company. He settled in Singapore, which is the center of shipping, to focus solely on the telecom business. Sim4Crew has reached 60,000 users in a short period and an annual turnover of USD 2.5 million.

In March 2019, he foresaw that the new e-sim card technology would adversely affect Sim4Crew, and he founded the world's first e-sim store, Airalo. Airalo received USD 150,000 in its pre-seed round from Antler and angel investors in the idea stage, and he recently secured USD 1.75 million.[20]

**Their intention to apply YFYI:**

He was 19 years old METU freshman when applied to YFYI. His father is well educated, but his relatives are uneducated and do not care about higher education. While his educated father was planning how to make payments at the end of the month, his uneducated relatives were rich people riding luxury cars. For this reason, he felt delayed in life while studying at the university. Instead of being a salaried employee, he always had the urge to do something. Then he saw YFYI flyer, and he applied to the competition with an idea of developing video black boxes for cars inspired by a video he watched. Cash awards and free office at METU Technopolis for three years were tempting for the team.

His team won the grand prize of YFYI in 2005, but due to lack of experience and lack of cash, the company closed down shortly.

[20] https://siliconcanals.com/news/airalo-first-esim-sim-store-telecommunication/

**Supports given through YFYI process:**

Since he was a very young freshman, he did not know anything about running a business. They got mentoring support from experienced technological company owners.

He won the cash award of 50.000 Turkish Liras and free office space for three years. However, they were able to use 35.000 Turkish Liras portion of the prize. The Technopolis Management gave 35.000 Turkish Liras of the cash prize and did not process any payment for the remaining part since the team was young and inexperienced. The management anticipated that the project would not be commercialized.

**The problems they faced after YFYI:**

Mr. Özdemir expressed his thoughts as "I thought everything would go well after winning the competition, but nothing went right. The time has taught us that ideation is poles apart from the execution".

Since they established a company at a very young age, they did not know how to manage a company, what obligations they had towards the government, what should be their marketing roadmap, what will be their product development strategy.

After winning the competition and establishing the company, the team realized that the 50,000 TL prize was not enough to produce a commercial prototype. At those times, the team was not capable of assessing that the prize won from the competition could be pre-seeded and they could receive seed investment for product development and commercialization. It is also clear that the investment ecosystem in Turkey was immature at that time, so they did not have many alternatives to develop their business.

# CHAPTER 6

# CONCLUSION

## 6.1. Discussion and Conclusion

Numerous academic studies in the field of entrepreneurship have shown that the importance of technology-oriented entrepreneurship for economic development is apparent. Entrepreneurship is not an easy way considering the high failure rate of technology start-ups. Liao, Welsch, & Moutray's (2008) paper summarized the significance of financial capital for the survival of the start-up, especially in its early years. Accordingly, various governmental financial support mechanisms went into operation to support technological entrepreneurship. Likewise, universities organized various entrepreneurship support programs and innovation and business plan competitions, established incubation centers, and even investment funds to commercialize the technology produced in the university. In this study, the contribution of YFYI, which is organized by METU and METU Technopolis as Turkey's first entrepreneurship competition, to entrepreneurship was investigated.

YFYI, which started as an entrepreneurship competition in order to spread entrepreneurship among university students in 2005, evolved towards an acceleration program following the developments in the world. In this respect, the YFYI program changed over the years has been divided into four phases.

- YFYI 1.0: Entrepreneurship competition for METU students and graduates
- YFY 1.1: Turkey's entrepreneurship competition
- YFYI 2.0: Introduction to the acceleration program
- YFYI 2.1: Global oriented acceleration program

Table 6.1: Review of YFYI According to Competition and Acceleration Characteristics

| | | YFYI 1.0 – 1.1 | YFYI 2.0 – 2.1 |
|---|---|---|---|
| Competition | Short-term and time-limited | ✓ | × |
| | Monetary reward | ✓ | ✓ |
| | Entrepreneurship training or workshops | ✓ | × |
| | Mentoring support (limited) | × | × |
| | Networking support | ✓ | ✓ |
| | Executed with sponsorships | ✓ | ✓ |
| | Special award categories for sponsor institutions | ✓ | ✓ |
| | Allows free usage of incubation space (if any) | ✓ | × |
| | Jury selection | ✓ | ✓ |
| | Awards ceremony | ✓ | ✓ |
| | The aim is to reward successful initiatives | ✓ | ✓ |
| | The participant aims to win the grand prize | ✓ | ✓ |
| | Competition between peers | ✓ | ✓ |
| Accelerator | Relatively long but time-limited (3-6 month) | × | ✓ |
| | Seed funding in exchange for equity | × | ~ |
| | High-quality training program | × | ✓ |
| | High-level mentoring support | × | ✓ |
| | A strong network for both business development and investment | × | × |
| | The investment structure makes the program sustainable but may require sponsorship for organizational expenses | × | × |
| | No award mechanism | × | × |
| | Allows usage of incubation space (if any) | × | ✓ |
| | Selection based on deal flow | × | ~ |
| | Demo Day | × | ✓ |
| | The aim is to accelerate either growth or failure of a start-up | × | ✓ |
| | The participant aims to test the idea/product | × | ~ |
| | Learning from peers | × | ✓ |

Although YFYI 2.1 is defined as an acceleration program, it still bears some contest features and does not have all of the acceleration program features reviewed in section *2.1. Innovation and Business Plan Contests* and *2.2. Accelerators*. Table 6.1 examines competition and accelerator characteristics YFYI 1.0 – 1.1 and YFYI 2.0 – 2.1 have.

In order for YFYI to be considered as an acceleration program, it should;

- transform into a sustainable model that does not have an award mechanism but an investment structure.
- expand its mentor and investor network and make them part of the program
- assess the initiatives to be accepted into the program with the eyes of an investor
- create a learning environment where participants learn from each other rather than a competitive environment.

METU Technopolis has added an indirect investment mechanism to the YFYI program with the establishment of its investment and accelerator company, Growth Circuit. YFYI 2.0 started to give importance to criteria such as team, the applicability of the idea, global market potential, problem-solution fit, and scalability instead of YFYI 1.0 - 1.1 criteria that give importance to technology and technical competence in the evaluation of initiatives.

As of 2014, the curriculum has become a comprehensive entrepreneurship program (YFYI 2.0). After 2016, YFYI gained a global perspective with the partnership with Growth Circuit and started to have a high-quality education program given by global instructors and mentors (YFYI 2.1).

In 2014 and beyond, he final ceremony started to be called Demo Day in which the finalist teams pitch in front of more than a thousand people, including investors and other actors of the Turkish entrepreneurship ecosystem. However, giving monetary awards in the Demo Day and distributing the awards (like in the case of a *Final*

*Ceremony*) with the evaluations of the jury members consisting of program sponsors causes to continue the perception of YFYI as a competition.

In this study, the effect of YFYI, which has been organized for 13 years, on entrepreneurship, was investigated. YFYI has a positive impact on entrepreneurship, given the fact that 62 direct companies established so far (see Table 2.6), and companies such as Onedio and ISSD have grown from YFYI.

The survey data of 176 YFYI finalists were analyzed under four groups; *all finalists*, *finalist founders*, *finalists with no entrepreneurial background,* and *the YFYI companies*.

It is seen that the majority of the finalists of the program are today METU graduates. It may be due to the eligibility criteria being METU students or graduates, which lasted until 2010.

As can be seen from Figure 4.14*: Responses of Survey Participants Who Have No Entrepreneurial Background Regarding Their Job Profiles*, YFYI finalists did not hesitate to call themselves as an entrepreneur / former entrepreneur even if they did not start a company. From this point of view, it can be concluded that YFYI increases self-motivation towards entrepreneurship in individuals.

The entrepreneurship competition cash awards have a more direct impact on the founder's journey because of a lack of alternative capital, especially that early on. In Turkey, where the average angel per population is one of the lowest in the OECD, there is limited opportunity to raise funding when the technology and market risks are not mitigated. As mentioned in section *2.3. Entrepreneurship Ecosystem in Turkey* TUBITAK and KOSGEB are the most influential financiers of founders at this stage. Swards given by competitions like YFYI also boost the available funding for teams to possibly mitigate the market risk because the grant funds are not sufficient to cover for the marketing or sales functions of these start-ups.

As it is understood from the interviews, the opportunity to take part in the entrepreneurship ecosystem created by METU Technopolis is one of the important reasons for entrepreneurs to apply for YFYI.

Being a finalist and having recognition, has a definite impact both as a tool to increase internal motivation and as an external validation for the future. External validation is critical because creating a start-up is not yet as accepted in the close family circles, given the lack of successful role models and the high uncertainty of being a founder. The graduates of METU, one of Turkey's most successful and esteemed universities, can easily find a job in the most prestigious institutions. In addition to that, METU graduates can discover job opportunities and continue their education abroad. Consequently, especially for METU students and alumni, the primary expectation of parents is to see their children employed by the most prestigious state institutions or local holdings. Being a founder and not having a stable career is disappointing for many parents.

The internal motivation is also critical because there is not much to keep teams together, other than the ambition to build technology together and a small opportunity to be 'their own boss'. So when the teams are selected as finalist their ambitions and motivations are increased in an environment where most of the people are always dragging their motivations by the traditional approach of "*This will never work*", "*If Large companies have not done it, what makes you think you can do it*", "*Get real and find a job, you do not know anything about business*".

However, even if the teams are not shortlisted as a finalist or won awards, the impact of YFYI is still crucial in the career paths of the white-collar employees who proceed to climb the corporate ladder. In a world where the old business models are disrupted at a higher pace, these individuals that had gone through the process of being trained as entrepreneurs will be the first to spot opportunities. Moreover, given time will lead intrapreneurship initiatives within their corporations or become more open to working with start-ups once their ranks are elevated to senior management positions.

There are points and lessons learned that could be replicated by other institutions and professionals from YFYI experience. In nascent ecosystems like Turkey's, especially during the 2005-2014 period, to overcome limited resources and awareness issues, promoting "awards" as an incentive rather than actual results-oriented high tech entrepreneurship has paid off.

The increase in application numbers of YFYI from 195 to 1,500 allows for a critical mass to be evaluated with potential, and steps can be taken with more concrete and focused start-up accelerator programs.

Even though there is an inherent bias in YFYI, which is excluding necessity-based entrepreneurship, or entrepreneurship driven from less known and lower-ranked universities, it is still safe to conclude that competitions like YFYI, have helped start-up creation via promoting high tech entrepreneurship in the long run.

It can be concluded that YFYI enabled a broader understanding among its participants, such as "Entrepreneurship as a mindset" since many individuals claimed to be founders/entrepreneurs, although they have not formally established start-ups.

In economies like Turkey, where the early-stage funding is limited, new job creation will not only be expected from start-ups but from larger institutions with more resources that will create new ventures and expand to new industries. For this transition to happen, individuals with the right growth mindset are needed in every level of the organization. YFYI has enabled its graduates to have that mindset.

The world of business plan competitions has evolved towards becoming accelerators, with added mentorship and high touch programs over the 2010-2019 period, with the advent of value creation through accelerator programs. YFYI was shifted from a competition to value add start-up ecosystem relatively late, after 2014.

The advocacy to raise funds to invest in participant companies was not prioritized with YFYI, but it was enabled through the investment and accelerator company, Growth

Circuit. Growth Circuit Acceleration Program has created global focused start-ups, ease the follow-on funding, and international recognition of start-ups in two years. In this respect, proving more impact is possible with an independent connected funding mechanism that would operate as a first loss accelerator fund. This success can be replicated by other institutions that bring founders to global attention, global mentors, and early-stage funding.

With this study, it was detected that the award mechanism of YFYI has not proven to have increased start-up creation statistically. However, it is safe to assume that the many people that did not complete the survey have not become founders and went on to become professionals or pursue academic careers. Therefore, if the number of people that filled out the survey had been balanced, it can be assumed to have observed a higher propensity to have created companies if they had been granted awards.

However, this does not mean that more awards should be suggested. Awards would have an impact, but company creation rates could have been increased with more follow-up programs for both awarded and the non-awarded teams. Besides, a mentor-led directional post-accelerator program could have supported the founders who attended the competition to feel more secure and optimistic about creating start-ups even though they were not the top companies.

## 6.2.Limitations

In this study, it was aimed to reach the whole population of YFYI finalists in order to get statistically significant results. However, the background information of 83% of the finalists was reached by online search. It is estimated that this may be due to changing the last name of women after marriage and a lack of digital identity for the remaining people.

The survey was sent to 67% of the finalists with background information via LinkedIn. The survey could not be sent to the people who did not respond to the LinkedIn invitation.

The lack of a consistent data management system for tracking applicants and accelerator teams has made it difficult to collect and analyze the data. Having a consistent tracking system both for the program participants and graduates is critical in order to be able to measure the program's success and its contribution to the local economy. It has been noticed that there are some companies not listed and tracked by METU Technopolis but were indirectly established after YFYI. The more reliable information flow between the department that collects the data about the employee numbers, revenue, and export figures of the companies residing in METU Technopolis and the entrepreneurship department will facilitate tracking the success of the start-ups and hence the success of the program.

### 6.3. Directions for Further Research

This study only examined the finalist teams and investigated the effect of the award mechanism on the entrepreneurial success of the finalists. The research can be expanded by examining all program participants. In this way, the effect of being a finalist in YFYI on entrepreneurship can be examined together with the selection criteria and success of the training program.

This study concludes that YFYI finalists have a tendency to define themselves as an entrepreneur even if they are not the founder of a company. Enabling its participants 'Entrepreneurship as a mindset' can be an intangible gain of YFYI that should be targeted and measured by other competitions and institutions.

A similar methodology can also be used to analyze other business plan competitions to see if the competitions have been effective in early-stage entrepreneurial ecosystem development.

Besides, an in-depth analysis of the teams who had established companies could also be researched to understand the quantified impact on job creation, economic empowerment, and innovation building.

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# APPENDICES

## APPENDIX A: APPROVAL OF METU HUMAN SUBJECTS ETHICS COMMITTEE

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
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Sayı: 28620816 / 308

28 Haziran 2019

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

**Sayın Doç.Dr. Adil ORAN**

Danışmanlığını yaptığınız **Beliz Bediz SİNAN'ın "Türkiye'nin İlk Girişimcilik Yarışması YFY'nin Etkisinin İncelenmesi"** başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülmüş ve **289-ODTÜ-2019** protokol numarası ile onaylanmıştır.

Saygılarımızla bilgilerinize sunarız.

Prof. Dr. Tülin GENÇÖZ
Başkan

Prof. Dr. Tolga CAN
Üye

Doç.Dr. Pınar KAYGAN
Üye

Dr. Öğr. Üyesi Ali Emre TURGUT
Üye

Dr. Öğr. Üyesi Şerife SEVİNÇ
Üye

Dr. Öğr. Üyesi Müge GÜNDÜZ
Üye

Dr. Öğr. Üyesi Süreyya Özcan KABASAKAL
Üye

## APPENDIX B: TWO PROPORTION Z-TEST CALCULATIONS

| **Award-Wining Survey Participants** | **Number** | **Percentage** |
|---|---|---|
| Established a company | 54 | 47,8% |
| Not established any company | 59 | 52,2% |
| Total number of awarded participants | 113 | |
| **Non-Award-Winning Survey Participants** | **Number** | **Percentage** |
| Established a company | 27 | 42,9% |
| Not established any company | 36 | 57,1% |
| Total number of awarded participants | 63 | |

Table 4.5: Distribution of Participants by Award Status and Company Establishment

$H_0$: $P_{\text{award-winning founders}} = P_{\text{non-award-winning founders}}$

$H_a$: $P_{\text{award-winning founders}} > P_{\text{non-award-winning founders}}$

Significance level was set as $\alpha = 0{,}05$

If the probability of getting a difference between award-winning founders and non-award-winning is less than our significance level, then we would reject our null hypothesis and accept the alternative hypothesis. If that probability is higher than our significance level, then we fail to reject the null hypothesis.

<u>Z-Score Calculation</u>

$$z = \frac{(\hat{P}_{\text{award-winning founders}} - \hat{P}_{\text{non-award-winning founders}})}{\sigma_{\hat{P}_{\text{award-winning founders}} - \hat{P}_{\text{non-award-winning founders}}}}$$

$$\hat{P}_{\text{combined}} = \frac{54 + 27}{113 + 63} = 0{,}46$$

$$z \cong \frac{\frac{54}{113} - \frac{27}{63}}{\sqrt{\frac{0{,}46(1-0{,}46)}{113}} + \sqrt{\frac{0{,}46(1-0{,}46)}{63}}} \cong \frac{0{,}05}{0{,}08} \cong 0{,}63$$

The difference that we got between our sample proportions is 0,05, which is 0,63 standard deviations above the mean of our sampling distribution if we assume that the null hypothesis is true.

$$p - value = P(z \geq 0{,}63) = 0{,}2643$$

From the Standard Normal Distribution Table given in APPENDIX B, the p-value was found as 0,2643.

Since the p-value=0,2643 is higher than the significance level $\alpha$ = 0,05, we fail to reject our null hypothesis ($H_0$).

## APPENDIX C: STANDART NORMAL DISTRIBUTION TABLE[21]

### Table 3 Areas in Upper Tail of the Normal Distribution

The function tabulated is $1 - \Phi(z)$ where $\Phi(z)$ is the cumulative distribution function of a standardised Normal variable, $z$.

Thus $1 - \Phi(z) = \frac{1}{\sqrt{2\pi}} \int_z^{\infty} e^{-z^2/2}$ is the probability that a standardised Normal variate selected at random will be greater than a value of $z$ $\left(= \frac{x-\mu}{\sigma}\right)$

| $\frac{x-\mu}{\sigma}$ | .00 | .01 | .02 | .03 | .04 | .05 | .06 | .07 | .08 | .09 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | .5000 | .4960 | .4920 | .4880 | .4840 | .4801 | .4761 | .4721 | .4681 | .4641 |
| 0.1 | .4602 | .4562 | .4522 | .4483 | .4443 | .4404 | .4364 | .4325 | .4286 | .4247 |
| 0.2 | .4207 | .4168 | .4129 | .4090 | .4052 | .4013 | .3974 | .3936 | .3897 | .3859 |
| 0.3 | .3821 | .3783 | .3745 | .3707 | .3669 | .3632 | .3594 | .3557 | .3520 | .3483 |
| 0.4 | .3446 | .3409 | .3372 | .3336 | .3300 | .3264 | .3228 | .3192 | .3156 | .3121 |
| 0.5 | .3085 | .3050 | .3015 | .2981 | .2946 | .2912 | .2877 | .2843 | .2810 | .2776 |
| 0.6 | .2743 | .2709 | .2676 | .2643 | .2611 | .2578 | .2546 | .2514 | .2483 | .2451 |
| 0.7 | .2420 | .2389 | .2358 | .2327 | .2296 | .2266 | .2236 | .2206 | .2177 | .2148 |
| 0.8 | .2119 | .2090 | .2061 | .2033 | .2005 | .1977 | .1949 | .1922 | .1894 | .1867 |
| 0.9 | .1841 | .1814 | .1788 | .1762 | .1736 | .1711 | .1685 | .1660 | .1635 | .1611 |
| 1.0 | .1587 | .1562 | .1539 | .1515 | .1492 | .1469 | .1446 | .1423 | .1401 | .1379 |
| 1.1 | .1357 | .1335 | .1314 | .1292 | .1271 | .1251 | .1230 | .1210 | .1190 | .1170 |
| 1.2 | .1151 | .1131 | .1112 | .1093 | .1075 | .1056 | .1038 | .1020 | .1003 | .0985 |
| 1.3 | .0968 | .0951 | .0934 | .0918 | .0901 | .0885 | .0869 | .0853 | .0838 | .0823 |
| 1.4 | .0808 | .0793 | .0778 | .0764 | .0749 | .0735 | .0721 | .0708 | .0694 | .0681 |
| 1.5 | .0668 | .0655 | .0643 | .0630 | .0618 | .0606 | .0594 | .0582 | .0571 | .0559 |
| 1.6 | .0548 | .0537 | .0526 | .0516 | .0505 | .0495 | .0485 | .0475 | .0465 | .0455 |
| 1.7 | .0446 | .0436 | .0427 | .0418 | .0409 | .0401 | .0392 | .0384 | .0375 | .0367 |
| 1.8 | .0359 | .0351 | .0344 | .0336 | .0329 | .0322 | .0314 | .0307 | .0301 | .0294 |
| 1.9 | .0287 | .0281 | .0274 | .0268 | .0262 | .0256 | .0250 | .0244 | .0239 | .0233 |
| 2.0 | .02275 | .02222 | .02169 | .02118 | .02068 | .02018 | .01970 | .01923 | .01876 | .01831 |
| 2.1 | .01786 | .01743 | .01700 | .01659 | .01618 | .01578 | .01539 | .01500 | .01463 | .01426 |
| 2.2 | .01390 | .01355 | .01321 | .01287 | .01255 | .01222 | .01191 | .01160 | .01130 | .01101 |
| 2.3 | .01072 | .01044 | .01017 | .00990 | .00964 | .00939 | .00914 | .00889 | .00866 | .00842 |
| 2.4 | .00820 | .00798 | .00776 | .00755 | .00734 | .00714 | .00695 | .00676 | .00657 | .00639 |
| 2.5 | .00621 | .00604 | .00587 | .00570 | .00554 | .00539 | .00523 | .00508 | .00494 | .00480 |
| 2.6 | .00466 | .00453 | .00440 | .00427 | .00415 | .00402 | .00391 | .00379 | .00368 | .00357 |
| 2.7 | .00347 | .00336 | .00326 | .00317 | .00307 | .00298 | .00289 | .00280 | .00272 | .00264 |
| 2.8 | .00256 | .00248 | .00240 | .00233 | .00226 | .00219 | .00212 | .00205 | .00199 | .00193 |
| 2.9 | .00187 | .00181 | .00175 | .00169 | .00164 | .00159 | .00154 | .00149 | .00144 | .00139 |
| 3.0 | .00135 | .00131 | .00126 | .00122 | .00118 | .00114 | .00111 | .00107 | .00104 | .00100 |
| 3.1 | .00097 | .00094 | .00090 | .00087 | .00084 | .00082 | .00079 | .00076 | .00074 | .00071 |
| 3.2 | .00069 | .00066 | .00064 | .00062 | .00060 | .00058 | .00056 | .00054 | .00052 | .00050 |
| 3.3 | .00048 | .00047 | .00045 | .00043 | .00042 | .00040 | .00039 | .00038 | .00036 | .00035 |
| 3.4 | .00034 | .00032 | .00031 | .00030 | .00029 | .00028 | .00027 | .00026 | .00025 | .00024 |
| 3.5 | .00023 | .00022 | .00022 | .00021 | .00020 | .00019 | .00019 | .00018 | .00017 | .00017 |
| 3.6 | .00016 | .00015 | .00015 | .00014 | .00014 | .00013 | .00013 | .00012 | .00012 | .00011 |
| 3.7 | .000108 | .000104 | .000100 | .000096 | .000092 | .000088 | .000085 | .000082 | .000078 | .000075 |
| 3.8 | .000072 | .000069 | .000067 | .000064 | .000062 | .000059 | .000057 | .000054 | .000052 | .000050 |
| 3.9 | .000048 | .000046 | .000044 | .000042 | .000041 | .000039 | .000037 | .000036 | .000034 | .000033 |
| 4.0 | .000032 | | | | | | | | | |

5.0 → 0.000 000 286 7 5.5 → 0.000 000 019 0 6.0 → 0.000 000 001 0

[21] http://archive.learnhigher.ac.uk/resources/files/Numeracy/Normal%20DistribFull.pdf

# APPENDIX D: SURVEY QUESTIONS FOR FINALISTS HAVING ENTREPRENEURSHIP BACKGROUND

## Tez Anket Çalışması

Bu araştırma, ODTÜ MBA öğrencisi Beliz Bediz Sinan tarafından Doç. Dr. Adil ORAN danışmanlığındaki yüksek lisans tezi kapsamında yürütülmektedir. Girişimcilik yarışmalarının / programlarının girişimcilik üzerine etkisinin Türkiye'nin en eski girişimcilik programı Yeni Fikirler Yeni İşler (YFYİ) örneğinde ölçülmesini amaçlayan tez çalışması kapsamında yalnızca bu araştırmada kullanmak üzere size bu anket gönderilmiştir. Anket yaklaşık 22 sorudan oluşmaktadır; ilk 6 soru demografik bilgiler, sonraki sorular ise YFYİ'ye yönelik sorulardır.

Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Cevaplarınız tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir. Katılımcılardan elde edilecek bilgiler toplu halde değerlendirilecek ve bilimsel yayınlarda kullanılacaktır. Katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz anketi yarıda bırakıp çıkmakta serbestsiniz.

Çalışma hakkında daha fazla bilgi almak için Beliz Bediz Sinan (bediz.beliz@metu.edu.tr) ile iletişim kurabilirsiniz.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip çıkabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum.

* Gerekli

## Genel Bilgiler

1. **İsim Soyisim** *

2. **Yaşınız?** *

3. **Cinsiyetiniz?** *
   *Yalnızca bir şıkkı işaretleyin.*
   - Kadın
   - Erkek
   - Diğer: _____

4. **Eğitim Durumunuz?** *
   Lütfen bu soruyu en son tamamladığınız eğitim derecesine göre yanıtlayınız.
   *Yalnızca bir şıkkı işaretleyin.*
   - Lisans
   - Yüksek Lisans
   - Doktora ve Üstü

5. **Mezun Olduğunuz Üniversite?** *
   Lütfen bu soruyu en son tamamladığınız eğitim derecesine göre yanıtlayınız.

6. **Mezun Olduğunuz Bölüm?** *
Lütfen bu soruyu en son tamamladığınız eğitim derecesine göre yanıtlayınız.

7. **Aşağıdaki ifadelerden hangisi sizi en iyi ifade ediyor?** *
*Yalnızca bir şıkkı işaretleyin.*

- Girişimci / Kurucu
- Seri Girişimci
- Akademisyen girişimci
- Eski girişimci şimdi özel sektör çalışanı
- Eski girişimci şimdi devlet çalışanı
- Eski girişimci şimdi akademisyen
- Eski özel sektör çalışanı şimdi girişimci
- Eski kamu çalışanı şimdi girişimci
- Diğer: _____

## Yeni Fikirler Yeni İşler

8. **YFYİ finalinde ödül aldınız mı?** *
*Yalnızca bir şıkkı işaretleyin.*

- Evet
- Hayır

9. **YFYİ sonrası şirket kurdunuz mu?** *
*Yalnızca bir şıkkı işaretleyin.*

- Evet
- Hayır *25. soruya geçin.*

## YFYİ İlk Şirket Bilgileri

10. **YFYİ sonrasında kurduğunuz ilk şirketin adını belirtebilir misiniz?** *

11. **YFYİ sonrasında kurduğunuz ilk şirketin kuruluş yılı nedir?** *

12. **YFYİ sonrasında kurduğunuz ilk şirketin faaliyeti yarışma projeniz ile benzer mi?** *
*Yalnızca bir şıkkı işaretleyin.*

- Aynı proje ile şirket kurdum
- Aynı proje ile şirket kurdum ancak sonra proje pivot etti. Benzer bir alanda ilerliyorum
- Farklı bir proje üzerine şirket kurdum
- Diğer: _____

13. **YFYİ sonrasında kurduğunuz şirket devlet desteği aldı mı?** *
*Yalnızca bir şıkkı işaretleyin.*

- Evet
- Hayır

14. **YFYİ sonrasında kurduğunuz şirket devlet desteği aldı ise bu destek/destekler hakkında kısa bilgi verebilir misiniz?**
Hangi kurumlardan, kaç yılında, ne kadar bir destek alındı vs.

15. **YFYİ sonrasında kurduğunuz ilk şirket yatırım aldı mı?** *
*Yalnızca bir şıkkı işaretleyin.*

- Evet
- Hayır

16. **YFYİ sonrasında kurduğunuz ilk şirket yatırım aldı ise bu yatırım/yatırımlar hakkında kısa bilgi verebilir misiniz?**
Kimden, hangi yıl, ne kadarlık bir yatırım aldı, değerleme bilgileri vs.

17. **YFYİ sonrasında kurduğunuz ilk şirket nerede kuruldu?** *
*Yalnızca bir şıkkı işaretleyin.*

- ODTÜ TEKNOKENT
- Diğer Teknoloji Geliştirme Bölgeleri
- Teknoloji Geliştirme Bölgesi dışında

18. **YFYİ sonrasında kurduğunuz ilk şirket hala aktif faaliyette mi?** *
*Yalnızca bir şıkkı işaretleyin.*

- Evet
- Faaliyette değil ancak resmi olarak kapanmadı
- Resmi olarak kapandı

19. **YFYİ sonrasında kurduğunuz ilk şirket hala aktifse nerede yer almaktadır?**
*Yalnızca bir şıkkı işaretleyin.*

- ODTÜ TEKNOKENT
- Diğer Teknoloji Geliştirme Bölgeleri
- Teknoloji Geliştirme Bölgeleri dışında

20. **YFYİ sonrasında kurduğunuz ilk şirketin çalışan sayısı hangi aralıktadır?** *

Şirketiniz hala faaliyette ise son çalışan sayınızı baz alınız. Şirketiniz faaliyetini durdurmuş veya resmen kapanmış ise 0'ı işaretleyebilirsiniz.

*Yalnızca bir şıkkı işaretleyin.*

- 0
- 1-5
- 5-10
- 10-20
- 20-50
- 50-100
- 100+

21. **YFYİ sonrasında kurduğunuz ilk şirket hala faaliyette ise 2018 yıl sonu cirosu nedir?**

Bu soruyu şirketin büyüklüğünü ölçümlemek adına soruyoruz. Verileriniz sadece akademik amaçlı kullanılacaktır. Ciroyu yaklaşık olarak belirtmeniz yeterlidir. Belirtmek istemiyorsanız bu soruyu atlayabilirsiniz.

22. **Eğer YFYİ sonrasında kurduğunuz ilk şirket resmi olarak kapandıysa kapanış yılı nedir?**

23. **Eğer YFYİ sonrasında kurduğunuz ilk şirket faaliyetlerine devam etmiyor ancak resmi kapanışı gerçekleşmediyse faaliyetin durduğu yılı belirtiniz.**

24. **YFYİ sonrasında birden fazla şirket kurdunuz mu?** *

*Uygun olanların tümünü işaretleyin.*

- [ ] Evet
- [ ] Hayır

## YFYİ Hakkında Görüşler ve Değerlendirmeler

Bu bölümde YFYİ hakkında görüşleriniz merak edilmektedir. Lütfen aşağıda yer alan cümlelere ölçek üzerinde 1'den 5'e kadar bir değer veriniz.

* 1:Kesinlikle Katılmıyorum 2:Katılmıyorum 3: Kararsızım 4: Katılıyorum 5: Kesinlikle Katılıyorum

25. *

*Yalnızca bir şıkkı işaretleyin.*

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| YFYİ'ye iyi ki katılmışım | | | | | |

26. *
*Yalnızca bir şıkkı işaretleyin.*

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| YFYİ sonrasında girişimciliğe yönelik bilgim/ilgim ve motivasyonum arttı | | | | | |

27. *
*Yalnızca bir şıkkı işaretleyin.*

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| YFYİ'yi arkadaşlarıma önerdim | | | | | |

28. *
*Yalnızca bir şıkkı işaretleyin.*

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| YFYİ'ye katılmasaydım girişimci olmazdım | | | | | |

29. **YFYİ programı hakkında görüş ve önerileriniz?**

## Görüş ve Öneriler

30. **Soru, görüş ve önerileriniz**

31. **E-posta adresiniz**
Zorunlu değildir

## APPENDIX E: SURVEY QUESTIONS FOR FINALISTS WITH NO ENTREPRENEURSHIP BACKGROUND

# Tez Anket Çalışması

Bu araştırma, ODTÜ MBA öğrencisi Beliz Bediz Sinan tarafından Doç. Dr. Adil ORAN danışmanlığındaki yüksek lisans tezi kapsamında yürütülmektedir. Girişimcilik yarışmalarının / programlarının girişimcilik üzerine etkisinin Türkiye'nin en eski girişimcilik programı Yeni Fikirler Yeni İşler (YFYİ) örneğinde ölçülmesini amaçlayan tez çalışması kapsamında yalnızca bu araştırmada kullanmak üzere size bu anket gönderilmiştir. Anket yaklaşık 22 sorudan oluşmaktadır; ilk 6 soru demografik bilgiler, sonraki sorular ise YFYİ'ye yönelik sorulardır.

Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Cevaplarınız tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir. Katılımcılardan elde edilecek bilgiler toplu halde değerlendirilecek ve bilimsel yayınlarda kullanılacaktır. Katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz anketi yarıda bırakıp çıkmakta serbestsiniz.

Çalışma hakkında daha fazla bilgi almak için Beliz Bediz Sinan (bediz.beliz@metu.edu.tr) ile iletişim kurabilirsiniz.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip çıkabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum.

* Gerekli

## Genel Bilgiler

1. **İsim Soyisim** *

2. **Yaşınız?** *

3. **Cinsiyetiniz?** *
   *Yalnızca bir şıkkı işaretleyin.*
   - Kadın
   - Erkek
   - Diğer: _____

4. **Eğitim Durumunuz?** *
   Lütfen bu soruyu en son tamamladığınız eğitim derecesine göre yanıtlayınız.
   *Yalnızca bir şıkkı işaretleyin.*
   - Lisans
   - Yüksek Lisans
   - Doktora ve Üstü

5. **Mezun Olduğunuz Üniversite?** *
   Lütfen bu soruyu en son tamamladığınız eğitim derecesine göre yanıtlayınız.

6. **Mezun Olduğunuz Bölüm?** *
   Lütfen bu soruyu en son tamamladığınız eğitim derecesine göre yanıtlayınız.

7. **Aşağıdaki ifadelerden hangisi sizi en iyi ifade ediyor?** *
   *Yalnızca bir şıkkı işaretleyin.*

- Girişimci / Kurucu
- Seri girişimci
- Akademisyen girişimci
- Eski girişimci şimdi özel sektör çalışanı
- Eski girişimci şimdi kamu çalışanı
- Eski girişimci şimdi akademisyen
- Eski özel sektör çalışanı şimdi girişimci
- Eski kamu çalışanı şimdi girişimci
- Kamu çalışanı
- Özel sektör çalışanı
- Akademisyen
- Freelancer / Serbest çalışan
- Diğer: _____

## Yeni Fikirler Yeni İşler

8. **YFYİ finalinde ödül aldınız mı?** *
   *Yalnızca bir şıkkı işaretleyin.*

- Evet
- Hayır

9. **YFYİ sonrası şirket kurdunuz mu?** *
   *Yalnızca bir şıkkı işaretleyin.*

- Evet
- Hayır *25. soruya geçin.*

## YFYİ İlk Şirket Bilgileri

10. **YFYİ sonrasında kurduğunuz ilk şirketin adını belirtebilir misiniz?** *

11. **YFYİ sonrasında kurduğunuz ilk şirketin kuruluş yılı nedir?** *

12. **YFYİ sonrasında kurduğunuz ilk şirketin faaliyeti yarışma projeniz ile benzer mi?** *
*Yalnızca bir şıkkı işaretleyin.*

- Aynı proje ile şirket kurdum
- Aynı proje ile şirket kurdum ancak sonra proje pivot etti. Benzer bir alanda ilerliyorum
- Farklı bir proje üzerine şirket kurdum
- Diğer: _____

13. **YFYİ sonrasında kurduğunuz şirket devlet desteği aldı mı?** *
*Yalnızca bir şıkkı işaretleyin.*

- Evet
- Hayır

14. **YFYİ sonrasında kurduğunuz şirket devlet desteği aldı ise bu destek/destekler hakkında kısa bilgi verebilir misiniz?**
Hangi kurumlardan, kaç yılında, ne kadar bir destek alındı vs.

_____
_____
_____
_____
_____

15. **YFYİ sonrasında kurduğunuz ilk şirket yatırım aldı mı?** *
*Yalnızca bir şıkkı işaretleyin.*

- Evet
- Hayır

16. **YFYİ sonrasında kurduğunuz ilk şirket yatırım aldı ise bu yatırım/yatırımlar hakkında kısa bilgi verebilir misiniz?**
Kimden, hangi yıl, ne kadarlık bir yatırım aldı, değerleme bilgileri vs.

_____
_____
_____
_____
_____

17. **YFYİ sonrasında kurduğunuz ilk şirket nerede kuruldu?** *
*Yalnızca bir şıkkı işaretleyin.*

- ODTÜ TEKNOKENT
- Diğer Teknoloji Geliştirme Bölgeleri
- Teknoloji Geliştirme Bölgesi dışında

18. **YFYİ sonrasında kurduğunuz ilk şirket hala aktif faaliyette mi?** *
*Yalnızca bir şıkkı işaretleyin.*

- Evet
- Faaliyette değil ancak resmi olarak kapanmadı
- Resmi olarak kapandı

19. **YFYİ sonrasında kurduğunuz ilk şirket hala aktifse nerede yer almaktadır?**
*Yalnızca bir şıkkı işaretleyin.*

- ODTÜ TEKNOKENT
- Diğer Teknoloji Geliştirme Bölgeleri
- Teknoloji Geliştirme Bölgeleri dışında

20. **YFYİ sonrasında kurduğunuz ilk şirketin çalışan sayısı hangi aralıktadır?** *
Şirketiniz hala faaliyette ise son çalışan sayınızı baz alınız. Şirketiniz faaliyetini durdurmuş veya resmen kapanmış ise 0'ı işaretleyebilirsiniz.
*Yalnızca bir şıkkı işaretleyin.*

- 0
- 1-5
- 5-10
- 10-20
- 20-50
- 50-100
- 100+

21. **YFYİ sonrasında kurduğunuz ilk şirket hala faaliyette ise 2018 yıl sonu cirosu nedir?**
Bu soruyu şirketin büyüklüğünü ölçümlemek adına soruyoruz. Verileriniz sadece akademik amaçlı kullanılacaktır. Ciroyu yaklaşık olarak belirtmeniz yeterlidir. Belirtmek istemiyorsanız bu soruyu atlayabilirsiniz.

22. **Eğer YFYİ sonrasında kurduğunuz ilk şirket resmi olarak kapandıysa kapanış yılı nedir?**

23. **Eğer YFYİ sonrasında kurduğunuz ilk şirket faaliyetlerine devam etmiyor ancak resmi kapanışı gerçekleşmediyse faaliyetin durduğu yılı belirtiniz.**

24. **YFYİ sonrasında birden fazla şirket kurdunuz mu?** *
*Uygun olanların tümünü işaretleyin.*

- [ ] Evet
- [ ] Hayır

## YFYİ Hakkında Görüşler ve Değerlendirmeler

Bu bölümde YFYİ hakkında görüşleriniz merak edilmektedir. Lütfen aşağıda yer alan cümlelere ölçek üzerinde 1'den 5'e kadar bir değer veriniz.
* 1:Kesinlikle Katılmıyorum 2:Katılmıyorum 3: Kararsızım 4: Katılıyorum 5: Kesinlikle Katılıyorum

25. *
*Yalnızca bir şıkkı işaretleyin.*

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| YFYİ'ye iyi ki katılmışım | | | | | |

26. *
*Yalnızca bir şıkkı işaretleyin.*

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| YFYİ sonrasında girişimciliğe yönelik bilgim/ilgim ve motivasyonum arttı | | | | | |

27. *
*Yalnızca bir şıkkı işaretleyin.*

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| YFYİ'yi arkadaşlarıma önerdim | | | | | |

28. *
*Yalnızca bir şıkkı işaretleyin.*

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| YFYİ'ye katılarak edindiğim tecrübe çalıştığım kurum içerisinde yeniliğe ve inovasyona daha açık olmamı sağladı | | | | | |

29. **YFYİ programı hakkında görüş ve önerileriniz?**

## Görüş ve Öneriler

30. **Soru, görüş ve önerileriniz**

31. **E-posta adresiniz**
Zorunlu değildir

## APPENDIX F: TURKISH SUMMARY / TÜRKÇE ÖZET

Pek çok akademik çalışma girişimciliğin, yeniliği besleyen, yeni pazar alanları yaratan veya var olan pazarları genişleten, rekabeti güçlendiren ve yeni iş fırsatları yaratan yapısıyla ekonomik gelişmeyi desteklediği sonucuna varmaktadır. Shane (2005), politika geliştiriciler açısından girişimcilik iş gücünü ve kişi başına düşen geliri arttırmak için doğru çözüm olarak belirtmiştir.

Girişimcilik destek mekanizmaları tüm dünyada hızla gelişmekte ve çeşitlenmektedir. Yenilik yarışmaları, girişimcilik etkinlikleri, hızlandırıcılar, kuluçka merkezleri ve ortak çalışma alanları girişimciliğin geliştiren ana destek mekanizmalarıdır.

Girişimlerin hayatta kalmasını etkileyen faktörleri inceleyen araştırmalar, yetersiz finansal sermaye ve finansal sıkıntıların yeni girişimlerin dayanıklılığı ile ilişkili olduğunu göstermiştir (Holtz-Eakin, Joulfaian ve Rosen, 1994).

Bu çalışmanın amacı Türkiye'nin ilk girişimcilik yarışması olan Yeni Fikirler Yeni İşler (YFYİ)'nin etkisinin ve girişimcilere verilen ödüllerin girişimlerin başarısı ve dayanıklılığı üzerindeki rolünün araştırılmasıdır. Çalışmanın iki ana amacı vardır:

- YFYİ'nin örneklerle ve ankete dayalı istatistiklerle etkisinin anlaşılması ve belgelenmesi
- Ödül alan ve almayan finalistler arasında anlamlı bir fark olup olmadığını araştırmak

Bu tez çalışmasının literatür taraması bölümünde yenilik ve iş planı yarışmaları ve girişim hızlandırıcıları çalışma mekanizmaları ile birlikte incelenmiştir.

Yenilik yarışmaları, belirli bir alandaki belirli sorunlara yaratıcı çözümler sunmak amacıyla halka veya belirli bir hedef gruba açılan zaman sınırlı yarışmalardır.

Margarin, konserve yemek, insan destekli uçuş gibi tarihteki birçok önemli keşif yenilik yarışmaları ile ortaya çıkmıştır (Adamczyk, Bullinger ve Möslein, 2012).
Birçok iş planı ve yenilik yarışması, bir fikri yeni bir işe dönüştürmek için yalnızca parasal bir ödül sağlamakla kalmaz, aynı zamanda girişimcilik eğitimi, danışmanlık ve network desteğini sunarak girişimcilere bir öğrenme ortamı yaratır. Bu gibi yenilikçilik yarışmaları aynı zamanda girişimcilerin fikirlerini, prototiplerini veya ürünlerini hızlı bir şekilde öğrenip test etmeleri ve sınırlı bir zaman dilimi içerisinde hızlı sonuçlar elde etmelerini sağlayan itici bir güç görevi görür. Ayrıca, bu yarışmalarda jürinin takdiri ile verilen ayni ve nakdi ödüller girişimcilerin motivasyonunu arttırmaktadır (Russell vd., 2008).

MIT 100K Girişimcilik Yarışması ve Harvard Business School Yeni Girişim Yarışması (NVC), üniversiteler tarafından yürütülen girişimcilik yarışmalarının öne çıkan örnekleri arasındadır.

Çoğu girişimcilik uzmanı 1950'lere dayanan uzun bir geçmişi olan *Kuluçka Merkezleri*'nin 1980'lerde özellikle ABD'deki üniversitelerde yaygın bir uygulama haline gelen hızlandırıcılara öncülük ettiğini düşünmektedir.

Nispeten ucuz Bilişim Teknolojileri endüstrisinde bile, teknoloji geliştirmenin önemli maliyetleri, hızlandırıcıların ortaya çıkmasından önce bu dönemde hatırlanmalıdır. Bulut bilişim, geniş bant internet ve üçboyutlu baskı öncesi bu dönemde, bir girişim kurmak yoğun sermaye ihtiyacı olan bir işti. O dönemlerde çoğu girişim üniversite tabanlı kuluçka merkezlerinin sahip olduğu ve işlettiği daha ucuz ekipmanlara ve laboratuvarlara erişim olmasaydı hayata geçemezdi. Ancak kuluçka merkezlerinde girişimlerin mezuniyet süresini, ortalama birkaç yıl yerine birkaç ay olacak şekilde kısaltan herhangi bir hızlanma şekli olmamıştır. Bu kuluçka merkezlerinin çoğu, teknolojideki değişikliklere ve yeni teknoloji şirketlerinin gereksinimlerine uyum sağlamak için geç kalmıştır. Bunun nedeni, kuluçka merkezlerinin ekipman gibi büyük maliyetlerinin olması veya kira geliri odaklı iş modelleri olabilir.

Gerçekte kuluçka merkezleri ve hızlandırıcılar arasında birbirini besleyen bir döngü vardır. Hızlandırıcı veya ön hızlandırıcıdan mezun olan girişimlerin çoğu erken aşama finansman eksikliği nedeniyle kuluçka süresine ihtiyaç duyar. Bu nedenle ön hızlandırıcı veya hızlandırıcıların çoğu 3-6 ay ücretsiz veya destekli çalışma alanı sunar.

Küresel olarak girişimcilik ekosistemini sarsan hızlandırma programı kavramı ilk olarak yüksek teknoloji meraklısı Paul Graham ve Jessica Livingston tarafından ortaya çıkmıştır. Test sermayesi eksikliği ile birlikte mentorluk desteği alamamanın bir yeniliğin gerçekleşmesi için bir darboğaz olduğunu fark eden ekip dünyanın ilk hızlandırma programı olan Y Combinator'ı Boston'da kurmuşlardır.

Hızlandırıcılar, girişimlerin sürdürülebilir ve hızlı bir büyüme için fikirlerini / ürünlerini eğitim ve mentorluk destekleri ile birlikte test edebilecekleri süreli programlardır. Hızlandırma programları girişimleri hayatta tutabilmek için tasarlanmamışlardır. Temelde amaç, girişimlerin büyüme ya da batma sürecini hızlandırmaktır.

Tipik olarak, hızlandırıcılar yoğun bir eğitim, mentorluk, hukuki danışmanlık, network, yatırım fırsatları ve iş geliştirme desteği sağlar. Bazı programlar bu desteklere ek olarak katılımcılara tohum sermayesi ve ofis alanı da sağlayabilir. Bu desteklerle birlikte, aynı hızlandırma programı dönemindeki diğer katılımcı ekiplerden öğrenme de hızlandırıcıların önemli kazanımlarından biri olarak görülmektedir (Cohen, 2013).

Hızlandırıcılar her dönem yaklaşık 3 ay sürer ve her dönemin sonunda *Demo Günü* olarak lanse edilen yatırımcıların, kurumların ve diğer girişimcilik ekosistemi aktörlerinin katılım gösterdiği bir final sunum etkinliği düzenlenmektedir (Konezal, 2012).

Hızlandırıcılar kar amacı güden veya kar amacı gütmeyen bir yapıda olabilirler, ancak finansal olarak sürdürülebilir olmalıdırlar. Bu kapsamda, çoğu hızlandırma programı

tohum yatırım ile birlikte katılımcılardan program karşılığı hisse talep ederler (Cohen, 2013).

Fowle (2017) hızlandırıcıların kritik başarı faktörlerini incelemiş ve başarılı bir hızlandırıcının aşağıdaki özelliklere sahip olması gerektiği sonucuna varmıştır:

- Katılımcı start-up'ların müşterilerine yakın olmak
- Grup öğrenmesini destekleyen dönemsel yapıda olmak
- Güçlü bir network ağına sahip olmak
- Fonu genel olarak herkese vermek yerine seçilen gruba vermek
- Geniş bir yatırımcı ağına sahip olmak
- Markasını yenilikçi yaklaşımlarıyla ve başarılı mezun hikayeleri ile güçlendirmek
- Programa start-up kabul ederken seçici olmak
- Zaman sınırlı olmak
- Kaliteli mentor ve eğitim programına sahip olmak

Türkiye'de girişimcilik ekosistemine baktığımızda bu çalışmada belgelendirdiğimiz YFYİ'nin Türkiye'nin ilk girişimcilik yarışması olarak başladığı yıl olan 2005 yılı ve sonrası incelenebilir. 2007 yılında ODTÜ ve ODTÜ Teknokent tarafından kurulan METUTECH-BAN Türkiye'nin ilk melek yatırım ağı olma özelliği taşımaktadır.

Devlet teşvikleri, Türk girişimcilerin, şirketlerini kurmak ve faaliyetlerine devam etmek için kullandıkları en önemli finansal kaynaklardan biridir. Türkiye Bilimsel ve Teknolojik Araştırma Kurumu (TÜBİTAK) ile Küçük ve Orta Ölçekli İşletmeleri Geliştirme ve Destekleme İdaresi Başkanlığı (KOSGEB) ve Bölgesel Kalkınma Ajansları, erken aşama teknoloji girişimlerine finansal destek sağlayan Türkiye'nin önde gelen kurumlarıdır.

Teknoloji Geliştirme Bölgeleri, bir başka deyişle Teknoparklar, ileri teknoloji şirketlerini bir araya getiren yapısıyla sinerji yaratır ve vergi teşvikleri ile teknoloji ihracatını kolaylaştırır. 2001 yılında kurulan ODTÜ Teknokent Türkiye'nin ilk

Teknoparkıdır. 2001 yılından 2018 yılı sonuna kadar, Türkiye'de kurulan teknopark sayısı 81'e ulaşmıştır. Start-ups Watch platformundan elde edilen verile göre, Türkiye'de 37 aktif start-up hızlandıcı bulunmaktadır.

YFYİ yenilikçi teknolojik fikirleri desteklemeyi, girişimcilik bilincini arttırmayı ve Türkiye'deki üniversite öğrencileri arasında girişimciliği teşvik etmeyi amaçlayan Türkiye'nin ilk teknoloji temelli girişimcilik yarışmasıdır. YFYİ yıllar içerisinde dünyadaki değişme ayak uydurarak bir hızlandırma programına doğru evrilmeye başlamıştır. Bu çalışmada YFYİ programı 4 farklı faza ayrılarak incelenmiştir.

- YFYİ 1.0: ODTÜ öğrencileri ve mezunları için girişimcilik yarışması
- YFYİ 1.1: Türkiye'nin girişimcilik yarışması
- YFYİ 2.0: Hızlandırma program yapısına dönüş
- YFYİ 2.1: Küresel odaklı hızlandırma programı

YFYİ 1.0:

Yarışmanın ilk beş senesini kapsar (2005 – 2010). Yarışma ön eleme, ikinci aşama ve final 4 aşamasından oluşmaktadır. Yarışmanın ilk yıllarında sadece ODTÜ öğrenci ve mezunları başvurabilirken ilerleyen yıllarda bu şart takımda en az bir ODTÜ öğrenci veya mezununun bulunması şeklinde genişletilmiştir. Yarışmaya kabul edilen ve ikinci aşamaya geçmeye hak kazanan 10 takım bir ödül töreni ile açıklanır. Takımlar bu dönemde iş planı oluşturma, ürün geliştirme, fikri mülkiyet hakları, yenilik, girişimcilik ve finansal modelleme gibi eğitimler alırlar. İş planlarının jüri değerlendirmesi sonucunda final 4 aşamasına kalan finalistler final günü sahnede sunum yaparak büyük ödül için yarışırlar.

YFYİ 1.1:

2011 – 2014 yılları arasındaki dönemdir. Büyük ödül miktarı 100.000 TL'ye ulaşır. Ödüller ayni ve nakdi olarak çeşitlenir. Yarışmaya başvuran ekipte en az bir ODTÜ öğrencisi veya mezunu olma şartı kalkar ve yarışma tüm Türkiye'ye hitap eder.

YFYİ 2.0:

2015 ve 2016 yıllarını kapsar. Türkiye girişimcilik ekosisteminin gelişmesi ile birlikte 2015 yılı itibari ile YFYİ daha kapsamlı eğitim ve mentorluk hizmetlerinin verildiği bir hızlandırma programına evrilmeye başlar. Yine bu dönemde ilk defa program çağrısı bireysel girişimci ekip başvurularının yanı sıra yeni teknoloji şirketlerine de açılmıştır. 2014 yılında T-JUMP San Francisco Merkezi'nin de faaliyete başlamasıyla program bu dönemde seçilen finalistlere ABD kampı ödülleri vermeye başlamıştır. Yine bu dönemde '*YFYİ Mezun Sponsor'* kategorisi açılmış, başarılı YFYİ mezun şirketleri de YFYİ girişimcilerine ödül vererek destek olmaya başlamıştır.

YFYİ 2.1:

YFYİ 2016 yılından bu yana küresel ölçekte başarılı şirketler çıkarma amacıyla küreselleşmeye odaklandı. Bu yeni model ile YFYİ Türkiye'nin ilk küresel hızlandırma programı olarak konumlandı.

Yine bu dönemde ODTÜ Teknokent'in yatırım ve hızlandırma şirketi Growth Circuit kurulmuştur. T-Jump San Francisco merkezini de kapsayan bir yapıda olan Growth Circuit YFYİ işbirliği ile ABD kampları daha uzun süreli bir yapıya dönüşmüş, UC Berkeley Yenilik Hızlandırma Grubu ve Draper Üniversitesi gibi Silikon Vadisi'nin saygın kurumlarından alınan hizmetlerle daha efektif hale gelmiş ve YFYİ girişimlerine dolaylı olarak bir yatırım mekanizması oluşturulmuştur.

Çalışmada 2005 – 2018 yılları arasında YFYİ'ye katılmış ve finale kalmış ekipler araştırılmıştır. LinkedIn taraması ile N=972 YFYİ katılımcı arasından n=370 finalisttin iş profilleri analiz edilmiş ve bu iş profillerine göre her bir ekip üyesi aşağıda listelenen dokuz kategori altında toplanmıştır.

a. Kurucu ortak / Kurucu
b. Çalışan
c. Akademisyen
d. Eski kurucu şimdi çalışan

e. Eski kurucu şimdi akademisyen

f. Eski çalışan şimdi kurucu

g. Eski akademik şimdi kurucu

h. Kurucu ve çalışan

i. Kurucu ve akademisyen

Ön araştırma ile incelenen bu finalistlere veri geliştirme ve doğrulama amaçlı çevirim içi anket uygulaması yapılmıştır.

LinkedIn ön araştırması ile; n=370 kişi arasından $m_1$=196 kişinin YFYİ'ye katıldıktan sonra bir şirket kurarak girişimciliği deneyimlediği bilgisine ulaşılmıştır. Bu 196 kişinin %96,4'üne, 189 kişiye, LinkedIn üzerinden ulaşılmış ve anket gönderilmiştir ve $x_1$:127 kişi anketi doldurmuştur.

n=370 kişi arasından $m_2$=114 kişinin YFYİ sonrası bir şirket kurmadığı ve girişimciliği deneyimlemediği gözlemlenmiştir. Bu 114 kişiden 101'ine LinkedIn aracılığı ile ulaşılmış ve $x_2$=49 kişi anketi doldurmuştur.

Böylelikle toplamda ($x_1$=127) + ($x_2$=49) = (X=176) anket datası elde edilmiştir.

$M_3$=60 finalist hakkında çevirim içi arama ile herhangi bir bilgiye ulaşılamamıştır.

Küresel Girişimcilik Endeksi (GEM) raporunda erken aşama girişimcilik aktivitesi şirket kurulumundan hemen sonraki dönem olarak tanımlanmaktadır. Buna bağlı olarak bu çalışma da girişimcilik deneyimi olan kişiyi bir şirket kurmuş kişi olarak tanımlamaktadır.

Bu kapsamda program finalistleri iki ana gruba ayrılmıştır:

a. Bir şirket kurarak girişimcilik geçmişine sahip olanlar

b. Şirket kurmayanlar

Anket her iki gruba da gönderilmiştir. Anketin amacı demografi bilgileri ve şirket hakkında ek bilgiler edinmenin yanı sıra; YFYİ programının girişimciliğe veya kurum içi girişimciliğe yönlendirmede pozitif bir etkisinin olup olmadığını anlamaktır. Beş bölümden oluşan anketin ilk bölümünde katılımcıların yaş, cinsiyet, eğitim durumu, eğitim geçmişi ve iş profili gibi demografik bilgiler sorulmaktadır. Anketin ikinci bölüm soruları YFYİ ödül mekanizması ile girişimciliğe yönelim arasında bir bağlantı olup olmadığını öğrenmek üzere tasarlanmıştır. Üçüncü bölümde ise YFYİ programı katılımı sonrasında şirket kurulmuş ise bu şirketin kuruluş tarihi, faaliyette olup olmadığı, çalışan sayısı, devlet desteği alıp almadığı ve yatırım alıp almadığı gibi sorular bulunmaktadır. Anketin dördüncü bölümü katılımcının YFYİ hakkında görüşleri ve programın girişimcilik kariyerlerine etkisini öğrenmek üzere kurgulanmış sorulardan oluşmaktadır. Son bölüm ise katılımcının genel görüş ve önerileri ile iletişim bilgilerini ele almaktadır.

Toplamda 176 YFYİ finalisti ankete katılmıştır. Anket sonuçları dört farklı grup altında incelenmiştir.

a. Tüm finalistler ($X=176$)
b. Şirket kurmuş, girişimcilik geçmişi olan finalistler ($x_1=127$)
c. Şirket kurmamış finalistler ($x_2=49$)
d. YFYİ sonrasında finalistler tarafından kurulan şirketler ($x_{1,1}=64$)

Ankete katılan tüm finalistlerin cinsiyet oranı %13,1 kadın ve %86,9 erkek olmuştur. Bir şirket kurarak girişimcilik geçmişine sahip olanlar arasında ise kadın oranının %9,9'a gerilediği gözlemlenmiştir. Ankete katılanların büyük bir çoğunluğu 25-34 yaş aralığındadır. Ankete katılanların %85,2'si lisans veya yüksek lisans derecesine sahiptir.

YFYİ ilk yıllarında sadece ODTÜ öğrencelerine açık bir yarışmaydı. İlerleyen yıllarda bu kural takımda en az bir ODTÜ öğrencisinin bulunması olarak genişletildi. Sonraki yıllarda ise bu kural tamamen ortadan kalkmıştır ve başvurulan tüm üniversite

öğrencisi veya mezununa açılmıştır. Bu bağlamda, anket katılımcılarının büyük bir çoğunluğunun son öğrenim gördüğü üniversitenin ODTÜ olması şaşırtıcı değildir.

Teknoloji tabanlı iş fikirlerinin kabul edildiği YFYİ finalisti anket katılımcılarının büyük çoğunluğunun mühendislik fakültesi ikincil olarak da temel bilimler mezunu olması da beklenen bir sonuçtur.

Bir şirket kurarak girişimciliği deneyimlemiş 127 katılımcının cinsiyet oranı %12,6 kadın ve %87,4 erkek olarak belirlenmiştir. Bu grupta yüksek lisans ve doktoraya yönelim oranında azalma gözlemlenmiştir.

Şirket kurmuş anket katılımcılarının %72,4'ü kendini '*Girişimci'*, *'Akademik Girişimci'*, *'Seri Girişimci'*, *'Eski Özel Sektör Çalışanı Şimdi Girişimci'*, *'Eski Devlet Çalışanı Şimdi Girişimci'*, *'Girişimci ve Özel Sektör Çalışanı'* olarak tanımlamakta ve aktif olarak girişimciliğe devam etmektedir.

Şirket kurmamış YFYİ finalistlerinin anket datası incelendiğinde cinsiyet oranı %14,3 kadın ve %85,7 erkek olarak ölçülmektedir. Bu grupta yüksek lisans ve doktora öğrenimine eğilimde artış gözlemlenmiştir. Yine bu gruptaki YFYİ finalistlerinin %61,2'si şirket kurmamış olmalarına rağmen kendilerini *'Eski Girişimci'* ya da *'Girişimci'* olarak tanımlamaktadır. Bu oran kendini *'Eski Akademik Girişimci Şimdi Özel Sektör Çalışanı'*, *'Eski Girişimci Şimdi Akademisyen'*, *'Eski Özel Sektör Çalışanı Şimdi Girişimci'*, *'Girişimci'*, *'Akademik Girişimci'*, ve *'Eski Girişimci Şimdi Özel Sektör Çalışanı'* olarak tanımlayanların toplamı yoluyla hesaplanmıştır.

Şirket kurmamış ve girişimcilik geçmişi olmayan bu grubun %63,3'ünü özel sektör çalışanları oluşturmaktadır. Bu oran kendini *'Eski Akademisyen Şimdi Özel Sektör Çalışanı'*, *'Eski Akademik Girişimci Şimdi Özel Sektör Çalışanı'*, *'Özel Sektör Çalışanı'* ve *'Eski Girişimci Şimdi Özel Sektör Çalışanı'* olarak tanımlayanlardan hesaplanmıştır.

Tüm anket katılımcılarının (X=179) 81'i YFYİ mezuniyeti sonrasında bir şirket kurduğunu belirtmiştir. Başka bir deyişle, anket katılımcılarının %46,0'sı YFYİ katılımı sonrasında bir şirket kurduğunu ifade etmiştir. Aynı takımdan birden fazla anket katılımcısı aynı şirketi kurmuş olduğundan incelenen şirket sayısı 64 olmuştur. Anket sonuçlarına göre, YFYİ sonrası şirket kuran finalistlerin yalnızca %17,3'ü YFYİ'de sundukları projeden farklı bir proje ile şirketleşmişler. Geri kalan %82,7 YFYİ projeleri ile şirketleşmiş aynı proje ile devam etmekte, pivot etmiş veya farklı bir proje ile çalışmaya başlamıştır.

YFYİ şirketlerinin %79,7 gibi önemli bir bölümü devlet desteklerinden faydalanmıştır. Yatırım açısından incelenecek olursa, durum devlet desteklerinin tam tersi yönündedir. Ankete katılan kurucuların YFYİ katılımı sonrası kurdukları ilk şirketlerin %26,6'sı yatırım almıştır.

Ankette incelenen YFYİ şirketlerinin %59,4'ü ODTÜ Teknokent'te kurulmuştur. ODTÜ Teknokent'te kurulan 38 şirketten 8'i resmi olarak kapanmış, 9'u aktif faliyette değil ancak resmi olarak kapanmamış, 21'i ise aktif olarak faaliyetlerine devam etmektedir. Bu 21 aktif şirketin 2 tanesi ODTÜ Teknokent'ten ayrılmış ve Teknoloji Geliştirme Bölgeleri dışına taşınmıştır. Anket sonuçlarına göre, ODTÜ Teknokent'te faaliyete başlamış ancak başka bir Teknoloji Geliştirme Bölgesi'ne taşınmış aktif YFYİ şirketi bulunmamaktadır.

Anket yoluyla incelenen YFYİ şirketlerinin %76,6'sı aktif faaliyetlerine devam etmektedir ancak bu şirketlerin %18,8'i aktif faaliyette değil ancak resmi olarak kapanmamıştır. Bu faaliyetlerine devam etmeyen şirketler hesaba katılmazsa ankette incelenen YFYİ şirketlerinin %57,8'inin aktif ticari faaliyette olduğu söylenebilir. Aktif faaliyette olan bu 37 şirketin %59,5'i 1-5 çalışana sahiptir.

Ankete katılan aktif YFYI şirketlerinin ortalama çalışan sayısını hesaplamak için ağırlıklı ortalama yöntemi kullanılmıştır. Bu yöntemle, 2005-2018 yılları arasında kurulan YFYİ şirketlerinin ortalama çalışan sayısı 7,65 olarak hesaplanmıştır. Ancak bu hesaplama, çalışan sayısını artırmak için yeterli zamanı olmayan genç şirketleri de

içermektedir. Bu nedenle, 2005-2010 yılları arasında kurulmuş YFYİ şirketlerinin ortalama çalışan sayısı yine ağırlıklı ortalama yöntemi ile hesaplanmıştır. Bu hesaplama ile, 9+ yaşında olan YFYİ şirketlerinin ortalama çalışan sayısı 26,75 olarak bulunmuştur.

Esas olarak sponsorluklarla yürütülen bu gibi programlar için uzun vadeli başarı kriterlerinden biri katılımcı memnuniyetidir. Bu doğrultuda anket katılımcılarından YFYİ programı ile ilgili görüşlerini 1-5 skalasında puanlayarak ifade etmeleri istenmiştir. Anketin bu bölümü puanlamaya ilişkin beş ifadeden oluşmaktadır:

1. YFYİ'ye iyi ki katılmışım.
2. YFYİ sonrasında girişimciliğe yönelik bilgim, ilgim ve motivasyonum arttı.
3. YFYİ'yi arkadaşlarıma önerdim.
4. YFYİ'ye katılmasaydım girişimci olmazdım. (Bu ifade sadece şirket kurmuş katılımcıların puanlamasına açıktır.)
5. YFYİ'ye katılarak edindiğim tecrübe çalıştığım kurum içerisinde yeniliğe daha açık olmamı sağladı. (Bu ifade sadece şirket kurmamış katılımcıların puanlamasına açıktır.)

Bu bölümde sonuçlar müşteri memnuniyeti ile ilgili en sık kullanılan iki önemli performans göstergesi olan Net Tavsiye Skoru (NPS) ve Müşteri Memnuniyeti Skoru (CSAT) yöntemleri ile analiz edilmiştir.

Yukarıda bahsedilen birinci ifadeye anket katılımcıları tarafından verilen yüksek puanların ve %74 CSAT performans göstergesi dikkate alındığında, YFYI'nin katılımcıların girişimciliğe ilgisini ve motivasyonunu arttırdığını söylemek mümkündür.

Üniversite öğrencileri arasında girişimciliği teşvik etmek, girişimcilik bilincini artırmak ve yenilikçi fikirlerin başarılı iş modellerine dönüştürülmesini desteklemek YFYI'nin ana hedefleri arasındadır. Bu açıdan bakıldığında, "YFYİ'ye katılmasaydım girişimci olmazdım" ifadesi skorunun YFYİ programına katılanların girişimcilikle ilk defa tanıştıkları göz önüne alındığında daha yüksek olması bekleniyordu. Bu sonuç,

ankete katılanların girişimci olmak için kendi kendine motive olarak programa başvurduğunu göstermektedir. Bu ifadenin girişimcilik geçmişi olan yanlı bir grubun değerlendirmesinden geçtiğini de belirtmek gerekir.

İkinci ve dördüncü ifadelerin skorları birlikte değerlendirildiğinde program katılımcılarının program öncesinde girişimciliği deneyimlemeye kararlı oldukları ancak YFYİ'nin girişimciliğe yönelik motivasyonunu arttırdığı sonucuna ulaşılmaktadır.

Üçüncü sıradaki öneri ifadesinin NPS skoru 31'dir. Bu skora göre anket katılımcılarının YFYİ'ye bağlılıkları pozitif bir senaryo çizse de gelişime açıktır.

Şirket kurmamış katılımcıların puanlaması beklenen beşinci ifadenin CSAT skoru %63'tür. Bu skor program katılımcıları ile kurum içi girişimcilik ve yeniliğe açıklık arasında pozitif bir ilişkinin olduğunu göstermektedir.

YFYİ programının ödül mekanizmasının şirket kurumu yoluyla girişimciliği teşvik edip etmediği bu çalışmanın araştırma sorunlarından biridir. Bu çerçevede, anket çalışması ile YFYİ finalistlerine program finalinde ödül alıp almadıkları ve programdan sonra bir şirket kurup kurmadıkları sorulmuştur.

YFYİ final töreninde jüri değerlendirmesi ile seçilen takımlara şirket kurmalarını cesaretlendirmek amacıyla parasal ve ayni ödüller verilir. Bu nedenle, ödül alan takımlar arasında şirket kurma oranının ödül almayan finalistlerden yüksek olmasını bekledik. Anket sonuçlarına göre, YFYİ final töreninde ödül alan 113 kişiden 54'ü bir şirket kurmuş, geri kalan 59'u programdan sonra herhangi bir şirket kurmadıklarını belirtmiştir. Ankete katılan ve YFYİ finalinde ödül almayan 63 kişiden 27'si YFYİ'den sonra bir şirket kurduğunu belirtmiştir. Başka bir deyişle, anket sonuçlarına göre ödül alanlar arasında şirket kurma oranı %47,8 iken ödül almayanlar arasında şirket kurma oranı %42,9'dur.

Bu çalışmada, ödül kazanma ile şirket kurma arasında pozitif bir ilişki olduğuna dair istatistiksel olarak anlamlı bir kanıtımızın olup olmadığını görmek için iki oranlı z testi yapılmıştır. Test kapsamında sıfır hipotezi ($H_0$) *' Ödül kazanan ve yeni bir şirket kuran anket katılımcıları arasında bir fark yoktur'* olarak belirlenmiştir. Alternatif hipotez ise *'Ödül almış şirket kurucularının gerçek oranı, ödüllendirilmemiş olanlardan daha yüksektir'* olarak belirlenmiştir. Yanılgı düzeyi $\alpha = 0,05$ olarak alınmıştır. Hesaplanan Z skoru 0,63'tür. Bu skora göre Standart Normal Dağılım Tablosu ile p değeri 0,2643 olarak hesaplanmıştır.

Hesaplanan p değeri (p=0,2643) yanılgı düzeyinden ($\alpha = 0,05$) yüksek olduğu için sıfır hipotezi ($H_0$) reddedilememiştir.

Böylelikle, anket sonuçlarına ve iki oranlı z-test hesaplamalarına göre, '*Ödül almış şirket kurucularının gerçek oranı, ödüllendirilmemiş olanlardan daha yüksek'* olduğunu belirten yeterli kanıt bulunamadığı söylenebilir.

Yine anket sonuçlarına göre 176 katılımcı arasından 6 kişi kendini seri girişimci olarak tanımlamıştır. Bu 6 girişimcinin 5 tanesi YFYİ finalinden ödül almıştır. Oransal olarak konuşmak gerekirse kendini seri girişimci olarak tanımlayan anket katılımcılarının %83'ü YFYİ finalinde ödül almıştır. Anket katılımcıları arasında kendini seri girişimci olarak tanımlamamış ancak birden fazla şirket kurduğunu belirtmiş kişiler bulunmaktadır. Seri girişimciliği birden fazla şirket kurmak olarak tanımlarsak ankete katılmış seri girişimci sayısı 23'e yükselmektedir ve bu 23 kişiden 18'inin YFYİ finalinde ödül aldığı gözlemlenmektedir.

Çalışma kapsamında YFYİ'ye katılmış dört şirket (ISSD, BTech, Mobilus ve Sim4Crew) ile röportajlar gerçekleştirilmiştir. Bu röportajların amacı girişimlerin hikayelerinin dokümantasyonunu sağlamak, kurucuların YFYİ başvurma amaçlarını, program deneyimlerini, program öncesi ve sonrasında karşılaştıkları zorlukları ve aldıkları destekleri gözlemlemektir. Bu röportajlardan anlaşıldığı üzere ODTÜ

Teknokent girişimcilik ekosisteminde yer alma fırsatı girişimcilerin YFYİ'ye başvurmaları için önemli nedenlerden biridir.

Erken aşama fonlamanın sınırlı olduğu Türkiye gibi ekonomilerde, istihdam yaratma yalnızca yeni şirketlerden değil yeni girişimler yaratacak ve yeni endüstrilere genişleyecek daha fazla kaynağa sahip büyük kurumlardan beklenmektedir. Bu geçişin gerçekleşmesi için, doğru büyüme zihniyetine sahip bireylere kurumların her düzeyinde ihtiyaç vardır. YFYİ programı mezunlarının bu yenilik ve büyüme zihniyetine sahip olmasını sağlamaktadır.

Bu çalışma ile YFYİ'nin ödül mekanizmasının şirket kuruluşuna istatistiksel olarak önemli bir katkı sağlamadığı anlaşılmıştır. Ancak, veri tabanına göre anketi tamamlamayan birçok insanın girişimci/kurucu olmadığını ve profesyonel iş hayatına çalışan olarak ya da akademik kariyerine devam ettiğini varsaymak güvenlidir. Bu nedenle, anketi dolduran kişilerde girişimci olan ve olmayan oranlarının dengelenmesi durumunda, ödül verilen ekiplerin şirketleşme eğiliminin daha yüksek olduğunu gözlemlenebilirdi.

Çıkan sonuç, YFYİ ve benzer programların daha fazla ödül önerilmesi gerektiği anlamına gelmemektedir. Ödüllerin katılımcılar üzerinde etkisi elbette vardır, ancak hem ödül almış hem de ödül almamış ekiplere daha fazla takip yoluyla destek vermek şirket kurulum oranları arttırılabilir.

Bu çalışmada, istatistiksel olarak anlamlı sonuçlar elde etmek için YFYI finalistlerinin tüm popülasyonuna ulaşmak amaçlanmıştır. Ancak, finalistlerin %83'ünün geçmiş bilgilerine çevrimiçi arama yoluyla ulaşılmıştır. Çevrimiçi arama yolu ile ulaşılamayan kesimin özellikle evlilik sonrasında kadınlarda soyadı değişikliği ve dijital görünürlük eksikliğinden kaynaklanabileceği tahmin edilmektedir.

Anket, bu finalistlerin %67'sine LinkedIn üzerinden gönderilmiştir. LinkedIn davetine yanıt vermeyen kişilere gönderilememiştir.

Başvuru sahiplerini ve program sonrasında hızlandırıcı ekipleri izlemek için tutarlı bir veri yönetim sisteminin olmayışı, çalışma kapsamında verilerin toplanmasını ve analiz edilmesini zorlaştırmıştır. Hem program katılımcıları hem de mezunlar için tutarlı bir izleme sistemine sahip olmak, programın başarısını ve yerel ekonomiye olan katkısını ölçebilmek için kritik öneme sahiptir. Çalışmada ODTÜ Teknokent tarafından takip edilmeyen ancak YFYİ'den sonra dolaylı olarak kurulmuş bazı şirketler olduğu görülmüştür.

Bu çalışma sadece finalist takımları incelemiş ve ödül mekanizmasının finalistlerin girişimcilik başarısı üzerindeki etkisini araştırmıştır. Tüm program katılımcıları incelenerek araştırma genişletilebilir. Bu şekilde YFYİ'de finalist olmanın girişimcilik başarısı üzerindeki etkisi, eğitim programının seçim kriterleri ve başarısı ile birlikte incelenebilir.

Bu çalışma, YFYİ finalistlerinin bir şirketin kurucusu olmasalar bile kendilerini girişimci olarak tanımlama eğiliminde oldukları sonucuna varmaktadır. Katılımcılarının "Bir zihniyet olarak Girişimcilik" ifadesine uyuyor olmaları, diğer yarışmalar ve kurumlar tarafından hedeflenmesi ve ölçülmesi gereken somut bir YFYİ kazancı olabilir.

Bu çalışmaya benzer bir metodoloji, yarışmaların erken aşamada girişimcilik ekosisteminin geliştirilmesinde etkili olup olmadığını görmek için diğer iş planı yarışmalarını analiz etmede de kullanılabilir.

Ayrıca, şirketleri kurucularının derinlemesine bir analizi, iş yaratma, ekonomik güçlenme ve yenilik oluşturma üzerindeki nicel etkiyi anlamak için yapılabilir.

## APPENDIX G: TEZ İZİN FORMU / THESIS PERMISSION FORM

**ENSTİTÜ** / INSTITUTE

**Fen Bilimleri Enstitüsü** / Graduate School of Natural and Applied Sciences ☐

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