

A STUDY ON  
THE EFFECTS OF BUSINESS INCUBATORS ON THEIR TENANTS  
UNDER THE LIGHT OF POSITIVE PSYCHOLOGY



BURÇİN TÜZEMEN

YEDİTEPE UNIVERSITY  
GRADUATE SCHOOL OF SOCIAL SCIENCES  
İSTANBUL, 2023

A STUDY ON  
THE EFFECTS OF BUSINESS INCUBATORS ON THEIR TENANTS  
UNDER THE LIGHT OF POSITIVE PSYCHOLOGY

BURÇİN TÜZEMEN

SUPERVISOR  
PROF. ÖZLEM KUNDAY

DISSERTATION SUBMITTED TO  
GRADUATE SCHOOL OF SOCIAL SCIENCES  
IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF  
Ph.D.  
IN  
DEPARTMENT OF BUSINESS ADMINISTRATION

YEDİTEPE UNIVERSITY  
GRADUATE SCHOOL OF SOCIAL SCIENCES  
İSTANBUL, 2023

## PLAGIARISM

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Date: 29.05.2023

Name / Surname: Burçin TÜZEMEN

## ABSTRACT

Business incubators support development of start-up companies by offering them a protective environment and various support services. Since their first appearance in USA in early 1960's, academic studies on business incubators have been carried out reaching out valuable findings on especially *hard* issues like their contribution to the financial success of start-up companies. Nevertheless, when it comes to *soft* issues, there are issues waiting to be studied more, such as the contributions of incubators to entrepreneurs as *individuals*. The purpose of this dissertation is to help close some of the gaps in the literature by focusing on the potential impact of business incubators on the individual well-being of entrepreneurs. With that in mind, the impact of incubator services on the psychological capital (PsyCap) and life satisfaction of entrepreneurs were focused on. In line with the research aim, a two-stage research was designed under which 9 semi-structured interviews were carried out with incubator managers, followed by 126 interviews made with entrepreneurs via an online survey. Based on the survey data and following correlation and regression analysis made by using SPSS v.22, statistically significant and positive relationships were observed between using business incubator services, PsyCap and life satisfaction of entrepreneurs. It was found out that the positive impact of incubator services on entrepreneurs' PsyCap was created mostly through networking and business support services rather than physical services. PsyCap was observed to assume a partially mediating role in the relationship between incubator services usage and life satisfaction of entrepreneurs. Finally, it was also observed that the link between PsyCap and life satisfaction was mostly via the hope dimension of PsyCap. With the cross disciplinary nature of its topic, the research focused on an area that is relevant for both entrepreneurship and organizational behaviour literature as well as general psychology. It is expected that, it can be considered one of the pioneering studies in its unique area. The research has managerial implications as well since it presents new findings on the contribution of business incubators to entrepreneurs – which might be expected to add to the dynamism in entrepreneurial ecosystem through affecting the demand for incubators positively.

*Keywords: Positive Psychology, Entrepreneurship, Business Incubator, Psychological Capital, Subjective Well-Being*

## ÖZET

Kuluçka merkezleri yeni kurulan şirketlere güvenli bir ortam ve çeşitli destek hizmetleri sunarak onların gelişimine katkıda bulunmaktadır. 1960'lı yılların başında ABD'de ilk ortaya çıkmalarından bu yana bu merkezler akademik çalışmalara konu olmuş ve örneğin bu kuruluşların yeni kurulan şirketlerin finansal başarısına katkıları gibi konularda önemli bulgulara ulaşılmıştır. Ancak, söz konusu çalışmalar sırasında insana dair konular yeterince irdelenmemiş, söz gelimi, kuluçka merkezlerinin girişimcilere bireysel düzlemdeki katkıları yeterince araştırılmamıştır. Bu tezin amacı, kuluçka merkezlerinin bu kuruluşlardan hizmet almakta olan girişimcilerin iyi oluş halleri üzerindeki potansiyel etkilerine odaklanarak literatürdeki açıkların bir kısmının kapatılmasına yardımcı olmaktır. Bu amaçla, kuluçka merkezlerinde sunulan hizmetlerin girişimcilerin psikolojik sermayesi ve hayat tatminleri üzerinde etkilerine odaklanılmıştır. Bu doğrultuda iki aşamalı bir araştırma kurgusu oluşturulmuş ve devamında önce 9 kuluçka merkezinin yöneticisiyle yarı yapılandırılmış görüşmeler gerçekleştirilmiş, bunu takiben de 126 girişimcinin katıldığı bir çevrimiçi anket uygulaması yürütülmüştür. Girişimcilerle yapılan anketten elde edilen veriler SPSS v.22 programı aracılığıyla yürütülen korelasyon ve regresyon analizleri ışığında incelendiğinde kuluçka merkezlerinde sunulan hizmetlerin kullanımıyla bu hizmetlerden yararlanan girişimcilerin psikolojik sermayesi ve hayat tatmini arasında istatistiki açıdan anlamlı düzeyde olan, pozitif yönlü ilişkilerin bulunduğu tespit edilmiştir. Yapılan analizlerde kuluçka merkezlerince sunulmakta olan hizmetlerden iş destek ve sosyal ağ oluşturma hizmetlerinin girişimcilerin psikolojik sermayesi üzerinde olumlu ve anlamlı bir etkisi olduğu gözlemlenirken, fiziki hizmetlerin anlamlı bir etkisi olmadığı görülmüştür. Ayrıca, kuluçka merkezlerince sunulan hizmetlerin kullanımıyla girişimcilerin hayat tatmini arasındaki ilişkide psikolojik sermayenin kısmi aracılık rolü üstlendiği de tespit edilmiştir. Girişimcilerin psikolojik sermayesi ile hayat tatminleri arasındaki ilişkinin ise özellikle psikolojik sermayenin umut boyutu sayesinde kurulduğu görülmüştür. Disiplinler arası konusu sayesinde araştırma girişimcilik, örgütsel davranış ve hatta genel anlamıyla psikoloji alanlarındaki akademik birikimi ilgilendiren bir konuya ışık tutmuştur. Çalışmanın odaklanılan alandaki öncü çalışmalardan biri olarak değerlendirilmesi ümit edilmektedir. Kuluçka merkezlerinin girişimcilere olan katkıları hakkında farklı bir açıdan bulgular sunduğu

iin, arařtırmanın ynetsel etkileri de bulunmaktadır. Bu sayede giriřimcilerin kuluka merkezlerine olan talebine olumlu bir katkıda bulunarak, giriřimcilik ekosistemindeki dinamizmi desteklemesi mit edilmektedir.

*Anahtar Kelimeler: Pozitif Psikoloji, Giriřimcilik, Kuluka Merkezi, Psikolojik Sermaye, znel İyi Oluř*



## ACKNOWLEDGEMENT

At the end of a long journey of five years in pursuit of earning a Ph.D., I would like to express my sincerest thanks, first of all, to all the professors who have done their best to share their knowledge with me all the way since my undergraduate years which started in 1995. Throughout my university life, I have always been a student of Management/ Business Administration. This journey started in Middle East Technical University of Ankara/ Turkey in 1995 where I was an undergraduate student for four years. Immediately after that, came my two years of master's degree studies in Sabancı University of Istanbul / Turkey. Having closed the first chapter of academic life at the end of 2001, I have started working as a professional in corporate life and worked in established companies of Turkey assuming managerial roles. It was 2018 where the second chapter of my academic life was opened with starting my Ph.D. study in Yeditepe University of Istanbul, Turkey. All those years I had either been a student or a practitioner of management and I earned my life with it. As of now, when I am writing these words, both journeys are still going on and I am still a full time professional while working on my dissertation. Coming back to the very beginning of this paragraph, the thing is, in fact there is either direct or indirect contribution of many people to this dissertation who have shared their knowledge and experience with me be it either in a university or company context. Some already passed away, the things that I learned from all these people enabled me carry out this work.

To be more specific, of course, the more recent *comrades* in this long journey deserve mentioning their names explicitly in these lines. With that respect, I first would like to express my gratitude to Professor ÖZLEM KUNDAY. Apart from her being my academic advisor in writing this thesis, she had been a supporter and co-author for me in preparing papers for local and international journals and a mentor for preparing for proficiency exams. It is impossible to quantify and measure the contribution of her positive energy and smiling face. Life would be a lot more difficult and insipid, had she not been there.

Another name that I have to mention in these lines is Associate Professor GÖNÜL DEMİREL, who has both been my teacher in organization theory classes and also an active member of my Thesis Evaluation Committee. What makes her more special is that we have been co-authors in a paper on Henry Fayol which was my *first*

*published academic work*. It was during this experience that I had started learning about the process and expectations in academic research and publication. Together with her, I also need to spell out the names of Dr. UFUK GÜR and Dr. ZEYNEP KABADAYI KUŞÇU who have taken active roles in the Thesis Evaluation Committee and shared their feedback regarding the progress in the study. Finally, I would also like to thank Dr. ÖZGE KİREZLİ and Prof. ÖZLEM ŞENVAR for their participation and contributions during the defense.

In addition to these valuable names, there are several others who had significant contributions in both the qualitative and quantitative stages of the research. These individuals were managers or executives in forecoming business incubators in Turkey and contributed a lot to the survey by either sharing their knowledge and experience throughout one-to-one interviews or helping distribute the survey used in the quantitative phase of the study to entrepreneurs. As a matter of fact, it would literally be *impossible* to carry out this study without their participation since majority of the knowledge created in this work is based on what they supplied or supported. These individuals, in alphabetical order, are: Mr. AHMET SEFA BİR from Cube Incubation, Mr. EFE SEZGİNER from TEB Girişim Evi, Mr. EMRE AKGÜMÜŞ from Anadolu Üniversitesi ANAÇ, Mr. EMRE ÖLÇER from Workup by İş Bankası, Ms. GİZEM KILCI from Acıbadem Kuluçka Merkezi, Ms. HAZAL ÖNSÖZ from Yeditepe University Teknoloji Transfer Merkezi, Mr. İBRAHİM ELBAŞI from Bilgiyi Ticarileştirme Merkezi, Mr. NACİ KAHRAMAN from Accelerate 2030, Ms. SILA DİNÇER from Inovent and Mr. YUNIS ISMAYIL from ITU Çekirdek. Among these valuable people, I would also like to spell out the names of Mr. Efe Sezginer and Ms. Sıla Dinçer once more, in that they also let me have the privilege to be part of the project evaluation processes of related incubators as a jury member in one of the project evaluation rounds. This unique experience, although for a very limited time period, allowed me to be part of the daily routines of the incubators and face directly with entrepreneurs.

Last, but not least, I would also like to thank to Mrs. DUYGU TÜZEMEN, my wife, who supported me a lot in undertaking the challenge of going back to academic life and daring to accept the challenge of trying to give a Ph.D. dissertation after the age of 40!

## TABLE OF CONTENTS

|                                                                  |     |
|------------------------------------------------------------------|-----|
| PLAGIARISM .....                                                 | i   |
| ABSTRACT.....                                                    | ii  |
| ÖZET .....                                                       | iii |
| ACKNOWLEDGEMENT .....                                            | v   |
| TABLE OF CONTENTS.....                                           | vii |
| LIST OF TABLES .....                                             | x   |
| LIST OF FIGURES .....                                            | xi  |
| ABBREVIATIONS .....                                              | xii |
| 1. INTRODUCTION .....                                            | 1   |
| 1.1 Purpose of the Research .....                                | 2   |
| 1.2 Research Questions .....                                     | 3   |
| 1.3 Importance of the Research.....                              | 3   |
| 2. LITERATURE REVIEW .....                                       | 4   |
| 2.1 Positive Psychology Movement and Organizational Studies..... | 4   |
| 2.2 The Concept of Well-being .....                              | 7   |
| 2.2.1 Overview of well-being .....                               | 7   |
| 2.2.2 Subjective well-being .....                                | 10  |
| 2.2.3 Life satisfaction .....                                    | 13  |
| 2.3 The Concept of Psychological Capital .....                   | 17  |
| 2.3.1 Overview of psychological capital .....                    | 17  |
| 2.3.2 Hope dimension.....                                        | 19  |
| 2.3.3 Self efficacy dimension .....                              | 21  |
| 2.3.4 Resilience dimension.....                                  | 24  |
| 2.3.5 Optimism dimension.....                                    | 26  |
| 2.4 Well-being and Psychological Capital of Entrepreneurs .....  | 28  |
| 2.4.1 Entrepreneurs and entrepreneurial life .....               | 28  |
| 2.4.2 Well-being of entrepreneurs .....                          | 34  |
| 2.4.3 Psychological capital of entrepreneurs .....               | 36  |
| 2.5 Business Incubators.....                                     | 38  |
| 2.5.1 Definition and historical development .....                | 38  |
| 2.5.2 Services provided by business incubators .....             | 39  |

|                                                                 |    |
|-----------------------------------------------------------------|----|
| 2.5.3 Types of business incubators .....                        | 40 |
| 2.6 Links Between Concepts and Business Incubators .....        | 42 |
| 2.6.1 Social support theory .....                               | 42 |
| 2.6.2 Social capital theory .....                               | 44 |
| 2.6.3 Social cognitive theory .....                             | 46 |
| 2.6.4 Relevant research and empirical findings.....             | 49 |
| 3. METHODOLOGY .....                                            | 51 |
| 3.1 Research Design.....                                        | 51 |
| 3.2 Research Model and Variables.....                           | 52 |
| 3.3 Research Hypotheses.....                                    | 52 |
| 3.4 Definition of the Universe.....                             | 53 |
| 3.5 Data Collection.....                                        | 54 |
| 3.5.1 The first (qualitative) stage of fieldwork.....           | 54 |
| 3.5.2 The second (quantitative) stage of fieldwork .....        | 55 |
| 3.6 Measurement Instruments .....                               | 56 |
| 3.6.1 Outline of semi-structured interviews .....               | 56 |
| 3.6.2 Overall structure of the survey questionnaire.....        | 57 |
| 3.6.3 Satisfaction with life scale (SWLS).....                  | 58 |
| 3.6.4 Psychological capital questionnaire (PCQ) .....           | 60 |
| 3.7 Data Analysis .....                                         | 61 |
| 3.7.1 Analysis of qualitative data .....                        | 61 |
| 3.7.2 Analysis of quantitative data .....                       | 62 |
| 4. RESEARCH FINDINGS .....                                      | 63 |
| 4.1 First (Qualitative) Stage Findings .....                    | 63 |
| 4.1.1 Observations on incubation business.....                  | 63 |
| 4.1.1.1 Diversity in program structures .....                   | 63 |
| 4.1.1.2 Organization.....                                       | 66 |
| 4.1.1.3 Facilities .....                                        | 67 |
| 4.1.1.4 Project flow to incubators .....                        | 68 |
| 4.1.1.5 Project evaluation criteria .....                       | 69 |
| 4.1.1.6 Critical success factors in incubation business .....   | 70 |
| 4.1.2 Observations of incubation managers on entrepreneurs..... | 70 |
| 4.1.2.1 The challenges of being an entrepreneur .....           | 71 |

|                                                                             |     |
|-----------------------------------------------------------------------------|-----|
| 4.1.2.2 Common weaknesses and mistakes of entrepreneurs .....               | 72  |
| 4.1.3 The interaction between business incubators and entrepreneurs.....    | 75  |
| 4.1.3.1 Contributions of business incubators to their tenants .....         | 75  |
| 4.1.3.2 Incubator as a source of synergy.....                               | 77  |
| 4.2 Second (Quantitative) Stage Findings.....                               | 79  |
| 4.2.1 Respondents' profile.....                                             | 79  |
| 4.2.2 Validity and reliability of measurement instruments .....             | 81  |
| 4.2.2.1 Factor analyses results for PCQ.....                                | 81  |
| 4.2.2.2 Factor analyses results for SWLS .....                              | 82  |
| 4.2.2.3 Reliability analyses results for measurement scales .....           | 83  |
| 4.2.3 Tests of hypotheses.....                                              | 84  |
| 4.2.4 Findings on lower level relationships between variables .....         | 90  |
| 4.2.4.1 Correlation analysis results on lower level relationships.....      | 90  |
| 4.2.4.2 Regression analysis results on lower level relationships .....      | 92  |
| 5. DISCUSSION .....                                                         | 97  |
| 5.1 Overview of the Research and Findings .....                             | 97  |
| 5.2 The Impact of Incubator Services on PsyCap of Entrepreneurs .....       | 98  |
| 5.3 The Impact of PsyCap on Life Satisfaction of Entrepreneurs.....         | 99  |
| 5.4 The Importance of Hope in PsyCap - Life Satisfaction Relationship ..... | 101 |
| 5.5 Managerial Implications.....                                            | 103 |
| 5.6 Limitations and Suggestions For Future Research.....                    | 105 |
| REFERENCES .....                                                            | 110 |
| APPENDIX A.....                                                             | 140 |
| APPENDIX B .....                                                            | 141 |
| APPENDIX C .....                                                            | 142 |
| APPENDIX D.....                                                             | 144 |
| APPENDIX E .....                                                            | 146 |
| APPENDIX F.....                                                             | 150 |

## LIST OF TABLES

|           |                                                                                           |    |
|-----------|-------------------------------------------------------------------------------------------|----|
| Table 1.  | Differences Between (Traditional) Incubator and Accelerators.....                         | 41 |
| Table 2.  | Business Incubator Universe in Turkey.....                                                | 53 |
| Table 3.  | Classification of Non KOSGEB Related Incubators in Turkey.....                            | 53 |
| Table 4.  | List of the Incubators Participating in the First Stage of Research.....                  | 55 |
| Table 5.  | SWLS Items.....                                                                           | 59 |
| Table 6.  | Sample Items From PCQ.....                                                                | 60 |
| Table 7.  | Descriptive Statistics on Demographic Profile of Participants.....                        | 80 |
| Table 8.  | KMO and Bartlett's Test Results for SWLS and PCQ Scales.....                              | 81 |
| Table 9.  | Factor Loadings for PCQ Scale.....                                                        | 82 |
| Table 10. | Factor Loadings for SWLS Scale.....                                                       | 83 |
| Table 11. | Reliability Test Results for SWLS and PCQ Scales.....                                     | 83 |
| Table 12. | Regression Analysis for Service Usage-PsyCap Relationship.....                            | 84 |
| Table 13. | Regression Analysis for PsyCap-Life Satisfaction Relationship.....                        | 85 |
| Table 14. | Regression Analysis for Service Usage-Life Satisfaction Relationship.....                 | 85 |
| Table 15. | Mediation Analysis for Services Usage (Process Macro Output).....                         | 86 |
| Table 16. | Moderation Analysis for Age (Process Macro Output).....                                   | 87 |
| Table 17. | Moderation Analysis for Gender (Process Macro Output).....                                | 88 |
| Table 18. | Moderation Analysis for Education (Process Macro Output).....                             | 88 |
| Table 19. | Moderation Analysis for Experience (Process Macro Output).....                            | 89 |
| Table 20. | Conclusion Regarding Hypotheses Tests.....                                                | 90 |
| Table 21. | Correlation Analysis Results on Lower Level Relationships.....                            | 91 |
| Table 22. | Reg. Analysis for Physical Services Usage and PsyCap Relationship .....                   | 92 |
| Table 23. | Regression Analysis for Business Support Services Usage and.....<br>PsyCap Relationship   | 93 |
| Table 24. | Regression Analysis for Networking Services Usage and.....<br>PsyCap Relationship         | 93 |
| Table 25. | Regression Analysis for Service Usage-Hope Relationship.....                              | 94 |
| Table 26. | Regression Analysis for Service Usage-Self Efficacy Relationship.....                     | 94 |
| Table 27. | Regression Analysis for Service Usage-Resilience Relationship.....                        | 95 |
| Table 28. | Regression Analysis for Service Usage-Optimism Relationship.....                          | 95 |
| Table 29. | Multiple Regression Analysis for PsyCap Dimensions-Life.....<br>Satisfaction Relationship | 96 |

**LIST OF FIGURES**

|                                                 |    |
|-------------------------------------------------|----|
| Figure 1. Research Design.....                  | 51 |
| Figure 2. Research Model.....                   | 52 |
| Figure 3. Sample Frame from Coding Process..... | 62 |



## ABBREVIATIONS

|         |                                                                 |
|---------|-----------------------------------------------------------------|
| GEM     | Global Entrepreneurship Monitor                                 |
| ISGEM   | Business Development Centre                                     |
| KOSGEB  | Small and Medium Enterprises Development Organization of Turkey |
| KMO     | Keiser-Meyer-Olkin (KMO)                                        |
| NGO     | Non-Governmental Organization                                   |
| PCQ     | Psychological Capital Questionnaire                             |
| POB     | Positive Organizational Behaviour                               |
| POS     | Positive Organizational Scholarship                             |
| PSYCAP  | Psychological Capital                                           |
| SWB     | Subjective Well-being                                           |
| SWLS    | Satisfaction With Life Scale                                    |
| TEKMER  | Technology Development Centre                                   |
| TUBITAK | Scientific and Technological Research Council of Turkey         |

## 1. INTRODUCTION

The value of focusing on the *positive* and using it in making people's lives better has been recognized quite a long time ago, back in the days of ancient Greece, as we see it from the story of Pygmalion and Galatea (Avey et al, 2011). Centuries later, in the beginning of 21st century, the value of the positive was this time being reminded by a group of psychologists led by Martin Seligman. Leading to the birth of *Positive Psychology* movement, Seligman and his fellows were simply reminding that psychological studies should focus more on making people happier and more productive and help them realise their full potential (Luthans et al, 2007a). Their efforts have paid off and many studies have been made since then that are parallel to this mission.

In the years to follow, positive psychology movement has increased its sphere of influence and inspired organizational studies as well. In line with positive psychology, two major schools appeared in the organizational studies arena under the names of positive organizational scholarship (POS) and positive organizational behaviour (POB) (Luthans et al., 2007a). Of these two schools, POS school was mostly interested in organizational level studies, but POB focused especially on the individual.

Positive psychology was aiming to serve the *well-being* of individuals. As put forward by Luthans (2002), it had emerged due to a lack of attention on the “strengths and positive characteristics of people, that make life worth living” (p.58). Therefore, studies in POB school focused on the strengths of people and the concept of *psychological capital* was developed. Based on positive psychological constructs of hope, efficacy, resilience, and optimism; psychological capital represented the motivational propensities of individuals (Luthans et al, 2007b). It turned out to be among the key concepts developed under the POB school and had strong links to well-being (Avey et al., 2011).

Coming back to today, despite many studies that have been made under POB school, there is still a lot to do. For instance, one area where still more studies are needed is the application of these approaches and concepts to the field of *entrepreneurship*. Indeed, further research calls are being made for *entrepreneurial well-being* and the antecedents and contextual factors affecting entrepreneurial well-being are encouraged to be studied (IECER, 2020).

Calls for further research on well-being in the entrepreneurial context are quite understandable in that entrepreneurship itself is an area which is quite important for society. Entrepreneurial activities are important for the economic development of nations and play an important role in keeping them competitive (Mazzarol & Reboud, 2017). Entrepreneurs try to survive under difficult conditions such as higher risk and uncertainty. They take psychological risks and entrepreneurial stressors may have negative effects on their well-being (Mazzarol & Reboud, 2017; Kollmann et al, 2019). Yet, finding out ways to improve their well-being may contribute positively to the success of entrepreneurial activities. In that sense, studies to be carried out under POB school carry the potential of supporting entrepreneurs.

How to approach entrepreneurial well-being is an issue. Contextual factors have considerable effects on entrepreneurial activities (Mazzarol & Reboud, 2017). Therefore, one possible way of approaching entrepreneurial well-being is concentrating on the entrepreneurial ecosystem. Within this ecosystem, there exists a special type of institution that has a high potential for contributing to entrepreneurial activities as well as affecting their well-being. It is the *business incubator*.

Business incubators are organizations that support the development of new business ventures by providing protective environments (UKSPA, 2015). Though their first examples go as back as the 1960s, they have gained momentum especially in the late 1990s and early 2000s. Parallel to the increase in business incubator activity, academic research has increased as well. Yet, these studies seem to have ignored the contribution of incubators to the psychology of entrepreneurs but rather focused on the financial and economic success of their ventures. As a result, today it is possible to speak of a lack of research on how incubators serve the psychological needs of their entrepreneurs (Ford, 2015). So, approaching entrepreneurial well-being issues over business incubators may have its merits and help enlighten a terrain that is not well discovered.

### **1.1 Purpose of the Research**

In line with the discussion above, this study focuses on entrepreneurial well-being in the context of business incubators. The purpose of the research carried out was to explore whether there exists a relationship between being located in a business

incubator and the well-being of entrepreneurs who are benefiting from the services provided by the incubator.

## 1.2 Research Questions

Using the tools provided by positive psychology, the potential relationship between business incubators and well-being of the entrepreneurs was explored by mainly focusing on two questions:

1. How do the services provided by business incubators affect the psychological capital of the entrepreneurs (incubator tenants) in these establishments?
2. How is the well-being of business incubator tenants affected by the changes in their psychological capital?

## 1.3 Importance of the Research

From an academic perspective, the research is believed to be important because; it focuses on a *unique* area in terms of the relationships and the overall context they are embedded in. Indeed, to the knowledge of the author, there has been quite limited research on the effect of *business incubators* and their services on the *psychological capital* and *well-being* of incubator tenants. On the local scale, although there are certain academic studies on business incubators in *Turkey*, the psychological effects of incubators on entrepreneurs have been understudied. Leaving business incubators aside, *studies on well-being and psychological capital in an entrepreneurial context* are also difficult to come across in the literature. Due to those reasons, the research is expected to be considered among the pioneering studies in the areas of *entrepreneurial well-being* and *business incubator* research literature.

Apart from its importance for academic literature, the research is also supposed to be important for the practitioners as well. It is expected to provide information regarding the contributions of business incubators to their tenants, which can be used as arguments in their communication activities targeting entrepreneurs. Regardless of whether incubators use it for marketing purposes or not, such findings will constitute an additional reason for applying incubators from the perspective of entrepreneurs. Therefore, providing empirical evidence on the benefits of business incubators is expected to affect the demand for these entities in a positive way, which will constitute a contribution to the dynamism in the overall entrepreneurial ecosystem.

## 2. LITERATURE REVIEW

### 2.1 Positive Psychology Movement and Organizational Studies

The notion of positive psychology can be traced back to as early as the beginning of the 20<sup>th</sup> century, 1902, to the writings of William James on healthy-mindedness (Gable & Haidt, 2005). In the following decades after him, it was Mihaly Csikszentmihalyi who realized the need for the integration of a positive approach to psychology during WW2 years (Seligman & Csikszentmihalyi, 2000). He was not alone then; in the early 1950s Abraham Maslow (1954) was also arguing that psychology was much too oriented toward the negative and this orientation should be balanced with studying areas like growth and realization of human potential (Avey et al, 2010). However, as a *major movement* and as we understand it now, the first sign regarding the beginning of positive psychology is seen in the presidential address of Martin Seligman to American Psychological Association in 1998 (Linley et al, 2006). In his speech, Seligman was making a call for a shift in psychology towards the positive and he was decisive to use his presidency for that purpose.

The call of Seligman for making a shift in psychological studies in his presidential address was later followed by other developments. Seligman was not alone in his efforts regarding positive psychology. A series of meetings began to be held by various scholars parallel to his efforts and Positive Psychology Steering Committee was established, involving Mihaly Csikszentmihalyi, Ed Diener, Kathleen Hall Jamieson, Chris Peterson, and George Vaillant (Linley et al, 2006). This was followed by the establishment of the Positive Psychology Network, a summit on positive psychology in Washington, D.C., and a special issue of American Psychologist journal of American Psychology Association in 2000 (Linley et al, 2006).

The special issue of American Psychologist (2000) was edited by Mihaly Csikszentmihalyi and Martin Seligman. In their introductory paper to positive psychology, Seligman and Csikszentmihalyi (2000) together were underlining the need for incorporating a positive approach to the field of psychology. They reminded that the focus of psychology had been too much on healing diseases, repairing damages and overcoming weaknesses until then. In other words, there was too much emphasis on the *negative*. Metaphorically speaking, psychology was seen as trying to figure out how to raise people from minus eight to zero; but it was not that good at understanding how to

take them to plus eight from zero level (Gable & Haidt, 2005). What Seligman and Csikszentmihalyi (2000) believed was that psychology, should not have been “just a branch of medicine concerned with illness or health; it is much larger. It is about work, education, insight, love, growth, and play” (p.7). What they argued was there was an imbalance in psychological studies and research should have been directed toward neglected areas (Gable & Haidt, 2005). Therefore, they were proposing that psychology should concentrate on experiences like well-being, satisfaction, hope, optimism, flow and happiness (Seligman & Csikszentmihalyi, 2000).

Having made an introduction to positive psychology through its historical development, then, the definition of it can be made as follows:

Positive psychology is the scientific study of optimal human functioning. At the meta-psychological level, it aims to readdress the imbalance in psychological research and practice by calling attention to the positive aspects of human functioning and experience and integrating them with our understanding of the negative aspects of human functioning and experience. At the pragmatic level, it is about understanding the wellsprings, processes and mechanisms that lead to desirable outcomes. (Linley et al, 2006, p.8)

In the years following Seligman’s call, many researchers have served the positive psychology movement. Some notable figures among them were Mihaly Csikszentmihalyi, Ed Diener, Kathleen Hall Jamieson, Chris Peterson, George Vaillant, Rick Snyder, Barbara Fredrickson, Jon Haidt and Suzan Segerstrom (Linley et al, 2006). Subject-wise, the topics that could be classified within the scope of positive psychology involved concepts like optimism, hope, courage, wisdom, gratitude, forgiveness, mindfulness, flow, spirituality and subjective well-being (SWB), the latter of which turned out to be the focal point of most of the studies under positive psychology (Kurtz & Lyubomirsky, 2011) Though some of the topics within the scope of positive psychology cannot be considered as *totally neglected* before; some topics like awe, curiosity, inspiration, forgiveness, gratitude had been the subject of very few studies before (Gable & Haidt, 2005).

The works of Martin Seligman and his fellows on positive psychology had reflections on organizational studies as well. With that respect, two major movements gained momentum under the names of Positive Organizational Scholarship (POS) and Positive Organizational Behaviour (POB) (Luthans & Youssef, 2004; Luthans et al,

2007). Of these two schools, POS was concentrating on the macro (organizational level), whereas POB was focusing on the micro (individual level) (Luthans et al, 2007a). POS studies were mostly led by scholars in the University of Michigan and the focus of the studies was organizational characteristics that had a positive nature and that could contribute to survival of organizations especially under difficult conditions (Luthans & Youssef, 2004).

When it comes to POB, the term was first spelled out and, hence, introduced to the world by Fred Luthans (2002) two years after Seligman and Csikszentmihalyi's call in the *American Psychologist* (Avey et al, 2010). Luthans (2002) defined POB as "the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today's workplace" (p. 59). When developing POB, Luthans was pointing out the fact that though the value of the *positive* was recognized in organizational behaviour studies as early as Hawthorne studies, as an academic field it was behind positive-oriented best-seller books in acting on the positive (Luthans, 2002). Therefore, Luthans (2002) believed that "the time has come to begin to build bridges between the academic OB field and the popular business bestsellers" (p.58).

Based on the definition by Luthans, POB focuses on any psychological strength that is positive in nature and within the scope of the organizational behaviour field. But more important than that, to be *eligible* to be worked upon, a concept to be worked under POB umbrella should be 1) based on theory and research, 2) state-like, making it open to development, 3) measurable, and 4) effective on performance (Luthans, 2002; Luthans et al., 2007a). These criteria contribute a lot to the value of POB studies, making their outcomes different from the contents of many popular positive-oriented self-help books of questionable scientific value. In line with this vision, Luthans (2002) had mentioned that five concepts were meeting the criteria for being included in POB studies, which were: 1) confidence/ self-efficacy, 2) hope, 3) optimism, 4) subjective well-being, and 5) emotional intelligence. Roughly five years later, together with his colleagues, he introduced the concept of psychological capital which covered three of these constructs under its umbrella (Luthans et al, 2007a).

## 2.2 The Concept of Well-being

### 2.2.1 Overview of well-being

In the dictionary, well-being is defined as “the state of being or doing well in life; happy, healthy, or prosperous condition; moral or physical welfare (of a person or community)” (Well-being, 2021). A high level of well-being corresponds to a positive experience whereas a low level of it points out to the existence of a negative experience (Sfeatcu et al, 2014). The term *well-being* was first spelled out in 1960s when there was a rising interest in post-materialistic values, and together with other concepts like *happiness* and *quality of life*, it had been a subject of interest to many (Veenhoven, 2015). In the following years, these concepts have been substantiated and worked on by many scholars. Naturally, after the 1980s well-being was among the major topics of interest under the positive psychology movement as well and, as people fulfill their basic needs more and more each day, its importance may be expected to increase in the future either (Diener, 2000). The importance of well-being has been acknowledged by United Nations as well by calling well-being a *fundamental human goal* and since 2013, the 20<sup>th</sup> of March is celebrated as *International Day of Happiness* (Wiklund et al, 2019).

The concept of well-being is in fact quite complex (Ryan & Deci, 2001) and there are many ways of approaching the issue. For instance, well-being may refer to the quality of life when approaching the issue from an economic perspective, whereas it may refer to inner peace or more simply happiness when approaching the issue from a rather spiritual perspective (Sfeatcu et al, 2014). Since the topic of this study is related to the inner world of individuals, the approach to well-being from the spiritual perspective is more relevant, hence worth investigating more. When this is done, it is seen that there exists a common framework that can be used when explaining the different forms of well-being under the spiritual perspective, which is based on the *Hedonia-Eudaimonia* dichotomy (Ryan & Deci, 2001). Being rooted in ancient Greece, these two concepts are based on the ideas of Aristippus and Aristotle respectively (Disabato et al, 2015). The hedonic approach to well-being defines well-being as seeking to have pleasure and refrain from pain or suffering; the eudaimonic approach, on the other hand, defines well-being by focusing on meaning and self-realization (Ryan & Deci, 2001). In other words, well-being under the hedonic approach can be seen simply as the absence of negative affect and presence of positive affect, whereas

well-being under the eudaimonic approach refers to living in full and reaching one's own potential (Vázquez et al, 2009). The distinction between hedonia and eudaimonia is important in that it leads to different concepts and research approaches under each school. The hedonic school of well-being is associated with the concept of *subjective well-being (SWB)* and the eudaimonic approach may be thought together with *psychological well-being* (Vázquez et al, 2009).

On the hedonic side, SWB refers to simply *happiness* in everyday language (Diener, 2000; Ryan & Deci, 2001; Luthans, 2002). It is based on the understanding that an individual himself/ herself is the one who can know the best about his/ her own happiness (Kurtz & Lyubomirsky, 2011). So, the word *subjective* is not there due to mere coincidence. The most used conceptualization of subjective well-being, as representing the hedonic approach to well-being, is Diener's (1984) triple model (Disabato et al, 2015), which is based on the original work of Andrews and Withey (1976). According to this model, there are three important concepts under SWB: 1) *Positive affect*, 2) *Negative affect* and, 3) *Life satisfaction* (Diener, 2000). Positive affect refers to experiencing pleasant moods and emotions whereas negative affect refers to the opposite; the balance between them is named *affective balance*, altogether constituting the emotional dimension of SWB. On the other hand, there is a cognitive dimension of SWB as well. Under this dimension, there exists *life satisfaction* which is an overall evaluation of one's life, or satisfaction with specific domains such as work satisfaction (Diener, 2000). With decades of work, positive psychologist Ed Diener's studies are closely associated with SWB (Luthans, 2002). It is such that, Diener holds the nickname *Dr. Happiness* (Jarden, 2012).

On the eudaimonic side, the concept of psychological well-being has been suggested by Carol Ryff who defines well-being rather as the development of a person's potential (Ryff, 1989 mentioned by Vázquez et al, 2009). Psychological well-being has a more complex nature as a construct when compared to SWB. Indeed Ryff (1995) defined it as being composed of mainly six dimensions as follows:

- Self-acceptance: having a positive attitude toward oneself
- Positive relations with others: having warm, satisfying, trust-based relations with others
- Environmental mastery: able to control own environment
- Autonomy: being self-determining and independent

- Purpose in life: having goals in life and a sense of direction
- Personal growth: continuously improving and developing oneself.

Following Ryff, Keyes (1998) opened a further chapter in well-being and, arguing that the social arena should be taken into account as well when working on well-being, proposed the concept of social well-being (Ng & Fisher, 2013). His definition of social well-being was based on the following five dimensions (Keyes, 1998):

- Social integration: The quality of the relationship between the person and society
- Social acceptance: Holding positive beliefs toward others
- Social contribution: Feeling like part of a community and giving something of value to others
- Social actualization: Believing that the society is in control of itself and has a potential
- Social coherence: Being able to understand the dynamics of society and finding it meaningful

To sum up, the well-being concept has a complicated and rich nature. Therefore, it is obvious that there are many options for approaching the concept of well-being in an entrepreneurial context such as that of business incubators. In that sense, the approach of the Global Entrepreneurship Monitor (GEM) is worth mentioning. In 2013, a section on well-being was incorporated into GEM surveys and GEM approached the issue using the perspective of SWB. GEM approach to entrepreneurial well-being (i.e., from the hedonic viewpoint and concentrating on SWB) is understandable, considering that most of the studies on well-being choose also to focus on SWB (Ng & Fisher, 2013) and what is meant by psychologists with well-being usually refers to SWB (Wiklund et al, 2019). Under SWB, GEM focused on *life satisfaction* which represents its cognitive dimension (Amoros & Bosma, 2014). All in all, life satisfaction is an important outcome of entrepreneurial activity (Bockorny & Youssef-Morgan, 2019). So, following a similar approach to that of GEM, in this study, it is decided to focus on SWB in general and life satisfaction in particular. Therefore, SWB and life satisfaction will be discussed in more detail in the sections to follow.

### 2.2.2 Subjective well-being

As mentioned earlier, SWB refers to people's affective and cognitive evaluations of their own lives (Diener, 2000; Diener et al, 2002). It includes the emotional responses of people, their overall evaluation of their life, and satisfaction with certain aspects of their lives (Diener et al, 1999; Diener & Ryan, 2009). One of the most prominent figures on SWB is Ed Diener, who started working in this field in early 1980s and introduced SWB as a term in 1984 (Veenhoven, 2012). The interest in SWB started to increase in the 1990s and gained momentum in the late 1990s with the positive psychology movement (Jarden, 2012). SWB, does not refer to a single construct but rather refers to a general area of interest (Diener et al, 1999).

As a concept, SWB has both emotional and cognitive components. On the emotional side, there is a positive (or *pleasant*) affect component which refers to emotions like joy, contentment, pride, ecstasy; and a negative (or *unpleasant*) affect component which is related with emotions like guilt, sadness, anxiety, stress, and depression (Diener et al, 1999). These two components are somewhat independent, and they are not simply the opposite of each other, thus they are treated separately (Diener et al, 2002). On the cognitive side of SWB, there are both life satisfaction and domain-specific satisfaction components. The life satisfaction component refers to the satisfaction of a person with his/her life in general, whether he/she wants to change it, how he/she views own life from other people's point of view etc. Domain-specific satisfaction components are those like work satisfaction, satisfaction with family, self-satisfaction etc. (Diener et al, 1999). Nevertheless, despite the inclusion of domain-specific satisfaction evaluations, the emphasis in SWB is usually on global/ overall assessments (Diener, 1984). Based on these components, a person with high SWB, or in simpler terms a *happy person*, can be viewed as someone who experiences positive emotions most of the time – as well as negative ones, but the latter being quite less often – and when requested to make an overall evaluation of his/her life, tells that he/she is content about it (Kurtz & Lyubomirsky, 2011; Diener et al, 2002).

Assuming that happiness, in other words, SWB, is a desired state for many, one can easily wonder about the sources of it. In that sense, the theories that try to explain what makes people happy can be grouped under three categories (Diener et al, 2002). According to *need and goal related theories*, the SWB of individuals increase as they reach their goals, as their needs are satisfied, and as they move towards an ideal state

that they desire (Diener et al, 2002). Maslow's (1954) well-known motivation and needs theory can be seen as one of the theories under this category. The second category of theories that explain SWB are *activity theories* which basically claim that happiness comes from what people do (Diener et al, 2002). In other words, these theories argue that the activities that individuals are involved in determine their SWB. One well-known example of such theories belongs to Csikszentmihalyi (1975) and his concept of *flow*, which can be defined as a state of high and positive concentration that is reached during an activity which is so enjoyable to the individual that, in a sense, time stops while performing it and individuals do the activity just for the sake of doing it (Sinding & Waldstrom, 2014). The third and final category of theories that explain what leads to SWB is *personality-related theories* (Diener et al, 2002). According to these theories, SWB of individuals is affected by pre dispositional factors that are rooted in their personality. Thinking all three categories together, the first two groups of theories indicate that SWB can be affected from external and temporary factors, whereas the third group of theories underlines the importance of internal factors of permanent nature that affects SWB.

When it comes to empirical findings about what leads to SWB, in an early study by Wilson (1967), a happy person had been defined as a “young, healthy, well-educated, well-paid, extroverted, optimistic, worry-free, religious, married person with high self-esteem, high job morale, modest aspirations, of either sex and of a wide range of intelligence” (p. 924). Within two decades after Wilson (1967), over 700 studies were made on the sources of SWB (Diener, 1984). It turned out that, his picture of the happy person needed some modifications. As far as demographic factors are considered, gender did not affect subjective well-being – conforming Wilson (Diener, 1984; Myers, 2000; Diener & Ryan, 2009). On the other hand, the *younger and happier* myth was found to be open to debate as there is no clear relationship between age and SWB (Diener, 1984; Myers, 2000; Diener & Ryan, 2009). Education has a slight contribution to SWB, whereas the contribution of emotional intelligence is clearer (Diener & Ryan, 2009). When it comes to spirituality, or being religious, it is possible to talk about the existence of a positive relationship between being spiritual and subjective well-being to confirm Wilson (1967). One of the reasons behind this may be that it provides a sense of purpose or meaning to people (Myers, 2000; Diener et al, 2002; Diener & Ryan, 2009). As Wilson (1967) argues, social relationships and social

bonds, like marriage, are proven to affect well-being positively (Myers, 2000; Diener et al, 2002; Diener & Ryan, 2009). Indeed, in a pioneering study on *very happy* individuals, Diener and Seligman (2002) found out that these people had a rich social life and spent most of their time with other people, unlike average individuals. Finally, income (or money) has a positive effect on SWB, yet its effect is of diminishing nature (Diener et al, 2002; Diener & Ryan, 2009). Parallel to this, an important factor that affects SWB negatively is unemployment, which has a quite considerable impact with reasons going beyond simply worsening financial conditions (Diener, 1984). Last, but not least, it should be noted that the effect of demographic factors on SWB is quite modest but the effect of personality factors like self-esteem, internal locus of control etc is more notable (Diener, 1984).

As far as the relationship of SWB with other concepts is to be discussed, to begin with, it correlates positively with sociality. This point is parallel to Wilson's (1967) portrayal of the happy person as someone of an extroverted nature. Actually, it is a reciprocal relationship. On the one hand, supportive relationships increase the subjective well-being of individuals; on the other hand, individuals with higher SWB have more friends and better social relationships (Diener & Ryan, 2009; Kurtz & Lyubomirsky, 2011; Jarden, 2012). In addition to it, SWB has positive impacts on the health of individuals (Diener & Ryan, 2009; Kurtz & Lyubomirsky, 2011; Jarden, 2012). Also, in a work setting, SWB positively affects career success and helps individuals obtain higher levels of income (Diener & Ryan, 2009; Kurtz & Lyubomirsky, 2011; Jarden, 2012). Finally, the subjective well-being of individuals even helps increase well-being at a societal level (Diener & Ryan, 2009).

Since there are different concepts under SWB, there are different scales used for the measurement of it. As early as 1980s, Diener (1984) mentioned the existence of almost 20 scales in use. Especially in the earlier studies single-item scales were used commonly and, due to their high level of reliability, may still be used in certain studies; yet multiple-item scales are more frequently used for measuring SWB (Diener et al, 2002; Kurtz & Lyubomirsky, 2011). No matter how many items are included in these scales, the common point is that they approach the issue from the viewpoint of individuals and it is such self-report measures that are most used in the measurement of SWB (Diener & Ryan, 2009). All in all, given the *subjective* nature of the issue, trying to measure happiness, or SWB, with an objective assessment from the viewpoint

of an outsider would be quite difficult (Veenhoven, 2012). Regarding the scales that are in use, Diener and Ryan (2009) mention the following scales to be among the most cited ones: Self-Anchoring Striving Scale (Cantril, 1965), Sixty-Second Happiness Measure (Fordyce, 1977), Positive and Negative Affect Scale (PANAS) (Watson et al, 1988) and Satisfaction with Life Scale (SWLS) (Diener et al, 1985).

When talking about the measurement of SWB, one important point that should be underlined is that the distinction between hedonic and eudaimonic approaches to well-being is limitedly supported by evidence (Disabato et al, 2015). Though the distinction is conceptually useful; when it comes to measurement, it is advised to measure the specific dimensions under those concepts rather than trying to measure at a broad level (Disabato et al, 2015). In a more direct expression, measuring affect balance by, say using the PANAS scale or measuring life satisfaction by, say, using SWLS is advised rather than trying to measure SWB at all.

Finally, it should be added that, in addition to using scales like these, there are also other ways of measuring SWB as well. In that sense, methods like *experience sampling* or *daily diary* and *day reconstruction* are worth mentioning (Kurtz & Lyubomirsky, 2011). Of course, such methods require a setup which is quite different than a survey and requires more resources for an application. Yet, these methods provide valuable insights regarding how people form their judgments on their SWB based on their momentary experiences; therefore, using such methods -in addition to scales- is also advised, if possible (Diener et al, 2002:).

### 2.2.3 Life satisfaction

Interest in the concept of life satisfaction can be traced back to 1960s, when there has been a rapid increase in research on this topic (Veenhoven, 2015). If a definition is to be made, it should first be reminded that life satisfaction is about self-fulfillment and “to what extend life is happening the way individual needs or wants or expects to happen” (Madiha & Akhouri, 2018, p. 20). In another definition, life satisfaction is portrayed as “the degree to which a person evaluates the overall quality of his or her present life-as-a-whole positively” (Veenhoven, 2015, p. 212). It’s a global/ overall self-evaluation of a person’s own life (Diener, 2000; Veenhoven, 2015). Veenhoven (2012) mentions that, like SWB *happiness* may be used as a synonym for life satisfaction as well but adds also that when defined as the cognitive component of

SWB in line with Diener's (1984) approach, the word *contentment* may be used as a better synonym of life satisfaction.

Life satisfaction is, in essence, a judgment and includes the comparison of a person's life with a standard that is determined by the individual (Diener et al, 1985). In other words, it involves the comparison of the current situation with the *ideal* situation. One of the key points here is that this ideal level is not determined from the outside and is set by the person himself/ herself (Diener et al, 1985). Therefore, indeed, life satisfaction has a subjective nature. Another important point about life satisfaction is that, since it is a cognitive concept, it refers to a relatively more stable element of SWB unlike the emotional elements of SWB which are temporary and volatile, making life satisfaction a better concept choice to be included in well-being studies (Proctor et al, 2017).

Whether life satisfaction is a trait-like concept that has a more or less stable nature or is a state-like concept that fluctuates with life conditions and events has been a major research question. According to Sousa and Lyubomirsky (2001), a good answer to this question comes from the study of Suh et al (1996) where the researchers found out that recent events affected life satisfaction of individuals whereas the effect of past events is not evident, pointing out to the possibility of adaptation of individuals in time. This finding suggests that life satisfaction may have a trait-like base that is coming from personality, but it may also be open to fluctuations especially in the short run due to environmental effects (Sousa & Lyubomirsky, 2001). In short, it can be concluded that life satisfaction is affected by both personal and environmental factors (Madiha & Akhouri, 2018).

As far as the personal factors that may affect life satisfaction are of concern, to begin with, demographic variables (such as age and gender) are found to explain little about life satisfaction in most studies (Sousa & Lyubomirsky, 2001; Veenhoven, 2015; Proctor et al, 2017). On the other hand, personality-related variables and social skills do explain much more about life satisfaction (Veenhoven, 2015). Proctor et al (2017) mention the following variables as having an impact on life satisfaction among others: extraversion and social self-efficacy (Fogle et al, 2002), self-esteem (Dew and Huebner, 1994), perfectionism (Gilman and Ashby, 2003) and hope (Gilman et al. 2006). This list can be made longer with the addition of resilience, empathy, internal locus of

control, openness to experience, assertiveness, and extroversion (Sousa & Lyubomirsky, 2001).

Another personal factor that has an impact on life satisfaction is the level of income. The relationship between it and life satisfaction is, however, a complicated one. There is a relationship between the two -especially at lower levels of income-, but the relationship weakens after a threshold is exceeded (Sousa & Lyubomirsky, 2001; Veenhoven, 2015). Rather than the level of income, however, employment can be considered as a more important factor that affects life satisfaction and this relationship is clearly more evident for men, than it is for women, as men's self-perceptions are deeply affected by their employment status (Sousa & Lyubomirsky, 2001). Under the employment umbrella, life satisfaction is also observed to be in relationship with vacation and professionals and individuals who hold managerial positions are usually among the ones who are most satisfied with their lives (Veenhoven, 2015).

As for the effect of environmental factors on life satisfaction, first of all, it should be stated that social relationships, either in private life or public life, have the power of affecting life satisfaction (Sousa & Lyubomirsky, 2001; Veenhoven, 2015). For instance, in the private life domain, family relations' quality and events like divorce, remarrying, and separation of parents are known to have considerable effects on life satisfaction (Proctor et al, 2017). However, in this domain, not all ties are always of equal importance. For instance, the relationship with a spouse has more effect on life satisfaction than relationships with friends or relatives (Veenhoven, 2015). With regard to environmental factors, another variable that affects life satisfaction is the *course of events* that individuals face as they live. In that sense, the balance of favourable and unfavourable events that are encountered at a given time interval is found to be effective on life satisfaction (Veenhoven, 2015).

As indicated in the above paragraphs, the life satisfaction of an individual is affected by both internal (personal) and external (environmental) factors. Thinking that life satisfaction is a cognitive evaluation of these factors, then, one can wonder how the assessment is made by individuals taking these factors into account. One possible explanation at this point comes from the popular *bottom-up calculation* approach. According to this approach, life satisfaction, or SWB, is sort-of *calculated* by the individuals taking into account the pleasures (as positives) and pains (as negatives) (Diener, 1984; Veenhoven, 2015). In line with this, life satisfaction can also be thought

of as the mental summation of satisfactions in different domains of life (Andrews & Withey, 1976 as cited in Veendhoven, 2015). In that sense, for instance, if an individual is satisfied with his/her marriage, satisfied with his/her job, has satisfying social relations etc, then reaching a general conclusion, he/she declares that his/her life is satisfactory.

In contrast to this bottom-up theory, there is also the *top-down* approach, which is worth mentioning when discussing how SWB, or life satisfaction in particular, might be evaluated in the minds of individuals. According to this approach, individuals have a general propensity, which is rooted in their personality, to view things in a positive or negative way and it influences how they react to the world in certain moments (Diener, 1984; Diener & Ryan, 2009). This is to say that a person who has positive attitudes in general and an inclination to be happy is likely to be more satisfied with his/her life. So, according to this theory, to be satisfied with life, what matters is not what individuals possess or experience *per se* but rather how they view those.

Among the two calculative approaches mentioned above, the top-down approach is more supported by evidence (Diener, 1984; Veendhoven, 2015). Lastly, however, it should also be added that in addition to these calculative models, there is also another approach that argues that individuals make inferences about their level of life satisfaction based on how they *feel*. According to this, if they have a track record of feeling well most of the time, then they decide that they have a satisfactory life (Veendhoven, 2015).

In a work setting, life satisfaction is associated positively with many constructs in organization behaviour literature. As a dependent variable, life satisfaction is empirically found to be positively affected by job satisfaction (Akgündüz, 2013; Çevik and Korkmaz, 2014; Gök et al, 2016), person-job fit (Çırpan, et al, 2018), occupational satisfaction (Sop, 2014: 9), perceived organizational support and organizational commitment (Polatçı et al, 2014). On the other hand, life satisfaction is found to be negatively affected by mobbing (Akdemir et al, 2019; Yöney & Kılınç, 2020), burnout (Çelik, 2016; Güner et al, 2014), workload (Çelik, 2016) and work-related strain (Kanbur, 2018).

## 2.3 The Concept of Psychological Capital

### 2.3.1 Overview of psychological capital

Together with his colleagues and based on the POB vision and related criteria mentioned above, Fred Luthans has pioneered the development of the Psychological Capital (PsyCap) Concept. Psychological capital is defined by Luthans et al. (2007a) as;

An individual's positive psychological state of development and is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success (p.3).

As also mentioned in the above definition psychological capital has four dimensions, which are Hope, Efficacy, Resilience, and Optimism – also called the HERO model (Donaldson et al, 2020). All of these dimensions that together form psychological capital are of cognitive nature (Avey et al, 2010). They share a lot, but they also have the necessary discriminant validity to remain as separate constructs (Avey et al, 2011). Each of these four constructs can be thought of as strongholds separately, but they also create a synergy (Luthans et al, 2006). Altogether, they build psychological capital as a second-order construct (Luthans et al, 2010).

Avey et al. (2011) argue that the relationship between psychological capital and its dimensions, each of which are actually worth consideration by their own sake as well, can be explained with the *theory borrowing* notion of Whetten et al (2009). According to this view, the psychological capital concept has been created on the bases provided by the Psychological Resource Theory of Hobfoll (2002). One of the arguments of this theory is that a construct that has enough discriminant and predictive validity can, in some cases, function better when considered as an indicator of a higher-order or *core* construct (Avey et al, 2011). In other and metaphorical terms, in some cases, it may be wiser to use a successful player within a team rather than leave him/her to act on solo performance! The multidimensional nature of psychological capital has been formed with this understanding. When developing psychological capital, Luthans

et al (2007a) made various tests with their data, using different combinations of the HERO constructs in addition to introducing them one by one and separately to their model. But in all their attempts, the model with the higher order construct of psychological capital proved to be better, which convinced them to develop the concept in its current form (Avey et al, 2011).

Literally formulated as a form of *capital*, psychological capital is different from human or social capital concepts in that; it does not refer to know-how as in the case of human capital or know-who as in the case of social capital. Rather it refers to *who you are* and *who you are turning into* (Luthans et al., 2006). Psychological capital or its dimensions should not be thought of as static concepts. In other words, they are not trait-like but they are rather state-like, which means that they are open to change in time and, hence, also improvement (Youssef-Morgan & Luthans, 2015).

The concept of psychological capital seems to have been subject to extensive research. Several links between psychological capital and other constructs have been clarified by researchers. In that sense, psychological capital has been empirically found to lead to many desired organizational variables such as; job satisfaction (Avey et al, 2011; Kaplan & Biçkes, 2013; Çakmak & Arabacı, 2017; Kong et al, 2018; Çelik & Bilginer, 2018; Demir, 2018; Doğan & Aslan, 2018), flow (Bayır & Aydın, 2019), organizational identification (Ateş et al, 2018), organizational commitment (Avey et al, 2011; Çakmak & Arabacı, 2017; Uygungil & Işcan, 2018), organizational citizenship (Kong et al, 2018), employee performance (Avey et al, 2011; Polatçı, 2014; Yeşil et al, 2016; Kong et al, 2018; Çavmak & Acar, 2020), job involvement (Demir, 2018), work engagement (Kodaş, 2018) and person-organization fit (Özkan & Tosun, 2020). In the entrepreneurial context, psychological capital has been found to have a positive effect on entrepreneurial intentions (Kahya, 2019; Önay et al, 2017) and intrapreneurship behaviours (Özkan & Tosun, 2020).

While psychological capital has positive connections with many constructs mentioned above, it also has negative effects on undesired organizational behaviour related concepts such as work alienation (Akdoğan & Aydemir, 2018), undesirable attitude (Kong et al, 2018), stress (Avey et al, 2011; Baron et al, 2016; Demir, 2018), work-family conflict (Demir, 2019), organizational silence (Macit et al, 2020), burnout (Demir, 2018; Tokmak, 2018; Tösten et al, 2017), intention to leave (Avey et al, 2011; Taşlıyan & Hırlak, 2016; Yeşil et al., 2016), procrastination (Kaplan & Göker, 2020)

and organizational cynicism (Avey et al, 2011; Uygungil & İşcan, 2018; Yılmaz & Yıldırım, 2021). As can be seen from all these connections, it acts as a construct that leads to many positive outcomes and has a restraining role when undesired organizational constructs are considered.

### 2.3.2 Hope dimension

Hope has been of interest to many people, such as philosophers, scientists, and educators for centuries but, it is Rick Snyder and his colleagues that should be credited for their comprehensive works on hope theory and related measures starting from the early 1990s (Edwards et al, 2007). The first article of Snyder on the subject of hope is published in 1989 (Snyder, 2002). Of course, *Snyder's hope theory* is not the only conceptualization of hope. But his approach suits well to achievement-related settings such as schools and work organizations (Reichard et al, 2013). His theory and related measures are well-accepted by researchers within and outside psychology (Edwards et al, 2007).

According to Snyder, hope is a cognitive concept, or in other words, *a way of thinking* which, however, also has connections with feelings (Snyder, 2002). Psychiatrists and psychologists used to define hope as a *positive expectation for goal attainment* during 1950s and 1960s (Snyder et al, 1991). Later on, a broader definition was made by Snyder et al (1991) as a “positive motivational state that is based on an interactively derived sense of successful (a) agency (goal-directed energy), and (b) pathways (planning to meet goals)” (p. 287). A simpler yet easier-to-remember definition is made by Luthans and Youssef (2004) as “having the willpower and pathways to attain one’s goals” (p.15). As a concept, the effects of hope were initially studied in non-work settings, such as clinical and educational ones, but later its effect on work organizations has also been subject to research (Luthans & Youssef, 2004).

In line with the definition of hope by Snyder et al (1991), three concepts which are *goals*, *agency thinking*, and *pathways thinking* are important and should be well understood. As far as goals are considered, it should be first noted that Snyder assumes that people’s behaviours are goal-oriented, and, representing targets to be reached, goals constitute a cognitive element of hope (Snyder, 2002). According to him, goals may be either of positive or negative nature. If positive, goals may be thought of as desiring to reach a target, sustaining something that is already possessed, or increasing

something that is already achieved or in possession. If negative, goals may be thought as delaying something undesired or stopping something at all (Snyder, 2002). To put it simply; goals represent what element of hope. The other two elements, pathways thinking and agency thinking, are related rather to the question of *how*. Indeed, pathways thinking is explained by Snyder (2002) as figuring out possible routes for reaching the goals in mind. So, it is like finding out a method or seeing the possibility of a solution to a problem. The last dimension of agency thinking is about believing that one can personally be able to apply that method or solution. In other words, it is the *perceived capacity to use pathways to reach desired goals* and it constitutes the motivational element of hope (Snyder, 2002). This motivational element can also be named simply as *willpower* (Edwards et al, 2007). In short, taking both three elements of goals, agency and pathways thinking into account; hope refers to willpower and waypower; and as in the famous saying, it means *when there is a will, there is a way* (Luthans, 2002).

To measure hope, the Hope Scale was developed by Snyder et al (1991). It was a validated scale, composed of eight items and was based on a *dispositional* measurement approach (Snyder et al, 1996). Thinking that, a more state-like measure of hope could also be useful to researchers, the State Hope Scale was later developed by Snyder et al (1996). This newer scale was aiming to measure the level of hope people possess in particular times and conditions, rather than the level of hope that the individual possesses in general (Snyder et al, 1996). Therefore, this second scale was useful for researchers who intended to measure the level of hope of individuals upon facing certain events, settings, or conditions.

As far as the relations of hope with other constructs are considered, it is found that hope has positive correlations with employee performance, job satisfaction, organizational commitment, and well-being (Reichard et al, 2013). In another study, Luthans and Youssef (2004) found that hope of leaders of work organizations has positive effects on the financial performance of their company, the job satisfaction of employees, and the level of their retention. On the other hand, hope is observed to have negative relations with burnout and stress (Reichard et al, 2013).

It is possible to increase the hope of individuals in a work setting through applying the following techniques (Luthans and Youssef, 2004):

- Assigning SMART goals to employees and, when necessary, creating smaller, more manageable sub-goals
- Empowering employees and exhibiting confidence in them
- Increasing the readiness of employees for a task through developing contingency plans beforehand and making mental rehearsals

### 2.3.3 Self efficacy dimension

The concept of self-efficacy is rooted in Albert Bandura's (1977) social learning theory, which is later renamed as social cognitive theory in 1986, and self-efficacy is one of the central concepts of this theory (Zulkosky, 2019; Madiha & Akhouri, 2018). Among all four dimensions of psychological capital, self-efficacy might be considered as probably the one with the highest recognition as there is quite a deep theory behind it and the work of many years (Luthans: 2002). Within the psychological capital context, it is defined as "one's conviction (or confidence) about his or her abilities to mobilize the motivation, cognitive resources, and courses of action needed to successfully execute a specific task within a given context" (Stajkovic & Luthans, 1998b; as mentioned by Luthans et al, 2007, p. 38). Another definition by Luthans and Youssef (2004) is "believing in one's ability to mobilize cognitive resources to obtain specific outcomes" (p.15). As can be seen from the definitions and as implied by the related theory, self-efficacy is a cognition-related concept; in more simple terms, it is a *belief* – it is the belief of a person in himself/ herself regarding the accomplishment of a mission and it is *learned* (Madiha & Akhouri, 2018). These "beliefs are not merely boastful statements based on bravado; they are deep convictions supported by experience" (Kreitner & Kinicki, 2010, p. 130).

The self-efficacy of a person determines how much effort he/she puts and continues putting upon coming up with obstacles on the way. Indeed, it is one thing to have the necessary skills, and another thing to be able to use them - especially under difficult conditions. When faced with a challenge, a resilient belief in oneself is necessary to keep trying and reaching the goals (Wood & Bandura, 1989). This is where self-efficacy comes to the scene. A person who has a high level of self-efficacy is someone who sets high goals for himself/ herself, likes being challenged, has a high level of self-motivation, pushes hard to reach his/her goals, and does not easily give up when faced with difficulties (Luthans et al, 2007a). On the other side of the continuum,

people with low self-efficacy levels tend to have low rates of success, and low self-efficacy is associated with the concept of learned helplessness, the belief of having no control on the environment (Sinding & Waldstrom, 2014).

Four mechanisms can be effective in influencing self-efficacy level of a person: 1) mastery experience (performance accomplishments), 2) modelling (vicarious experience), 3) social (verbal) persuasion, and 4) judgement of physiological states (emotional arousal) (Bandura, 1977; Wood & Bandura, 1989). Of these four mechanisms, mastery experience is listed first since it is the most effective one according to Bandura (Kreitner & Kinicki, 2010). Successful past experiences enhance the self-efficacy level of a person, whereas unsuccessful attempts lead to the opposite effect on self-efficacy (Bandura, 1977). When it comes to the second mechanism, modelling, it may be expressed simply as; finding similar people (as benchmarks), observing them doing something, seeing them be successful, and developing a self-efficacy belief based on *their* successes. The third mechanism, social or verbal persuasion works either through being encouraged properly/ persuaded by other people or being assigned tasks that can be completed with success in the end (Wood & Bandura, 1989). The fourth and last mechanism, judgement of physiological states is about making self-observations when trying to accomplish a goal and drawing conclusions on own capacity. This last mechanism refers to the emotional arousals that people experience especially during trying to cope with difficult situations (Bandura, 1977).

Within psychological capital context, self-efficacy of an individual has certain characteristics. First, it is domain-specific; in other words, it is not necessarily transferrable from one area to the other. Second, it is based on practice or earlier experience. Third, in line with the overall POB approach, it is open to improvement; hence self-efficacy of a person can be increased in time. Fourth, it is open to the influences of other people; in other words, a person's level of self-efficacy can increase or decrease depending on what other people say. And, last, the self-efficacy level of a person is also variable in that it may depend on many external factors that are outside the control of a person (Luthans et al, 2007a).

Regarding the relationship of self-efficacy with other constructs in organizational behaviour literature, it might be useful to clarify the difference between self-efficacy and two similar constructs: self-esteem and self-confidence. To begin

with, self-esteem and self-efficacy are related but different concepts (Zulkosky, 2019). Self-esteem is the general belief in self-worth (Bandura, 2006; Kreitner & Kinicki, 2010). The second construct, self-confidence, refers to the belief of a person in his / her capabilities (Kreitner & Kinicki, 2010). Both two constructs might be seen as rather related to personal characteristics and of a stable nature, making them different from self-efficacy, which is a situation or task-specific concept (Zulkosky, 2019). Nevertheless, it should be noted here that within psychological capital literature, the term self-efficacy may sometimes be used interchangeably with self-confidence (Luthans et al, 2007a). One further thing that needs to be addressed about the concepts in relation with self-efficacy is that it has links to self-direction and self-motivation (Miles, 2012). As a matter of fact, self-efficacy can be seen among contemporary theories of motivation (Robbins & Judge, 2017). Finally, there is a link between self-efficacy and locus of control in that people with internal locus of control generally have higher levels of self-efficacy (Van der Bijl & Shortridge-Baggett, 2001). Nevertheless, they are separate concepts in that locus of control represents a belief regarding outcomes whereas self-efficacy is a belief about personal capability (Bandura, 2006).

When it comes to the measurement of self-efficacy, Bandura (2006) says that there is no all-purpose measure of it. As reasoning, Bandura (2006) points out the fact that the concept of self-efficacy is domain-specific, which necessitates the creation of different scales for each domain. Indeed, it may be possible to speak of different self-efficacy scales for the measurement of efficacy in different and specific domains such as driving self-efficacy, problem-solving self-efficacy, children's self-efficacy, and even teacher self-efficacy to promote mathematics! (Bandura, 2006). With these in mind, and within the scope of the psychological capital concept, it may be possible to mention the Role Based Self Efficacy Scale developed by Parker (1998) as one proper measurement tool. By its definition (as *role-based*) the scale aims to measure the efficacy beliefs of individuals not regarding a single task but across particular set of tasks within a role (Parker, 1998). Finally, it should also be noted that, in contrast to these domain-specific approaches, there also exists General Self Efficacy scales as well developed by various scholars in the last three decades. They are based on the notion that people may also have an efficacy view of their performance ability in a number of different situations. However, this view of general self-efficacy is quite controversial

in the literature (Scherbaum et al, 2006). It is also not in line with the definition of self-efficacy under the POB approach (Luthans, 2002).

As far as outcomes of self-efficacy is considered, in general, efficacy beliefs influence whether people think in an optimistic or pessimistic manner, the quality of their emotional life, the level of stress they can tolerate, and their life choices (Bandura, 2006; Luthans, 2002). Self-efficacy is also observed to affect the life satisfaction of people as well (Madiha & Akhouri, 2018). In a work setting, self-efficacy is positively related to work-related performance as shown by the meta-analysis of Stajkovic and Luthans (1998a). Besides work-related performance, self-efficacy has positive relations with desired organizational attitudes like job satisfaction, organizational commitment, and perceived organizational effectiveness (Luthans & Youssef, 2004). Parallel to these observations, employees with high levels of self-efficacy are seen to be better initiative takers, who produce more creative ideas, who work harder, and try more to overcome challenges (Sinding & Waldstrom, 2014).

It is possible to increase the self-efficacy level of individuals using the mechanisms defined by Bandura (1977). The best way of achieving this is through letting people experience success and tools like coaching and on-the-job training can be useful for this (Luthans & Youssef, 2004). In line with Bandura's (1977) mechanisms, observing successful people at a task and taking them as a model can also help increase the self-efficacy level of an individual. Likewise, social persuasion, in other words encouraging others verbally, and providing positive feedback, hence acknowledging the success of others, can increase the self-efficacy of individuals (Luthans & Youssef, 2004). In addition to these, applying thought self-leadership techniques such as constructive self-talk and mental imagery (visualising success) can also help improve the self-efficacy of an individual (Neck et al, 1999). As a matter of fact, applying self-leadership techniques like natural rewarding also have a positive impact on self-efficacy both at the individual and team level (Stewart et al, 2011).

#### **2.3.4 Resilience dimension**

The concept of resilience is rooted in the areas of developmental and clinical psychology where positive psychologist Ann Masten and others have made valuable studies (Luthans & Youssef, 2004). In the clinical psychology literature, resilience is defined as a “class of phenomena characterized by patterns of positive adaptation in the

context of significant adversity or risk” (Masten & Reed, 2002 as cited in Luthans et al, 2007a, p. 116). What this definition tells us about resilience is that, in simple terms, resilience is being able to *stand up after falling*. So, according to this understanding, resilience refers to how a person reacts to negative events.

Under the psychological capital umbrella, however, resilience is defined slightly differently in a way to include reactions after positive events as well. Indeed, Luthans (2002) defined resilience as “the capacity to rebound or bounce back from adversity, conflict, failure, or even positive events, progress, and increased responsibility” (p. 702). Based on this definition, for instance, keeping pushing sales after achieving a record sales performance can also be seen as an example of resilience, which is not an example of recovery from a bad situation but rather an example of going beyond the level of normal (Luthans et al, 2007a). So, metaphorically speaking, resilience can be seen as keeping walking on the road no matter how rainy or bright the weather may be and increasing the speed of walk if necessary.

A central feature that helps us understand resilience is *adaptability* (Avey et al, 2010). Indeed, resilience is about being flexible enough to adapt to changing conditions yet keeping track. The adaptation can be seen as a *biopsychospiritual homeostasis*, referring to the overall adaptation of a person to the new situation both physically, mentally, and spiritually (Richardson, 2002). This adaptation can reach such a level that, resilient people not only turn to their original situation after facing a difficulty but instead, keep going and exceed their original status. This becomes possible since they; 1) accept the reality of the new situation, 2) have a deep belief that life is meaningful and 3) improvise and adapt to the new situation (Luthans & Youssef, 2004).

The sources of the power behind resilience are called resilience assets, possession of which help people exhibit resilient behaviour in the face of obstacles and challenges. These assets include “cognitive abilities, temperament, positive self-perceptions, faith, a positive outlook on life, emotional stability, self-regulation, a sense of humour and general appeal or attractiveness” (Masten, 2001 as cited in Luthans et al, 2007a, p. 117). As mentioned by Richardson (2002); forgiveness (McCullough, 2000), hope (Snyder, 2000), humility (Tangney, 2000), dreams (Snyder & McCullough, 2000) and wisdom (Baltes & Staudinger, 2000) can also be added to this list. Finally, in addition to such resources, the effect of values on resilience should also be underlined. Values are the principles that guide the actions of the people. In that sense,

values can help explain, for instance, the eagerness of patriots or war heroes to keep fighting (Luthans et al, 2007a).

As far as its measurement is of concern, it should be noted that the Resilience Scale developed by Wagnild & Young (1993) may be considered one of the best tools that can be used in assessing the resiliency of different age groups (Fernandes et al, 2018). Regarding the consequences of resiliency, it is found that resilience supports the accumulation of hope, increases the self-efficacy level of an individual, and helps take control of his/her own life (Richardson, 2002). In a work setting, it has a positive impact on work performance (Luthans et al, 2006) and may be expected to positively affect job satisfaction, organizational commitment and social capital (Luthans et al, 2007a). The description of a high-performing employee by Luthans (2002) gives quite a good feeling about the outcomes of resilience, as well as self-efficacy, and goes as follows: He/she “really gets into the task; gives whatever it takes to accomplish the task; perseveres, when meeting obstacles, frustrations, or setbacks; has very positive self-thoughts; and is resistant to stress and burnout” (p. 60).

The resilience of a person can be increased by practices like meditation, yoga, prayer, Taichi and Aikido (Richardson, 2002). In addition to such personal applications, in a work setting, it is possible to increase the resilience of individuals through the application of the following strategies (Luthans & Youssef: 2004):

- Asset-focused strategies: Increasing the availability of resources to increase the chance of success in a given task
- Risk-focused strategies: Reducing stressors and eliminating risks that may lead to a potential failure
- Process-focused strategies: Improving the capabilities/ abilities of individuals and organizations that they utilize in reaching their goals

### **2.3.5 Optimism dimension**

Scheier & Carver (1985) define optimism with regard to the *expectations about the future*. According to them, optimist people believe that things will happen in line with their expectations and that good things will happen to them rather than bad ones. As might be expected, the situation is otherwise for pessimists. Optimist people, unlike pessimists, attribute positive events to internal and permanent causes and negative events to external and case-specific factors. Such a way of looking at things means that

optimists credit themselves for good things, leading to an increase in their self-esteem (Luthans & Youssef, 2004). Thus, the two groups differ in how -and, whether- they can overcome difficulties and this difference in their approaches has considerable impacts on their lives (Carver et al, 2010).

There are two different ways of approaching optimism: Visualizing it as a way of interpreting specific events (the concept of *optimistic explanatory style*) or as a general expectation regarding life (as a *dispositional construct*) (Forgeard & Seligman, 2012). The first way of approaching optimism has been developed by Seligman et al. (Seligman, 1991). Seligman and his colleagues were working on the concept of learned helplessness. They found out that people who exhibited helplessness in stressful situations had a pessimistic way of explaining the events they went through (Forgeard & Seligman, 2012). Such people were simply thinking that negative events would keep being in their life, would affect all their life, that they were, in fact, faulty etc. On the other hand, the explanatory style of people who could avoid helplessness in stressful situations was quite different and more optimistic. This observation led to the development of the *optimistic explanatory style* concept. Seligman wrote about the state-like view of optimism in his book *Learned Optimism* (Luthans, 2002).

The second approach, which sees optimism as a dispositional construct is based on the works of Scheier & Carver (1985). They argue that optimism (or pessimism) is about overall expectations regarding the life and future rather than context-specific interpretations of certain events. Under this approach, optimism is seen as a personality variable. Thus, the differences between optimists and pessimists in reading the world remain mostly the same across time and different situations. In that sense, a person is optimistic or pessimistic *in general*.

When it comes to measurement, the main scale that is developed under the optimistic explanatory style approach is the Attributional Style Questionnaire (ASQ) developed by Peterson et al (1982) (Forgeard & Seligman, 2012). As for the dispositional approach, Scheier and Carver (1985) have developed the Life Orientation Test (LOT) as a measurement scale. Later, a revised version of it (LOT-R) has been developed by Scheier et al (1994).

Between the two approaches, hope under the psychological capital umbrella is defined in line with the approach of Seligman et al, rather than that of Scheier and Carver (Luthans et al, 2007a). This is understandable in that the dispositional view of

Scheier and Carver does not meet the criterion of being state-like and possible to develop a construct to be included in studies under POB. But, since a *style* refers to a manner or way of doing something, people can learn to be more optimistic if they choose to change their usual manners/ ways. The understanding of optimism under positive psychology also gives credit to the *flexible optimism* definition of Peterson (2000). According to this understanding, being optimistic should not mean being blind in the sense that the realities of the situation are taken into account, and after making a correct evaluation of the situation, an optimistic or pessimistic approach is selected by the individual (Luthans et al, 2007a). In other words, optimism in the psychological capital context *preferably* has a calculated nature.

Early research on optimism has shown that it positively affects morale (Scheier & Carver, 1985; Luthans, 2002), psychological well-being (Scheier & Carver, 1985), SWB (Forgeard & Seligman, 2012), life satisfaction (Scheier & Carver, 1985; Piper, 2019), health (Forgeard & Seligman, 2012; Carver et al, 2010), performance (Luthans et al, 2007b), work happiness (Luthans et al, 2007b), job satisfaction (Luthans et al, 2007b; Luthans, 2002), success (Forgeard & Seligman, 2012). Also, optimist people are found to be better at relationships than pessimists and optimism leads to increased persistence during education and a higher level of income in the future (Carver et al, 2010).

The optimism of individuals can be developed through the following three practices (Luthans & Youssef, 2004):

- Developing tolerance for the past; Accepting failures, forgiving oneself for own mistakes
- Appreciating the current situation; Being thankful and full of contentment toward life
- Believing that the future bears opportunities that can be seized.

## **2.4 Well-being and Psychological Capital of Entrepreneurs**

### **2.4.1 Entrepreneurs and entrepreneurial life**

Before discussing on well-being and psychological capital of entrepreneurs, it might be useful to begin by first making a definition of entrepreneurship and then drawing light toward entrepreneurs and the realities of entrepreneurial life. In that

sense, entrepreneurship can be defined by Mazzarol and Reboud (2017) as “an activity that involves the discovery, evaluation and exploitation of opportunities to introduce new goods and services, ways of organising, markets, processes and raw materials through organising efforts that previously had not existed” (pg.15). This is a comprehensive definition in that it seems to incorporate somewhat conflicting two important perspectives on entrepreneurship, namely those of Joseph Schumpeter (1934) and Israel Kirzner (1997).

Indeed, the definition above gives credit to the discovery theory of entrepreneurship of Israel Kirzner (1997) which argues that entrepreneurs are alert people who find out opportunities in the market, and act upon them for their benefit (Kessler, 2013; Mazzarol & Reboud, 2017). Yet, it also seems to acknowledge the role of innovation in entrepreneurial activities, which is one of the major functions of entrepreneurs according to Joseph Schumpeter who defines entrepreneurial activity with the help of the creative destruction concept under his creative theory of entrepreneurship (Kessler, 2013). Schumpeter’s (1934) view is different from that of Kirzner in that, Schumpeter’s entrepreneur is not an individual who finds out an opportunity that existed independent from him/ her, but rather is an individual who creates that opportunity himself/ herself by using innovation – which means adopting new approaches in products, processes, ways of marketing or organization (Mazzarol & Reboud, 2017). Both views have their merits and had better be taken into account when thinking about entrepreneurship.

Still, despite the embracing approach of the above definition which tries to make a synthesis of different and important views of entrepreneurship, this does not change the fact that entrepreneurship is a complex issue, and several different definitions can also be made (Mazzarol & Reboud, 2017). For instance, the definition of entrepreneurship is made in a wider manner than the above definition under GEM studies. Indeed, though GEM gives much credit to the ambitious, Schumpeterian entrepreneurs, who focus on growth through innovation and contribute a lot to economic development; still much less ambitious forms of entrepreneurial activity – for instance, that of self-employed people- are also considered under GEM definition (Amoros & Bosma, 2014). According to this understanding, then entrepreneurship is not limited to the activities of people like Steve Jobs, Richard Bronson, or Elon Musk; but also, the activities of the owners of a ma-and-pa shop on the corner should be

considered. Such a broader approach as followed by GEM has also its merits as well, especially when it is thought that such forms constitute most of the entrepreneurial activity (Amoros & Bosma, 2014).

When it comes to how entrepreneurship is viewed throughout this study, the definition by Mazzarol & Reboud (2017) is believed to be applicable. At the end of the day, the kind of entrepreneurial activity to be included in this study is defined as those within the boundaries of business incubators. Therefore, it may be well expected that there will be no place for a ma-and-pa shop owner among the tenants of a business incubator. In other words, though the approach of GEM in defining entrepreneurship in a wide manner may be more relevant for broader studies or as a general definition, entrepreneurship is not defined in this study as an activity that includes *all* kinds of economic activities of *all* self-employed people.

Having made a brief definition of entrepreneurship, if we have to define *who entrepreneurs are*; we can start by reminding that they are often portrayed as visionary people who like hard work, are somewhat emotionally attached to their products or services and, speaking for most, desiring to leave some kind of mark behind (Wiklund et al, 2019). When trying to figure out who they are, personality is an important factor that should be taken into account (Baron et al, 2016). Indeed, for instance, four of the five dimensions of personality defined under the Big 5 Model are found to be in positive relationship with both entrepreneurial intentions and entrepreneurial success (Zhao et al, 2010). These are conscientiousness, extraversion, openness to experience and emotional stability dimensions. In their meta-analysis, Zhao et al (2010) also included risk propensity as an additional personality dimension and found that it was also in a positive relationship with entrepreneurial intentions but had no relationship with success.

So, when we speak of entrepreneurs, in fact, we point out to individuals who have certain similarities in terms of their personality. Thus, it is also possible to speak of certain *entrepreneurial traits*. With that regard, some of the traits that may be used for entrepreneurs include having a *need for achievement*, an appetite for *risk-taking*, an *internal locus of control*, being tolerant towards *uncertainty*, and having a need for *personal control* over things (Mazzarol & Reboud, 2017). Confirming that these traits are often associated with entrepreneurship, Dej (2007a) also mentions that *creativity* and *self-efficacy* might as well be included in the list of entrepreneurial traits. In

addition to entrepreneurial traits, it may also be possible to speak about the existence of certain *entrepreneurial competencies*. With that regard, having a long-term vision, being flexible, showing empathy to others, having a widened perception, being able to build networks, taking advantage of personal relations, and being action oriented can be counted among those competencies (Dej, 2007a).

When it comes to *why they do it*; a common framework that is used to explain entrepreneurial motivations is by using the Push-and-Pull Factors framework which implies that individuals are either pulled into entrepreneurial actions; or – with slightly a negative way of looking at it - they are pushed towards entrepreneurship due to some environmental developments (Kirkwood, 2009). Generally speaking, push factors are mostly environmental in nature, and overall aim of entrepreneurial action is to escape from the current situation; whereas pull factors are mostly individual in nature, and aim of entrepreneurial action is to reach a desired future state (Dej, 2007b).

A similar approach to entrepreneurial activities like that of the push-and-pull model is adopted by GEM as well using the concepts of *opportunity* versus *necessity* entrepreneurship. This bilateral approach to entrepreneurial motivations basically argues that individuals either become entrepreneurs out of necessity (having no other option for work) or out of seeing an opportunity that can be exploited by the individual. So, for instance, while the former kind of entrepreneurs aim to avoid losing a level of income; the latter type aims not to maintain it but instead exceed current level of income (Amoros & Bosma, 2014). Necessity-motivated individuals can be seen as those that are pushed toward entrepreneurship, whereas opportunity-motivated ones are pulled towards it (Amoros et al, 2021).

Generally speaking, pull factors are worth considering more when explaining entrepreneurial motivations (Segal et al, 2005). Motivations like the desire to be independent or to achieve high financial returns can be seen under pull factors (Kirkwood, 2009; Mazzarol & Reboud, 2017). The desire to be one's own boss (autonomy) is probably the best-known internal motivational factor for an individual (Dej, 2007b). Indeed, individuals mostly choose entrepreneurship not like choosing a job, but rather like choosing a way of living or lifestyle (Bockorny & Youssef-Morgan, 2019). In that sense, entrepreneurship can be seen as one way of achieving personal fulfilment as well (Wiklund et al, 2019). To confirm this, self-employed people attach more meaning to self-direction and stimulation in life than do people who work for a

salary (Warr, 2017). So, such internal factors play an important role when trying to understand the motivational powers effective on entrepreneurs and may act as pulling forces. Some other pull factors may be listed as the desire to earn recognition, to have a better work-life balance, to see own ideas being implemented in real life, to be able to conduct tasks that are interesting to oneself, and to develop oneself (Dej, 2007b). On the other hand, under the heading of push factors, negative events like being unemployed/ losing a job or being passed over for a promotion at work can motivate individuals to be entrepreneurs as well (Dej, 2007b; Kirkwood, 2000). Similarly, being unsatisfied with a job, having lower than expected levels of wage, and having a rigid work schedule can also act as push factors (Segal et al, 2015).

Entrepreneurial life is different from the life of a salaried professional in many aspects. To begin with, on the brighter side, entrepreneurs have more control over their work environment and have the luxury to act on their own will when compared to salaried employees who are expected to act in accordance with the requirements of their organizations and superiors (Benz & Fray, 2018; as cited in Berglund, 2014). Entrepreneurs have the right to determine how the resources are allocated in their company and, on their own, can decide how work will be organized (Stephen & Roesler, 2010). In other words, they have more job control.

On the other hand, entrepreneurial life has its challenges too. For instance, though their job control is high, so are their job demands (Stephen & Roesler, 2010). They assume several different roles as an entrepreneur, such as being an innovator, a risk manager, an executive manager in charge, a person who builds relationships, or a goal achiever (Chen et al, 1998). Having the responsibility of carrying different roles, their workload is usually higher than salaried employees and they work for longer hours (Stephen & Roesler, 2010). In other words, it is highly probable that they experience difficulties in reaching a work-life balance (Dej, 2007a). In addition to workload related issues, entrepreneurs are also exposed to high levels of stress. It is because they try hard to survive under unpredictable, risky, volatile conditions; try to overcome financial difficulties, and carry the responsibility of their employees (Baron et al, 2016). Indeed, the risks that they take, be it either social, financial or personal, may even lead to physical stress in addition to psychological one (Dej, 2007a).

The challenges of entrepreneurial life start even before the establishment of start-up companies. Finding a business idea that can work is the first challenge

experienced by all entrepreneurs and it may be followed by such challenges as finding sufficient capital, choosing the right location for the business, establishing a good team, being able to reach customers, being able to handle competition, etc. (Fong et al 2019; Kanchana et al, 2013). Of these difficulties, in a recent study by Looze and Desai (2020), *being able to reach customers* turned out to be the most challenging one and it referred to both marketing/advertising activities, finding new customers, keeping them satisfied and being able to handle competition. Following this, in their study, *attracting skilled employees* and *finding sufficient capital*, either to initiate or to ensure the growth of the start-up company, were the top challenges raised by entrepreneurs - which is quite understandable given the fact that entrepreneurs have limited credit and experience difficulties in reaching funds most of the time (Katrodia & Sibanda, 2018). Indeed, especially in the case of aspiring entrepreneurs, the availability of necessary funds turns out to be the top challenge for them (Looze & Desai, 2020).

In addition to such challenges, entrepreneurs also face the challenge of being able to *understand market requirements*, trends or patterns and have difficulty in rightfully assessing whether their products/services will be welcomed by customers (Katrodia & Sibanda, 2018). Also, having *insufficient knowledge of taxation or related regulations/laws* may be another difficulty of entrepreneurial life for especially new entrepreneurs (Katrodia & Sibanda, 2018; Looze & Desai, 2020). For especially young entrepreneurs, one further challenge may be a *lack of experience* and *commitment on the side of his/her family* (Katrodia & Sibanda, 2018). *Not being able to have access to mentors* who can provide assistance, as well as *not having sufficient network or connections* are also difficulties that are spelled out by entrepreneurs as being challenges worth mentioning (Looze & Desai, 2020). So, to sum up, entrepreneurial life has its challenges, it requires certain personal qualities and it may be well expected that the individuals who choose it as a career are the ones who believe that their personal traits can match these requirements (Zhao et al, 2010).

While closing this section, it might be insightful to leave the last words to a successful entrepreneur who summarizes his/her daily life as below (Dej, 2007b):

When people ask me if I like being in business, I usually respond: On days when there are more sales than problems, I love it; on days when there are more problems than sales, I wonder why I do it. Basically, I am in business because it gives me a good feeling about myself. You learn a lot about your capabilities

by putting yourself on the line. Running a business is not only a financial risk; it is an emotional risk as well. I get a lot of satisfaction from having dared it done it- and been successful (p. 57).

#### **2.4.2 Well-being of entrepreneurs**

Entrepreneurial research traditionally focuses on issues like business performance, success or failure. Indeed, firm performance has been found as the dependent variable that has been mostly worked on in entrepreneurship studies conducted after 2000 (Shepherd et al, 2019; as cited in Wiklund et al, 2019). On the other hand, entrepreneurship and its effect on personal fulfillment and well-being is also very important. Indeed, many people choose to be entrepreneurs for reasons like being able to act more independently or having the chance of doing something meaningful to them, which are not financial (Baron et al, 2016). Therefore, SWB (or to be more specific, life satisfaction) deserves to be an issue that should be included in entrepreneurial studies as a dimension of entrepreneurial success (Baron et al, 2016; Bockorny & Youssef-Morgan, 2019). Yet, despite being potentially this much important, research on the well-being of entrepreneurs has been quite limited until recently (Berglund, 2014; Sherman et al, 2015; Warr, 2017). However, interest and the number of studies on entrepreneurial well-being are finally growing, and there are various opportunities for future research (Wiklund et al, 2019; Amoros et al, 2021).

When it comes to research findings on the well-being of entrepreneurs, it should be first underlined that they generally report higher levels of SWB compared to those who are working in salaried jobs or are unemployed (Amoros et al, 2021; Stephan & Roesler, 2010; Berglund, 2014). Indeed, according to the findings from the GEM study, which was carried out in 70 countries in its 2013 round, the life satisfaction of entrepreneurs was found to be higher than non-entrepreneurs in all regions of the world (Amoros & Bosma, 2014). In addition to this, the life satisfaction of opportunity-based entrepreneurs was reported to be higher than that of necessity-based entrepreneurs (Amoros & Bosma, 2014). This last point is confirmed by Olcay and Kunday (2016) as well who found out that acting on a perceived opportunity rather than necessity positively affects life satisfaction more. As a matter of fact, opportunity entrepreneurs are found to be more successful in general and visualised as having higher resources and ambitions (Dej, 2007b). Nevertheless, this does not change the fact that

entrepreneurship, even out of necessity, contributes to the SWB of individuals (Amoros et al, 2021). Parallel to life satisfaction, the job satisfaction of entrepreneurs is found to be higher than that of salaried workers as found by studies conducted in different parts of the world (Warr, 2017). The higher job satisfaction of entrepreneurs can be explained by the fact that they have more control over their job, hence enjoy higher task autonomy, which is known to affect job satisfaction positively (Berglund, 2014).

The higher level of SWB among entrepreneurs can not be explained with material benefits such as income because an average entrepreneur earns less than a salaried professional (Amoros et al, 2021; Stephan, 2018). However, it is believed that non-material advantages of entrepreneurship, such as being autonomous and flexible, or having opportunities for self development lead to higher levels of SWB of entrepreneurs (Amoros et al, 2021). Indeed, for instance, entrepreneurs report higher autonomy than salaried employees, and it is a factor that explains much of the difference in work satisfaction between the two groups (Stephan, 2018; Hytti et al, 2013 as cited in Warr, 2017).

If a list is to be provided regarding the sources of entrepreneurial well-being, in a review of 144 empirical studies, Stephan (2018) observed that the following factors had been empirically observed to have a positive effect on it: 1) *Task-related variables* such as autonomy (job control), time flexibility, skill utilization (being able to use skills for work) 2) *Personal variables* such as having intrinsic motivation, having better physical health, health maintenance habits, having social support and personality traits like risk-taking and internal locus of control; 3) *Business related variables* such as achieving business goals, receiving income and financial rewards from the business, perceived business success and high firm performance. On the personal variables side, it is also possible to add being able to have flow experience at work to the list as it is found to have a positive impact on the SWB of entrepreneurs as well (Sherman et al, 2015). Regarding the factors that might have a negative effect on the well-being of entrepreneurs, Stephan (2018) observed that the following factors harmed entrepreneurial well-being: Job demands (stress), financial problems of the business (not due to its material implications but rather due to its negative effect on self image/identity), social isolation, work-family conflict, and family conflicts.

In addition to these variables that concentrate on the entrepreneur and his/ her company/ work, contextual variables are also effective on the well-being of

entrepreneurs, such as the overall state of the economy, economic growth, market conditions, level of customer demand, competition in the market or physical work environment (working in the nature versus working with toxic materials or under heavy physical workload etc) (Stephan 2018)

As far as the consequences of entrepreneurial well-being are considered, it is observed to lead to increased persistence (putting effort into the business), higher opportunity recognition, and higher firm performance. Also, an increase in the well-being of entrepreneurs have spillover effects on their surrounding as well (increasing the well-being of their partners or their tolerance towards others) (Stephan 2018).

### **2.4.3 Psychological capital of entrepreneurs**

The success of a venture depends on the ability of its founder on assessing opportunities and overcoming the challenges on the way, which means that the psychological capital of an entrepreneur may be seen as an important factor that affects his/ her entrepreneurial development (Tang, 2020). To go even further, it may also be possible to argue that psychological capital is an *essential* resource that must be possessed by an entrepreneur to reach success (Baluku et al, 2018). Nevertheless, despite its potential importance, studies on psychological capital in the specific context of entrepreneurship have been relatively limited, although psychological capital itself is well-acknowledged among the members of academia (Yousaf et al, 2015).

The functionality of HERO model elements within an entrepreneurial context is worth considering. For instance, Chen et al (1998) have worked on the concept of self-efficacy in an entrepreneurial setting and proposed the concept of *entrepreneurial self-efficacy* which they believed could help explain the chances of an individual to become an entrepreneur. In their empirical study, the researchers proved that entrepreneurs had a higher level of entrepreneurial self-efficacy and it differentiated them from other people (Chen et al, 1998). In another study, entrepreneurs were seen to have higher levels of general self-efficacy than non-entrepreneurs as well (Markman et al, 2005; as cited in Laguna, 2007). As for the constructs of hope and optimism, though empirical evidence may be limited or need cautious comments, these constructs may also be considered as possessing considerable value in explaining entrepreneurial actions (Laguna, 2017).

Regarding the benefits of psychological capital in the entrepreneurial context, Baron et al (2016) empirically found out that, despite the difficulties of entrepreneurial life, entrepreneurs report low levels of stress. They attributed this to the fact that entrepreneurs are individuals who have high levels of psychological capital. According to the researchers' view, entrepreneurial life has its challenges, and it is not everyone but only some individuals with certain characteristics or resources (namely, entrepreneurs) that are attracted to this kind of career. In that sense, psychological capital can be seen as one of those resources that help entrepreneurs. The potential of psychological capital in overcoming the negative effects of stress in entrepreneurial life is underlined by also Jensen (2012), who reminds us that the ability to cope with stress can be a critical success factor for an entrepreneur.

In addition to its positive effects on stress, the psychological capital of entrepreneurs is also found to have a positive effect on the business performance of their companies (Baluku et al, 2018; Hmieleski & Carr, 2008). Hmieleski and Carr (2008) took other forms of capital, such as financial, social and human capital, into account in their study and put forward that it is psychological capital that affects their ultimate success most. Based on their findings, the researchers contend that psychological capital can be a critical success factor for entrepreneurs, especially under dynamic environmental conditions. Acknowledging the positive effect of entrepreneurs' psychological capital on company performance, Yousaf et al (2015) suggest that psychological capital can also foster the growth intentions of entrepreneurs. The positive effects of psychological capital on both business performance and the growth intentions of entrepreneurs are also confirmed by Wang et al (2019).

As far as the other reflections of psychological capital in the entrepreneurial context are considered, it should also be added that psychological capital is empirically found to have a positive impact on the entrepreneurial intentions of individuals (Özdemir & Özgüner, 2016; Mahfud et al, 2019) and organizational entrepreneurship (Pirali & Seyadat, 2015) either. Also, psychological capital is also empirically found to have positive impacts on entrepreneurial traits of risk-taking and internal locus of control, which point out to its facilitating role in entrepreneurial contexts (Rasyid & Bangun, 2015). In addition to this, the psychological capital of entrepreneurs is also observed to have a positive effect on their level of satisfaction and commitment to their current role as entrepreneurs (Baluku et al, 2018).

## 2.5 Business Incubators

### 2.5.1 Definition and historical development

A business incubator is a company or organization that helps foster the growth and development of start-up companies through several support mechanisms. If a formal definition is to be given, United Kingdom Business Institutions Association (2007) defines business incubation as “a unique and highly flexible combination of business development processes, infrastructure and people, designed to nurture and grow new and small businesses by supporting them through the early stages of development and change” (UKSPA, 2015). Similarly, in the Turkish law (no. 4691) on the development of Technology Development Centres, business incubators are defined as “organizations that aim to develop young and new companies by providing office services, equipment support, managerial support, access to financial sources and critical business and technical support services under one roof” (Teknoloji Geliştirme Bölgeleri Yönetmeliği, 2016). Aernoudt (2004) describes a *good incubator* with the following words:

A good incubator has a big enough number of new, young enterprises with growth potential, an optimal rotation rate, a high survival rate of graduates that continue to do business outside the nurturing premises, a positive impact on the perception of entrepreneurs and on the creation of an entrepreneurial culture, strong links with industry, R&D centres and universities and finally a structure facilitating access to financial market (p.128).

The concept of business incubation was created in the USA where the first incubator has been established in Batavia, New York by Joseph Mancuso in 1959 (Güner & Korkmaz, 2011; Sungur & Dulupçu, 2013). What it simply aimed was to help the creation of new jobs in an area where there was a local stagnation due to the closure of a Massey Ferguson plant (Birden et al, 2020). In Europe, the first business incubator was established in the United Kingdom in 1975 with a similar logic to that of Batavia in USA, with the aim of helping the creation of jobs in an area where British steel factory closures lead to unemployment (Aernoudt, 2004; Sungur & Dulupçu, 2013; Birden et al., 2020). In Germany, the first incubator was set up by the University of Berlin in 1983, aiming to foster cooperation between universities and industry. Two years later, in 1985 the first incubator in France was established within Sofia Antipolis

Technology Park (Aernoudt, 2004). It is estimated that there are more than 7.000 incubators in the World (Hart, 2016) and the USA hosts the biggest proportion of business incubators in the world (Birden et al., 2020).

When it comes to the development of business incubators in Turkey, the concept of incubation was introduced to Turkey by the Small and Medium Enterprises Development Organization of Turkey (KOSGEB) with the establishment of Technology Development Centres (TEKMER) (Akçomak & Taymaz, 2004). With a focus on supporting technology and innovation-related entrepreneurial activities, the first TEKMER in Turkey was founded in the Middle East Technical University campus in 1990 (Akçomak, 2007). Later on, KOSGEB introduced the second generation of incubators to Turkey with the establishment of the first Business Development Centre (ISGEM) in 1997 (Güner & Korkmaz, 2011).

After the establishment of TEKMERs and ISGEMs by KOSGEB, the third generation of business incubators started to appear in Turkey where universities, non-governmental organizations (NGO) and private sector companies were in a leading position rather than KOSGEB. The first such business incubator was Bilkent Cyberpark founded by Bilkent University with the support of the World Bank in 2004. Over the years, this third generation of incubators have exceeded TEKMER and ISGEM's in total number and, as of 2022, they make up the biggest segment of incubators in Turkey with 85 incubators (Startups.watch, 2022). All in all, the total number of incubators in Turkey is close to 130 as of 2022.

### **2.5.2 Services provided by business incubators**

As implied also in the definitions, business incubators provide physical, business and networking support services.

- Physical support: Physical support refers to mainly support activities on space and infrastructure-related elements. It includes services like desk and office space, access to meeting rooms, car parking, internet access, leasing arrangements etc (Ollerenshaw, 2019). Hi-tech support services such as access to laboratories and research facilities may also be included under this heading (Ratinho et al, 2013).
- Business support: These services refer to those that help entrepreneurs do their job more consciously and knowledgeably. In that sense, coaching, mentoring,

training, counselling and business plan services may be provided by incubators to their tenants (Ratinho et al, 2013). It may also include services like marketing, accounting and financial support (Ollerenshaw, 2019).

- Networking support: Networking is an integral part of incubation business and business incubators provide both internal (within the incubator) and external (outside the incubator) networking opportunities. Such opportunities and services help entrepreneurs strengthen their social capital (Ratinho et al, 2013). The incubator manager is of critical importance in creating networking opportunities (Ollerenshaw, 2019).

The services that are briefly described above are provided by incubators to support the birth and growth of start-up companies, which face the risk of failure under conditions of low access to necessary resources or capabilities; Therefore, the value of being supported by incubators is well acknowledged in both developed and developing countries (Uhm et al, 2018). As a matter of fact, the *experience of incubation itself* is declared by entrepreneurs as being quite valuable (Lange, 2018). This is quite understandable in that incubation programs aim to develop entrepreneurs in various aspects by providing training on various topics, coaching them, giving business assistance etc. In that sense, being enrolled in an incubation program can be viewed as a learning opportunity on the side of entrepreneurs. Thus, when asked to evaluate the added value of the program, entrepreneurs mention knowledge resources (such as mentors, coaches etc) and access to networks among the top important contributions of incubators to them (Lange, 2018).

### 2.5.3 Types of business incubators

Throughout the historical development of business incubators, different kinds of incubators entered the scene. At a basic level, it is possible to speak of a bilateral classification like non-profit versus for-profit incubators, or public versus private incubators. Such a classification, based on the identity of the supporting/ founding establishment behind or owner of the incubator and whether it aims to get a profit out of incubation operations has merit and is valid. A slightly developed and combined version of such bilateral approaches can be seen in the classification suggested by Kuratko and LaFollette (1987) under which incubators are grouped as “1) publicly sponsored, 2) non-profit sponsored, 3) university sponsored, and 4) privately

sponsored” (Birden et al, 2020, p. 133). Although this specific classification dates to 1980s, it is thought by the author that it is quite useful and can prove to be applicable in describing the current incubator landscape in Turkey as of 2022.

Nevertheless, it is still possible to consider other dimensions in classifying incubators and speak of further classification approaches. In that regard, Aernoudt (2004) classifies incubators under five categories depending on their mission or industry focus as follows: (1) Economic (regional) development incubators, (2) Technology incubators focusing on the development of high-tech firms, (3) Social incubators aiming to narrow social gaps by creating jobs for people with low employment chance, (4) Basic research incubators to apply incubation to fundamental research, and (5) Mixed incubators creating start-ups, no matter which industry.

Speaking of types and classifications of incubators, one final word should be made on a relatively new incubation concept, the *accelerator*. Accelerators have started to appear in 2005 (Birden et al, 2020). They have shown a rapid increase in Turkey as well especially after 2013 (Çubukçu, 2018). An accelerator can be simply thought of as a type of incubator, which is different from *traditional* incubators (see Table 1 below).

**Table 1**

*Differences Between (Traditional) Incubator and Accelerators*

|                       | <b>(Traditional) Incubator</b>                                                  | <b>Accelerator</b>                                                                                                     |
|-----------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Tenants</b>        | Wide scope: All science-based businesses as well as non-tech businesses welcome | Narrower scope: Focus mostly on a web-based, mobile app, social networking, game, cloud, software development business |
| <b>Business Model</b> | More than 90% non-profit purpose                                                | Primarily for-profit                                                                                                   |
| <b>Founder</b>        | Universities, economic and local organizations, government                      | Entrepreneurs and Investors                                                                                            |
| <b>Duration</b>       | Longer term: 1-5 years                                                          | Shorter term: 1-6 months                                                                                               |
| <b>Investment</b>     | Usually, no direct investment                                                   | Usually invest between 180K - 250K USD (in exchange for 4%-8% of shares)                                               |

*Note:* Adapted from Uhm et al. (2018).

## **2.6 Links Between Concepts and Business Incubators**

While looking for potential links between business incubators and the psychological capital and well-being of their tenants, three different theories can be referred to: Social Support Theory, Social Capital Theory and Social Cognitive Theory. These three theories are briefly explained and discussed below as to how they may shed light on the potential link between incubators and the inner world of entrepreneurs.

### **2.6.1 Social support theory**

The concept of social support has been in the academic arena since the 1970s, starting with health and family areas (Bhanthumnavin, 2000). It may be defined as the perception or experience that arises when someone feels being cared for, being valued by other people, and that he or she is part of a network of assistance (Xi et al 2017). Another and similar definition by Cobb (1976) views social support as the belief of the individual that he/she is being loved, given importance, and cared for and that there exist other people that can be available and trusted upon a need. In another definition, the exchange of social needs is emphasized when defining it (Braham, 1998). In, yet another one, the ability to take advice and help is underlined in the definition made by Morgeson & Humphrey (2006). It is possible to provide more definitions which may have both similarities and differences. Indeed, multiple theories form the basis of studies in the field of social support, and this leads to difficulty in coming up with an agreed-upon definition (Jolly et al, 2020). Yet, they all have value and reflect the richness of approaches towards social support.

The literature review of Jolly et al (2020) covering almost 200 studies on social support reveals that four different theories, namely the Job Demands-Resources Model, Conservation of Resources Theory, Social Exchange Theory, and Basic Needs Theory, have been taken into account when explaining how social support may assume a role in daily life. According to their findings, under the Job Demands-Resources Model (Bakker et al, 2014) social support may act as a job resource that increases the motivation of the individual and helps overcome the challenges that the job possesses. Under the Conservation of Resources Theory (Hobfoll, 2001), which argues that the loss of resources may lead to stressful situations and people thus try to maintain their resource base, social support may help individuals protect their resources and improve their morale. Under Social Exchange Theory, an important feature of which is

reciprocity (Gouldner, 1960), social support is viewed as a phenomenon that leads to a self-energizing, reciprocal and positive give-and-take cycle between the provider and recipient of support. Finally, with the lens of Basic Needs Theory (Deci & Ryan, 2000), social support is seen as a factor that helps us meet the competence, autonomy, and relatedness needs of the individual and lead to an increase in his/her level of internal motivation (Jolly et al, 2020).

There are different types or forms of social support. As far as the content of social support is considered, for instance, according to House (1981) there may be four different types of social support: emotional, instrumental, informational and appraisal support (Jolly et al, 2020). According to this classification, emotional support refers to providing psychosocial aids like caring and empathy. Instrumental support refers to the provision of certain resources that someone needs. Informational support is about providing general information, experience or advise. Finally, appraisal support refers to supplying feedback to individuals that may help them develop themselves. This classification also reflects the approach of Bhanthumnavin (2000) where she classifies support types under three groups namely as emotional, material and informational support. In addition to content, social support may also differ in form as either actual behaviours or perceptions (Jolly et al, 2020). This distinction refers to the difference between the actual use of social support or the perceived availability of it. At the end of the day, the existence of something and knowing that it exists are two different things. Yet, this distinction is important in that the two situations may lead to different outcomes (Jolly et al, 2020).

There are many sources and potential recipients of social support (Bhanthumnavin, 2000). For example, social support may come from the spouse of a person, his or her children, his or her mother and father, friends, a minister in a church, his or her psychologist or peers at work (Abbey et al, 1985). This richness in sources may also lead to the creation of different subcategories of social support. For instance, in a work setting, social support related terms based on the source of support include co-worker support, supervisor support, leader support, peer support, colleague support, team-member support etc. (Jolly et al, 2020).

No matter where it comes from, the positive link between social support and well-being has been proven by many studies (Cohen & Wills, 1985). It is also found that, there may be mediating variables like optimism, in the relationship between social

support and well-being (Karademas, 2006). In addition to these, social support decreases the anxiety, depression, and interpersonal sensitivity that people experience and helps increase the quality of their life (Abbey et al, 1985). Social support is also known to be effective on psychological capital formation (Luthans et al, 2007a). It has a positive effect on resilience and resilience assumes a protective role against depression (Bonanno et al, 2007; as cited in Fernandes et al, 2018). In a work setting, social support given by a supervisor is found to have positive impacts on job satisfaction, quality of life, job stress and work effectiveness (Bhanthumnavin, 2000). As a matter of fact, both supervisor and co-worker social support in a work setting have also positive effects on the self-efficacy and SWB of individuals (Chou, 2015). In sum, being able to receive social support has positive reflections on the inner world of people in general.

When it comes to business incubators and entrepreneurs, incubators can be seen as potential sources of social support for their tenants. Indeed, supporting entrepreneurs is the very reason behind the establishment of business incubators. To reach this goal, incubators create mechanisms like coaching and mentoring. They also provide training programs to entrepreneurs and offer consulting services. In all these mechanisms there is a social element where entrepreneurs are supported by other people on behalf of the business incubator. So, in line with social support theory, it is then quite possible to expect see the positive reflections of the efforts of incubators on the well-being of entrepreneurs.

### **2.6.2 Social capital theory**

There are various forms of capital, such as financial, physical or human capital, and social capital is one of them (Lyons, 2002). Various definitions of it have been made by scientists sharing a common base but also having slight differences (Adler & Kwon, 2002). For instance, as mentioned by Adler and Kwon (2002), one definition that emphasizes the bonding aspect of social capital is made by Putnam (1995) and goes as “features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit” (p. 67). Another definition, that, this time, emphasizes the bridging feature of social capital is made by Portes (1998) who sees social capital as “the ability of actors to secure benefits by virtue of membership in social networks or other social structures” (p.6). A further definition

that covers both features is made by Nahapiet and Ghoshal (1998) and says that social capital is the "sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (p. 243). No matter how it is defined, it is productive in its nature and possession of social capital leads to achieving certain goals that would otherwise be impossible without it (Coleman, 1988).

What social capital theory simply argues is that people receive resources, either tangible or intangible, via their connections with other people (Miles, 2012). According to Coleman (1988), social capital exists in the *relationships* of people with other people. Therefore, networks of people are of vital importance in the theory of social capital (Lyons, 2002). Sources of social capital depend on the social network of a person and what is important is the position of the person in this network (Miles, 2012). Speaking of networks and relationships, at this point it might be useful to remind that, there are various forms of relationships -such as market relations, hierarchical relations, and social relations- and among all, it is social relations that form the basis of social capital (Adler & Kwon, 2002).

Social capital can both complement and substitute other capital forms (Adler & Kwon, 2002). No matter what role it assumes, social capital has many benefits; For instance, it may bring career success, higher compensation, or easier job access for an individual working in a company, or it may bring higher growth, better relations with suppliers or higher innovation for a person running his own company (Miles, 2012). In the entrepreneurial context, it has also been found that it has a facilitation effect on entrepreneurial development (Lyons, 2002) and the establishment of start-ups (Adler & Kwon, 2002).

In the case of business incubators and their tenants, entrepreneurs have the chance to benefit from strong social networks when they choose to be part of an incubator (Honig & Karlsson, 2007). In the words of Köseoğlu (2007), "Working together in the same building with firms in similar sectors and with similar demographics creates synergy in the incubator, which results in the creation of social capital" (p.13). Indeed, business incubators provide a suitable ground for the creation of social capital since they are based on the logic of resource pooling where numerous companies share the same environment (Lyons, 2002). The synergy between entrepreneurs, their suppliers and other related actors in the incubator is also mentioned

by Honig and Karlsson (2002). However, synergy is not the only potential source of social capital for an incubator tenant. Incubators offer networking services deliberately to enable entrepreneurs to increase their resource bases. With that purpose, for instance, incubators set up connections with potential investors. All these attempts help improve the social network and capital of tenants.

Depending upon the position of the person and others in a network, it is possible to speak of two types of social capital: vertical or horizontal (Lyons, 2002). Vertical social capital can be thought of as kind of a hierarchical form of capital where upward or downward relationships form the base of such capital. Horizontal social capital, however, refers to the capital accumulation among people of an equal level, such as peers in an organization – or tenants in a business incubator! This second kind of social capital serves the purpose of enterprise development and may be more relevant in the case of business incubators (Köseoğlu, 2007).

So, being a tenant in an incubator can lead to an increase in the social capital of entrepreneurs. This increase in social capital may have reflections on the inner world of entrepreneurs as well. This is because, it is empirically observed that increases in social capital can lead to an increase in psychological capital (Örgün, 2017). Therefore, through social capital formation, entrepreneurs can also psychologically benefit from being a tenant in an incubator.

### **2.6.3 Social cognitive theory**

The social cognitive theory of Bandura (1986) is a widely accepted theory that tries to explain human behaviour focusing on personal, behavioural, and environmental factors and the interactions among them (Yakut, 2019). In other words, it is based on a *three-dimensional reciprocal determinism*; where the dimensions are 1) behaviour, 2) cognitive and personal elements, and 3) the environment (Wood & Bandura, 1989). Different from earlier theories, and as mentioned by the concept of reciprocal determinism, social cognitive theory acknowledges that the environment has an effect on human behaviour, but human behaviour affects the environment as well (Bayron, 2013).

The theory is based on earlier works of Bandura that were conducted in a behaviourist and social learning framework, but it also takes cognitive processes into account to explain human behaviour (Stajkovic & Luthans, 1998b). The social pillar of

the theory refers to the social origin of individuals' behaviours and thoughts (what people learn from each other) and the cognitive pillar refers to the thinking process (what goes on within their mind) and its influence on their actions (Stajkovic & Luthans, 1998b).

A very important concept that plays a major role in social cognitive theory is self-efficacy - which is also a dimension of psychological capital. Under the social cognitive theory, self-efficacy is viewed as one of the major determinants of people's behaviours (Stajkovic & Luthans, 1998b). Another important argument under social cognitive theory is that there are *five basic human capabilities* that people have and use to direct and control their own behaviours (Stajkovic & Luthans, 1998b). These are briefly explained below:

- *Symbolizing capability* enables individuals to use their visual experiences as inputs to their cognitive models where they can be processed and lead their actions in the future.
- With the help of *forethought capability*, individuals can anticipate the results of their actions, establish goals and make plans for the future.
- *Vicarious learning capability* helps people to learn from others by observing them.
- *Self-regulation capability* assumes an important role in the theory and enables people to act upon their own, internal standards, rather than simply conform to the demands of others.
- Through *self-reflection capability*, individuals can analyse their own behaviours, thoughts, and experiences to reach valuable information about themselves and their environment.

As implied by these capabilities, observation, imitation, and reinforcement are important processes in the theory (Bayron, 2013).

According to Kushev et al (2018), social cognitive theory can provide a valuable lens that can be used in all facets of the entrepreneurial process and shed light on how complex decisions within this process are made. Therefore, it can be assumed that social cognitive theory can also be used to understand how entrepreneurs may be affected by being a tenant of a business incubator. In that sense, a potential contribution of social cognitive theory may come from how the self-efficacy of entrepreneurs may be affected by being part of an incubator.

One potential factor that can function as a leverage in increasing the self-efficacy level of entrepreneurs in a business incubator may be the ability to access resources offered by the incubator. Indeed, entrepreneurs are more likely to exploit opportunities when they have access to more resources such as those improving their managerial capabilities or support of their stakeholders (Choi & Sheppard, 2004). Incubators provide many resources of various forms to their tenants either directly or through their connections with third parties. These *resources* are not only the ones that are acquired through the services provided by incubators but may also include *soft* resources such as a sense of belonging and credibility (Eveleens et al 2017). According to social cognitive theory, the cognitive evaluation of a given situation leads to an increase or decrease in the level of self-efficacy of individuals (Sinding & Waldstrom, 2014). Since access to more resources may increase entrepreneurs' confidence levels regarding their chance of successfully exploiting an opportunity (Kushev et al, 2018), then gaining access to such resources may lead to an increase in the self-efficacy level of the entrepreneurs. With the very same logic, Marshall et al (2020) argue that social cognitive theory explains the link between access to resources and well-being in the entrepreneurial context. The researchers also empirically prove that as the ability of entrepreneurs to access resources increases, their self-efficacy increases and this leads to an increase in their well-being (Marshall et al, 2020).

To sum up, incubators provide access to resources that are valuable for the success of start-up companies and entrepreneurs, who cognitively process this situation and find out a reason to believe more in the success of their endeavours. This means an increase in their self-efficacy which then leads to an improvement in their well-being. So, social cognitive theory can help explain how business incubators can positively affect the inner world of their tenants. Actually, it might be sufficient to close the discussion at this point but, it is worth briefly mentioning and giving credit to one further theory that provides insights about how the availability of resources may increase the chance of success for a start-up; it is the well-known Resource-Based-View (RBV) of the firm! In its original form, RBV argues that a firm is a bundle of resources and capabilities that firms use to create value for their customers and obtain revenues in return (Penrose, 1959). If these resources are valuable, rare, inimitable, and non-substitutable, then, such resources can also turn out to be sources of competitive advantage for companies which can bring a competitive advantage to them (Barney,

1991). The RBV, thus, is a theory that explains the link between the resource base of a company and its performance. Thus, it does not constitute a direct theoretical background that explains the effect of resource availability (provided by incubator) on the inner world of entrepreneurs. But it is commonly referred to in business incubator literature (Eveleens et al, 2017). Indeed, the resources provided by incubation programs constitute the most important factor in determining the value of a program to entrepreneurs, who apply incubators to be able to reach those resources that they believe will help increase their chance of survival and growth (Lange, 2018). So, RBV may help explain the reason why entrepreneurs cognitively find out a reason to improve their self-efficacy upon the availability of resources provided by incubators.

#### **2.6.4 Relevant research and empirical findings**

The inner world of entrepreneurs in business incubators is a neglected research area. (Ollerenshaw, 2019). Ford (2015) is told to be the first researcher to examine the relationship (Ollerenshaw, 2019). Ford himself was also aware of the fact that there was a lack of research on the psychological capital development of entrepreneurs within business incubators (Ford, 2015). Being a marketing consultant at Arkansas Venture Centre, Ford had the chance to spend much time with the entrepreneurs in a business incubator setting. Based on his professional experience and research-purposed interviews with entrepreneurs, he proposed that business incubators can be seen as entities that foster positive social interactions among their tenants and help increase their psychological capital (Ford, 2015).

Approaching the issue at a Ph.D. dissertation level, Ollerenshaw (2019) studied the link between business incubator services and the psychological capital of incubator tenants. She conducted in-depth interviews and surveys with both entrepreneurs in incubators and business incubator managers. She argued that the services provided by business incubators could be seen as *interventions* that help the accumulation of psychological capital of entrepreneurs (Ollerenshaw, 2019). At the end of her study, she found out that the services provided by business incubators had indeed positive effects on the psychological capital of tenants (Ollerenshaw, 2019). So, acting as pioneering studies, the work of both Ford (2015) and Ollerenshaw (2019) points out the existence of a relationship between incubator services and the inner world of incubator

tenants via psychological capital development. But of course, more research should be conducted on this issue.

As a matter of fact, once the link between business incubator services and the psychological capital of incubator tenants starts working, inevitably well-being of entrepreneurs is positively affected. In a meta-analysis, Avey et al. (2011) concluded that the positive link between psychological capital and psychological well-being is well confirmed by different researchers. The link between psychological capital and well-being is found to exist in entrepreneurial contexts as well (Hmieleski & Carr, 2007; Baluku et al, 2018). Youssef-Morgan and Luthans (2015, p. 18) propose that the link between the two concepts can be explained by six different theoretical mechanisms, “formation of positive appraisals of past, present and future events” leading to greater well-being being at the forefront. In the entrepreneurial context, Bockorny and Youssef-Morgan (2019) also focused on the psychological capital of entrepreneurs and confirmed that it positively affects their life satisfaction, which is the cognitive dimension of SWB. In addition to them, Baron et al (2016) also found out that as psychological capital increases, the perceived level of stress decreases, and, in turn, the SWB level of entrepreneurs increases either.

The link between psychological capital and life satisfaction, hence well-being, is also confirmed by other studies which approach the issue by using the dimensions of psychological capital. For instance, Akgündüz (2013) empirically found out that *self-efficacy* has a positive effect on life satisfaction. Sarıçam et al (2015), on the other hand, worked on the relationship between another dimension of psychological capital, the *hope* dimension, and they found out that it affects life satisfaction positively. Likewise, other researchers found positive relationships between life satisfaction and *resilience* (Alibekiroğlu et al, 2018) and *optimism* (Sapmaz & Doğan, 2012) dimensions of psychological capital.

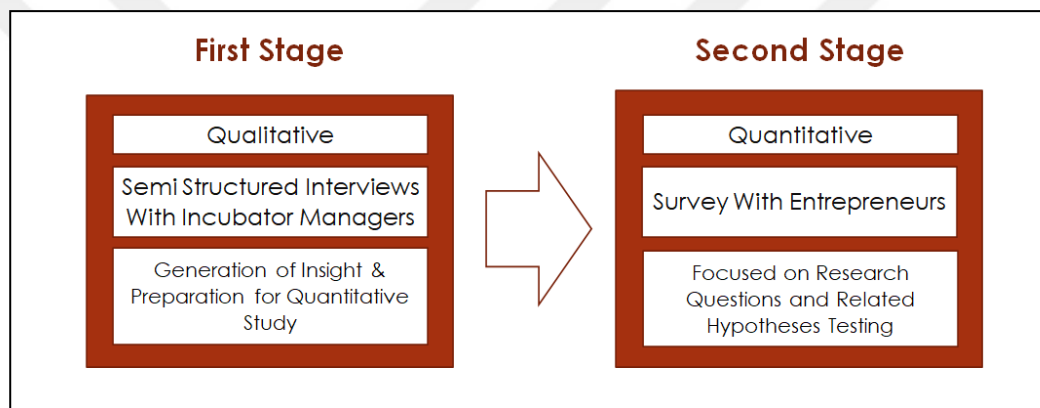
### 3. METHODOLOGY

#### 3.1 Research Design

A non-experimental, cross-sectional research design was adopted for the study and both qualitative and quantitative research techniques were used. In that sense, the research consisted of two consecutive stages as shown in Figure 1. The first stage was qualitative and has mainly served as a preparation phase of the second (quantitative) stage, where the main fieldwork of the study was conducted.

**Figure 1**

*Research Design*



In the first (qualitative) stage, a total of 9 online interviews were carried out with business incubator managers. The aim of this stage was twofold; Firstly, the interviews served the purpose of understanding the dynamics of the incubation business better. The information and insight gathered in this stage were expected to be quite useful when discussing the results of the overall research and indeed it has been as such. The second purpose of this stage was to set up personal contacts with incubator managers to act as leverage during the fieldwork of the second stage.

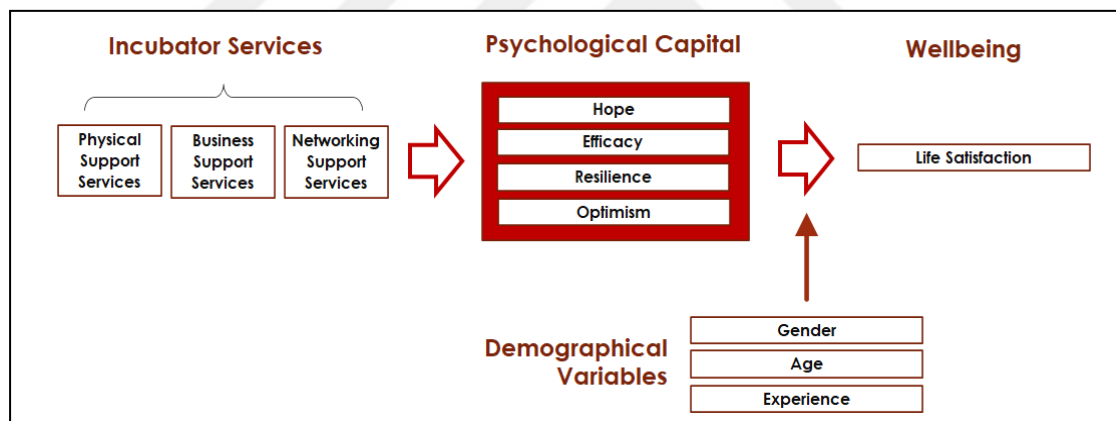
The second stage of the research was quantitative and an *online survey* was carried out. The purpose of this stage was to focus on the main research questions and understand the relationships between business incubator services and the inner world of incubator tenants. Therefore, the unit of observation and unit of analysis at this stage were individuals. The survey included a total of 126 entrepreneurs. The data gathered at this stage was used for hypotheses testing. With that purpose, correlation and regression analysis were run after the fieldwork.

### 3.2 Research Model and Variables

The research model is shown in Figure 2 below. As depicted in the figure, incubator services (overall) made up the independent variable of the research. The services provided by incubators were classified under three separate groups as physical support, business support and networking support services. The dependent variable of the research was the life satisfaction of incubator tenants, which is the cognitive dimension of subjective well-being (SWB). The psychological capital (PsyCap) of incubator tenants was expected to be the mediating variable of the research. As explained earlier, it is composed of four dimensions: Hope, efficacy, resilience, and optimism. Finally, demographical variables such as gender, age, and experience of incubator tenants were the control variables of the research.

**Figure 2**

*Research Model*



The main hypotheses of the research were as follows:

- **H1** Incubator services have a positive effect on PsyCap.
- **H2** PsyCap has a positive effect on life satisfaction.
- **H3** Incubator services (overall) have a positive effect on life satisfaction.
- **H4** PsyCap has a mediation role in incubator services – life satisfaction relationship.
- **H5** Entrepreneurial demographics act as a moderator in PsyCap – life satisfaction relationship.

### 3.4 Definition of the Universe

The universe of the research was defined as the entrepreneurs in Turkey using business incubator services. Since it was a cross-sectional study, being *currently* (at the time of the field study) enrolled in any business incubator in Turkey was used as an eligibility criterion while pulling out the sample. Entrepreneurs who had once used but were no longer using the services of incubators (hence, *graduated*) were not included in the sample.

As explained earlier, there are three groups of incubators in Turkey: 1) KOSGEB related TEKMERs, 2) KOSGEB related ISGEMs and 3) Non-KOSGEB-related incubators that are run by either universities, NGOs or private sector companies. Based on this segmentation, the number of incubators in each group and other available statistics are provided in the following tables.

**Table 2**

*Business Incubator Universe in Turkey*

| <b>Business Incubator Segment</b> | <b>Number</b> |
|-----------------------------------|---------------|
| 1) TEKMER's                       | 24*           |
| 2) ISGEM's                        | 35**          |
| 3) Non-KOSGEB-related incubators  | 85***         |
| <b>Total</b>                      | <b>129</b>    |

*Source: \*Ari (2019), \*\*Desk research of author in 2019, \*\*\*Startupswatch (2022)*

**Table 3**

*Classification of Non KOSGEB Related Incubators in Turkey*

| <b>Ownership</b>     | <b>(Traditional)</b> |                  | <b>Total</b> |
|----------------------|----------------------|------------------|--------------|
|                      | <b>Accelerator</b>   | <b>Incubator</b> |              |
| University Sponsored | 11                   | 25               | 36           |
| Privately Sponsored  | 25                   | 1                | 26           |
| Publicly Sponsored   | 14                   | 9                | 23           |
| <b>Total</b>         | <b>50</b>            | <b>35</b>        | <b>85</b>    |

Note: Classification made by the authors based on data from Startupswatch (2022)

According to the data provided by Startupswatch (2022) and as can be seen from Table 3, 50 of non-KOSGEB-related incubators are classified as accelerators whereas the remaining 35 can be seen as *traditional* incubators. Be it either classified as an accelerator or a traditional incubator, it is seen that a considerable portion of all is sponsored by universities. Universities are followed by private institutions and almost all the accelerators in Turkey are sponsored by this group. Not shown in the table, it should also be noted that banks play an important role in that 11 out of the 25 private institutions are banks. The third biggest group of incubators are those that are publicly sponsored, and they are sponsored by institutions like chambers of commerce, regional development agencies, municipalities, local governorships etc.

As for the total number of entrepreneurs who are in relation with business incubators in Turkey, be it either KOSGEB related or not, it is hard to speak of any publicly available statistic. In that sense, it is not possible to provide a reliable figure regarding the size of the *universe*. If an estimation is to be made; Çubukçu (2018) provides the yearly number of tenants accepted to eight accelerators that she interviewed in her study. For most of the accelerators, she mentions that average figure fluctuates between 10 and 20 – yet for one case, ITU Çekirdek, it goes as high as 100. In two earlier studies, Sungur and Dulupçu (2013) and Güner and Korkmaz (2011) mention average tenant figures as around 20 for ISGEMs. In a relatively newer study, Arı (2019) interviewed five non-KOSGEB-related incubators. The average number of tenants was 25 in four of them, but it exceeded 100 in the fifth. So, given the limited and high-ranged nature of available information as such, it is difficult to make a well-grounded estimate. At best it could be said that the universe may be *a couple of thousands* in size.

### 3.5 Data Collection

#### 3.5.1 The first (qualitative) stage of fieldwork

In the first (qualitative) stage of the research, a total of 9 semi-structured interviews were conducted with business incubator managers of non-KOSGEB-related incubators. The managers were first contacted in person via direct messages on a professional social media platform (Linkedin) and they were asked for their cooperation by the researcher. Upon their positive return, interview meetings were scheduled. All

of the interviews were conducted via online meeting platforms, like Zoom or Google Meet. The length of the interviews ranged between 30 and 75 minutes, depending upon the availability of incubator managers. All of the interviews took place between June 02, 2021, and July 01, 2021, mostly within working hours.

At the beginning of each interview, a brief oral introduction was provided to the interviewees by the researcher regarding the purpose of the research. Also, assurance was given in that no sensitive information would be collected during the research and findings would be published only anonymously. During the interviews, no video and audio recordings were made but hand notes were taken in each interview by taking the permission of interviewees in advance. A full list of the incubators, the managers of which were interviewed at this stage, is provided in Table 4.

**Table 4**

*List of the Incubators Participated in the Qualitative Stage of the Research*

| # | Name of the Incubator                | Incubator Ownership  |
|---|--------------------------------------|----------------------|
| 1 | TEB-Tim Girişim Evi                  | Private Sponsored    |
| 2 | Workup (İş Bankası)                  | Private Sponsored    |
| 3 | Bilgiyi Ticarileştirme Merkezi (BTM) | Public Sponsored     |
| 4 | Cube Incubation (Teknopark Istanbul) | Public Sponsored     |
| 5 | Accelerator2030                      | Public Sponsored     |
| 6 | Yeditepe Üniversitesi TTO            | University Sponsored |
| 7 | Acıbadem Kuluçka Merkezi             | University Sponsored |
| 8 | Inovent (former SUCool)              | University Sponsored |
| 9 | ANAÇ Kuluçka Merkezi (Arinkom)       | University Sponsored |

### 3.5.2 The second (quantitative) stage of fieldwork

In the second stage of the research, an online survey was carried out with business incubator tenants (entrepreneurs). The fieldwork took place between August 15, 2021, and January 15, 2022. At this stage, an online survey platform (Survey Monkey) was used and the average length of an interview was 7 minutes. The links of the survey were distributed to respondent candidates either through the distribution of survey links by incubator managers or the submission of survey links to entrepreneurs by the researcher.

Distribution of survey links by incubator managers: In order to distribute the survey links to respondent candidates a total of 13 non-KOSGEB-related incubators were contacted, including the 9 managers who were met in person during the interviews in the first stage. All business incubator managers were asked for their cooperation to send the survey links to be provided to them by the researcher. All but two of the incubator managers contacted with that purpose agreed to support the research and distributed the survey links to their tenants. As a result of their joint effort, a total of 62 interviews were completed.

Submission of survey links to entrepreneurs by the researcher: In order to increase the size of the sample, the researcher had also decided to submit survey links himself to respondent candidates - targeting to reach entrepreneurs who were not affiliated with the incubators who supported the study. With that purpose the researcher created a list of potential respondents via a desk research study whereby the websites non-KOSGEB related business incubators were checked to gather information about the start-ups which were supported by related incubators. Later on, the founders of related start-ups were contacted personally by the researcher through a professional social media platform (Linkedin) giving information about the survey and inviting them to participate. As a result, 174 entrepreneurs were contacted and 64 of them participated in the research – pointing out a participation rate of over 30%.

Throughout the use of two different mechanisms as mentioned above, a total of 126 interviews were conducted in the quantitative stage of the fieldwork. After the closure of the field, it was found that the respondents were affiliated with a total of 17 different incubators in the country. The full list of these incubators is provided in Appendix F.

### **3.6 Measurement Instruments**

#### **3.6.1 Outline of semi-structured interviews**

The semi-structured interviews that have been conducted in the first (qualitative) stage of field work were carried out via the Interview Guide prepared for the research – which, in its original form is presented in Appendix D. The guide was prepared to keep the main two research questions in mind and included questions on both the operations of the incubators and the observations of incubator managers

regarding entrepreneurs. Before the field application, the form had been reviewed by the thesis advisor and got its final shape after the feedback of the advisor was received.

In line with the interview guide, a typical interview evolved around the following topics:

- A brief overview of the incubator and the programs/ services offered to entrepreneurs.
- Strategic choices of incubators: Industry or project type focus.
- Business model and organization structure of the incubator.
- The selection process of the incubator and project evaluation criteria.
- Incubator managers' observations regarding;
  - Nature of the demand by entrepreneurs and their profile,
  - Needs and expectations of entrepreneurs from the incubator,
  - Difficulties faced by entrepreneurs.
- Incubator managers' perceptions on the contribution of their services to entrepreneurs.

During field application, the interview guide was used with the sole purpose of keeping the conversations on track and was not shared openly with any of the interviewees in advance. The realised flow of each interview in the fieldwork was unique to itself and shaped according to the interaction between the researcher and incubator manager. In some instances, additional questions were raised by the researcher spontaneously wherever necessary, depending upon the unique flow of the interview. Upon the completion of each interview in the field, the interview guide was reviewed by the researcher based on the interview experience. With that respect, the priorities of questions were reassessed, and the final flow of each interview was shaped by taking the experiences from previous interviews into account.

### **3.6.2 Overall structure of the survey questionnaire**

The survey questionnaire used in the second (quantitative) stage of the research was composed of four parts as follows:

- Information about the incubator and usage of incubator services,
- Measurement of well-being (life satisfaction) of entrepreneur,
- Measurement of entrepreneur's psychological capital,
- Demographic information about the entrepreneur.

The questionnaire began with collecting information on the incubator which is affiliated with entrepreneur and the services provided within. First, the category of the incubator was asked (as being either TEKMER, ISGEM, Non-KOSGEB-related Incubator or Accelerator). Then *usage* of physical support, business support and networking support services were questioned, followed by a question on the *perceived importance of each service* by the entrepreneur for his/her business. These two questions were critical for the research in that data on the independent variable would come from these two questions. The response of entrepreneurs to these two questions was collected via a 1-5 Likert Scale. Assessing the usage and perceived importance of incubator services with such a logic is in line with Çubukçu (2018) and (Ollerenshaw, 2019) applications.

After questioning the usage and perceived importance of business incubator services, the well-being (life satisfaction) and psychological capital of entrepreneurs were measured. For that purpose, two scales commonly used by researchers and well accepted in their own areas were selected: namely, Satisfaction With Life Scale (SWLS) and Psychological Capital Questionnaire (PCQ). These two scales are discussed in detail in the sections to follow. These scales were followed by the final part of the questionnaire, which was composed of questions on the demographic characteristics of participants. In this part, there were questions on age, gender, level of education, and total experience in work life (years) of entrepreneurs. The original survey questionnaire used during the fieldwork is included in Appendix E.

### **3.6.3 Satisfaction with life scale (SWLS)**

SWLS is one of the most common scales used in the measurement of SWB (Kurtz & Lyubomirsky, 2011). Developed originally by Diener et al (1985), SWLS is a scale that is composed of 5 items grouped under 1 single dimension. The scale is originally used with a 1-7 Likert where 1 = completely disagree and 7 = completely agree (Dağlı & Baysal, 2016). Though the scale is copyrighted, all professionals are provided the freedom of using it without any permission or charge (Diener, 2021). A copy of the related disclaimer is provided in Appendix A of this document.

The scale has been translated into Turkish by Köker (1991). The validity and reliability tests of the scale by Dağlı and Baysal (2016) have shown that the scale has a reliability score (Cronbach's Alpha) of 0.88 and that the scale is both valid and reliable.

A similar study by Bekmezci and Mert (2018) on the validity and reliability of the scale in the Turkish context has produced exactly the same reliability figure. The original items in the scale are shown in the table below (Diener et al, 1985). During the fieldwork, Turkish versions of the items in the scale were used based on the study of Akbaş et al (2020).

**Table 5**

*SWLS Items*

|   |                                                             |
|---|-------------------------------------------------------------|
| 1 | In most ways my life is close to my ideal                   |
| 2 | The conditions of my life are excellent                     |
| 3 | I am satisfied with my life                                 |
| 4 | So far, I have gotten the important things I want in life   |
| 5 | If I could live my life over, I would change almost nothing |

In practice, the 1-7 Likert (original) version of the scale was used in the Turkish setting by Alibekiroğlu et al (2018), Aşan and Erenler (2008), Belen (2021), Canlı et al (2020), Dursun and İstar (2014) where 1 = “Kesinlikle Katılmıyorum”, 2 = “Katılmıyorum”, 3 = “Pek Katılmıyorum”, 4 = “Kararsız”, 5 = “Biraz Katılıyorum”, 6 = “Katılıyorum” and 7 = “Kesinlikle Katılıyorum”. Similar 1-7 Likert applications with a slightly different wording where 1 = “Hiç Katılmıyorum” and 7 = “Tamamen Katılıyorum” is also seen in the literature (Kalafatoğlu & Çelik, 2020). Though the scale is originally used with a 1-7 Likert, SWLS was used by Global Entrepreneurship Monitor in 2013 with a 5-level Likert (Amoros & Bosma, 2014). In the Turkish setting, Dağlı & Baysal (2016) also used a 1-5 Likert version upon the feedback of the respondents in their validity and reliability study. They observed that the scale was quite reliable with the 5 level Likert. The 5-level Likert that they used was: 1 = “Hiç katılmıyorum”, 2 = “Çok az katılıyorum”, 3 = “Orta düzeyde katılıyorum”, 4 = “Büyük oranda katılıyorum” and 5 = “Tamamen katılıyorum” (Dağlı & Baysal, 2016). A similar yet slightly different wording as 1 = “Tamamen Katılmıyorum”, 2 = “Katılmıyorum”, 3 = “Ne katılıyorum, ne katılmıyorum”, 4 = “Katılıyorum” and 5 = “Tamamen Katılıyorum” was used by Çelik (2016) and Gök et al. (2016).

In the research, the scale was used with a 1-5 Likert scale where 1 = “Kesinlikle Katılmıyorum”, 2 = “Katılmıyorum”, 3 = “Ne Katılıyorum, Ne Katılmıyorum”, 4 = “Katılıyorum” and 5 = “Kesinlikle Katılıyorum”.

### 3.6.4 Psychological capital questionnaire (PCQ)

Being composed of a total of 24 items, PCQ was developed by Luthans et al. (2007b) based on the earlier works of Parker (1998) on “self-efficacy”, Snyder et al. (1996) on “hope”, Wagnild and Young (1993) on “resilience” and Scheier and Carver (1985) on “optimism” (Luthans et al., 2007b). The copyrights of the scale are being kept by Mind Garden Inc. and written permission is required to use the scale (Ollerenshaw, 2019). Upon application of the author, required permission was taken for using it and related document is provided in Appendix B. When it comes to the individual items in the scale, however, Mind Garden Inc. does not permit the PCQ items to be published openly in documents such as dissertations (Ollerenshaw, 2019; Okunola, 2021). Therefore, the scale is only partially reproduced in line with Mind Garden’s rules in the table to follow.

**Table 6**

*Sample Items From PCQ*

|   |                                                                      |
|---|----------------------------------------------------------------------|
| 1 | In this job, things never work out the way I want them to            |
| 2 | At this time, I am meeting the work goals that I have set for myself |
| 3 | I feel confident presenting information to a group of colleagues     |

Originally, the PCQ scale is used with a 1-6 Likert where 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, and 6 = strongly agree (Luthans et al., 2007b; Ollerenshaw, 2019; Aslaner, 2020). This original usage is translated to Turkish as 1 = “Kesinlikle Katılmıyorum”, 2 = “Katılmıyorum”, 3 = “Biraz katılmıyorum”, 4 = “Biraz katılıyorum”, 5 = “Katılıyorum”, 6 = “Kesinlikle Katılıyorum” (Tosunoğlu, 2021). Similar applications where 1 = “Hiç Katılmıyorum” and 6 = “Tamamen Katılıyorum” are seen in the Turkish case as well (Bayır & Aydın, 2019; Çakmak & Arabacı, 2017; Bahadır & Kahveci, 2020; Macit et al., 2020). Despite the scale being used with a 1-6 Likert originally, in practice, there are examples in the Turkish literature where a 1-5 Likert is used with PCQ as 1 = “Beni hiç tanımlamıyor”,

2= “Beni biraz tanımılıyor”, 3= “Kararsızım”, 4= “Beni iyi tanımılıyor”, 5 “Beni çok iyi tanımılıyor” (Akçay, 2012). Another 1-5 Likert is observed to be used as 1= “Kesinlikle Katılmıyorum”, 2= “Katılmıyorum”, 3= “Ne katılıyorum ne katılmıyorum”, 4= “Katılıyorum”, 5= “Kesinlikle Katılıyorum” (Akdoğan & Aydemir, 2018; Bolelli, 2020; Doğan & Aslan, 2018; Düzgün & Yeşiltaş, 2017; Özler & Yıldırım, 2015).

In the research, the scale was used with a 1-5 Likert scale where 1 = “Kesinlikle Katılmıyorum”, 2 = “Katılmıyorum”, 3 = “Ne Katılıyorum, Ne Katılmıyorum”, 4 = “Katılıyorum” and 5 = “Kesinlikle Katılıyorum”.

The tests for reliability and validity of PCQ exhibit that the scale is satisfactory in both aspects (Çetin & Basım, 2012). To confirm them; the Cronbach’s Alpha score was found as 93,8 (overall score) by Tokmak (2018). A similar (over 90) score was reported by Akçay (2012) whereas the respective figure was 0.87 in the study of Özler and Yıldırım (2015) and 0.85 in Özkan and Tosun (2020), Okun and Büyükbeşe (2019) and Macit et al (2020) studies. As for the reliability of individual dimensions; they were reported to range between 0.85 and 0.91 (Taşlıyan and Hırlak, 2016); 0.85 and 0.87 (Özler and Yıldırım, 2015); 0.75 and 0.84 (Önay et al, 2017).

### 3.7 Data Analysis

#### 3.7.1 Analysis of qualitative data

During the interviews, 39 pages of *field notes* were taken by the researcher. After each interview these original notes were reviewed by the researcher as soon as possible (as a general principle, within the same day of the interview) and separate *contact summary sheets* were prepared for each interview. This way, the data gathered during the interviews was transferred to digital form and prepared for further analysis.

Upon the completion of the qualitative fieldwork, a *content analysis* was carried out by the researcher. In essence, the procedure to be followed during this analysis aimed to classify and group the data collected in the field around certain themes based on the similarities among them (Miles and Huberman, 1994). For that purpose, the data was *manually coded* using the interview guide as a beginning point to show related *categories* to be revised as necessary. During this stage a *frequency analysis* was carried out as well. A sample frame from the coding process is provided below.

**Figure 3***Sample Frame from Coding Process*

| 1  | CATEGORY                                  | CODE                                     | FREQ | Incubator A | Incubator B | Incubator C | Incubator D | Incubator E |
|----|-------------------------------------------|------------------------------------------|------|-------------|-------------|-------------|-------------|-------------|
| 26 | Difficulties Experienced by Entrepreneurs | High uncertainty                         | 1    |             |             |             |             |             |
| 27 |                                           | High work load                           | 1    |             |             |             |             |             |
| 28 |                                           | Access to customers / gaining acceptance | 4    | x           | x           |             | x           |             |
| 29 |                                           | Unable to generate cash flow             | 1    |             |             |             |             |             |
| 30 |                                           | Team problems                            | 4    |             |             | x           |             | x           |
| 31 |                                           | Falling in Love with Idea                | 4    |             |             |             | x           | x           |
| 32 |                                           | Technically strong/ commercially weak    | 4    |             | x           | x           |             | x           |
| 33 |                                           | Lack of awareness/ discipline            | 3    |             |             | x           | x           |             |

### 3.7.2 Analysis of quantitative data

The analysis of the data gathered in the second (quantitative) and main fieldwork of the research was made by using SPSS version 22.0. Before testing the hypotheses, the validity of the measurement instruments in use (namely, SWLS and PCQ scales) was assessed via factor analyses. Later on, it was followed by a reliability analysis. Afterwards, to test the hypotheses, regression, mediation, and moderation analyses were carried out.

## 4. RESEARCH FINDINGS

### 4.1 First (Qualitative) Stage Findings

In this section of the study, the findings of the first (qualitative) stage of the fieldwork are shared based on the semi-structured interviews conducted with incubator managers. Firstly, the findings on the dynamics of incubation business are shared where observations regarding incubator structures, strategies, organisations, and internal processes are presented. Afterwards, the observations of incubator managers regarding entrepreneurs are shared including the difficulties entrepreneurs face, their needs, and their weaknesses. Finally, the findings regarding the contributions of incubators to entrepreneurs and synergy creation within incubators are shared. Note that, all the information provided in this section is based on interviews - with the exception that at certain points entrepreneur opinions will also be referred to, which are obtained using publicly available information provided by relevant incubators.

#### 4.1.1 Observations on incubation business

##### 4.1.1.1 Diversity in program structures

To begin with, it might be difficult to speak of a standard business incubator program structure in Turkey. Indeed, there seems to be considerable variation among incubators in terms of; the industry and project types that they focus on, their business models, the types of the institutions supporting them, and their scale.

##### Differentiation among incubators in terms of their industry & project type focus:

During the interviews, it was observed that the majority of the incubators preferred to act as generalists when it came to focusing on an industry for project flow. However, though less in number, there were specialist incubators as well, which accept only projects from selected industries. An example of a specialist incubator was *Acıbadem Kuluçka Merkezi*, which is affiliated with Acıbadem University and Acıbadem Hospitals Group. This incubator preferred to focus on projects from the health industry only. Another example of specialization in incubators came from *Cube Incubation*, which was a business incubator that preferred to provide support to only deep-tech start-ups.

There was also differentiation in terms of the stage of the projects (start-ups) that were accepted by incubators. Some incubators, for instance *accelerators*, were observed to provide support to only start-ups that are in the later stages of their development. Yet, some others preferred to support a wider range of projects and provide support to start-ups irrespective of their stage in the life cycle. Such incubators developed different programs targeting projects that are in different stages. One such incubator was *Bilgiyi Ticarileştirme Merkezi* (BTM) which offered 4 different programs to entrepreneurs: 1) *BTMCamp Program* providing support to projects which are at the unique value proposition level; 2) *Pre Incubation Program* focusing on the projects that are at minimum viable product level; 3) *Incubation Program* supporting projects at *proof-of-concept* level; and 4) *Post Incubation Program* supporting projects where the firm foundation is completed and high growth is expected.

In another example, *ANAC* was observed to host 6 different programs developed for entrepreneurs. 3 of 6 programs of *ANAC* were focusing on students and academicians only, while the remaining three programs were open to everybody. Of the three remaining programs; 1) *Startupus Program* targeted students and had a format of a 3-4 days hackathon; 2) *Seedup Program* was open to everybody and provided support to projects at the idea stage; and 3) *Techup Program* provided support to projects at minimum-viable-product level or start-ups which had completed their establishment process.

In yet another example, *Cube Incubation* had 4 different programs: 1) *Ideacube* was an online program that opened up 6 times a year and provided basically 3-week-long trainings to projects at the idea stage; 2) *Campcube* was a 4-week-long program that opened up 4 times a year and supported entrepreneurs who had justified the business idea and moved on to product development stage; 3) *Runcube* was a 5-week-long program that provided training and other kind of supports, including investment opportunities, to entrepreneurs who had actually started selling their products to their customers; and, 4) *Racecube* was developed for projects in the later stages of their life cycle.

Differentiation among incubators in terms of their business model: When it comes to the business model of incubators, it is possible to ask questions like: Do the incubators charge any fees for the services that they provide? Do they sign up binding contracts with entrepreneurs? Do the incubators aim to generate profits or do they have

a not-for-profit vision? Do the incubators become partners with entrepreneurs when they choose to support a start-up? etc... A quick answer is: It is observed that there was no standard business model of incubation in Turkey- at least as far as the incubators interviewed are considered.

During the interviews, it was witnessed that there were some incubators that provided their services to entrepreneurs for free and did not ask entrepreneurs to sign a binding contract. Therefore, they could be considered as not-for-profit entities. *TEB-Tim Girişim Evi*, *Workup (İş Bankası)*, and *BTM* were the incubators that could be considered examples of this. On the other hand, some incubators adopted a *mixed* approach when it came to profit-making orientation. A good example of a mixed approach regarding profit expectations came from *Inovent*, which is a private university-supported incubator. In their case, Inovent demanded no fee for training, mentoring, and consultancy services from entrepreneurs in the pre-incubation phase. However, when projects started developing and were selected to be taken inside the incubator, a contract was signed with related entrepreneurs. When a financial investment was decided to be made by Inovent, it was done in return for a given amount of shares of the start-up. A similar practice was also observed to be followed by *ANAÇ*.

Another important factor that was told to affect the business model of an incubator was whether they were established within a *techno park* (science park) or not. Indeed, Turkish law (no. 4691) on Technology Development Zones relates to the operations of incubators located inside science parks. According to this law, science park incubators enjoy certain tax exemptions and other incentives, unlike other incubators which are not located physically inside these zones.

Differentiation among incubators in terms of their scale: Based on the information supplied by incubator managers, observed differentiation among incubators in terms of their scale is thought to be noteworthy. Indeed, on the one hand, it was observed that there were large-scale incubators such as *ITU Çekirdek*, *ODTU Atom* or *BTM* which served hundreds of entrepreneurs at a given time. On the other hand, it was also observed that there were several programs that preferred to serve quite a limited number of (10-15) entrepreneurs simultaneously.

According to the comments of an incubator manager, this situation could be viewed as the coexistence of two different models of incubation: 1) The *large-scale incubator*, and 2) The *boutique incubator*. According to the large-scale versus boutique

incubator view, the advantage of the large-scale incubator is thought to come from being able to serve a high number of entrepreneurs at the same time. For instance, due to the large scale of entrepreneurs served, trainings are conducted as seminars with the participation of a high number of trainees. Having many entrepreneurs together at the same time also serves to enhance relationship development among entrepreneurs, which later can increase the chance of creating synergy among them. While the large-scale incubator model has its own, scale-related advantages; the boutique incubator model is believed to enable more close relationships between entrepreneurs and incubator staff and, close follow-up and support of entrepreneurial development becomes easier. So, both models have their pros and cons.

#### **4.1.1.2 Organization**

Although it is not possible to offer it as a universal model due to the scale differences among incubators, based on the observations of the author, an average incubator can be viewed as an operation that is in essence run by few people. In that sense, an *average incubator* seemed to be an organization with the following elements:

- Core Team: 3-5 people in headquarters (A manager and 2-4 specialists),
- A project evaluation board,
- Mentor, consultant, and trainer network,
- Investor network.

Upon observations, it is believed by the author that a business incubator can be defined as a network organization in which a small number of highly qualified people with high coordination capabilities can organize a high number of people and resources to serve entrepreneurs.

Mentor organization: Although during the interviews mentorship was told to be usually provided on a voluntary basis, it was also added that there were mentors who were paid in return for their services by the incubators. In the words of an incubator manager, incubator mentorship in Turkey could be considered as a "*pre-investment date*". According to this view, most of the mentors – who get no fees for their services- in fact were also opportunity-seeking investors who looked for alternative investment opportunities related to the projects they provided mentorship for.

It is hard to speak with numbers when it comes to the size of mentor networks as these networks are quite flexible. Yet, it was observed that the number of mentors in an incubator's network could go as high as 100 or 140. It was mentioned by incubator managers that mentors came from a wide range of backgrounds. As proposed by one incubator manager, it is possible to speak of two different types of people in mentorship: 1) Mentors coming from a given industry; and 2) Mentors coming from a given area of specialization (marketing, sales, law etc).

Having previous entrepreneurial experiences was mentioned as being very valuable when it came to providing mentorship to an entrepreneur. According to one interviewee, "people who were once entrepreneurs themselves but then gone to bankrupt, entrepreneurs who had received grants from official entrepreneurship support programs and entrepreneurs who are currently running successful start-ups" (I9) are mentioned as obvious candidates for mentorship.

Trainer organization: As far as training programs provided to entrepreneurs are of concern, it was observed that incubator managers or core staff of the incubator could act as trainers themselves and also programs could be outsourced to professionals as well. When training programs were outsourced, a popular source of trainers seemed to be universities (professors) as well as professional training companies. The contents of training programs were told to be shaped in accordance with the needs of entrepreneurs. For instance, training programs provided to the start-ups at their early stages usually covered basic topics like business model development or marketing. As far as start-ups of later stages are considered, more complicated programs like leadership or impact management were provided to entrepreneurs. As a result, for instance, the training programs in a pre-incubation program were different from those provided in an accelerator.

#### **4.1.1.3 Facilities**

Office space has historically been an important element of the service provided by incubators to entrepreneurs. Due to recent business models like shared office spaces, it became easier for business incubators to offer such services- without having to own related facilities themselves. During the fieldwork, it was observed that shared office suppliers like *Workinton*, *Kollektif House*, *Impact Hub* were used by incubators as working offices or as meeting places in big organizations like demo day activities etc.

As a matter of fact, one of these suppliers, Workinton, was seen to go beyond simply providing space but assumed a very active role in the daily management and execution of an incubator - namely *Workup (İş Bankası)*.

Although shared office spaces serve to make it easier for incubators to offer their services; they may also be seen as a threat for incubators as they can be considered as a substitute to them, although limited with only physical space. A comment from an incubator manager was worth noticing: “Office space requirements of entrepreneurs have started to disappear. Now there are shared working places where it is possible to pay 600-700 TL (100\$) per month and make use of their services easily” (I1).

On the other hand, high-tech physical facilities of incubators were observed to be still very valuable for entrepreneurs. For instance, *Cube Incubation* was told to be the business incubator with the largest closed space in Turkey. *Wet/dry laboratories, assembly workshops and clean rooms* of the incubator were marked as differentiation and attraction points of Cube Incubation. Another example of high value-added physical facility came from *Acıbadem Kuluçka Merkezi*, who – with the help of its affiliated group hospitals provided *product application areas* to entrepreneurs.

#### **4.1.1.4 Project flow to incubators**

During the interviews, it was observed that an entrepreneur could apply to an incubator at any time within a year for most incubators. For instance, *Inovent* reported accepting applications to its regular programs at any time. Likewise, the *TechUp* program of *ANAC* or *Workup (İş Bankası)* was open to application all year round. However, some of them opened up their programs and accepted applications only at certain times.

Regarding the total number of project flow (applications by entrepreneurs), it was observed that there was a considerable variation. For instance, it was reported to be at the 200 level for *ANAC* or *TEB-TİM Girişim Evi*; whereas it was told to reach the level of 1.000 for *BTM* or *Cube Incubation*. In addition to regular and exclusive programs of incubators, TUBITAK-related special programs for start-ups (such as BIGG) were observed to create an additional project flow. For instance, applications to *ANAC* were reported to be 150 for one round of BIGG in 2021, whereas it was 500 in the case of *Inovent* – which acted in cooperation with three other university-related incubators for this program.

As far as the eligibility of applications is of concern, the figures for the applications to both regular activities of incubators and TUBITAK-related programs showed that roughly 5-10% of the projects that apply to incubators were found to be eligible by these entities. For instance, in the case of regular project flow, 20 of 200 projects were found eligible in the case of *TEB-TİM Girişim Evi*; whereas the number of eligible projects was around 60-70 in the *Cube Incubation* case. In the case of TUBITAK-related project flow, the total number of projects that were found eligible and selected to be sent to TUBITAK for final election was 12-13 (out of 150) in *ANAÇ* case, whereas *Inovent* declared to pass 29 of the 500 projects to TUBITAK for the final election.

#### **4.1.1.5 Project evaluation criteria**

As summarised by an incubator manager, when an application is made to an incubator by an entrepreneur, it is possible to evaluate the project according to the three major criteria as shown below:

- *Market validation* → Is there a need for the product/ service to be provided by the entrepreneur? Would a market really exist for the products/ services of the start-up?
- *Product-market fit* → Does the product meet the needs of its target market?
- *Business validation* → In the case of a start-up foundation serving the product/ services suggested by the entrepreneur, would it be viable and would it turn into a sustainable, profitable business?

In addition to those, during the interviews, it was observed that the originality of the idea/ product/ service, its potential for commercialization, its growth potential, cost/ benefit analysis results could also be considered as potential criteria that might be taken into account by incubators. Last but not least, a further project evaluation criteria was mentioned as the *entrepreneur himself/ herself*. Indeed, in the words of one incubator manager: “In fact we aim to assess the entrepreneur as a person throughout the evaluations. What we really try to understand is whether he/ she is an executioner. The business idea is important, yes, but it is no more important in incubation business that it is in other kinds of businesses. What matters the most is whether the entrepreneur has the abilities to realise the idea” (I3). The main reason behind putting so much emphasis on the entrepreneur during project evaluations was declared as the high cost

of time and work hours spent to entrepreneurs once they were elected. At the end of the day, as one incubator manager put it clearly “no one wants to waste his/ her energy by selecting the wrong entrepreneur” (I9).

#### ***4.1.1.6 Critical success factors in incubation business***

As summarised by one incubator manager, the critical success factors in the incubation business were mentioned to be:

- The need to create a success story (to encourage entrepreneurs to apply to the incubator),
- Assisting entrepreneurs in finding potential customers,
- Having the necessary resources to help entrepreneurs go international or global,
- Having a wide network of investors, mentors and consultants.

#### **4.1.2 Observations of incubation managers on entrepreneurs**

Before presenting the findings regarding the observations of incubation managers on entrepreneurs, it may be insightful to note how entrepreneurship and start-ups can be defined in the eyes of an incubator manager. In the words of an incubator manager, an entrepreneur may be defined as “a person who has limited resources yet is trying to reach a specific target in a very fast manner in a life is full of uncertainty” (I2). When it comes to start-up, it may be defined as “a company that is founded by an entrepreneur who is aiming to catch a high growth rate in a small period of time and then, probably, cash out soon” (I4). Such a definition is thought to reflect the opinion of most incubator managers as growth was underlined as a key concept in the definition and mentioned during the interviews.

Although it is not directly spelled out in the above definition of start-up, during the interviews innovation was also mentioned by many incubator managers as another important concept that should be thought of together with the concept of start-up. Indeed, one of the incubator managers went as far as defining “start-up= innovative venture” (I3). According to this approach, whether a start-up deserves being invested in depends on whether it is based on innovation or not.

#### ***4.1.2.1 The challenges of being an entrepreneur***

Working under high uncertainty: One of the challenges of being an entrepreneur was mentioned as working under a highly uncertain environment. It is so that, as one incubator manager put it forward, “Trying to set up a business in the form of a start-up, meaning a business using novel business models, is especially viewed as an insane endeavor in Turkey” (I2). During the fieldwork, the internal struggle with uncertainty was also observed to be expressed as follows by an entrepreneur: “Every single day you wake up, and without having a single idea as to what will happen that day, you keep telling yourself that I can do it today, yes, I can do it...” (Workup, 2017)

The high amount of workload: Another difficulty that entrepreneurs need to cope with was mentioned as the high amount of workload by incubator managers. As one incubator manager expressed “Entrepreneurship is more difficult than it is viewed from the outside. People who aspire ‘throwing away the necktie and make his or her own business’ should understand that entrepreneurship is based on working for 48 hours without sleep if necessary” (I2). During fieldwork, the requirement for hard work was observed to be confirmed by an entrepreneur with the following words: “Entrepreneurship starts with pointing out a problem first. Many people can do this. But an entrepreneur is the one who dares to remain sleepless, who knocks out doors and tries to persuade other people in order to solve that problem” (Workup, 2017).

Access to potential customers & gaining acceptance in the market: With the words of an incubator manager, “the first customer of a start-up is no different than is sip water to a flower” (I1). Indeed, as mentioned by many incubator managers, access to the market and finding potential customers turned out to be one of the greatest needs of entrepreneurs. Having noticed this need, some incubators had started working actively to create activities where start-ups meet their potential customers. For instance; *TEB-TİM Girişim Evi* reported running a program called *Startup to Corporate* in which big clients of TEB Bank (which is one of the two founders of the incubator) meet entrepreneurs whose products/ services may be relevant to them. Likewise, it was observed that *BTM* tried to make it easier for entrepreneurs to find new customers via its *Sales Acceleration Program*.

When necessary, some incubators were also observed to support entrepreneurs with local and international field activities to make it easier for them to reach potential customers and even investors. For instance, *Acıbadem Kuluçka Merkezi* had sent

entrepreneurs to exhibitions in Holland with the support of Regional Development Agencies run by the state. Likewise, *Inovent* had sent entrepreneurs to Silicon Valley and Bahrain for field visits. Such visits were mentioned to have proved to be useful for finding investors.

During the interviews, having access to the market was mentioned to be insufficient for entrepreneurs and that it should be coupled with gaining acceptance. As an incubator manager put it forward, “entrepreneurs have to be used to being refused” (I1) as this may be the case when trying to make sales. How to manage being refused was also declared to be very important since being refused in sales attempts might lead to a loss of motivation and internal conflicts within the team of the entrepreneur.

Being unable to generate immediate cash flows: It was mentioned by some incubator managers that start-ups had to be financially strong enough to bear until being accepted in the market. The declaration of one of the incubator managers in this issue was worth considering: “Setting up a business that uses robotic technology is not like opening up a tailor shop; You won’t start earning money starting from day one”. I have seen many projects that had to be cancelled out as they could not financially resist enough” (I1).

Team-related problems: Another challenge that was mentioned by many incubator managers was team-related problems which might take different forms. One mostly mentioned team-related challenge was the *difficulty of setting up a team*. In the words of an incubator manager, “Entrepreneurs have hard time finding the people to realize their ideas” (I9). What was meant here is that entrepreneurs have difficulties in finding *employees* rather than partners. It is simply because “Entrepreneurs don’t have enough money to pay other people to work for them” (I9). One other difficulty in setting up a team was mentioned to be related to the lack of awareness of human capital on the side of the entrepreneur. As expressed well by one of the incubator managers, “Some entrepreneurs believe that they can set up the business on their own” (I4). In addition to these, the dissolution of teams due to internal conflicts was also mentioned by most incubator managers as a highly common problem in start-ups.

#### ***4.1.2.2 Common weaknesses and mistakes of entrepreneurs***

The syndrome of falling in love with the business idea: Although expressed with different words, a common mistake of entrepreneurs mentioned by again many

incubator managers was *falling in love with the business idea*. What was meant here was that; entrepreneurs might focus on and believe in their idea so much that they might miss the big picture, and without having enough knowledge about the environment they might develop excessive confidence in themselves and their idea. Some expressions of incubator managers about this syndrome were as follows: “There are many entrepreneurs who try to generate ideas sitting on their chair, without going to the field” (I4); “One of the most important reasons behind the failure of entrepreneurs is their over insistence on the wrong product” (I3); “Everyone thinks his/her own idea is unique and fabulous” (I8).

A natural consequence of falling in love with the business idea was mentioned as being unable to question and objectively evaluate the business idea on the side of entrepreneurs. This is quite dangerous in that, as mentioned by many incubator managers, the deficiencies in the business model may lead to ultimate failure. As an incubator manager put it forward “Sometimes we see that entrepreneurs design their business idea on paper and remain late in going to the field. In other words, they don’t think about whether their idea has a reflection in real life” (I9). The same incubator manager continued as follows: “According to them, entrepreneurship is all about sunshine and lollipops. They face reality when they dare to go to the field. That is why I send every entrepreneur to the field, asking them to talk with five different people after our initial meeting with them. If they still believe in their business idea when they return, we start working with them on their project” (I2). One other incubator manager outlined the corrective role of incubators against this syndrome as follows: “Our job is to tell them that they are not as good as they think they are” (I8).

The problem of being *technically strong but commercially weak*: Another weakness mentioned about entrepreneurs by some incubator managers was that entrepreneurs were usually *commercially weak* although *technically strong*. For instance, as reported by one incubator manager, it was possible to come across many entrepreneur academicians who have no commercial acumen, especially in deep-tech projects. The example given by an incubator manager was worth quoting: “There was an entrepreneur academician in Bursa. He had a patented invention but he had no interest in turning it into a product and selling. All he said was ‘I invented it, whoever wants to commercialize is welcome, I hope the country benefits from it’. At the end of the day, he sold his patent to a company in Izmir at quite a modest price” (I4). As

mentioned by one of the incubator managers, another reflection of the commercial weakness of entrepreneurs was observed in TUBITAK-related project applications where entrepreneurs were required to prepare and submit detailed long-term financial projections.

Incubators were, thus, observed to be forced to develop mechanisms to cope with such weaknesses of entrepreneurs. For instance, establishing *sales offices* within the incubator to help entrepreneurs commercialize their products was an example of such mechanisms. One other countermeasure example came from training programs; As mentioned by one of the incubator managers, teaching entrepreneurs how to apply *Business Canvas* turned out to be one of the ways of improving the business acumen of entrepreneurs.

One other weakness of entrepreneurs was mentioned as “not knowing how to prepare a one-pager or how to prepare a presentation to potential investors” (I7). Therefore, through training programs and personal support, incubators were observed to try to close such gaps as well. It was reported by the incubator managers that, due to the knowledge gaps on the commercial side, there was quite an interest to services in the areas of finance, law, accounting, intellectual property rights etc.

Lack of awareness and work discipline: One final weakness mentioned by some incubator managers was that entrepreneurs might lack the necessary level of awareness and work discipline. A striking observation spelled out as “Usually it may be hard to find an entrepreneur in a start-up!” (I3) by one of the incubator managers pointed out the deficiencies of entrepreneurs. According to the same incubator manager, it was why incubators need to spend a lot of time and energy to “teach entrepreneurs how to be one” (I3).

Another observation regarding lack of work discipline by an incubator manager found its expression in the following words: “They (entrepreneurs) miss the meetings and don’t show up because they don’t pay any money to us; when we call them to see whether they will attend, they just say ‘oops, I forgot!’” (I9).

Qualification-related problems based on the observations of one of the incubator managers during a TUBITAK-related project evaluation process were summarised as “Every man on the street has a business idea!” (I9), pointing out that most of the project applications were in fact low qualified. The following sentence of the same incubator

manager exhibited to what extent this situation might grow: “There are people who apply TUBITAK BIGG program to get money to buy seeds for his plantation” (I9).

#### **4.1.3 The interaction between business incubators and entrepreneurs**

##### ***4.1.3.1 Contributions of business incubators to their tenants***

Based on the interviews with incubator managers, it was observed that there were many contributions of incubators to their tenants directly and indirectly. These contributions started with facilitating doing business for entrepreneurs, went on with the benefits that they received from the mentorship and assistance services provided to them, and extended to the social benefits and synergetic effects of being affiliated with an incubator. These contributions are detailed in the paragraphs to follow.

Facilitation of doing business: As mentioned by most incubator managers, using the services hence being supported by a business incubator can have a facilitative effect by *opening up new doors and increasing credibility* for entrepreneurs. In that sense, entrepreneurs were perceived to be more prestigious by potential investors and financial institutions. As reported by one of the incubator managers, just because of the above-mentioned reason, entrepreneurs chose to write phrases like “...being supported by ...X... University Incubator” (I5) on their website. It was also mentioned by incubator managers that, after gaining the support of an incubator, entrepreneurs could easily get appointment from entities which they could not have succeeded to do so on their own despite having tried for 5-6 times (before being supported by the incubator). An entrepreneur’s own words confirmed this issue: “When I start talking with potential investors, I start the match 1-0 ahead when I say I am being supported by ...X... Incubator” (Workup, 2017). In sum, incubators were observed to help entrepreneurs to overcome certain difficulties easier and faster. An entrepreneur confirmed this situation by saying “We had solved some issues in 2-3 months here (inside the incubator), which we could normally handle only within a full year on our own before” (Workup, 2017).

Benefits of receiving mentorship: According to the observations of an incubator manager, entrepreneurs needed social and intellectual capital in addition to financial capital. According to this incubator manager, “Entrepreneurs need to be with people who had hard times themselves in the past and be part of a society” (I2). Therefore, the added value of receiving mentorship, in other words *being together with experienced*

*people* was underlined by many incubator managers. As expressed by an incubator manager, “It is possible for established companies to hire consultants as they have money, however, without mechanisms like mentorship, such things are impossible for entrepreneurs” (I2).

According to the same incubator manager, the relationship between an entrepreneur and his/ her mentors could be viewed as a *master-apprentice relationship*. What was also interesting and worth noticing was that the same incubator manager defined mentorship by using the analogy of “a man, who has lost all his hair, giving a hand to another (the entrepreneur)” (I2).

On the side of entrepreneurs, the following sentences spelled out by incubator tenants served to confirm the observations of incubator managers: “Even a sentence long advice can in times accelerate my work; I can move three months forward in an instance” (Workup, 2017) ... “They (mentors) are providing you roadmaps; Here (inside the incubator), you learn shortcuts. Because there are people here who have themselves run on those roads” (Workup, 2017)..

One-on-one assistance to entrepreneurs: Both incubator managers and their staff were mentioned to be in contact with entrepreneurs and therefore they acted as a source of information, experience, and guidance for entrepreneurs. As pointed out by one of the incubator managers, as the size of the incubator decreased (hence, as the incubator acts more in the *boutique* model), it *might* become easier for incubator personnel to assist entrepreneurs on a one-to-one basis. Therefore, it was argued that incubators smaller in size *might* be considered as having a natural advantage over large-scale incubators.

During the interviews, it was observed that mechanisms enabling to pay close attention and assistance to entrepreneurs on a personal basis might be applied by incubators if necessary. For instance; *Accelerate 2030* aimed to appoint *one separate mentor for each entrepreneur* for every 15 entrepreneurs within the program. Under this program, every mentor would be responsible for the development of his/her assigned entrepreneur/ project. Each mentor would be required to spend at least 4-6 hours per month with the entrepreneur. Mentors would be selected among people who were known in their industries and who had the necessary connections to open up new doors to their mentees in terms of investment.

Social support - being part of a group: According to some incubator managers, even being supported by an incubator could mean something for entrepreneurs in itself. Indeed, as put forward by an incubator manager; “First of all, it is important for entrepreneurs that they feel being valued... Actually, they (entrepreneurs) can find most of the training programs provided by incubators on the Internet. But knowing that there is someone to call in case of emergency and being part of a group matters to them ” (I9). As expressed by yet another incubator manager, “Even having a table here (in the incubator) means something to entrepreneurs, because they longer need to go to a cafe for a meeting, but instead they can come to here and work in a professional environment ” (I2). The words of an entrepreneur confirmed these incubator managers as follows: “We understand that we have leaned back to a strong wall when we see that we receive what we need both in terms of mentorship and in terms of our other needs immediately ” (Workup, 2017).

#### ***4.1.3.2 Incubator as a source of synergy***

It may be possible to see incubators as social spaces that help create synergy among entrepreneurs. As mentioned by one of the well-known mentors of incubation business in Turkey; “What we call as a business idea stems out from communication and interaction... It comes out of problems, out of the attempts to make something better and relationships with other people” (Workup, 2017). In other words, being together with other entrepreneurs might have a positive impact on the creativity of entrepreneurs. The words of an entrepreneur confirmed the above view as follows: “It is an endless ocean and we sail together with the start-ups that we meet here towards new ideas and new seas ” (Workup, 2017).

During the interviews, it was observed that some incubator managers pointed out that being physically together - inside the facilities of an incubator- had value for entrepreneurs. Indeed, as mentioned by one incubator manager, “Entrepreneurs tell us (incubator managers) that ‘you have provided us with a table and place to work; we used to work separately in our own places beforehand, now we can work together and we felt being a team ” (I2). The following words of an entrepreneur in this very same issue confirmed him: “After coming to here (incubator) I set up a team with the help of the weather here, that team is developing and it is easier to manage it with the help of this place ” (Workup, 2017).

Incubators themselves were observed to try hard and consciously to help increase the synergy created within the incubator among entrepreneurs. For instance, *BTM* facilities were reported to be open on 7/24; These –social- facilities gave the entrepreneurs the chance to continue their life without needing to go out. Therefore, *BTM* positioned itself as a center helping entrepreneurs to socialize. Another incubator, *ANAC* was observed to apply a *buddy system* to increase interaction and social support among entrepreneurs.

In one of the incubators interviewed, the practice of *Collective Performance Evaluation* shed light on the interaction between incubator management and entrepreneurs. In this practice, monthly evaluation meetings were carried out with entrepreneurs, and the overall development of their project/ start-up is evaluated. The interesting thing in this practice was that, the evaluations were not done on a one-to-one basis but they were carried out in a collective manner. In other words, while an entrepreneur discussed the development of his/ her business with incubator managers, all other entrepreneurs had the chance to listen to them. The aim of this practice was mentioned as serving the purpose of letting entrepreneurs know about each other and contributing where necessary. It was believed by the related incubator manager that this practice helps entrepreneurs to benefit from the common mind. In his own words, the incubator manager told “Entrepreneurs should know well about each other so that they can grow the pie together... A joint working culture should prevail” (I2).

Another incubator practice that helped create synergy among entrepreneurs was *War Game Activity*. In this activity, all entrepreneurs came together and every one presented his/ her own project/ business idea to others. Afterwards, the presentation was evaluated, criticized, and challenged by the whole group together. The purpose was to get the input of more minds for each entrepreneur through receiving collective feedback.

During the fieldwork, it was observed that one of the incubators had created the brand of *Startup Brotherhood* conveying the importance of social support and synergy under the roof of the incubator. The following words of a related incubator manager regarding this concept helped to understand the boundaries of the expected brotherhood: “It is an understanding of ‘your customer is my customer’ that is shared by the entrepreneurs in our incubator. The entrepreneurs here use the products/ services of each other. They help other entrepreneurs meet whomever they know and can be

helpful to others. They usually don't charge anything for their services to each other. Feedback is of critical value in especially early stage projects. Therefore, the entrepreneurs here use the products of each other to exchange their feedback and ideas as customers; thus support each other to develop themselves" (I2).

## 4.2 Second (Quantitative) Stage Findings

### 4.2.1 Respondents' profile

The analyses of the data gathered in the quantitative stage started with checking out the profile of survey participants and related results are presented in Table 7. As can be seen from the table, a huge majority (90%) of the participants were below the age of 40, hence *young* in simple terms. The gender distribution of the sample showed that survey participants were mostly males. As far as the education level of participants is of concern, it turned out that more than 90% of the sample was composed of individuals who were at least university graduates. As a matter of fact, almost 1/3 of the overall sample held postgraduate degrees. So, all these findings outlined the fact that a typical entrepreneur involved in the study was a *young, well-educated male*.

One other finding about survey participants was that, the majority (75%) of them had professional working experiences before as a salaried employee. In addition to this, almost half (59%) of the survey participants mentioned that they had previous venture experiences as well. These findings showed that a typical participant in the survey had some sort of *real-life experience* before his or her current endeavor. When it comes to their affiliation with incubators or entrepreneurship programs, it was seen that they were mostly (47%) enrolled in pre-incubation programs of incubators and one third (37%) were affiliated with TUBITAK BIGG program.

**Table 7***Descriptive Statistics on Demographic Profile of Participants (n=126)*

| <b>Demographic Properties</b>    |                                      | <b>f</b>   | <b>%</b>   |
|----------------------------------|--------------------------------------|------------|------------|
| Age                              | 25 and below                         | 36         | 28.6       |
|                                  | 26 – 30                              | 32         | 25.4       |
|                                  | 31 – 35                              | 21         | 16.7       |
|                                  | 36 – 40                              | 25         | 19.8       |
|                                  | 41 and above                         | 12         | 9.6        |
| Gender                           | Female                               | 24         | 19.0       |
|                                  | Male                                 | 102        | 81.0       |
| Education                        | High School (Lycee) Graduate or less | 12         | 9.5        |
|                                  | University Graduate                  | 79         | 62.7       |
|                                  | Post Graduate (Masters)              | 29         | 23.0       |
|                                  | Post Graduate (Ph.D)                 | 6          | 4.8        |
| Entrepreneur(s) in the Family    | Yes                                  | 31         | 24.6       |
|                                  | No                                   | 95         | 75.4       |
| Earlier Venture Ownership        | Yes                                  | 62         | 49.2       |
|                                  | No                                   | 64         | 50.8       |
| Earlier Salaried Work Experience | Yes                                  | 95         | 75.4       |
|                                  | No                                   | 31         | 24.6       |
| Working Experience               | 1 – 6 Years                          | 66         | 52.3       |
|                                  | 7 – 12 Years                         | 25         | 19.8       |
|                                  | 13 – 18 Years                        | 18         | 14.3       |
|                                  | 19 Years and above                   | 17         | 13.5       |
| Type of Incubator Program        | Pre-Incubation Program               | 60         | 47.6       |
|                                  | Incubation Program                   | 50         | 39.7       |
|                                  | Acceleration Program                 | 16         | 12.7       |
| BIGG Program Affiliation         | Yes                                  | 47         | 37.3       |
|                                  | No                                   | 79         | 62.7       |
| <b>Total</b>                     |                                      | <b>126</b> | <b>100</b> |

#### 4.2.2 Validity and reliability of measurement instruments

The validity of a measurement instrument refers to the extent to which it measures what it is supposed to be measuring (Cramer & Howitt, 2004). In order to assess the validity of the measurement instruments, it was decided to carry out a factor analysis. When conducting a factor analysis for the assessment of the validity of a measurement instrument under investigation, the first step is to check the sampling adequacy and find out whether the data set at hand is sufficient. For that purpose, Keiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were used. After the evaluation of the results shown in Table 8, it was concluded that both KMO and Bartlett test results were satisfactory ( $KMO > 0.50$ ; Bartlett's Test –  $p < 0.05$ ), showing that the data was adequate for running a factor analysis on both measurement scales.

**Table 8**

*KMO and Bartlett's Test Results for SWLS and PCQ Scales*

|                                  |            | SWLS    | PCQ      |
|----------------------------------|------------|---------|----------|
| KMO Measure of Sampling Adequacy |            | .85     | .83      |
|                                  | Chi-Square | 301.704 | 1301.713 |
| Bartlett's Test of Sphericity    | df         | 10      | 276      |
|                                  | Sig.       | .000    | .000     |

##### 4.2.2.1 Factor analyses results for PCQ

When carrying out the factor analysis for PCQ, it was seen in the first run that the 24 items in the scale were *unexpectedly loaded under five factors* that had an Eigenvalue over 1 and that the factors explained 59,7% of the total variance in PsyCap. In addition to this, several items had factor loadings under 0.5. Therefore it was decided to extract such controversial items from the scale and re-run the analysis.

As a result of extractions in two separate runs, it was finally decided to leave 7 items out of the scale. After these extractions were made, it turned out that the *remaining 17 items in the scale were loaded on four factors* which, in total, explained 63% of the variance in PsyCap (see Table 9). Hence after these extractions, it was concluded that the *scale was valid and further analysis could be made using the 17 items* in the scale.

**Table 9***Factor Loadings for PCQ Scale*

| Scale Items* | Component |      |      |      |
|--------------|-----------|------|------|------|
|              | 1         | 2    | 3    | 4    |
| SE_1         | .709      |      |      |      |
| SE_2         | .767      |      |      |      |
| SE_3         | .735      |      |      |      |
| SE_4         | .627      |      |      |      |
| SE_5         | .711      |      |      |      |
| SE_6         | .771      |      |      |      |
| HOP_2        |           |      | .722 |      |
| HOP_4        |           |      | .762 |      |
| HOP_6        |           |      | .861 |      |
| RES_2        |           | .624 |      |      |
| RES_3        |           | .748 |      |      |
| RES_5        |           | .750 |      |      |
| RES_6        |           | .756 |      |      |
| OPT_1        |           |      |      | .645 |
| OPT_3        |           |      |      | .773 |
| OPT_4        |           |      |      | .683 |
| OPT_6        |           |      |      | .549 |

\* Abbreviations stand for the dimensions under PsyCap (SE: Self Efficacy, HOP: Hope, RES: Resilience, OPT: Optimism)

#### **4.2.2.2 Factor analyses results for SWLS**

As a result of the factor analyses carried out for SWLS, it was seen in the first run of the analyses that all five items in the SWLS scale were loaded *under one factor with an Eigenvalue over 1 as expected*, and the factor explained 66,9% of the total variance in satisfaction with life. Since all the factor loadings were above 0.5 (as shown in Table 10), further extraction of the items turned out to be unnecessary. Therefore, it was decided to keep all items in the scale and it was concluded that the scale was *valid*.

**Table 10***Factor Loadings for SWLS Scale*

| Scale Items | Component 1 |
|-------------|-------------|
| SWLS_1      | .846        |
| SWLS_2      | .822        |
| SWLS_3      | .821        |
| SWLS_4      | .833        |
| SWLS_5      | .765        |

#### 4.2.2.3 Reliability analyses results for measurement scales

When analysing reliability, a commonly used test is Cronbach's Alpha which shows how well items in a given set are correlated with each other (Sekaran & Bougie, 2016). This widely used test was used in this study as well. As a result of the tests conducted via measurement of Cronbach Alpha scores for each scale in the research, it was concluded that the measurement scales used in the study were *reliable*. Indeed, as can be seen in Table 11, the scores of both SWLS and PCQ scales (0.87 and 0.86, respectively) were higher than 0.80, which is considered a good level of reliability. As far as the dimensions of PCQ are of concern, their reliability scores changed between 0.68 and 0.85, which mean that they are also reliable since Cronbach Alpha scores in the 0.70 range are considered acceptable and only scores that are lower than 0.60 are regarded poor (Sekaran & Bougie, 2016).

**Table 11***Reliability Test Results for SWLS and PCQ Scales*

| Scale                                     | Cronbach's Alpha |
|-------------------------------------------|------------------|
| SWLS (5 items)                            | 0.87             |
| PCQ (17 items)                            | 0.86             |
| PCQ_Dimension 1 (Self Efficacy) (6 items) | 0.85             |
| PCQ_Dimension 2 (Hope) (3 items)          | 0.77             |
| PCQ_Dimension 3 (Resilience) (4 items)    | 0.79             |
| PCQ_Dimension 4 (Optimism) (4 items)      | 0.68             |

### 4.2.3 Tests of hypotheses

Test of H1 “Incubator services have a positive effect on PsyCap”: A simple linear regression model was built for testing H1 and to understand the potential effect of using incubator services on the psychological capital of entrepreneurs. As a result of the regression analysis (Table 12), it was found that the overall model was statistically significant (F-value= 20.551; P-value< 0.05) and incubator services usage significantly predicted psychological capital of entrepreneurs ( $\beta$ = 0.377, P-value< 0.05). Since the adjusted R<sup>2</sup> value of the model was 0.135, the results showed that 13,5% of the variation in psychological capital was explained by the variation in incubator services usage.

**Table 12**

*Regression Analysis for Services Usage-PsyCap Relationship*

| <b>R<sup>2</sup>= .142, Adjusted R<sup>2</sup>= .135, F-value= 20.551, P-value = .000</b> |            |                             |            |                           |        |
|-------------------------------------------------------------------------------------------|------------|-----------------------------|------------|---------------------------|--------|
|                                                                                           |            | Unstandardized Coefficients |            | Standardized Coefficients |        |
| Model                                                                                     |            | B                           | Std. Error | Beta                      | t      |
| 1                                                                                         | (Constant) | 3.442                       | .130       |                           | 26.473 |
|                                                                                           | SERV_USE*  | .187                        | .041       | .377                      | 4.533  |

Dependent Variable: **PsyCap**

\*SERV\_USE stands for incubator services usage (overall)

Test of H2 “PsyCap has a positive effect on life satisfaction”: For the test of H2, a simple linear regression model was built to understand whether psychological capital predicts life satisfaction. As a result, it was found out that the overall model was statistically significant (F-value= 29.189; P-value< 0.05) as well as the effect of psychological capital on life satisfaction ( $\beta$ = 0.437, P-value< 0.05) (Table 13). The adjusted R<sup>2</sup> value of the model showed that 18,4% of the variation in life satisfaction of entrepreneurs was explained by the variation in their level of psychological capital.

**Table 13***Regression Analysis for PsyCap-Life Satisfaction Relationship*

| R <sup>2</sup> = .191, Adjusted R <sup>2</sup> = .184, F-value= 29.189, P-value = .000 |            |                |            |              |       |      |
|----------------------------------------------------------------------------------------|------------|----------------|------------|--------------|-------|------|
|                                                                                        |            | Unstandardized |            | Standardized |       |      |
|                                                                                        |            | Coefficients   |            | Coefficients |       |      |
| Model                                                                                  |            | B              | Std. Error | Beta         | t     | Sig. |
| 1                                                                                      | (Constant) | -.181          | .620       |              | -.292 | .770 |
|                                                                                        | PsyCap     | .831           | .154       | .437         | 5.403 | .000 |
| Dependent Variable: <b>SWLS</b> (Life Satisfaction)                                    |            |                |            |              |       |      |

Dependent Variable: **SWLS** (Life Satisfaction)

Test of H3 “Incubator services (overall) have a positive effect on life satisfaction”: As a result of the linear regression analysis made for testing H3, it was concluded that there was a *significant and positive relationship* between the independent variable, incubator services usage (overall) and the dependent variable, life satisfaction ( $\beta = 0.325$ ,  $P\text{-value} < 0.05$ ) as shown in Table 14.

**Table 14***Regression Analysis for Service Usage-Life Satisfaction Relationship*

| R <sup>2</sup> = .105, Adjusted R <sup>2</sup> = .098, F-value= 14.611, P-value = .000 |            |                |            |              |       |      |
|----------------------------------------------------------------------------------------|------------|----------------|------------|--------------|-------|------|
|                                                                                        |            | Unstandardized |            | Standardized |       |      |
|                                                                                        |            | Coefficients   |            | Coefficients |       |      |
| Model                                                                                  |            | B              | Std. Error | Beta         | t     | Sig. |
| 1                                                                                      | (Constant) | 2.222          | .253       |              | 8.790 | .000 |
|                                                                                        | SERV_USE*  | .307           | .080       | .325         | 3.822 | .000 |

Dependent Variable: **SWLS** (Life Satisfaction)

\*SERV\_USE stands for incubator services usage (overall)

Test of H4 “PsyCap has a mediation role in incubator services – life satisfaction relationship”: H4 was tested with Model 4 of Process Macro of Andrew Hayes. This analysis produces two different regression results; one focusing on the potential effect of the independent variable (X) on the mediating variable (M), and the other one focusing on the simultaneous potential effects of independent and mediating variables (X and M) on the dependent variable (Y). Later on, it produces results on the direct

effect of X on Y, and the indirect effect of X on Y – which refers to mediation. The results of the respective test are presented in Table 15.

**Table 15**

*Mediation Analysis for Services Usage (Process Macro Output)*

|                                                               |        |        |         |          |          |        |
|---------------------------------------------------------------|--------|--------|---------|----------|----------|--------|
| Model : 4, Y: SWLS , X: SERV_USE, M: PSYCAP, Sample Size: 126 |        |        |         |          |          |        |
| <b>OUTCOME VARIABLE: PSYCAP</b>                               |        |        |         |          |          |        |
| <b>Model Summary</b>                                          |        |        |         |          |          |        |
| R                                                             | R-sq   | MSE    | F       | df1      | df2      | p      |
| .3771                                                         | .1422  | .1683  | 20.5511 | 1.0000   | 124.0000 | .0000  |
| <b>Model</b>                                                  |        |        |         |          |          |        |
|                                                               | coeff  | se     | t       | p        | LLCI     | ULCI   |
| constant                                                      | 3.4424 | .1300  | 26.4730 | .0000    | 3.1850   | 3.6998 |
| SERV_USE                                                      | .1871  | .0413  | 4.5333  | .0000    | .1054    | .2688  |
| <b>OUTCOME VARIABLE: SWLS</b>                                 |        |        |         |          |          |        |
| <b>Model Summary</b>                                          |        |        |         |          |          |        |
| R                                                             | R-sq   | MSE    | F       | df1      | df2      | p      |
| .4695                                                         | .2204  | .5587  | 17.3882 | 2.0000   | 123.0000 | .0000  |
| <b>Model</b>                                                  |        |        |         |          |          |        |
|                                                               | coeff  | se     | t       | p        | LLCI     | ULCI   |
| constant                                                      | -.1775 | .6111  | -.2905  | .7719    | -1.3871  | 1.0321 |
| SERV_USE                                                      | .1763  | .0812  | 2.1709  | .0319    | .0155    | .3370  |
| PSYCAP                                                        | .6970  | .1636  | 4.2597  | .0000    | .3731    | 1.0209 |
| <b>DIRECT AND INDIRECT EFFECTS OF X ON Y</b>                  |        |        |         |          |          |        |
| <b>Direct effect of X on Y</b>                                |        |        |         |          |          |        |
| Effect                                                        | se     | t      | p       | LLCI     | ULCI     |        |
| .1763                                                         | .0812  | 2.1709 | .0319   | .0155    | .3370    |        |
| <b>Indirect effect(s) of X on Y</b>                           |        |        |         |          |          |        |
|                                                               | Effect | BootSE | BootLCI | BootULCI |          |        |
| PSYCAP                                                        | .1304  | .0445  | .0516   | .2281    |          |        |

As a result of the mediation analysis made with Process Macro, it was concluded that PsyCap has *a significant partial mediation role* in the relationship between incubator services usage and life satisfaction. It is because the test results for the indirect effect of psychological capital on life satisfaction were significant (the interval of BootLLCI and BootULCI did not include zero value), as well as the test results regarding the direct effect ( $P\text{-value} = 0.0319 < 0.05$ ).

Test of H5 “Entrepreneurial demographics act as a moderator in PsyCap – life satisfaction relationship”: In order to test H5, potential moderation effect of age, gender, education and work experience of participants were analysed with Model 1 of Process macro which has been developed for the measurement of moderator variables on the relationship between an independent and dependent variable. As a result of the analyses, it was seen that *neither of the variables (age, gender, education and work experience) had a significant moderation role* in the relationship between psychological capital and life satisfaction. Indeed, in all cases, the respective P-values for the interaction effect were higher than the level of 0.05 (See Tables 16-19).

**Table 16**

*Moderation Analysis for Age (Process Macro Output)*

|                                                              |         |        |         |          |          |        |
|--------------------------------------------------------------|---------|--------|---------|----------|----------|--------|
| Model : 1, Y: SWLS , X: PSYCAP, W: AGE, Sample Size: 126     |         |        |         |          |          |        |
| <b>OUTCOME VARIABLE: SWLS</b>                                |         |        |         |          |          |        |
| <b>Model Summary</b>                                         |         |        |         |          |          |        |
| R                                                            | R-sq    | MSE    | F       | df1      | df2      | p      |
| .4588                                                        | .2105   | .5705  | 10.8435 | 3.0000   | 122.0000 | .0000  |
| <b>Model</b>                                                 |         |        |         |          |          |        |
|                                                              | coeff   | se     | t       | p        | LLCI     | ULCI   |
| constant                                                     | -1.2463 | 1.0966 | -1.1365 | .2580    | -3.4172  | .9245  |
| PSYCAP                                                       | 1.0572  | .2745  | 3.8509  | .0002    | .5137    | 1.6007 |
| AGE                                                          | .4893   | .3966  | 1.2243  | .2232    | -.3019   | 1.2804 |
| Int_1                                                        | -.1065  | .0993  | -1.0723 | .2857    | -.3031   | .0901  |
| Product terms key: Int_1: PSYCAP x AGE                       |         |        |         |          |          |        |
| <b>Test(s) of highest order unconditional interaction(s)</b> |         |        |         |          |          |        |
|                                                              | R2-chng | F      | df1     | df2      | p        |        |
| X*W                                                          | .0074   | 1.1499 | 1.0000  | 122.0000 | .2857    |        |



**Table 18 (Cont'd)***Moderation Analysis for Education (Process Macro Output)***Test(s) of highest order unconditional interaction(s)**

|     | R2-chng | F      | df1    | df2      | p     |
|-----|---------|--------|--------|----------|-------|
| X*W | .0155   | 2.3959 | 1.0000 | 122.0000 | .1242 |

**Table 19***Moderation Analysis for Experience (Process Macro Output)*

Model : 1, Y: SWLS , X: PSYCAP, W: EXPERIENCE, Sample Size: 126

**OUTCOME VARIABLE: SWLS****Model Summary**

| R     | R-sq  | MSE   | F       | df1    | df2      | p     |
|-------|-------|-------|---------|--------|----------|-------|
| .4631 | .2145 | .5676 | 11.1022 | 3.0000 | 122.0000 | .0000 |

**Model**

|            | coeff  | se    | t      | p     | LLCI    | ULCI   |
|------------|--------|-------|--------|-------|---------|--------|
| constant   | -.8664 | .9454 | -.9164 | .3612 | -2.7378 | 1.0051 |
| PSYCAP     | .9601  | .2354 | 4.0792 | .0001 | .4942   | 1.4261 |
| EXPERIENCE | .3179  | .2746 | 1.1578 | .2492 | -.2256  | .8614  |
| Int_1      | -.0654 | .0666 | -.9817 | .3282 | -.1972  | .0665  |

Product terms key: Int\_1: PSYCAP x EXPERIENCE

**Test(s) of highest order unconditional interaction(s)**

|     | R2-chng | F     | df1    | df2      | p     |
|-----|---------|-------|--------|----------|-------|
| X*W | .0062   | .9637 | 1.0000 | 122.0000 | .3282 |

Conclusions Regarding Hypotheses Tests: As a result of the regression, moderation and mediation analyses conducted, four out of the five hypotheses of the research were accepted (see Table 20).

**Table 20***Conclusions Regarding Hypotheses Tests*

| <b>Hypotheses</b> |                                                                                | <b>Outcome</b> |
|-------------------|--------------------------------------------------------------------------------|----------------|
| H1                | Incubator services have a positive effect on PsyCap                            | Accepted       |
| H2                | PsyCap has a positive effect on life satisfaction                              | Accepted       |
| H3                | Incubator services have a positive effect on life satisfaction                 | Accepted       |
| H4                | PsyCap has a mediation role in incubator services – life satisfaction relation | Accepted       |
| H5                | Entrepreneurial demographics moderate PsyCap – life satisfaction relationship  | Rejected       |

#### **4.2.4 Findings on lower level relationships between variables**

Once the relationships between variables were clarified with hypothesis tests, it was decided to conduct further analysis to gain more insight into the relationships between the usage of incubator services, the psychological capital of entrepreneurs and their life satisfaction. With that purpose, lower-level relationships between research variables were put under investigation. The analysis at this stage focused mostly on understanding whether all types of incubator services are effective on psychological capital and life satisfaction of entrepreneurs or not; whether incubator services usage affects all four dimensions of psychological capital of entrepreneurs, and whether all four dimensions of psychological capital of entrepreneurs were effective on their life satisfaction. With the purpose of finding an answer to the questions mentioned above, it was decided to carry out a correlation analysis that took all these factors into account and then carry out regression analysis where necessary.

##### **4.2.4.1 Correlation analysis results on lower level relationships**

As presented in Table 21, it was found that: There was *no statistically significant correlation* between physical services usage and PsyCap. There were, however, *statistically significant ( $P\text{-value} < 0.05$ ) and positive correlations* between business support services and networking services and PsyCap. Also, there were *significant ( $P\text{-value} < 0.05$ ) and positive correlations* between incubator services usage and all four dimensions of PsyCap. Finally, there were *statistically significant ( $P\text{-value} < 0.05$ ) and positive correlations* between all four dimensions of PsyCap and life satisfaction.

**Table 21***Correlation Analysis Results on Lower Level Relationships*

|           |                     | SERV_USE | PHYS_SERV | SUPP_SERV | NETW_SERV | SWLS   | PSYCAP | SE     | HOP    | RES    | OPT    |
|-----------|---------------------|----------|-----------|-----------|-----------|--------|--------|--------|--------|--------|--------|
| SERV_USE  | Pearson Correlation | 1        | .527**    | .908**    | .852**    | .325** | .377** | .216*  | .327** | .287** | .259** |
|           | Sig. (2-tailed)     |          | .000      | .000      | .000      | .000   | .000   | .015   | .000   | .001   | .003   |
|           | N                   | 126      | 101       | 124       | 123       | 126    | 126    | 126    | 126    | 126    | 126    |
| PHYS_SERV | Pearson Correlation | .527**   | 1         | .219*     | .305**    | -.010  | .107   | .030   | .075   | -.080  | .245*  |
|           | Sig. (2-tailed)     | .000     |           | .029      | .002      | .919   | .285   | .764   | .457   | .425   | .014   |
|           | N                   | 101      | 101       | 99        | 100       | 101    | 101    | 101    | 101    | 101    | 101    |
| SUPP_SERV | Pearson Correlation | .908**   | .219*     | 1         | .653**    | .340** | .362** | .223*  | .319** | .310** | .202*  |
|           | Sig. (2-tailed)     | .000     | .029      |           | .000      | .000   | .000   | .013   | .000   | .000   | .024   |
|           | N                   | 124      | 99        | 124       | 122       | 124    | 124    | 124    | 124    | 124    | 124    |
| NETW_SERV | Pearson Correlation | .852**   | .305**    | .653**    | 1         | .351** | .372** | .248** | .312** | .231*  | .267** |
|           | Sig. (2-tailed)     | .000     | .002      | .000      |           | .000   | .000   | .006   | .000   | .010   | .003   |
|           | N                   | 123      | 100       | 122       | 123       | 123    | 123    | 123    | 123    | 123    | 123    |
| SWLS      | Pearson Correlation | .325**   | -.010     | .340**    | .351**    | 1      | .437** | .255** | .524** | .177*  | .258** |
|           | Sig. (2-tailed)     | .000     | .919      | .000      | .000      |        | .000   | .004   | .000   | .048   | .004   |
|           | N                   | 126      | 101       | 124       | 123       | 126    | 126    | 126    | 126    | 126    | 126    |
| PSYCAP    | Pearson Correlation | .377**   | .107      | .362**    | .372**    | .437** | 1      | .709** | .758** | .738** | .729** |
|           | Sig. (2-tailed)     | .000     | .285      | .000      | .000      | .000   |        | .000   | .000   | .000   | .000   |
|           | N                   | 126      | 101       | 124       | 123       | 126    | 126    | 126    | 126    | 126    | 126    |
| SE        | Pearson Correlation | .216*    | .030      | .223*     | .248**    | .255** | .709** | 1      | .363** | .548** | .334** |
|           | Sig. (2-tailed)     | .015     | .764      | .013      | .006      | .004   | .000   |        | .000   | .000   | .000   |
|           | N                   | 126      | 101       | 124       | 123       | 126    | 126    | 126    | 126    | 126    | 126    |
| HOP       | Pearson Correlation | .327**   | .075      | .319**    | .312**    | .524** | .758** | .363** | 1      | .353** | .367** |
|           | Sig. (2-tailed)     | .000     | .457      | .000      | .000      | .000   | .000   | .000   |        | .000   | .000   |
|           | N                   | 126      | 101       | 124       | 123       | 126    | 126    | 126    | 126    | 126    | 126    |
| RES       | Pearson Correlation | .287**   | -.080     | .310**    | .231*     | .177*  | .738** | .548** | .353** | 1      | .381** |
|           | Sig. (2-tailed)     | .001     | .425      | .000      | .010      | .048   | .000   | .000   | .000   |        | .000   |
|           | N                   | 126      | 101       | 124       | 123       | 126    | 126    | 126    | 126    | 126    | 126    |
| OPT       | Pearson Correlation | .259**   | .245*     | .202*     | .267**    | .258** | .729** | .334** | .367** | .381** | 1      |
|           | Sig. (2-tailed)     | .003     | .014      | .024      | .003      | .004   | .000   | .000   | .000   | .000   |        |
|           | N                   | 126      | 101       | 124       | 123       | 126    | 126    | 126    | 126    | 126    | 126    |

\*\* . Correlation is significant at the 0.01 level (2-tailed). \* . Correlation is significant at the 0.05 level (2-tailed).

Abbreviations: SERV\_USE → Services Usage, PHYS\_SERV → Physical Services Usage, SUPP\_SERV → Business Support Services Usage, NETW\_SERV → Networking Services Usage, SWLS → Life Satisfaction, PSYCAP → Psychological Capital, SE → Self Efficacy, HOP → Hope, RES → Resilience, OPT → Optimism

#### 4.2.4.2 Regression analysis results on lower level relationships

Regression analysis results on the relationship between incubator service types and PsyCap: To check out whether all kinds of incubator services had a positive effect on PsyCap, it was decided to carry out separate regression analysis between PsyCap (as the dependent variable) and different service subgroups under incubator services - namely physical services, business support services and networking services- as dependent variables.

As can be seen from Tables 22, 23 and 24, although business support and networking services were found to have positive effects on PsyCap when evaluated separately, there was no significant evidence regarding the existence of a linear relationship between physical support services usage and PsyCap – which is not surprising as the correlation analysis results had already pointed out to the inexistence of a correlation between the two.

When it comes to business support services as shown in Table 23, however, evidence told us that the linear model was significant (F-value= 18.445; P-value< 0.05) and business support services usage had a statistically significant positive effect on PsyCap ( $\beta$ = 0.362, P-value< 0.05). Likewise, Table 24 showed that the linear model for networking support services usage and PsyCap relationship was also significant (F-value= 19.462; P-value< 0.05) and also was the positive effect of networking support services on PsyCap ( $\beta$ = 0.372, P-value< 0.05).

**Table 22**

*Regression Analysis for Physical Services Usage and PsyCap Relationship*

| <b>R<sup>2</sup>= .012, Adjusted R<sup>2</sup>= .002, F-value= 1.157, P-value = .285</b> |            |                |            |              |        |      |
|------------------------------------------------------------------------------------------|------------|----------------|------------|--------------|--------|------|
|                                                                                          |            | Unstandardized |            | Standardized |        |      |
|                                                                                          |            | Coefficients   |            | Coefficients |        |      |
| Model                                                                                    |            | B              | Std. Error | Beta         | t      | Sig. |
| 1                                                                                        | (Constant) | 3.901          | .098       |              | 39.696 | .000 |
|                                                                                          | PHYS_SERV* | .037           | .034       | .107         | 1.076  | .285 |
| Dependent Variable: <b>PsyCap</b>                                                        |            |                |            |              |        |      |

Dependent Variable: **PsyCap**

\* PHYS\_SERV stands for physical incubator services usage.

**Table 23***Regression Analysis for Business Support Services Usage and PsyCap Relationship*

| <b>R<sup>2</sup>= .131, Adjusted R<sup>2</sup>= .124, F-value= 18.445, P-value = .000</b> |            |                |            |              |        |
|-------------------------------------------------------------------------------------------|------------|----------------|------------|--------------|--------|
| Model                                                                                     |            | Unstandardized |            | Standardized |        |
|                                                                                           |            | Coefficients   |            | Coefficients |        |
|                                                                                           |            | B              | Std. Error | Beta         | t      |
| 1                                                                                         | (Constant) | 3.481          | .127       |              | 27.390 |
|                                                                                           | SUPP_SERV* | .169           | .039       | .362         | 4.295  |

Dependent Variable: **PsyCap**

\* SUPP\_SERV stands for physical incubator services usage.

**Table 24***Regression Analysis for Networking Services Usage and PsyCap Relationship*

| <b>R<sup>2</sup>= .139, Adjusted R<sup>2</sup>= .131, F-value= 19.462, P-value = .000</b> |            |                |            |              |        |
|-------------------------------------------------------------------------------------------|------------|----------------|------------|--------------|--------|
| Model                                                                                     |            | Unstandardized |            | Standardized |        |
|                                                                                           |            | Coefficients   |            | Coefficients |        |
|                                                                                           |            | B              | Std. Error | Beta         | t      |
| 1                                                                                         | (Constant) | 3.555          | .110       |              | 32.264 |
|                                                                                           | NETW_SERV* | .146           | .033       | .372         | 4.412  |

Dependent Variable: **PsyCap**

\* NETW\_SERV stands for physical incubator services usage.

Regression Analysis Results on the Relationship Between Incubator Services Usage and Dimensions of PsyCap: According to the simple linear regression analysis results, incubator services usage (overall) was found to have positive and *statistically significant relationships* with all four dimensions of PsyCap. To start with, Table 25 shows that the model on the relationship between incubator services usage and the hope dimension of PsyCap was significant (F-value= 14.814; P-value< 0.05) and the positive effect of overall services usage (SERV\_USE) on hope was also statistically significant ( $\beta$ = 0.327, P-value< 0.05). According to the model, 10% of the variation in the hope level of entrepreneurs could be explained by using incubator services since adjusted  $R^2$  = 0.107.

**Table 25***Regression Analysis for Service Usage-Hope Relationship*

| R <sup>2</sup> = .107, Adjusted R <sup>2</sup> = .100, F-value= 14.814, P-value = .000 |            |                |            |              |        |      |
|----------------------------------------------------------------------------------------|------------|----------------|------------|--------------|--------|------|
|                                                                                        |            | Unstandardized |            | Standardized |        |      |
|                                                                                        |            | Coefficients   |            | Coefficients |        |      |
| Model                                                                                  |            | B              | Std. Error | Beta         | t      | Sig. |
| 1                                                                                      | (Constant) | 3.047          | .222       |              | 13.752 | .000 |
|                                                                                        | SERV_USE*  | .271           | .070       | .327         | 3.849  | .000 |

Dependent Variable: **HOP (Hope)**

\*SERV\_USE stands for incubator services usage (overall)

As far as the relationship between incubator services usage (overall) and self-efficacy relationship is of concern, Table 26 shows that there existed a positive linear relationship between the two (F-value= 6.086, P-value = 0.015). However, it should be noted that, although the positive effect of service usage was significant ( $\beta = 0.216$ , P-value < 0.05), it helped explain only 4% of the total variation in self-efficacy (adjusted  $R^2 = 0.039$ ).

**Table 26***Regression Analysis for Service Usage-Self Efficacy Relationship*

| R <sup>2</sup> = .047, Adjusted R <sup>2</sup> = .039, F-value= 6.086, P-value = .015 |            |                |            |              |        |      |
|---------------------------------------------------------------------------------------|------------|----------------|------------|--------------|--------|------|
|                                                                                       |            | Unstandardized |            | Standardized |        |      |
|                                                                                       |            | Coefficients   |            | Coefficients |        |      |
| Model                                                                                 |            | B              | Std. Error | Beta         | t      | Sig. |
| 1                                                                                     | (Constant) | 4.071          | .147       |              | 27.692 | .000 |
|                                                                                       | SERV_USE*  | .115           | .047       | .216         | 2.467  | .015 |

Dependent Variable: **SE (Self Efficacy)**

\*SERV\_USE stands for incubator services usage (overall)

Table 27 shows that the model built to explain the effect of incubator services usage (overall) on the resilience dimension of psychological capital was statistically significant (F-value= 11.113, P-value = 0.01). According to this model, the effect of service usage was found to be positive and significant ( $\beta = 0.287$ , P-value < 0.05) and

helped explain almost 8% of the total variation in the resilience level of entrepreneurs (adjusted  $R^2 = 0.075$ ).

**Table 27**

*Regression Analysis for Service Usage-Resilience Relationship*

| R <sup>2</sup> = .082, Adjusted R <sup>2</sup> = .075, F-value= 11.113, P-value = .001 |            |                |            |              |        |      |
|----------------------------------------------------------------------------------------|------------|----------------|------------|--------------|--------|------|
|                                                                                        |            | Unstandardized |            | Standardized |        |      |
|                                                                                        |            | Coefficients   |            | Coefficients |        |      |
| Model                                                                                  |            | B              | Std. Error | Beta         | t      | Sig. |
| 1                                                                                      | (Constant) | 3.636          | .163       |              | 22.351 | .000 |
|                                                                                        | SERV_USE*  | .172           | .052       | .287         | 3.334  | .001 |

Dependent Variable: **RES (Resilience)**

\*SERV\_USE stands for incubator services usage (overall)

Finally, Table 28 explains the effect of service usage on optimism. According to this table, the relevant regression model was statistically significant (F-value= 8.893, P-value = 0.03). According to it, the effect of service usage was positive and significant ( $\beta = 0.259$ , P-value < 0.05), explaining 6% of the total variation in entrepreneurs' optimism (adjusted  $R^2 = 0.059$ ).

**Table 28**

*Regression Analysis for Service Usage-Optimism Relationship*

| <b>R<sup>2</sup>= .067 Adjusted R<sup>2</sup>= .059, F-value= 8.893, P-value = .003</b> |            |                |            |              |        |      |
|-----------------------------------------------------------------------------------------|------------|----------------|------------|--------------|--------|------|
|                                                                                         |            | Unstandardized |            | Standardized |        |      |
|                                                                                         |            | Coefficients   |            | Coefficients |        |      |
| Model                                                                                   |            | B              | Std. Error | Beta         | t      | Sig. |
| 1                                                                                       | (Constant) | 3.015          | .201       |              | 14.982 | .000 |
|                                                                                         | SERV_USE*  | .191           | .064       | .259         | 2.982  | .003 |

Dependent Variable: **OPT (Optimism)**

\*SERV\_USE stands for incubator services usage (overall)

Regression analysis results on the relationship between dimensions of PsyCap and life Satisfaction: With the aim of seeing whether the significant positive correlations between all four dimensions of PsyCap might translate into the existence of linear relationships between variables, it was decided to carry out a multiple regression analysis, the results of which are presented in Table 29.

**Table 29**

*Multiple Regression Analysis for PsyCap Dimensions-Life Satisfaction Relationship*

| <b>R<sup>2</sup>= .287 Adjusted R<sup>2</sup>= .263, F-value= 12.155, P-value = .000</b> |            |                             |            |                           |       |
|------------------------------------------------------------------------------------------|------------|-----------------------------|------------|---------------------------|-------|
|                                                                                          |            | Unstandardized Coefficients |            | Standardized Coefficients |       |
| Model                                                                                    |            | B                           | Std. Error | Beta                      | t     |
| 1                                                                                        | (Constant) | .402                        | .653       |                           | .616  |
|                                                                                          | OPT*       | .098                        | .111       | .076                      | .876  |
|                                                                                          | SE*        | .168                        | .168       | .095                      | 1.000 |
|                                                                                          | HOP*       | .558                        | .099       | .489                      | 5.644 |
|                                                                                          | RES*       | -.121                       | .151       | -.077                     | -.800 |

Dependent Variable: **SWLS** (Life Satisfaction)

\* OPT stands for optimism, SE stands for self efficacy, HOP stands for hope and RES stands for resilience dimension of PsyCap.

As can be seen in Table 29, building such a model proved to be meaningful since it was statistically significant (F-value= 12.155, P-value = 0.00) and helped explain ¼ of the variation in life satisfaction. Nevertheless, the results showed that the *positive effect of PsyCap on life satisfaction came only from its hope dimension* as far as a linear relationship is of concern. Indeed the significance scores of optimism, self-efficacy and resilience dimensions of the concept were all higher than the threshold of 0.05 (P-value > 0.05).

## 5. DISCUSSION

### 5.1 Overview of the Research and Findings

Having been in the cross junction of two different fields, entrepreneurship and positive psychology, the research was designed to explore whether there exists a relationship between using the services of a business incubator and the well-being of entrepreneurs who are benefiting from those services. Utilizing important concepts like psychological capital (PsyCap) and life satisfaction developed under the umbrella of positive psychology, the research had two major questions looking to be answered: 1) How do the services provided by business incubators affect the PsyCap of entrepreneurs, and, 2) How is life satisfaction (hence, well-being) of entrepreneurs affected by the changes in their psychological capital?

Based on the teachings of Social Support, Social Capital and Social Cognitive Theories, positive relationships were expected to exist between the concepts under investigation. In other words, positive relationships were expected to be found between using business incubator services, PsyCap and the life satisfaction of entrepreneurs. Within the context of the research, these expectations were translated into the following research hypotheses:

- H1: Incubator services have a positive effect on PsyCap
- H2: PsyCap has a positive effect on life satisfaction
- H3: Incubator services have a positive effect on life satisfaction
- H4: PsyCap has a mediation role in incubator services – life satisfaction relation
- H5: Entrepreneurial demographics moderate PsyCap – life satisfaction relationship

To come up with sound answers to the research questions, a two-stage research design was adopted. The first stage of the research was qualitative in nature where semi-structured interviews were conducted with managers of nine different incubators in Turkey. The aim of this stage was to generate insights on the dynamics of the incubation business and the nature of the relationship between incubators and entrepreneurs before launching the second stage of the research. The second stage of the study was quantitative in nature and an online survey was conducted. In this survey, 126

interviews were made with entrepreneurs who were active users of business incubator services in Turkey at the time of the study.

At the end of the survey and relevant regression analysis conducted, it was statistically significant and positive relationships were found between the variables under question as expected. In more exact terms, incubator services were found to have significant positive effects on PsyCap of entrepreneurs and their life satisfaction – hence, their well-being. This meant that the expectations formed under the light of Social Support, Social Capital, and Social Cognitive Theories regarding the interaction between business incubator services and the inner world of entrepreneurs were based on solid ground. Indeed, business incubators turned out to be one of the settings where the dynamics explained by these theories seem to apply.

As far as the research hypotheses are of concern, four out of five research hypotheses were accepted, meaning that the positive linear relationships between incubator services usage, PsyCap of entrepreneurs, and their life satisfaction were all found to be statistically significant (H1, H2, H3 accepted). In addition to this, it was also found that psychological capital had a partial mediation role in the relationship between incubator services usage and life satisfaction (H4 accepted). Nevertheless, no evidence was found on potential moderation of effect of entrepreneurial demographics on the linear relationship between their PsyCap and life satisfaction (H5 rejected).

If a comparison is to be made between the main findings of the research and earlier studies in the literature, to begin with, it should first be noted that the positive linear relationship between incubator services usage and PsyCap is in line with Ollerenshaw (2019) findings and Ford (2015) propositions. Another main finding, the positive linear relationship between PsyCap and the life satisfaction of entrepreneurs, is also parallel to Avey et al (2011), Hmieleski & Carr (2007), Baluku et al (2018) and Bockorny & Youssef-Morgan (2019) findings.

## **5.2 The Impact of Incubator Services on PsyCap of Entrepreneurs**

As for the impact of different incubator service categories on entrepreneurs, the research found that the physical services provided by incubators did not have a statistically significant effect on PsyCap of entrepreneurs in contrast to networking and business support services. This is to say that what increased PsyCap and the well-being of entrepreneurs were incubator services like mentoring, counselling, coaching,

training, business planning support or finding potential investors or suppliers. Unlike those, however, physical services like providing desk and office space, meeting room, car parking, internet access to entrepreneurs turned out to be ineffective in increasing the PsyCap of entrepreneurs. Actually, it might be considered somewhat *sorrowful* to come up with this finding in that providing office space to recently established companies was -once- at the core of the business incubator idea when the concept historically first appeared in the USA in early 1960s. Nevertheless, due to changing work models and an increase in alternative workplace setting offerings available in time, it seems that physical services help little in increasing entrepreneurs' PsyCap in contemporary times. Indeed, recalling a comment of an incubator manager interviewed in the qualitative phase of the research provides supporting insight: "Office space requirements of entrepreneurs have started to disappear. Now there are shared working places where it is possible to pay 100\$ per month and make use of their services easily" (I1)

### 5.3 The Impact of PsyCap on Life Satisfaction of Entrepreneurs

When it comes to the finding of the research on the positive effect of PsyCap on life satisfaction, it is parallel to several other studies in the literature (Sabaityte & Diržyte, 2016; Singhal & Rastogi, 2017; Bockorny & Youssef-Morgan, 2019; Bajwa et al, 2019; Datu & Valdez. 2019; Santisi et al, 2020; Diržyte & Patapas, 2022). As far as relationships between dimensions of PsyCap and life satisfaction are of concern, the positive relationship between *hope* dimension of PsyCap and life satisfaction is confirmed by Valle et al (2004), Gilman et al. (2006), Sarıçam et al (2015), McConnell & Stull (2017) and Raats et al (2019) as well.

On the other hand, findings in the literature on the linear relationship between *self-efficacy* and life satisfaction (Madiha & Akhouri, 2018; Akgündüz, 2013; Datu et al, 2022, Kim & Kim, 2022) are not verified by the research. Likewise, the linear relationship which is found to exist between *optimism* and life satisfaction (Scheier & Carver, 1985; Piper, 2019; Sapmaz & Doğan, 2012; Cheng et al, 2022) was also not observed during the quantitative fieldwork of the research. Finally, the positive linear relationship between *resilience* and life satisfaction which is found in other studies (Alibekiroğlu et al, 2018; Rivera et al, 2021; Yan et al, 2022; Wang et al, 2022) was not observed in the research.

Despite the overall parallelism of research findings with those of previous other studies in the literature regarding the main relationships questioned in the research, it is kind of interesting to observe that the *lower-level relationships* between *dimensions of PsyCap* and life satisfaction seem to be only in *partial accordance* with the literature *at the first glance*. Indeed, *when evaluated one by one*, all four dimensions of PsyCap seem to have positive linear relationships with life satisfaction as put forward by several studies in the literature. As a matter of fact, the research also provided evidence regarding the existence of separate *positive correlations* between each of these constructs and life satisfaction. Yet, these relationships were *not all translated into linear relationships* when questioned under a multiple regression model. Instead, *when evaluated as a group*, it was only the *Hope* dimension among all four dimensions of PsyCap that is statistically confirmed to have a linear relationship with life satisfaction. So, this situation might be considered somewhat contradictory to the findings of the literature. But as already mentioned, this is how it looks *at the first glance*.

A more careful elaboration of this issue shows that such a comparison may not be fair, or in layman's terms, an *apple-to-apple* one. Indeed, former studies in the literature focusing on the link between separate dimensions of PsyCap and life satisfaction usually focus on only one dimension at a time (be it hope, resilience, self-efficacy, or optimism). In other words, these studies did not involve PsyCap in their research model but rather involved only one dimension of it. Therefore, although they provided evidence regarding the existence of a linear relationship between life satisfaction and separate dimensions under PsyCap, they did not involve PsyCap as a second-order construct in their model. So, in all these studies, separate dimensions of PsyCap were treated and analysed as *independent and individual constructs* but NOT as *dimensions of a second-order construct*.

If studies in the literature that aim to measure the impact of PsyCap as a second-order construct and its dimensions on well-being through a multiple regression analysis are taken into account, it is seen that the findings in the literature are mixed. For instance, Bolelli (2020) found out that all dimensions under PsyCap have significant positive linear relationships (in a multiple regression model) with psychological well-being. However, in another study, Gibson and Hicks (2018) observed that although PsyCap (overall) had a significant positive effect on psychological well-being, in the multiple regression analysis only the *Hope* and *Resilience* dimensions had significant

positive effects. Likewise, Göçen (2019) observed that only *Self-Efficacy* and *Optimism* dimensions of PsyCap had significant linear relationships with psychological well-being. In yet another study, on the effect of PsyCap on life satisfaction (hence subjective well-being), Işıklı (2018) observed that only *Hope* and *Optimism* dimensions were spotted to have significant positive effects on well-being. So, all these studies indicate that the existence of a linear relationship between PsyCap and well-being might not always translate into the existence of separate linear relationships between individual PsyCap dimensions when questioned under a multiple regression model.

#### **5.4 The Importance of Hope in PsyCap - Life Satisfaction Relationship**

Leaving the variations in findings of studies carried out in different settings aside, at this point, it might be better to concentrate on trying to understand the specific outcomes of the study and try to understand why especially the *Hope* dimension of PsyCap might be at the forefront in increasing well-being in entrepreneurship setting. Really, what makes *Hope* so important in leading the relationship between PsyCap and the life satisfaction of entrepreneurs?

Part of the answer to this question may come from the parallelisms between the two concepts. Indeed, Arend (2020) even goes as far as stating that “hope is entrepreneurship” (p.2). According to him, in line with Snyder’s (2002) conceptualization of hope, entrepreneurial activities require establishing a goal (such as setting up a company and trying to gain acceptance in the market), figuring out a way for reaching the goal (for instance, developing marketing and sales strategies) and being able to take the necessary steps on that way (operations/ execution). In essence, there are several findings in the literature (Przepiorka, 2017) focusing on behaviours of goal-directed nature where hope is found to improve goal engagement in entrepreneurial settings. This is to say that, as entrepreneurs become more hopeful toward the future, they develop a higher commitment to their goals, and in turn their effectiveness increases, making it more likely that their endeavours flourish. Parallel to this, as put forward by Laguna (2008), hope is empirically found to enhance the probability of reaching an entrepreneurial goal.

When it comes to the hope – life satisfaction link, hope is found to have a positive effect on life satisfaction in general (Bailey et al, 2007) and there is no exception for entrepreneurs (Przepiorka, 2017). This may be partly due to the fact that

goal involvement is claimed to play an important role on the way toward happiness (Seligman, 1991), and being hopeful means believing that one can reach his/ her goals. Also, as Frankl (1946) points out, goals help the creation of meaning for man. In addition to this, hope also acts as a buffer against stress, contributing positively to life satisfaction as observed by Hmieleski and Carr (2007) who studied the impacts of hope in entrepreneurial settings.

Nevertheless, there is still a further issue that needs to be clarified! Hope, by definition, is a concept regarding the *future*. On the other hand, life satisfaction seems to be an evaluation of an individual regarding the *present* or even the *past*. Indeed, to recall the items in the SWLS scale developed by Diener et al (1985), life satisfaction is either defined thru items that are not bounded by a time frame - but mostly referring to the present situation- (“In most ways my life is close to my ideal”, “The conditions of my life are excellent” and “I am satisfied with my life”) or *past-looking* evaluations (“So far I have gotten the important things I want in life” and “If I could live my life over, I would change almost nothing”). So, there is nothing in these items referring to the future or one’s expectations from the future. Then, given that two concepts- hope and life satisfaction- differ in their time frame, how come *believing that the future will be as desired* leads to a *better evaluation of the present*? Is it that the individuals may be reacting positively to an *expected but unrealised-yet positive mental picture of the future* (reaching one’s own goals) as if it already is a *reality*?

The concept of *prospection* and mechanisms of human perception can shed some light at this point and help understand whether positive evaluations of the future (having hope) can affect life satisfaction. Prospection can be defined as “a *mental representation* of possible futures given the information available in the present and from past experience” (Guitard & Jarden, 2022; p.1). According to Seligman and Tierney (2017), prospection is about *contemplations* regarding the future, and it is an important feature that distinguishes mankind from other animals. Unlike *retrospection*, which can be expressed as the human ability to re-experience the past, prospection can be seen as kind of a mental simulation of the future (Gilbert & Wilson, 2007).

In line with the definition of prospection, being hopeful might be seen as a kind of prospection where an individual forms a positive image of the future where he/she reaches a given goal. It is known that such “simulations allow people to *preview* events and to *prefeel* the pleasures and pains those events will produce” (Gilbert & Wilson,

2007; p.317). Therefore, it is possible that having hope for the future, hence having created a positive mental image regarding the future *might* affect evaluations regarding the present time such as life satisfaction. In that case, the genuine belief (hope) of an entrepreneur in that his or her start-up will eventually succeed and reach its targets, can help increase his or her life satisfaction even if there is still *way to go*. Thinking analogical, indeed, *why should the archer postpone being happy, if he clearly can see that his arrow is flying in the right path towards hitting the bullseye?*

### 5.5 Managerial Implications

Apart from its contributions to the literature, the research has several implications for practitioners, namely for incubator managers and entrepreneurs. In that sense, some of the issues worth mentioning relate to the difficulties experienced during the fieldwork. To begin with, one difficulty was about reaching information about the projects/ entrepreneurs supported by incubators. During the fieldwork, it was seen that although some of the incubators were observed to be quite open in sharing public information about the start-up companies that they support, for some incubators the situation was quite the opposite. This was unexpected in that all incubator managers interviewed during the qualitative stage of the fieldwork were quite cooperative and open in sharing information. Therefore, the incubation industry seemed to be quite welcoming and helpful on a personal basis. Yet, during the second, quantitative stage of the research, collecting information about the start-ups and entrepreneurs being supported by incubators proved to be quite difficult. Although some incubators were observed to share information about the start-up companies that are established under their roof in a clear and easy-to-reach manner (such as making announcements about them or providing lists of those companies in the own web pages of incubators), it was quite difficult to come across such information for some others. For instance, in one good example, *ITU Çekirdek* was observed to publish press releases on its webpage containing information regarding the activities of the start-ups hosted, in addition to sharing the list and contact information of the start-ups. In the case of *ITU Çekirdek*, it was also observed that video recordings of the pitch-up presentations of entrepreneurs were made available. So, this transparency and open stand proved to be quite useful in carrying out the research. However, as already mentioned, there were also opposite examples where incubators were observed to share no such information at all – making

it quite difficult to reach their tenants (entrepreneurs). It is suggested that incubators had better follow good examples like ITU Çekirdek in providing information about the start-ups that they support in an easy-to-reach manner. It is thought that not only this will be a positive development for the researchers who are willing to study in this industry, but it will also help entrepreneurs to make more knowledge-based decisions in selecting which incubator to work with.

Another difficulty faced up during the fieldwork was that, though few, some of the incubators officially declared that they would not support the research in the quantitative stage of the study where the cooperation of incubators was requested in reaching the survey links to their tenants (entrepreneurs). The *surprising* thing was that these were university-affiliated incubators! In one instance, one of the incubator managers contacted declared openly that the management committee of the incubator had decided being uninvolved in academic studies! No need to make further comments on this issue, it is once again suggested that all incubators had better be as transparent and cooperative in sharing information. At the end of the day, the information collected in these studies will be used for the benefit of related entrepreneurial ecosystems.

One other thing observed during the research was the lack of central bodies that could act as a source of information about the incubation industry. Although there are civil society organizations in many industries in Turkey, this is not the situation for the business incubation industry. If a comparison is to be made, there are many good examples in the world such as the National Business Association of USA, the United Kingdom Business Association of England, the Business Innovation and Incubation of Australia, the Brazilian Association of Science Parks and Incubators, Asociacion de Viveros e Incubadoras de Empresas of Spain, to name a few. It is thought that the incubators in Turkey could benefit from the establishment of such an organization as soon as possible.

When it comes to the reflections based directly on the findings of the research, one of the managerial implications may be about the value added of incubator services for entrepreneurs. As shown quite well by the study, business support and networking services have a higher contribution to the well-being of entrepreneurs when compared with physical services such as office space. So, it is suggested that incubator managers put more effort to develop their services like mentoring, business consulting, network development etc. For sure, physical working space is getting less important each day

and entrepreneurs can handle their own workspace needs easily by themselves without the support of an incubator. It is also evident that, the COVID-19 pandemic has also decreased the need for physical working space as the world went more digital and new working models had to be adopted – be it either voluntary or not. Therefore, taking all these into account, it is also suggested that incubators give more weight to talking about their business support and networking services in their marketing communication efforts. In that sense, for instance, positioning an incubator as a strong provider of services like providing business assistance and investor meetings might be a good idea.

One further implication of the research for incubator managers is that having detected the role of PsyCap on the impact of the services provided by incubators on the well-being of their tenants (entrepreneurs), it might be a good idea to deliberately develop special programs and mechanisms to help further increase the PsyCap of entrepreneurs. The suggestions for improving each of the dimensions under PsyCap are well outlined in the literature and mentioned earlier in the study. Needless to repeat them here once more, it is suggested that incubator managers evaluate such recommendations seriously to improve PsyCap levels of the entrepreneurs who are being served by the incubators. As the end of the day, higher PsyCap of entrepreneurs leads to higher entrepreneurial success (Jahdi, 2015).

## **5.6 Limitations and Suggestions For Future Research**

The research has several limitations and one of them stems from the sample size in the quantitative stage, which is 126. This number is below the level of 300, which may be considered as a general *rule-of-thumb-target* of 300 for non-experimental studies (Bujang et al, 2017). Therefore, the size of the sample could be considered *below text-book ideal*, if it is proper to say so. Nevertheless, to speak in favour of the realized sample size, it should also be remembered that when determining the sufficiency of a given sample, experience in similar studies that have been made beforehand should also be considered (Cramer & Howitt, 2004).

Although the number of available comparable studies is not high to the best knowledge of the researcher, the largest study that has been done with incubator-affiliated entrepreneurs in Turkey was carried out with 238 participants and it was backed up by the State Scientific and Technological Research Council of Turkey (TUBITAK) and Suleyman Demirel University (Sungur & Dulupçu, 2013). The next

comparable study in Turkey was carried out with 125 entrepreneurs in 8 accelerators by Çubukçu in 2018. When it comes to other, non-local studies which involved interviews with incubator-affiliated entrepreneurs, the sample in the Ollerenshaw (2019) study, was as low as 30, making regression analysis impossible – although, the initial aim of the study was to find out the relationship between incubator services and psychological capital of entrepreneurs. Therefore, considering the overall size of the related universe, difficulties of reaching the target group, and realised sample sizes in few but comparable studies into account, it is thought that realised sample size in the research is worth admiration. Needless to remind, the size and nature of the realised sample in this study proved to be satisfactory for running out statistical analysis as well. Yet, to be on the safe side, it is recommended that future studies better aim for higher sample sizes.

Another limitation of the research worth mentioning is the representativeness of the sample. As explained earlier, the sample included entrepreneurs from 17 different business incubators in Turkey, which corresponds to lower than 15% of the incubators in the country. So, entrepreneurs from a minority group of incubators in the country were included in the study. In addition to and more important than this, the participants in the research were all affiliated with privately held incubators. In that sense, the generalisability of the findings of the study to public incubators *might* be considered as open to discussion. Therefore, it might be good to include public incubators in future studies to increase representativeness to the extent possible or to observe differences between public and privately held incubators – if any.

A further limitation of the study regarding the representativeness of the sample stems from the fact that the sample was non-probabilistic in nature. Nevertheless, it is also thought that it was the only option at the time of the fieldwork, given that it is practically impossible to generate a list for the *universe* (*all* entrepreneurs using services of incubators within Turkey at a given time). Indeed, there was no data source (such as a central governing body or sectoral association) that can provide information regarding incubator-related entrepreneurs at the time of the field study. During the field work, it was also observed that not all incubators in Turkey were transparent in sharing information of related entrepreneurs and their start-ups. Therefore, all these difficulties necessitated the use of a convenient sample in the time of the survey. So, although

*ideally* studies with probabilistic samples might be suggested for the future, in practice it is thought by the researcher that it would be quite difficult to do so.

Leaving sampling-related issues aside, a factor that deserves being considered regarding its potentially negative effects on the research is the COVID-19 pandemic which was effective during the entire field study. The first (qualitative) stage of the fieldwork had started on June 2021, and it was late January 2022 when the second (quantitative) stage was completed. When it comes to the overall situation regarding the COVID-19 pandemic in Turkey at that time, the vaccination of the general public had only recently started gaining momentum. Yet, at the end of the fieldwork (mid January, 2022) the number of new COVID-19 cases per day was still higher than the level of 60.000 throughout Turkey (Ministry of Health, 2022). Therefore, both two stages of the research were completed at a time when the pandemic was prevailing.

From the point of the research, it is thought that the pandemic *might* have affected several issues that might be relevant to the study. To begin with, since work habits had started rapidly evolving towards using digital platforms and changing regular working models towards online ones, the importance (and also availability) of the physical facilities that can be offered by incubators *might* have decreased for entrepreneurs. This, *if happened*, could have weakened the potential relationship between the physical services of incubators and PsyCap of entrepreneurs. If that is the case, it might than be an important contextual factor that might affect basic research findings. However, it is probably impossible to know this, unless similar future studies are conducted in times where COVID-19 no longer constitutes a threat to society in general, and to entrepreneurs in particular.

One quite important point that also must be considered the potential effect of COVID-19 on the well-being of entrepreneurs. It is known that the well-being of individuals has decreased during the pandemic (Prasath et al, 2021). More important than that, although the relationship between PsyCap and well-being is observed to last during pandemic, changes were observed in the lower-level relationships between concepts. For instance, in one study, it was reported that during COVID-19 significant predictors of well-being were hope, optimism and resiliency dimensions of PsyCap, whereas before COVID-19 forecoming predictors were optimism and self-efficacy (Prasath et al, 2021). If that is indeed the case and the pandemic has affected the relationship between well-being and dimensions of PsyCap , than it is probable that

COVID-19 might also have affected the relationship between PsyCap and life satisfaction in the case of entrepreneurs. Indeed, there are other studies where hope is reported to have increased during COVID-19 lockdowns (Amirav et al, 2021). So, it might not be coincidental to have observed hope come to forefront in establishing the link between PsyCap and life satisfaction in the case of entrepreneurs. This may also explain why the findings of the research on lower-level relationships turned out to be somewhat contradictory to previous studies in the literature which have been carried out before the pandemic. Once again, it is believed that findings from future studies that will be conducted under non-pandemic conditions will help clarify such ambiguities.

The limitations of the research mentioned all the way up to here all pertain to the quantitative stage of the fieldwork which forms the backbone of the study and upon which the major findings are based. But the field study had a qualitative stage as well and the findings were shared in a quite detailed manner. Nevertheless, as a careful reader should have also noticed, the findings of this section were not much referred to during the discussion section. This is done on purpose since the main purpose of the qualitative stage was just to generate first-hand insights regarding the overall context and develop relationships with incubator managers that could act a leverage in the quantitative stage of the research. Therefore, it was refrained from overemphasizing the findings of this stage. Nevertheless, this stage of the fieldwork can still be seen as pioneering in that, to the knowledge of the author, the number of similar studies is quite limited, especially in the specific context (Turkey). In that sense, it is believed that conducting further studies of this kind with a wider scope and participant base could help increase knowledge accumulation on the dynamics of the incubation business. At the end of the day, incubator managers constitute an important stakeholder group and their observations regarding entrepreneurs and entrepreneurial activities are believed to provide contributions to the literature from a unique perspective.

One final suggestion for future studies comes from the experiences of the researcher during the quantitative stage of the fieldwork. As mentioned already two separate methods were used at this stage to reach potential participants for the survey. One of those methods was asking for the cooperation of incubator managers already contacted earlier during the qualitative stage to distribute survey links to the entrepreneurs that use the services of related incubators. Although the interviews conducted via this method generated almost half of the survey data, it was seen during

the fieldwork that it would not be sufficient by itself to reach the required number of interviews. Therefore, the researcher had decided to utilize a second method for reaching out to potential survey respondents. With this aim, using the information provided by the incubators in their corporate websites on the start-ups that are affiliated with them, the researcher generated a list of start-ups that could be included in the survey. After completing this list, the researcher decided to use social media platforms (Linkedin) to directly establish connections with the founders of these start-ups and invite them to participate in the survey. Although the effectiveness of this method was a question mark for the researcher in the beginning of the process, the positive response on the side of the entrepreneurs and willingness to participate in the survey was well over expectations. As a matter of fact, it would probably be impossible to complete the quantitative fieldwork of the research, had the researcher not decided to *try* a new method for reaching survey participant candidates. It is believed that this experience is worth sharing with other researchers in this section, and it is suggested that using social media platforms and developing personal contacts directly with survey respondent candidates can be lifesaving in especially studies that require the participation of a narrowly defined target group that is hard to come across with in the field (which was exactly the case in the research).

\*\*\*

## REFERENCES

- Abbey, A., Abramis, D. J., & Caplan, R. D. (1985). Effects of different sources of social support and social conflict on emotional well-being. *Basic and Applied Psychology*, 6(2), 111 – 129.
- Adler, P. S., & Kwon, S-W. (2002). Social capital: Prospects for a new concept. *Academy of Management Review*, 27(1), 17 – 40.
- Aernoudt, R. (2004). Incubators: Tool for entrepreneurship? *Small Business Economics*, 23, 127–135. doi:10.1023/B:SBEJ.0000027665.54173.23
- Akbaş, M., Gemlik, N., & Çatar, R. Ö. (2020). The relationship between organizational silence and life satisfaction: A research on foundation university academicians. *International Journal of Social Sciences Academy*, 2(3), 98 – 126.
- Akçay, V. H. (2012). The relationship between positive psychological capital and job satisfaction. *Kahramanmaraş Sütçü İmam University Faculty of Economics and Administrative Sciences Journal*, 2(1), 123 – 140.
- Akçomak, S. (2007). KOSGEB teknoloji geliştirme merkezleri ne kadar etkin? [How effective are KOSGEB technology development centres?] *Bilgi Çağı, Nisan 2007*. Accessible from: [http://users.metu.edu.tr/akcomak/200704\\_bilgicagi\\_nisan2007.pdf](http://users.metu.edu.tr/akcomak/200704_bilgicagi_nisan2007.pdf).
- Akçomak, S., & Taymaz, E. (2004). *Assessing the effectiveness of incubators: The case of Turkey* (ERC Working Papers in Economics 04/12). Ankara: Middle East Technical University Economic Research Center.
- Akdemir, H., Taş, M. A., & Çiçek, H. (2019). The relationship between emotional harassment (mobbing) and life satisfaction in the workplace: A research in Burdur province. *Erciyes University Journal of Faculty of Economics and Administrative Sciences*, (54), 138 – 159. doi:10.18070/erciyesiibd.546662
- Akdoğan, A., & Aydemir, C. (2018). The effect of positive psychological capital on work alienation. *International Journal of Economic and Administrative Studies*, 2018(17. ÜİK Special Ed), 307 – 318. doi:10.18092/ulikidince.437760

- Akgündüz, Y. (2013). Analysis of relationship between job satisfaction, life satisfaction, and self-efficacy in hospitality business. *Celal Bayar University Journal of Social Sciences*, 11(1), 180 – 204.
- Alibekiroğlu, P. B., Akbaş, T., Ateş, F. B., & Kırdök, O. (2018). Mediator effect of self compassion in the relationship between life satisfaction and psychological resilience in college students. *Çukurova University, Journal of Social Sciences*, 27(2), 1 – 17.
- Amirav, D. R., Besor, O., & Amirav, I. (2021). Hope during COVID-19 lockdown. *Cureus*, 13(5), e15097. doi:10.7759/cureus.15097
- Amoros, J. E., & Bosma, N. (2014). Global entrepreneurship monitor: 2013 global report. Accessed from Global Entrepreneurship Monitor Website: <https://www.gemconsortium.org/report/gem-2013-global-report>.
- Amoros, J. E., Cristi, O., & Naude, W. (2021). Entrepreneurship and subjective well-being: Does the motivation to start-up a firm matter? *Journal of Business Research*, 127(2021), 389 – 398. doi:10.1016/j.jbusres.2020.11.044
- Andrews, F.M., & Withey, S.B. (1976). *Social Indicators of Well-Being*. New York, U.S.A: Plenum Press.
- Arend, R. J. (2020). The roles of thought and affect on entrepreneurship – A new hope. *Journal of Business Venturing Insights*, 14(2020), e00188.
- Arı, A. (2019). *Effect of incubation centers on the development of national innovation and entrepreneurship system*. (Masters Thesis). Accessed via Turkish Council of Higher Education Thesis Center (Ulusal Tez Merkezi). (Thesis no: 596070).
- Aslaner, F. (2020). *The role of positive psychological capital on effecting individual business performance through leader-member exchange, perceived organizational support and perceived organizational prestige: A research on retail sector*. (Ph.D. Thesis). Accessed via Turkish Council of Higher Education Thesis Center (Ulusal Tez Merkezi). (Thesis no: 652858).

- Aşan, Ö., & Erenler, E. (2008). Relationship between job satisfaction and life satisfaction. *Suleyman Demirel University Journal of Faculty of Economics and Administrative Sciences*, 13(2), 203 – 216.
- Ateş, M. F., Turgut, H., & Çelik, M. (2018). The mediating role of organizational identification in the effect of psychological capital on job performance. *International Journal of Economic and Administrative Studies*, 2018(17. UİK Special Ed), 781 – 798. doi:10.18092/ulikidince.437901
- Avey, J. B, Luthans, F., Smith, R. M., & Palmer, N. F. (2010). Impact of positive psychological capital on employee well-being over time. *Journal of Occupational Health Psychology*, 15(1), 17 – 28. doi:10.1037/a0016998
- Avey, J. B., Reichard, R. J., Luthans, F., & Mhatre, K. H. (2011). Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Human Resource Development Quarterly*, 22(2), 127 – 152. doi:10.1002/hrdq.20070
- Bahadır, E., & Kahveci, G. (2020). Examining the relationship between the psychological capital levels of teachers and toxic leadership behaviours of school principals. *Inonu University Journal of the Faculty of Education*, 21(2), 858 - 879. doi:10.17679/inuefd.526845
- Bailey, T. C., Winnie, E., Frisch, M. B., & Snyder, C. R. (2007). Hope and optimism as related to life satisfaction. *The Journal of Positive Psychology*, 2(3), 168 – 175. doi:10.1080/17439760701409546
- Bajwa, J., Abai, M., Couto, S., Kidd, S., Dibavar, A., & McKenzie, K. (2019). Psychological capital and life satisfaction of refugees in Canada: Evidence from a community-based educational support program. *Journal of Community Psychology*, 47(3), 504 – 516. doi:10.1002/jcop.22134
- Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD-R approach. *Annual Review of Organizational Psychology and Organizational Behavior*, 1, 389 – 411. doi:10.1146/annurev-orgpsych-031413-091235

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191 – 215. doi:10.1037/0033-295X.84.2.191
- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Pearson.
- Bandura, A. (2006). Guide for constructing self-efficacy scales. In F. Pajares & T. Urdan (Eds.). *Self-Efficacy Beliefs of Adolescents*. Greenwich, CT: Information Age Publishing. 307 – 337.
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99 – 120. doi:10.1177/014920639101700108
- Baltes, P. B., & Staudinger, U. M. (2000). Wisdom: A metaheuristic (pragmatic) to orchestrate mind and virtue toward excellence. *The American Psychologist*, 55(1), 122 - 136. doi:10.1037/0003-066X.55.1.122
- Baluku, M. M., Kikooma, J. F., Bantu, E., & Otto, K. (2018). Psychological capital and entrepreneurial outcomes: The moderating role of social competences of owners of micro enterprises in East Africa. *Journal of Global Entrepreneurship Research*, 8 26 (2018). doi:10.1186/s40497-018-0113-7
- Baron, R. A., Franklin, R. J., & Hmieleski, K. M. (2016). Why entrepreneurs often experience low, not high, levels of stress: The joint effects of selection and psychological capital. *Journal of Management*, 42(3), 742 – 768. doi:10.1177/0149206313495411
- Bayır, Ö. Ö., & Aydın, A. (2019). The relationship between authentic leadership, psychological capital, work related flow and school achievement. *Bolu Abant İzzet Baysal University Journal of Faculty of Education*, 19(4), 1232 - 1254. doi:10.17240/aibuefd.2019..-631377
- Bayron, C. E. (2013). Social cognitive theory, entrepreneurial self-efficacy and entrepreneurial intentions: Tools to maximize the effectiveness of formal entrepreneurship education and address the decline in entrepreneurial activity. *Revista Griot*, 6(1), 66 – 77.

- Bekmezci, M., & Mert, I. S. (2018). Turkish validity and reliability study of life satisfaction scale. *Toros University Journal of Social Sciences*, 5(8), 166 – 177.
- Belen, H. (2021). The impact of mindfulness and assertiveness on well-being: A structural equation modeling analysis. *Turkish Psychological Counseling and Guidance Journal*, 11(60), 147 – 160.
- Benz, M., & Fray, B. S. (2008). Being independent is a great thing: Subjective evaluations of self-employment and hierarchy. *Economica*, 75(298), 362 - 383.
- Berglund, V. (2014). Entrepreneurs subjective well-being and job satisfaction: does personality matter? Accessed from: <https://www.diva-portal.org/smash/get/diva2:762866/FULLTEXT01.pdf>.
- Bhanthumnavin, D. (2000). Importance of supervisory social support and its implications for HRD in Thailand. *Psychology and Developing Societies*, 12(2), 155 – 166. doi:10.1177/097133360001200203
- Birden, M., Bastuğ, M., & Yazıcı, S. (2020). The impact of incubators on entrepreneurial process in Turkey: A guide for startups. *Journal of Business, Economics and Finance*, 9(2), 132 – 142. doi:10.17261/Pressacademia.2020.1219
- Bockorny, K., & Youssef-Morgan, C. M. (2019). Entrepreneurs' courage, psychological capital, and life satisfaction. *Frontiers of Psychology*, 10: 789. doi:10.3389/fpsyg.2019.00789
- Bolelli, M. (2020). The effects of psychological capital on subjective well being: A study from Turkey. *International Journal of Management and Administration*, 4(4), 245 – 259. doi:10.29064/ijma.763064
- Bonanno, G. A., Galea, S., Bucciarelli, A. & Vlahov, D. (2007). What predicts psychological resilience after disaster? The role of demographics, resources, and life stress. *Journal of Consulting and Clinical Psychology*, 75(5), 671 – 682. doi:10.1037/0022-006X.75.5.671

- Braham, C. G. (1998). *Random house Webster's dictionary (3rd ed.)*. New York: Ballantine Books.
- Bujang, M. A., Sa'at, N., & Sidik, M. A. B. (2017). Determination of minimum sample size requirement for multiple linear regression and analysis of covariance based on experimental and non-experimental studies. *Epidemiology Biostatistics and Public Health*, 14(3), 1 – 9.
- Canlı, S., Bingöl, N., & Göktaş, B. (2020). Relationship between perceived social support and job and life satisfaction by elderly care elements working in nursing home. *Hacettepe Journal of Health Administration*, 23(3): 435 – 450.
- Cantril, H. (1965). *The pattern of human concerns*. New Brunswick, NJ: Rutgers University Press.
- Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical Psychology Review*, 30(7), 879 – 889. doi:10.1016/j.cpr.2010.01.006
- Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, 13(4), 295 – 316.
- Cheng, K. J. G., McMaughan, D. J., & Smith, M. L. (2022). The role of optimism on the relationship between activity limitations and life satisfaction among middle-aged and older adults in the United States: A growth curve model of changes over time. *Journal of Applied Gerontology*, 41(4), 993 – 1001. doi:10.1177/07334648211056638
- Choi, Y. R., & Shephard, D. A. (2004). Entrepreneurs' decisions to exploit opportunities. *Journal of Management*, 30(3), 377 – 395. doi:10.1016/j.jm.2003.04.002
- Chou, P. (2015). The effects of workplace social support on employee's subjective well-being. *European Journal of Business and Management*, 7(6), 8 – 19.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38(5), 300 – 314. doi:10.1097/00006842-197609000-00003

- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310 – 357. doi:10.1037/0033-2909.98.2.310
- Coleman, J. S. (1988). Social capital in the creation of human capital. *The American Journal of Sociology*, Vol. 94, Supplement: Organizations and Institutions: Sociological and Economic Approaches to the Analysis of Social Structure (1988), S95 - S120.
- Cramer, D., & Howitt, D. (2004). *The SAGE dictionary of statistics: A practical resource for students in the social sciences*. London: SAGE Publications Ltd.
- Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco: Jossey-Bass.
- Çakmak, M. S., & Arabacı, İ. B. (2017). Effect of perceived positive psychological capital of teachers on their job satisfaction and organization commitment. *Electronic Journal of Social Sciences*, 16(62), 890-909. doi:10.17755/esosder.282130
- Çavmak, D., & Acar, F. (2020). Relationship between positive psychological capital and perceived performance: An investigation on healthcare employees. *The Journal of Human and Work*, 7(2), 213 – 212. doi:10.18394/iid.732944
- Çelik, M. (2016). The relationships among burnout life satisfaction and workload: A study on accounting professionals in Denizli. *Suleyman Demirel University The Journal of Faculty of Economics and Administrative Sciences*, 21(4), 1139 - 1152.
- Çelik, M., & Bilginer, F. G. (2018). The role of trust in leader in the effect of psychological capital on job satisfaction: A research in tourism sector. *Journal of Süleyman Demirel University Institute of Social Sciences*, 2(31), 138 – 160.
- Çetin, F., & Basım, H. N. (2012). Organizational psychological capital: A scale adaptation study. *Amme İdaresi Dergisi*, 45(1), 121 – 137.

- Çevik, N. K., & Korkmaz, O. (2014). Bivariate ordered probit analysis of the relationship between the life satisfaction and the job satisfaction in Turkey. *Academic Review of Economics and Administrative Sciences*, 7(1), 126 – 145.
- Çırpan, H., Vardarli, P., & Koçak, Ö. E. (2018). Mediating effect of thriving at work on the relationship between person-job fit and life satisfaction. *Balıkesir University the Journal of Social Sciences Institute*, 22(41), 237 – 252. doi:10.31795/baunsobed.581782
- Çubukçu, C. (2018). *Research of technology startup accelerators and their effectiveness: An empirical analysis of accelerators in Turkey*. (Ph.D. Thesis). Accessed via Turkish Council of Higher Education Thesis Center (Ulusal Tez Merkezi). (Thesis no: 523206).
- Dağlı, A., & Baysal, B. (2016). Adaptation of the satisfaction with life scale into Turkish: The study of validity and reliability. *Electronic Journal of Social Sciences*, 15(59), 1250 – 1262. doi:10.17755/esosder.263229
- Datu, J. A. D., & Valdez, J. P. M. (2019). Psychological capital is associated with higher levels of life satisfaction and school belongingness. *School Psychology International*, 40(4), 331 – 346. doi:10.1177/0143034319838011
- Datu, J. A. D, Yuen, M., Fung, E., Zhang, J., Chan, S., & Wu, F. (2022). The satisfied lives of gifted and gritty adolescents: Linking grit to career self-efficacy and life satisfaction. *Journal of Early Adolescence*. Advance online publication. doi:10.1177/02724316221096082
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 319 – 338. doi:10.1207/S15327965PLI1104\_01
- Dej, D. (2007a). Personality and competencies of the entrepreneurs. In Juan Antonio Moriano León and Marjan Gorgievski (coordinators), *Psychology of entrepreneurs: Research and education*, 83 – 94. Universidad Nacional de Educación a Distancia: Madrid.

- Dej, D. (2007b). Motivation to become entrepreneur. In Juan Antonio Moriano León and Marjan Gorgievski (coordinators), *Psychology of entrepreneurs: Research and education*, 57 – 63. Universidad Nacional de Educación a Distancia: Madrid.
- Demir, S. (2018). The relationship between psychological capital and stress, anxiety, burnout, job satisfaction and job involvement. *Eurasian Journal of Educational Research*, 75(2018), 137 – 154.
- Demir, S. (2019). An analysis about the relationships between psychological capital and work-family life conflict. *OPUS - International Journal of Society Researches*, 13(19), 557 – 576. doi:10.26466/opus.563221
- Dew, T., & Huebner, E. S. (1994). Adolescents' perceived quality of life: An exploratory investigation. *Journal of School Psychology*, 33(2), 185–199.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95(3), 542 – 575. doi:10.1037/0033-2909.95.3.542
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71 – 75. doi:10.1207/s15327752jpa4901\_13
- Diener, E. Suh, E. M., Lucas, R.E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125(2), 276 – 302. doi:10.1037/0033-2909.125.2.276
- Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American psychologist*, 55(1), 34 – 43. doi:10.1037/0003-066X.55.1.34
- Diener, E. and Seligman, M. E. P. (2002). Very happy people. *Psychological Science*, 13(1), 81 – 84. doi:10.1111/1467-9280.00415
- Diener, E., Lucas, R. E., & Oishi, S. (2002). Subjective well-being: The science of happiness and life satisfaction. In Snyder, C. R. and Lopez, S. J. (Eds)

*Handbook of positive psychology*, (pp 63-73). New York: Oxford University Press.

Diener, E., & Ryan, K. (2009). Subjective well-being: A general overview. *South African Journal of Psychology*, 39(4), 391 – 406. doi:10.1177/008124630903900402

Diener, E. (2021). *Permission to use Satisfaction With Life Scale*. Accessed from: <http://labs.psychology.illinois.edu/~ediener/SWLS.html>.

Diržyte, A., & Patapas, A. (2021). Positive organizational practices, life satisfaction, and psychological capital in the public and private sectors. *Sustainability*, 2022, 14(1), 488. doi:10.3390/su14010488

Disabato, D. J., Goodman, F. R., Kashdan, T. B., Short, J. L., & Jarden, A. (2015). Different types of well-being? A cross-cultural examination of hedonic and eudaimonic well-being. *Psychological Assessment*, 28(5), 471 - 482. doi:10.1037/pas0000209.

Doğan, S., & Aslan, M. (2018). Psychological capital, intrinsic motivation and job satisfaction relationship. *Academic Review of Economics and Administrative Sciences*, 11(3), 112 – 125.

Donaldson, S. I., Chan, L. B., Villalobos, J., & Chen, C. L. (2020). The generalizability of HERO across 15 Nations: Positive psychological capital (PsyCap) beyond the US and other WEIRD countries. *International Journal of Environmental Research and Public Health*, 2020(17), 1 – 11. doi:10.3390/ijerph17249432.

Dursun, S., & İştari, E. (2014). Effects of work-family conflict of woman on job and life satisfaction. *Ataturk University Journal of Economics and Administrative Sciences*, 28(3), 127 – 137.

Düzgün, E., & Yeşiltaş, M. (2017). An investigation on hotel organizations to determine the effects of procedural justice perception of employers on psychological capital. *International Journal of Management Economics and Business*, ICMEB17 Special Issue, 428 – 439.

- Edwards, L., Rand, K. L., Lopez, S. J., & Snyder, C. R. (2007). Understanding hope: A review of measurement and construct validity research in *Oxford handbook of methods in positive psychology*, edited by Anthony D. Ong, Manfred H. M. van Dulmen. New York: Oxford University Press, 2007: 83-95.
- Eveleens, C. P., van Rijnsoever, F. J., & Niesten, E. M. M. I. (2017). How network-based incubation helps start-up performance: a systematic review against the background of management theories. *Journal of Technology Transfer*, 42, 676 – 713. doi:10.1007/s10961-016-9510-7
- Fernandes, G., Amaral, A., & Varajao, J. (2018). Wagnild and Youngs's resilience scale validation for IS students. *Procedia Computer Science*, 138(2018), 815 – 822.
- Fogle, L. M., Huebner, E. S., & Laughlin, J. E. (2002). The relationship between temperament and life satisfaction in early adolescence: Cognitive and behavioral mediation models. *Journal of Happiness Studies*, 3, 373–392.
- Fong, E. Y., Jabor, M. K. B., Zulkifli, A. H., & Hashim, M. R. (2019). Challenges faced by new entrepreneurs and suggestions how to overcome them. *Advances in Social Science, Education and Humanities Research*, 470, 223 – 227.
- Ford, C. (2015). *Beyond a social capital agenda: Exploring metrics and motives inside business incubators in Arkansas*. Paper presented at the 5th International Conference on Engaged Management Scholarship, Baltimore, Maryland. doi:10.2139/ssrn.2676288
- Fordyce, M.W. (1977). *The happiness measures: A sixty-second index of emotional well-being and mental health*. Unpublished manuscript, Edison Community College, Ft. Myers, Florida.
- Forgeard, M. J. C., & Seligman, M. E. P. (2012) Seeing the glass half full: A review of the causes and consequences of optimism. *Pratiques Psychologiques*, 18, 107 – 120.
- Frankl, V. E. (1946). *Man's search for meaning*. UK: Beacon Press.

- Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology? *Review of General Psychology*, 9(2), 103 – 110.
- Gibson, A., & Hicks, R. (2018). Psychological capital and core self-evaluations in the workplace: Impacts on well-being. *International Journal of Psychological Studies*, 10(2), 15 – 24.
- Gilbert, D. T., & Wilson, T. D. (2007). Prospection: Experiencing the future. *Science*, 317, 1351 – 1354. doi:10.1126/science.1144161
- Gilman, R., & Ashby, J. S. (2003). A first study of perfectionism and multidimensional life satisfaction among adolescents. *Journal of Early Adolescence*, 23, 218–235.
- Gilman, R., Dooley, J., & Florell, D. (2006). Relative levels of hope and their relationship with academic and psychological indicators among adolescents. *Journal of Social and Clinical Psychology*, 25, 166–178.
- Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review*, 25, 161 – 178. doi:10.2307/2092623
- Gök, G. A., Erdem, R., & Yıldız, F. K. (2016). Relation between life and job satisfaction levels of the outsourced employees. *Pamukkale University Journal of Social Sciences Institute*, (23), 43 – 55.
- Göçen, A. (2019). Teachers' life meaning, psychological capital and gender's effect on their psychological well-being. *Cumhuriyet International Journal of Education*, 8(1), 135 - 153.
- Guitard, J., & Jarden, A. (2022). Cognitive forecasting and its link to life satisfaction: An investigation of accurate and optimistic prospection and retrospection. *International Journal of Well-being*, 12(2), 1-35. doi:10.5502/ijw.v12i2.1981.
- Güner, F., Çiçek, H., & Can, A. (2014). The relationship between the levels of occupational stress and burnout and the levels of job satisfaction and life satisfaction of employees. *International Journal of Alanya Faculty of Business*, 6(3), 59 – 76.

- Güner, H., & Korkmaz, A. (2011). The role of entrepreneurship to increase the employment. *Journal of Labour Relations*, 2(1), 42 – 65.
- Hart, T. (2016, September). *Business creation – incubation & acceleration*. Presentation made at Macro-Regional Innovation Week, Trieste, Italy.
- Hmieleski, K. M., & Carr, J. C. (2007) The relationship between entrepreneur psychological capital and well-being. Babson College Entrepreneurship Research Conference (BCERC) 2007, Frontiers of Entrepreneurship Research 2007, Available at SSRN: <https://ssrn.com/abstract=1064021>.
- Hmieleski K.M., & Carr J.C. (2008). The relationship between entrepreneur psychological capital and new venture performance. *Frontiers of Entrepreneurship Research*, 28(4), 1.
- Hobfoll, S. E. (2001). The influence of culture, community, and the nested self in the stress process: Advancing conservation of resources theory. *Applied Psychology*, 50, 337–421. doi:10.1111/1464-0597.00062
- Hobfoll, S. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, 6, 307 – 324.
- Honig, B., & Karlsson, T. (2007). Social capital and the modern incubator: A comparison of in-group and out-group social networks. *Journal of Small Business & Entrepreneurship*, 23(1), 1 – 13. doi:10.1080/08276331.2010.10593512
- House, J. S. (1981). *Work stress and social support*. Reading, MA: Addison-Wesley.
- Hytti, U., Kautonen, T., & Akola, E. (2013). Determinants of job satisfaction for salaried and self-employed professionals in Finland. *International Journal of Human Resource Management*, 24(10), 2034–2053. doi:10.1080/09585192.2012.723023
- IECER. (2020). *Interdisciplinary European conference on entrepreneurship research, call for papers*. Accessed from: <https://www.iecer-conference.org/call-for-papers>.

- Işıklı, E. İ. (2018). The relationship between psychological capital and life satisfaction in the department of health management: The case of Düzce University. *Turkish Studies* 13(7), 163 – 174.
- Juhdi, H. N., Juhdi, N., & Omar, N. A. (2015). Psychological capital and entrepreneurial success: Mediating role of entrepreneurial work engagement. *European Journal of Interdisciplinary Studies*, 2(1), 110. doi:10.26417/ejis.v2i1.p110-133
- Jarden, A. (ed.). (2012). Positive psychologists on positive psychology. *International Journal of Well-being*, 2(2), 70–149. doi:10.5502/ijw.v2i2.0
- Jensen, S. M. (2012). Psychological capital: Key to understanding entrepreneurial stress? *Economics & Business Journal: Inquiries & Perspectives*, 4(1), 44 – 55.
- Jolly, P. M., Kong, D. T., & Kim, K. Y. (2020). Social support at work: An integrative review. *Journal of Organizational Behavior*, 2021(42), 229 – 251. doi:10.1002/job.2485
- Kahya, V. (2019). The effect of psychological capital on entrepreneurial tendency: A research on trainees attended to kosgeb entrepreneurship education. *OPUS - International Journal of Society Researches*, 9(12), 634 - 657. doi:10.26466/opus.587988
- Kalafatoğlu, M. R., & Çelik, S. B. (2020). Adaptation of the short version of the scales of general well-being into Turkish: A validity and reliability study. *OPUS - International Journal of Society Researches*, 15(25), 3633 – 3653.
- Kanbur, E. (2018). Effects of work overload on job and life satisfaction: Mediating role of work-related strain. *The Journal of Human and Work*, 5(2), 125 – 143. doi:10.18394/iid.375457
- Kanchana, R.S., Divya, J. V. and Beegom, A. A. (2013). Challenges faced by new entrepreneurs. *International Journal of Current Research and Academic Review*, 1(3), 71 - 78.

- Kaplan, M., & Biçkes, D. M. (2013). The relationship between psychological capital and job satisfaction: A study of hotel businesses in Nevşehir. *Journal of Management and Economics*, 20(2), 233 – 242.
- Kaplan, M., & Göker, H. (2020). The effect of the psychological capital on procrastination: The moderating role of psychological well-being. *The Journal of International Social Sciences*, 30(1), 273 – 290.
- Karademas, E. C. (2006). Self-efficacy, social support and well-being: The mediating role of optimism. *Personality and Individual Differences*, 40, 2006, 1281 – 1290. doi:10.1016/j.paid.2005.10.019
- Katrodia, A., & Sibanda, R. (2018). Challenges experienced by young entrepreneurs entering the small and medium enterprise sector (SME) in Rajkot region, Gujarat-India. *Academy of Entrepreneurship Journal*, 24(4), 1 – 14.
- Kessler, E. H. (2013). *Encyclopedia of management theory (Volume one)*. Los Angeles: Sage Publications.
- Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly*, 61(2), 121 – 140.
- Kim, B. S., & Kim, M. (2022). Self-efficacy mediates the relationship between perfectionism and life satisfaction in South Korean adults. *Social Behavior and Personality: An international journal*, 50(4), e11226. doi:10.2224/sbp.11226
- Kirkwood, J. (2009). Motivational factors in a push-pull theory of entrepreneurship. *Gender in Management: An International Journal*, 24(5), 346 – 364. doi:10.1108/17542410910968805
- Kirzner, I. (1997). Entrepreneurial discovery and the competitive market process: An Austrian approach. *Journal of Economic Literature*, 35(1), 60 – 85.
- Kodaş, B. (2018). The relationship between positive psychological capital and work engagement of food and beverage employees. *Kırklareli University Journal of Social Sciences*, 2(1), 1 – 14.

- Kollmann, K., Stöckmann, T., & Kensbock, J. M. (2019). I can't get no sleep— The differential impact of entrepreneurial stressors on work-home interference and insomnia among experienced versus novice entrepreneurs. *Journal of Business Venturing* 34(2019), 692 – 708. doi:10.1016/j.jbusvent.2018.08.001
- Kong, F., Tsai, C-H., Tsai, F-S., Huang, W., & de la Cruz, S. M. (2018). Psychological capital research: A meta-analysis and implications for management sustainability. *Sustainability*, 10, 3457. doi:10.3390/su10103457
- Köker, S. (1991). *Normal ve sorunlu ergenlerin yaşam doyumu düzeylerinin karşılaştırılması*. [Comparison of life satisfaction levels of normal and problematic adolescents] (Masters Thesis). Accessed via Turkish Council of Higher Education Thesis Center (Ulusal Tez Merkezi). (Thesis no: 016802).
- Köseoğlu, G. (2007). *Social capital development among tenant firms and between tenant firms and the host university in business incubators: A case of a Turkish business incubator*. (Masters Thesis). Accessed via Turkish Council of Higher Education Thesis Center (Ulusal Tez Merkezi). (Thesis no: 217963).
- Kreitner, R., & Kinicki, A. (2010). *Organizational behaviour* (Ninth edition). New York: McGraw-Hill/ Irwin.
- Kuratko, D. F., & LaFollette, W. R. (1987). Small business incubators for local economic development. *Economic Development Review*, 5(2), 49 - 55.
- Kurtz, J. L., & Lyubomirsky, S. (2011). Positive psychology. In M. R. Mehl & T. S. Conner (Eds.), *Handbook of research methods for studying daily life* (pp. 553-568). New York: The Guilford Press.
- Kushev, T., Ahuja, M. K., & Carter, R. E. (2018). A social cognitive perspective on opportunity evaluation. *The Journal of Entrepreneurship*, 28(1), 35 – 67. doi:10.1177/0971355718810570
- Laguna, M. (2007). Positive psychological capital and entrepreneurship. In Juan Antonio Moriano León and Marjan Gorgievski (coordinators), *Psychology of Entrepreneurs: Research and Education*, 135 – 143. Universidad Nacional de Educación a Distancia: Madrid.

- Laguna, M. (2008). Positive psychological capital and process of business start-up. *International Journal of Psychology*, 43(3–4), 390–391.
- Lange, G. S. (2018). *The value of business incubators and accelerators from the entrepreneurs perspective*. (Ph.D. Thesis, Georgia State University, USA). Web access: [https://scholarworks.gsu.edu/bus\\_admin\\_diss/92](https://scholarworks.gsu.edu/bus_admin_diss/92)
- Linley, P. A., Joseph, S., Harrington, S., & Wood, A. M. (2006). Positive psychology: Past, present, and (possible) future. *The Journal of Positive Psychology*, 1(1), 3 – 16.
- Looze, J., & Desai S. (2020). *Challenges along the entrepreneurial journey: Considerations for entrepreneurship supporters*. Kansas City: Ewing Marion Kauffman Foundation.
- Luthans, F. (2002). Positive organizational behaviour: Developing and managing psychological strengtghs. *Academy of Management Executive*, 16(1), 57 – 72.
- Luthans, F., & Youssef, C. M. (2004). Human, social, and now positive psychological capital management: Investing in people for competitive advantage. *Organizational Dynamics*. 33(2), 143 – 160. doi:10.1016/j.orgdyn.2004.01.003
- Luthans, F., Avey, J., Avolio, B., Norman, S. M., & Combs, G. (2006). Psychological capital development: Toward a micro intervention. *Journal of Organizational Behavior*, 27(3), 387 – 393. doi:10.1002/job.373
- Luthans, F., Youssef, J. M., & Avolio, B. J. (2007a). *Psychological capital: Developing the human competitive edge*. New York: Oxford University Press.
- Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007b). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology*, 2007(60), 541 – 572.
- Luthans, F., Avey, J. B., Avolio, B. J., & Peterson, S. J. (2010). The development and resulting performance impact of positive psychological capital. *Human Resource Development Quarterly*, 21(1), 41 – 67. doi:10.1002/hrdq.20034

- Lyons T. S. (2002). Building social capital for rural enterprise development: Three case studies in the United States, *Journal of Developmental Entrepreneurship*, 7(2), 193 – 216.
- Macit, M., Karaman, M., & Ekim, H. (2020). Psychological capital and organizational silence in healthcare professionals. *Journal of Inonu University Health Services Vocational School*, 8(2), 423 – 444. doi:10.33715/inonusaglik.72673
- Madiha, M., & Akhouri, D. (2018). Self efficacy and life satisfaction among young adults. *International Journal of Applied Science Engineering and Management*, 4(2), 19 – 29. doi:02.03.2018-1519971355
- Mahfud, T., Triyono, M. B., Sudira, P., & Mulyani, Y. (2019). The influence of social capital and entrepreneurial attitude orientation on entrepreneurial intentions: The mediating role of psychological capital. *European Research on Management and Business Economics*, 26 (2020), 33 – 39. doi:10.1016/j.iedeen.2019.12.005
- Markman, G. D., Balkin, D. B., & Baron, R. A. (2002). Inventors and new venture formation: The effects of general self-efficacy and regretful thinking. *Entrepreneurship Theory and Practice*, 4, 149 - 165.
- Marshall, D. R., Meek, W.R., Swab, R.G., & Markin, E. (2020). Access to resources and entrepreneurial well-being: A self-efficacy approach. *Journal of Business Research*, 120(2020), 203–212.
- Masten, A. S., & Reed, M. G. J. (2002). Resilience in development. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 74–88). Oxford, UK: Oxford University Press.
- Maslow, A. H. (1954). *Motivation and personality*. New York: Harper.
- Mazzarol, T., & Reboud, S. (2017). *Entrepreneurship and Innovation* (4th Ed). Singapore: Springer.
- McConnell, H. K., & Stull, L. G. (2017). Hope, life satisfaction, and motivation. *Modern Psychological Studies*, 23(1), Article 1.

- McCullough, M. E. (2000). Forgiveness as human strength: Theory, measurement, and links to well-being. *Journal of Social and Clinical Psychology, 19*(1), 43 – 55. doi:10.1521/jscp.2000.19.1.43
- Miles, J. A. (2012). *Management and organization theory*. San Fransisco: Jossey-Bass.
- Miles, M, B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded Sourcebook*. (Second Edition). Thousand Oaks, California: Sage.
- Ministry of Health, General table on Coronavirus. (2022). Retrieved August 13, 2022 from <https://covid19.saglik.gov.tr/TR-66935/genel-koronavirus-tablosu.html>.
- Morgeson, F. P., & Humphrey, S. E. (2006). The work design questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology, 91*, 1321 – 1339.
- Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist, 55*(1), 56 – 67. doi:10.1037//0003-066X.55.1.56
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review, 23*, 242 – 266.
- Neck, C.P., Neck, H. M., Manz, C. C., & Godwin, J. (1999). "I think I can; I think I can" A self-leadership perspective toward enhancing entrepreneur thought patterns, self-efficacy, and performance. *Journal of Managerial Psychology, 14*(6), 477 – 501.
- Ng, E., & Fisher, A. T. (2013). Understanding well-being in multi-levels: A review. *Health, Culture and Society, 5*(1), 308 – 323. doi:10.5195/hcs.2013.142
- Okun, O., & Büyükbeşe, T. (2019). The association between employee voice, pscyhological capital and well-being among NATO workers: A multinational study from the perspective of positive organizational behavior. *Akdeniz IIBF Journal, 19*(2), 391 – 414. doi:10.25294/aiuibfd.649280
- Olcaý, G. A., & Kunday, Ö. (2016). Determinants of well-being of Turkish entrepreneurs: An assessment based on entrepreneurial perception, motives, and

innovation. *Journal of Entrepreneurship and Innovation Management*, 5(2), 1 – 16.

Ollerenshaw, A. (2019). *The relationship between business incubator services and the psychological capital of tenants*. (Ph.D. Thesis, Federation University, Australia). Web access: <http://researchonline.federation.edu.au/vital/access/HandleResolver/1959.17/173755> .

Önay, I., Ayas, S., Uğurlu, Ö. Y., & Önay, M. B. (2017). The relationship between psychological capital and entrepreneurship intentions. *Gazi Journal of Economics and Business*, 3(3), 55 – 66.

Örgün, E. (2017). *Role of organizational socialization on tge psychological capital and social capital in hotel businesses*. (Ph.D. Thesis). Accessed via Turkish Council of Higher Education Thesis Center (Ulusal Tez Merkezi). (Thesis no: 491454).

Özdemir, A., & Özgüner, M. (2016). The effect of psychological capital on entrepreneurship: A study on university students. *Journal of Human Sciences*, 13(3), 5107 - 5121. doi:10.14687/jhs.v13i3.4146

Özkan, O. S., & Tosun, B. (2020). The mediating role of person-organization fit in the relationship between psychological capital and intrapreneurship. *International Journal of Management Economics and Business*, 16(2), 326 – 345. doi:10.17130/ijmeb.756889

Özler, D. E., & Yıldırım, H. B. (2015). A case study to define the relation between organizational trust and psychological capital. *Nevsehir Hacı Bektas Veli University Journal of ISS*, 5(2015), 163 – 188.

Parker, S. (1998). Enhancing role-breadth self efficacy: The roles of job enrichment and other organizational interventions. *Journal of Applied Psychology*, 83, 835 – 852.

Penrose, E. T. (1959). *The theory of the growth of the firm*. New York: Wiley.

- Peterson, C., Semmel, A., Baeyer, C.V., Abramson, L., Metalsky, G., & Seligman, M. (1982). The attributional style questionnaire. *Cognitive Therapy and Research*, 6, 287 – 299.
- Peterson, C. (2000). The future of optimism. *American Psychologist*, 55(1), 45 – 55. doi:10.1037//0003-066X.55.1.44
- Piper, A. T. (2019). Optimism, pessimism and life satisfaction: An empirical investigation. SOEP papers on Multidisciplinary Panel Data Research, No. 1027. Deutsches Institut für Wirtschaftsforschung (DIW), Berlin.
- Pirali, A., & Seyadat, S. (2015). Review the role of components of psychological capital on organizational entrepreneurship. *International Journal of Innovative Science, Engineering & Technology*, 3(7), 186 – 193.
- Polatçı, S. (2014). The effects of psychological capital on task and contextual performance: A research on police organization. *Ege Academic Review*, 14(1), 115 – 124.
- Polatçı, S., Ardiç, K., & Koç, M. (2014). Job and life satisfaction from a different perspective the effects of perceived organizational support and organizational commitment. *Çukurova University, Journal of Social Sciences*, 23(1), 267 – 287.
- Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology*, 24, 1 - 24.
- Prasath, P. R., Mather, P. C., Bhat, C. S., & James, J. K. (2021). University student well-being during COVID-19: The role of psychological capital and coping strategies. *The Professional Counselor*, 11(1), 46 – 60. doi:10.15241/prp.11.1.46
- Przepiorka, A. M. (2017). Psychological determinants of entrepreneurial success and life-satisfaction. *Current Psychology*, 36(2017), 304–315. doi:10.1007/s12144-016-9419-1

- Proctor, C., Linley, P. A., & Maltby, J. (2017). Life satisfaction. In R.J.R. Levesque (ed.), *Encyclopedia of adolescence*, 1-8. doi:10.1007/978-3-319-32132-5\_125-2.
- Putnam, R. D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy*, 6(1), 65 – 78.
- Raats, C. Adams, S., Savahl, S., Isaacs, S., & Tiliouine, H. (2019). The relationship between hope and life satisfaction among children in low and middle socio-economic status communities in Cape Town, South Africa. *Child Indicators Research*, April 2019. doi:10.1007/s12187-018-9549-0
- Rasyid, A. A., & Bangun, Y. R. (2015). The relationship between psychological capital and entrepreneurial traits: A case study of MBA SBM ITB students in Bandung. *Journal of Business and Management*, 4(3), 297 - 316.
- Ratinho, T., Harms, R., & Groen, A. J. (2013). Business incubators: (How) do they help their tenants? In R. Oakey, A. Groen, P. van der Sijde, & G. Cook (Eds.). *New technology-based firms in the new millenium*, 10, 161-182. West Yorkshire, UK: Emerald Publishing. doi:doi: 10.1108/S1876-0228(2013)0000010011
- Reichard, R. J., Avey, J. B., Lopez, S., & Dollwet, M. (2013). Having the will and finding the way: A review and meta-analysis of hope at work. *The Journal of Positive Psychology*, 8(4), 292 – 304. doi:10.1080/17439760.2013.800903
- Richardson, G. E. (2002). The metatheory of resilience and resiliency. *Journal of Clinical Psychology*, 58(3), 307 – 321. doi:10.1002/jclp.10020
- Rivera, M., Shapoval, V., & Medeiros, M. (2021). The relationship between career adaptability, hope, resilience, and life satisfaction for hospitality students in times of Covid-19. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 29 (2021), 100344. doi:10.1016/j.jhlste.2021.100344
- Robbins, S. P., & Judge, T. A. (2017). *Organizational behaviour* (17<sup>th</sup> Edition). Harlow: Pearson.

- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52, 141 – 166.
- Ryff, C. D. (1995). Psychological well-being in adult life. *Current Directions in Psychological Science*, 4(4), 99 – 104.
- Sabaityte, E. and Diržyte, A. (2016). Psychological capital, self-compassion and life satisfaction of unemployed youth. *International Journal of Psychology: Biopsychosocial Approach*, 2016 / 19. doi:10.7220/2345-024X.19.3
- Santisi, G., Lodi, E., Magnano, P., Zarbo, R., & Zammitti, A. (2020). Relationship between psychological capital and quality of life: The role of courage. *Sustainability*, 2020, 12, 5238.
- Sapmaz, F., & Doğan, T. (2012). Optimism as a predictor of happiness and life satisfaction. *Mersin University Journal of the Faculty of Education*, 8(3), 63 – 69.
- Sarıçam, H., Çelik, I., & Coşkun, L. (2015). The relationship between emotional intelligence, hope and life satisfaction in preschool preserves teachers. *Educational Research Association The International Journal of Research in Teacher Education*, 6(1), 1 – 9.
- Scheier M.F., & Carver C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, 4, 219–247.
- Scheier, M., Carver, C., & Bridges, M. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the life orientation test. *Journal of personality and social psychology*, 67, 1063 – 1078.
- Scherbaum, C. A., Cohen-Charash, Y., & Kern, M. J. (2006). Measuring general self-efficacy: A comparison of three measures using item response theory. *Educational and Psychological Measurement*, 66(6), 1047 – 1063. doi:10.1177/0013164406288171

- Schumpeter, J. (1934). *The theory of economic development*. New York: Harvard University Press.
- Segal, G., Borgia, D., & Schoenfeld, J. (2005). The motivation to become an entrepreneur. *International Journal of Entrepreneurial Behaviour & Research*, 11(1), 42 – 57. doi:10.1108/13552550510580834
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach* (Seventh Edition). West Sussex, United Kingdom: Wiley.
- Seligman, M. (1991) *Learned optimism*. New York: Knopf.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5 – 14. doi:10.1037//0003-066X.55.1.5
- Seligman, M. E. P., & Tierney, J. (2017, May 19). We aren't built to live in the moment. *The New York Times*.  
<https://www.nytimes.com/2017/05/19/opinion/sunday/why-the-future-is-always-on-your-mind.html>.
- Sfeatcu, R., Mițariu, M. C., Ionescu, C., Roman, M., Mițariu, S. C., Coldea, L., Bota, G., & Burcea, C. C. (2014). The concept of well-being in relation to health and quality of life. *European Journal of Science and Theology* 10(4), 123 - 128.
- Shepherd, D.A., Wennberg, K., Suddaby, R., & Wiklund, J. (2019). What are we explaining? A review and agenda on initiating, engaging, performing, and contextualizing entrepreneurship. *Journal of Management*, 45(1), 159 – 196.
- Sherman, C. L., Randall, C., & Kauanui, S. K. (2015). Are you happy yet? Entrepreneurs' subjective well-being. *Journal of Management, Spirituality & Religion*. doi:10.1080/14766086.2015.1043575
- Sinding, K., & Waldstrom, C. (2014). *Organizational behaviour* (Fifth Edition). Berkshire: McGraw-Hill.

- Singhal, H., & Rastogi, R. (2017). Psychological capital and career commitment: The mediating effect of subjective well-being. *Management Decision*, 56(2), 458 – 473. doi:10.1108/MD-06-2017-0579
- Snyder, C. R. (1989). Reality negotiation: From excuses to hope and beyond. *Journal of Social and Clinical Psychology*, 8, 130 - 157.
- Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M, Sigmon, S. T., Yoshinobu, L., Gibb, J., Langelle, C., & Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, 60(4), 570 – 585.
- Snyder, C. R, Sympson, S., Ybasco, F., Borders, T., Babyak, M., & Higgins, R. (1996). Development and validation of the state hope scale. *Journal of Personality and Social Psychology*, 70, 321 – 335.
- Snyder, C. R., & McCullough, M. E. (2000). A positive psychology field of dreams: "If you build it, they will come..." *Journal of Social and Clinical Psychology*, 19(1), 151 – 160. doi:10.1521/jscp.2000.19.1.151
- Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry*, 13(4), 249 – 275.
- Sop, S. A. (2014). İş baskısı, iş-serbest zaman çatışması, meslek memnuniyeti ve yaşam doyumu ilişkisi üzerine bir inceleme [An evaluation of the relationship between job strain, work-to-leisure conflict, occupational satisfaction and life satisfaction]. *Tourism Academic Journal*, 1(1), 1 – 14.
- Sousa, L., & Lyubomirsky, S. (2001). Life satisfaction. In J. Worell (Ed.), *Encyclopedia of women and gender: Sex similarities and differences and the impact of society on gender* (Vol 2), 667 - 676. San Diego, CA: Academic Press.
- Stajkovic, A. D., & Luthans, F. (1998a). Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin*, 124, 240 – 261.

- Stajkovic, A. D., & Luthans, F. (1998b). Social cognitive theory and self-efficacy: Going beyond traditional motivational and behavioral approaches. *Organizational Dynamics*, 26(4), 62 – 72.
- Startupswatch. (2022). *Turkish startups ecosystem map v7.5*. Accessed from: <https://startups.watch/reports#>.
- Stephan, U., & Roesler, U. (2010). Health of entrepreneurs vs. employees in a national representative sample. *Journal of Occupational & Organisational Psychology*, 83(3), 717-738.
- Stephan, U. (2018). Entrepreneurs' mental health and well-being: A review and research agenda. *Academy of Management Perspectives*, 32(3), 290 – 322. doi:10.5465/amp.2017.0001
- Stewart, G. L., Courtright, S. H., & Manz, C. C. (2011). Self-leadership: A multilevel review. *Journal of Management*, 37(1), 185 – 222. doi: 10.1177/0149206310383911
- Suh, E., Diener, E., & Fujita, F. (1996). Events and subjective well-being: Only recent events matter. *Journal of Personality and Social Psychology*, 70(5), 1091 -1102. doi:10.1037//0022-3514.70.5.1091
- Sungur, O., & Dulupçu, M. A. (2013). Survival performance of tenant firms in business incubators (ISGEMs) in Turkey. *Mehmet Akif Ersoy Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 5(8), 1 – 25.
- Tang, J-J. (2020). Psychological capital and entrepreneurship sustainability. *Frontiers in Psychology*, 11: 866. doi:10.3389/fpsyg.2020.00866
- Tangney, J. (2000). Humility: Theoretical perspectives, empirical findings and directions for future research. *Journal of Social and Clinical Psychology*, 19, 70 - 82. doi:10.1521/jscp.2000.19.1.70
- Taşlıyan, M., & Hırlak, B. (2016). The relationship between authentic leadership, psychological capital, intention to leave and employee performance: A research

on nurses. *Akademik Bakış Uluslararası Hakemli Sosyal Bilimler Dergisi*, 56, 92 – 115.

Teknoloji Geliştirme Bölgeleri Yönetmeliği. (2016, 10 Ağustos). *Resmi Gazete* (Sayı: 29997). Accessed from: <https://www.resmigazete.gov.tr/eskiler/2016/08/20160810-8.htm>

Tokmak, M. (2018). The effects of positive psychological capital on burnout: A research aimed at public official. *Journal of Management and Economics*, 25(3), 863 – 878. doi:10.18657/yonveek.419469

Tosunoğlu, H. (2021). *The moderating effects of workaholism and psychological capital on the relationship between work-family conflict and emotional exhaustion. A field study*. (Ph.D. Thesis). Accessed via Turkish Council of Higher Education Thesis Center (Ulusal Tez Merkezi). (Thesis no: 658196).

Tösten, R., Arslantaş, H. İ., & Şahin, G. (2017). The impact of teachers' positive psychological capital on burnout. *YYU Journal Of Education Faculty*, 14(1), 726 – 744. doi:10.23891/efdyu.2017.28

Uhm, C. H, Sung, C. S., & Park, J. Y. (2018). Understanding the accelerator from resources-based perspective. *Asia Pacific Journal of Innovation and Entrepreneurship*, 12(3), 258 – 278.

UKSPA. (2015). United Kingdom Science Park Association Fact Sheet: A Brief Introduction to Business Incubation.

Uygungil, S., & İşçan, Ö. F. (2018). Analysis of the relationships between positive psychological capital, organizational commitment and organizational cynicism. *Journal of Süleyman Demirel University Institute of Social Sciences Year*, 2(31), 435 – 453.

Valle, M. F., Huebner, E. S., & Suldo, S. M. (2004). Further evaluation of the children's hope scale. *Journal of Psychoeducational Assessment*, 22, 320 – 337.

Van der Bijl, J. J., & Shortridge-Baggett, L. M. (2001). Self-efficacy: Theory and measurement. *Scholarly Inquiry for Nursing Practice*, (15)13, 189 – 207.

- Vázquez, C., Hervás, G., Rahona, J. J., & Gómez, D. (2009). Psychological well-being and health. Contributions of positive psychology. *Annuary of Clinical and Health Psychology*, 5(2009), 15 – 27.
- Veenhoven, R. (2012). Happiness: Also known as “life-satisfaction” and “subjective well-being”. In Kenneth C. Land, Alex C. Michalos, and M. Joseph Sirgy (Eds.) *Handbook of social indicators and quality of life research*. Dordrecht, Netherlands: Springer Publishers. page 63-77. doi: 10.1007/978-94-007-2421-1\_3.
- Veenhoven, R. (2015). Overall satisfaction with life: Subjective approaches. In Wolfgang Glatzer, Laura Camfield, Valerie Moller & Marino Rojas (Eds.), *The global handbook of well-being*. Chapter 9, 207-238. Dordrecht, Netherlands: Springer Publishers. doi:10.1007/ 978-94-017-9178-6-9
- Wagnild G. M., & Young, H. M. (1993). Development and psychometric evaluation of the resiliency scale. *Journal of Nursing Management*, 1(2), 165–178.
- Wang, Y., Tsai C-H., Lin D.D., Enkhbuyant, O., & Cai, J. (2019). Effects of human, relational, and psychological capitals on new venture performance. *Frontiers in Psychology*, 10: 1071. doi:10.3389/fpsyg.2019.01071
- Wang, Q., Sun, W., & Wu, H. (2022). Associations between academic burnout, resilience and life satisfaction among medical students: a three-wave longitudinal study. *BMC Medical Education* (2022), 22: 248. doi:10.1186/s12909-022-03326-6
- Warr, P. (2017). Self-employment, personal values and varieties of happiness–unhappiness. *Journal of Occupational Health Psychology*. Advance online publication. doi:10.1037/ocp0000095
- Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063 - 1070.
- Well-being. (2021). *Within Oxford English Online Dictionary*. Retrieved 6 May 2021 from [www.oed.com](http://www.oed.com).

- Whetten, D., Felin, T., & King, B. (2009). The practice of theory borrowing in organizational studies. *Journal of Management*, 35, 537 – 563.
- Wiklund, J., Nikolaev, B., Shir, N., Foo, M-D., & Bradley, S. (2019). Entrepreneurship and well-being: Past, present, and future. *Journal of Business Venturing*, 34(2019), 579 – 588.
- Wilson, W. (1967). Correlates of avowed happiness. *Psychological Bulletin*, 67, 294 - 306.
- Wood, R., & Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review*, 14(3), 361 – 384.
- Workup. (Producer). (2017). *Workup Girişimcilik Programıyla Tanışın* [Corporate Presentation Video]. Accessed on 05.09. 2021 from <https://www.youtube.com/watch?v=HRvBuz7AYwQ>.
- Xi, X., Wang, Y., & Jia, B. (2017). The effect of social support on subjective well-being: Mediator roles of self-esteem and self-efficacy. *Advances in Social Science, Education and Humanities Research*, 121, 493 – 505.
- Yakut, E. (2019). A social cognitive theory perspective on marketing studies: A literature review. *Journal of Yasar University*, 14 (Special Issue), 18-33.
- Yan, W., Zhang, L., Li, W., & Kong, F. (2022). How is subjective family socioeconomic status related to life satisfaction in Chinese adolescents? The mediating role of resilience, self-esteem and hope. *Child Indicators Research* (2022). doi:10.1007/s12187-022-09936-2
- Yeşil, S., Yetiş, E., & Telli, S. (2016). Psychological capital and its effects on employees: A field study in banking sector. *International Journal of Academic Value Studies*, 2(1), 25 - 40.
- Yılmaz, Y., & Yıldırım, A. (2019). The relationship between organizational cynicism and psychological capital according to the perceptions of teachers. *Milli Eğitim Dergisi*, 50(229), 607 – 636.

- Yousaf, S. U., Hanafiah, M. H., & Usman, B. (2015). Psychological capital: Key to entrepreneurial performance and growth intentions. *International Research Journal of Social Sciences*, 4(9), 39 – 45.
- Youssef-Morgan, C. M., & Luthans, F. (2015). Psychological capital and well-being. *Stress and Health* 31, 180 – 188. doi:10.1002/smi.2623
- Yöney, E. Y., & Kılınç, E. (2020). Investigation of the effect of mobbing on the job and life satisfaction of employees in the banking sector. *Journal of Economics Business and Political Researches*, 5(11), 34 – 52.
- Zhao, H., Seibert, S. E., & Lumpkin, G. T. (2010). The relationship of personality to entrepreneurial intentions and performance: A meta-analytic review. *Journal of Management*, 36(2), 381 – 404. doi:10.1177/0149206309335187
- Zulkosky, K. (2019). Self-efficacy: A concept analysis. *Nursing Forum*, 44(2), 93 – 102. doi:10.1111/j.1744-6198.2009.00132.x

## APPENDIX A

### Explanatory Note on Usage of Satisfaction With Life Scale (SWLS)

The screenshot shows a web browser window displaying the website of Ed Diener, a Distinguished Professor Emeritus of Psychology and Senior Scientist for the Gallup Organization. The website has a blue header with the name 'Ed Diener' and his titles. Below the header is a navigation menu with links: Home, Contacts & Links, Ed Diener & Lab, RESEARCH, SCALES, and Inquiries. A search bar is located below the navigation menu. The main content area is titled 'Satisfaction With Life Scale (SWLS)' and includes a sidebar with a list of scales: Overview, Satisfaction with Life Scale (SWLS), Scale of Positive and Negative Experience (SPANE), Flourishing Scale (FS), Scales for Children and Teenagers, Affect Intensity Measure, and Inventory of thriving (CIT & BIT). The main content area also includes sections for 'Permission to Use' and 'About SWLS'.

**Ed Diener**  
Joseph R. Smiley Distinguished Professor Emeritus of Psychology  
Senior Scientist for the Gallup Organization

Home Contacts & Links Ed Diener & Lab RESEARCH SCALES Inquiries

FIND STUFF  Search ☒ Only search this site

**Scales**

- Overview
- Satisfaction with Life Scale (SWLS)
- Scale of Positive and Negative Experience (SPANE)
- Flourishing Scale (FS)
- Scales for Children and Teenagers
- Affect Intensity Measure
- Inventory of thriving (CIT & BIT)

**Satisfaction With Life Scale (SWLS)**

**Permission to Use**

The scale is copyrighted but you are free to use it without permission or charge by all professionals (researchers and practitioners) as long as you give credit to the authors of the scale: Ed Diener, Robert A. Emmons, Randy J. Larsen and Sharon Griffin as noted in the 1985 article in the *Journal of Personality Assessment*.

**About SWLS**

The SWLS is a short 5-item instrument designed to measure global cognitive judgments of satisfaction with one's life. The scale usually requires only about one minute of a respondent's time.

**Source:** <http://labs.psychology.illinois.edu/~ediener/SWLS.html> (Date of Access: 21.04.2021)

## APPENDIX B

## Permission to Use Psychological Capital Questionnaire (PCQ)

Burçin Tüzemen



To whom it may concern,

This letter is to grant permission for Burçin Tüzemen to use the following copyright material:

Instrument: ***Psychological Capital (PsyCap) Questionnaire (PCQ)***

Authors: ***Fred Luthans, Bruce J. Avolio & James B. Avey.***

Copyright: ***"Copyright © 2007 Psychological Capital (PsyCap) Questionnaire (PCQ) Fred L. Luthans, Bruce J. Avolio & James B. Avey. All rights reserved in all medium."***

for his/her thesis/dissertation research.

Three sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any other published material.

Sincerely,

Mind Garden, Inc.  
[www.mindgarden.com](http://www.mindgarden.com)

## APPENDIX C

## Yeditepe University Ethics Committee Approval for Research

YEDİTEPE ÜNİVERSİTESİ BEŞERİ VE SOSYAL BİLİMLER ETİK  
KURULU KOMİSYONU28.09.2021 TARİHLİ  
21/2021 No'lu TOPLANTI KARARLARI

- 16) Yeditepe Üniversitesi Sosyal Bilimler Enstitüsü Siyaset Bilimi ve Uluslararası İlişkiler Doktora Öğrencilerinden F. Necmiye Tutar'ın, Prof. Dr. Emin Gürses danışmanlığında yürütülecek olan "Sağlık Güvenliği ve Türkiye Örneğinde Covid-19'un Güvenleştirilmesi" başlıklı araştırmasının Beşeri Bilimler etik standartlarına uygunluğu Yeditepe Üniversitesi Beşeri ve Sosyal Araştırmalar Etik Kurulu tarafından değerlendirilmiş ve onaylanmıştır.
- 17) Yeditepe Üniversitesi Sosyal Bilimler Enstitüsü İşletme Doktora Öğrencilerinden Burçin Tüzemen'in, Doç. Dr. Özlem Kunday danışmanlığında yürütülecek olan "A Study on the Effects of Business Incubators on their tenants under the light of Positive Psychology" başlıklı araştırmasının Beşeri Bilimler etik standartlarına uygunluğu Yeditepe Üniversitesi Beşeri ve Sosyal Araştırmalar Etik Kurulu tarafından değerlendirilmiş ve onaylanmıştır.



**YEDİTEPE ÜNİVERSİTESİ BEŞERİ VE SOSYAL BİLİMLER ETİK  
KURULU KOMİSYONU**

**28.09.2021 TARİHLİ  
21/2021 No'lu TOPLANTI KARARLARI**

Prof. Dr. Suat ANAR

Etik Kurul Komisyon Başkanı

İletişim Fakültesi, Gazetecilik Bölümü

Prof. Dr. Sultan ÜZELTÜRK

Hukuk Fakültesi, Hukuk Bölümü

Prof. Dr. Ayla ERSOY

Güzel Sanatlar Fakültesi, Sanat Yönetimi Bölümü

Prof. Dr. Zeynep Aslı ALICI

Ticari Bilimler Fakültesi, Uluslararası Finans Bölümü

Prof. Dr. Cengiz ERİŞEN

İktisadi ve İdari Bilimler Fakültesi, Siyaset Bilimi ve Uluslararası İlişkiler Bölümü

Prof. Dr. Demet LÜKÜSLÜ

Fen-Edebiyat Fakültesi, Sosyoloji Bölümü

Prof. Dr. Saffet BABÜR

Fen-Edebiyat Fakültesi, Felsefe Bölümü

## APPENDIX D

### Interview Guide

#### Görüşme Öncesinde Katılımcıya Yüzyüze Yapılacak Açıklamalar

Sayın Yetkili,

Öncelikle görüşme talebimi kabul ederek vaktinizi ayırdığınız için size teşekkür ederim.

Bugün sizinle yapacağımız görüşme, Yeditepe Üniversitesi Sosyal Bilimler Enstitüsü bünyesinde yürütülmekte olan bir araştırma kapsamında gerçekleştirilecektir. Söz konusu araştırmada Türkiye’deki kuluçka merkezlerinde sunulan hizmetlerin girişimcilere olan katkısı incelenmektedir. Bu çerçevede, önce çeşitli kuluçka merkezlerinin yöneticileriyle bugünküne benzer görüşmeler gerçekleştirilecektir. Bunun ardından da Türkiye’deki kuluçka merkezlerinden hizmet almakta olan girişimcilere dönük olarak, ayrı bir anket çalışması yürütülecektir. Bu çalışmalar sonucunda elde edilen veriler girişimcilikle ilgili bir doktora tezinde değerlendirilecektir ve literatüre önemli katkılarda bulunması beklenmektedir.

Bugün sizinle gerçekleştireceğimiz görüşmede genel olarak kuluçka merkezinizin işleyişi ve girişimcilerle ilgili gözlemlerinize dair sorular yönelteceğim. Size yöneltilecek sorular ticari sır olarak nitelendirilebilecek herhangi bir konu içermeyecektir. Ayrıca, şahsınıza ait kişisel veri olarak değerlendirilebilecek herhangi bir bilgi de istenmeyecektir. Vereceğiniz bilgiler kuruluşunuzun adıyla veya sizin isminizle eşleştirilerek herhangi bir mecrada kesinlikle kullanılmayacak; analiz ve raporlamalar anonim olarak gerçekleştirilecektir. Görüşmemizde kişisel rahatsızlık verecek olan herhangi bir soru yöneltilmeyecektir. Ancak katılım esnasında kendinizi rahatsız hissederseniz herhangi bir aşamada görüşmemizi sona erdirebilirsiniz. Görüşmeye katılmanız ve devam etmeniz tamamen gönüllük esasına dayalıdır.

Görüşmemizin 60 dk’yı geçmeyecek bir şekilde ele alınması planlanmaktadır. Görüşme sırasında herhangi bir görüntü veya ses kaydı alınmayacaktır. Sadece, eğer izniniz olursa, konuşmamız esnasında not almayı öngörmekteyim. Alacağım notlar tamamen gizli tutulacak ve üçüncü şahıslarla paylaşılmayacaktır.

Göstermiş olduğunuz ilgi ve vaktinizi ayırdığınız için şimdiden teşekkür ederim.

#### Görüşme Sırasında Yöneltilcek Sorular

##### Merkeze İlgili Temel Bilgiler

1. Kuluçka merkezinizin sahiplik yapısı nedir? Hangi kuruluşlar tarafından desteklenmektedir?
2. Merkeziniz hangi tarihte kurulmuştur? Kısaca gelişim aşamalarından bahseder misiniz?
3. Merkezinizin resmi olarak benimsediği bir misyonu / vizyonu varsa paylaşır mısınız?
4. Merkezinizde toplam kaç kişi çalışmakta? Nasıl bir organizasyon yapınız var? Mentor, eğitimci, danışman vb part-time kadrolarınız var mı?
5. Merkezinizin iş modelinde, gelir kaynaklarını neler oluşturuyor? Kar etme amacınız var mıdır?

### **Proje Talebi; Proje Odağı ve Seçim Süreci**

6. Size gelen projelerin içeriğini düşündüğünüzde, genelde ne tür projeler geliyor?
7. Size gelen projeler arasından hangi kriterler doğrultusunda seçim yapmaktasınız?
8. “Kesinlikle içinde yer almayız” dediğiniz veya özel olarak odaklandığınız belirli bir endüstri/ endüstriler var mıdır?
9. Her aşamadaki projeyi destekliyor musunuz, yoksa belirli aşamalarda bulunan projeleri mi desteklemektesiniz?
10. Bir yıl içinde size ortalama kaç tane proje başvurusu yapılıyor? Siz ortalama kaç tanesini seçiyorsunuz?
11. Projeleri dönemlik olarak mı kabul ediyorsunuz?
12. Şu an -halihazırda- sizden destek almakta olan kaç girişimci var?
13. Sizden an itibarıyla aktif olarak hizmet almakta olan girişimcilerin profili nasıl? (Tecrübe durumları, yaş-cinsiyet dağılımı, eğitimleri vb?)
14. Mevcut durumda hizmetlerinizden yararlanan girişimcilerin projeleri hangi iş alanlarında / ne tür iş modelleriyle ilerliyor?

### **Girişimci Beklentileri ve Kuluçka İçi Deneyimi**

15. Gözlemlerinize göre, size projeleriyle gelen girişimcilerin en çok ihtiyaç duydukları şeyler/sizden en büyük beklentileri genelde ne oluyor?
16. Girişimciler, başvurularını hangi kanaldan yapıyorlar? Başvuru süreci nasıl işliyor?
17. Kabul edildikten sonra girişimcileri içeride nasıl bir süreç bekliyor? Hangi aşamalardan geçiyorlar?
18. Ne kadar bir süre sizinle birlikte kalıyorlar? Ayrılma kararı neye göre veriliyor? Kalabilecekleri maksimum bir süre sınırı var mı?
19. Bireysel olarak sizden destek almakta olan girişimcilerle birebir vakit geçirme imkanınız oluyor mu? Ne yoğunlukta?
20. Sizden hizmet alan girişimcilerin kendi aralarındaki ilişkiler ne kadar yoğun? Birbirleriyle işbirliği yapıyorlar mı? Kuluçka içinde sinerji yaratıldığına dair paylaşabileceğiniz örnekler var mı?

### **Girişimcilere Verilen Hizmetler ve Etkileri**

21. Girişimcilere hangi hizmetleri sunuyorsunuz? Bunları detaylı olarak anlatabilir misiniz?
22. En çok ve en az talep gören hizmetleriniz neler?
23. En iyi verdiğiniz düşündüğünüz destek hangisidir?
24. Gözlemlediğiniz kadarıyla, girişimciler ne tür engellerle mücadele ediyorlar? Onları en çok zorlayan şeyler genelde ne oluyor?
25. Girişimcilerin karşılaştıkları bu zorlukları aşmaları konusunda onlara nasıl yardımcı oluyorsunuz?
26. Girişimcilerinizin ruhsal durumlarında sizinle geçirdikleri süre boyunca gözlemlediğiniz değişiklikler oluyor mu? Oluyorsa, neler?
27. Gözlemlerinize göre, girişimcilere sunduğunuz hizmetlerin onların iç dünyaları üzerinde bir etkisi oluyor mu? Oluyorsa, en çok hangi hizmet(ler) onların iç dünyası üzerinde etkili?

\*\*\*EĞER SİZİN EKLEMEK İSTEDİĞİNİZ BİR NOKTA YOKSA, GÖRÜŞMEMİZ SONA ERMİŞTİR.  
KATILIMINIZDAN ÖTÜRÜ TEŞEKKÜR EDERİM\*\*\*

## APPENDIX E

### Survey Questionnaire

#### Ankete Giriş Metni

Değerli Girişimci,

Yeditepe Üniversitesi Sosyal Bilimler Enstitüsü bünyesinde Türkiye’deki kuluçka merkezlerinden hizmet almakta olan girişimcilerin dahil olduğu bir araştırma yürütülmektedir. Söz konusu araştırma kapsamında kuluçka merkezlerinde sunulan hizmetlerin girişimcilere olan katkısı incelenmektedir. Araştırma kapsamında online olarak hazırlanan anketler, sizin gibi Türkiye’nin çeşitli illerindeki kuluçka merkezlerinden yararlanan girişimcilere ulaştırılmaktadır. Anketi doldurmak için ortalama koşullarda 10 dk’nızı ayırmanızın yeterli olduğu düşünülmektedir. Anketten elde edilen veriler girişimcilikle ilgili bir doktora tezinde değerlendirilecektir ve literatüre önemli katkılarda bulunması beklenmektedir.

Ankette size yaşıınız, cinsiyetiniz, eğitim durumunuz vb konularda temel bazı sorular sorulmakla birlikte, kimliğinize ilişkin herhangi bir soru kesinlikle yöneltilmemektedir. Yanıtlarınız gizli tutulacak ve üçüncü şahıslarla paylaşılmayacaktır. Ankette genel olarak kişisel rahatsızlık verecek olan herhangi bir soru bulunmamaktadır. Ancak katılım esnasında kendinizi rahatsız hissederseniz herhangi bir aşamada anketi yanıtlamayı sona erdirebilirsiniz. Ankete katılımınız ve devam etmeniz tamamen gönüllülük esasına dayalıdır.

Göstermiş olduğunuz ilgi ve vaktinizi ayırdığınız için şimdiden teşekkür ederiz.

#### Kuluçka Merkezi Hizmetleri Kullanımı ile İlgili Sorular

1. Şu an hizmetlerinden yararlanmakta olduğunuz **kuluçka merkezinin türünü** aşağıdaki seçeneklerden hangisi en iyi şekilde tanımlar?

|                                                            |   |
|------------------------------------------------------------|---|
| TEKMER (KOSGEB bağlantılı Teknoloji Geliştirme Merkezi)    | 1 |
| İŞMER (KOSGEB bağlantılı İş Geliştirme Merkezi)            | 2 |
| Üniversite/ özel sektör/ STK vb bağlantılı KULUÇKA MERKEZİ | 3 |
| Üniversite/ özel sektör/ STK vb bağlantılı HIZLANDIRICI    | 4 |

2. **Ne kadar bir süredir** şu an hizmetlerinden yararlandığınız kuluçka merkezinin içinde yer almaktasınız ?

|                                     |   |
|-------------------------------------|---|
| 1-3 aydır                           | 1 |
| 4-6 aydır                           | 2 |
| 7-9 aydır                           | 3 |
| 10-12 aydır                         | 4 |
| 1 – 2 yıl arasında bir süreden beri | 5 |
| 2 yıldan uzun süreden beri          | 6 |

3. Şu an içinde bulunduğunuz kuluçka merkezinde aşağıdaki hizmetlerden **ne ölçüde yararlandığınızı** belirtir misiniz?

|    |                                                                 | Hiç/<br>Böyle bir<br>hizmet<br>yok | Çok<br>Az | Az | Orta | Yüksek | Çok<br>Yüksek |
|----|-----------------------------------------------------------------|------------------------------------|-----------|----|------|--------|---------------|
| 1  | (F) Ofis hizmetleri (çalışma alanı, toplantı salonları vb)      | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 2  | (F) Laboratuvar vb teknik altyapı hizmetleri                    | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 3  | (İ) Eğitim/ Seminer / Kurs olanakları                           | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 4  | (İ) Mentorluk / Koçluk hizmetleri                               | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 5  | (İ) Pazarlama, finans, hukuk vb alanlarda danışmanlık           | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 6  | (İ) Mali destekler                                              | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 7  | (İ) Reklam / tanıtım desteği                                    | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 8  | (N) Yatırımcılarla tanışma olanakları                           | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 9  | (N) Kuluçkadaki diğer girişimcilerle bir araya gelme olanakları | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 10 | (N) Sektörel kuruluşlarla işbirliği olanakları                  | 0                                  | 1         | 2  | 3    | 4      | 5             |

4. İçinde bulunduğunuz kuluçka merkezinde sunulan hizmetlerin *işinizin başarısı açısından önem derecesini* belirtir misiniz?

|    |                                                                 | Hiç/<br>Böyle bir<br>hizmet<br>yok | Çok<br>Az | Az | Orta | Yüksek | Çok<br>Yüksek |
|----|-----------------------------------------------------------------|------------------------------------|-----------|----|------|--------|---------------|
| 1  | (F) Ofis hizmetleri (çalışma alanı, toplantı salonları vb)      | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 2  | (F) Laboratuvar vb teknik altyapı hizmetleri                    | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 3  | (İ) Eğitim/ Seminer / Kurs olanakları                           | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 4  | (İ) Mentorluk / Koçluk hizmetleri                               | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 5  | (İ) Pazarlama, finans, hukuk vb alanlarda danışmanlık           | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 6  | (İ) Mali destekler                                              | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 7  | (İ) Reklam / tanıtım desteği                                    | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 8  | (N) Yatırımcılarla tanışma olanakları                           | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 9  | (N) Kuluçkadaki diğer girişimcilerle bir araya gelme olanakları | 0                                  | 1         | 2  | 3    | 4      | 5             |
| 10 | (N) Sektörel kuruluşlarla işbirliği olanakları                  | 0                                  | 1         | 2  | 3    | 4      | 5             |

(F)=Fiziki Destek Grubu; (İ)= İş Destek Grubu; (N)=Networking Destek Grubu

### PCQ ve SWLS Ölçekleri Uygulaması

5. Aşağıdaki ifadelerin herbirine **ne kadar katıldığınızı** belirtir misiniz?

|   |                                                                | Kesinlikle Katılmıyorum | Katılmıyorum | Ne katılmıyorum, ne katılmıyorum | Katılıyorum | Kesinlikle Katılıyorum |
|---|----------------------------------------------------------------|-------------------------|--------------|----------------------------------|-------------|------------------------|
| 1 | Yaşamımdan memnunum                                            | 1                       | 2            | 3                                | 4           | 5                      |
| 2 | Yaşamımda sahip olmak istediğim önemli şeyleri elde ettim      | 1                       | 2            | 3                                | 4           | 5                      |
| 3 | Yaşamım pek çok yönüyle ideali karşılamaktadır                 | 1                       | 2            | 3                                | 4           | 5                      |
| 4 | Yeniden dünyaya gelseydim yaşamımda hiçbir şeyi değiştirmezdim | 1                       | 2            | 3                                | 4           | 5                      |
| 5 | Yaşam koşullarım mükemmeldir                                   | 1                       | 2            | 3                                | 4           | 5                      |

6. Aşağıdaki ifadelerin herbirine **ne kadar katıldığınızı** belirtir misiniz?

|    |                                                                      | Kesinlikle Katılmıyorum | Katılmıyorum | Ne katılmıyorum, ne katılmıyorum | Katılıyorum | Kesinlikle Katılıyorum |
|----|----------------------------------------------------------------------|-------------------------|--------------|----------------------------------|-------------|------------------------|
| 1  | Bu işyerinde işler asla benim istediğim şekilde yürümez.             | 1                       | 2            | 3                                | 4           | 5                      |
| 2  | Bu aralar kendim için belirlediğim iş amaçlarımı yerine getiriyorum. | 1                       | 2            | 3                                | 4           | 5                      |
| 3  | Bir grup iş arkadaşına bir bilgi sunarken kendime güvenirim.         | 1                       | 2            | 3                                | 4           | 5                      |
| 4  | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 5  | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 6  | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 7  | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 8  | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 9  | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 10 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 11 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 12 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 13 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 14 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 15 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 16 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 17 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 18 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 19 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 20 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 21 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 22 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 23 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |
| 24 | Can not be reproduced here due to copyright of Mind Garden Inc.      | 1                       | 2            | 3                                | 4           | 5                      |

### Demografi Soruları

7. Yaşınızı belirtir misiniz?

[.....] yaş

8. Cinsiyetinizi işaretler misiniz?

|       |   |
|-------|---|
| Kadın | 1 |
| Erkek | 2 |

9. Eğitim durumunuzu aşağıdakilerden hangisi en iyi açıklar?

|                                     |   |
|-------------------------------------|---|
| İlköğretim (İlk / Orta Okul) mezunu | 1 |
| Lise mezunu                         | 2 |
| Üniversite mezunu                   | 3 |
| Yüksek lisans mezunu                | 4 |
| Doktora sahibi                      | 5 |

10. Ailenizde sizden başka bir girişimci var mıdır?

|       |   |
|-------|---|
| Evet  | 1 |
| Hayır | 2 |

(10.SORU "EVET" İSE SORULACAK)

11. Ailenizdeki diğer girişimci / girişimcilerin yakınlık derecesi nedir?

|                                              |   |
|----------------------------------------------|---|
| Annem                                        | 1 |
| Babam                                        | 2 |
| Kardeşim / Kardeşlerim                       | 3 |
| Eşim                                         | 4 |
| Başka bir aile büyüğüm (amca, dayı, dede vb) | 5 |
| Diğer (Belirtiniz)                           |   |

12. Şu anki girişiminizden önce başka bir girişiminiz oldu mu?

|       |   |
|-------|---|
| Evet  | 1 |
| Hayır | 2 |

13. Şu anki girişiminizden önce herhangi bir yerde maaşlı olarak çalıştınız mı?

|       |   |
|-------|---|
| Evet  | 1 |
| Hayır | 2 |

14. Toplam çalışma hayatı tecrübeniz kaç yıldır? Lütfen maaşlı bir çalışan ve/veya kendi işinizin sahibi olarak, çalışma hayatı içinde geçirmiş olduğunuz tüm süreyi düşünerek cevap veriniz.

[.....] yıl

\*\*\*ANKETİMİZ BİTMİŞTİR, KATILIMINIZDAN ÖTÜRÜ TEKRAR TEŞEKKÜR EDERİZ\*\*\*

## APPENDIX F

## List of Incubators Covered in Quantitative Field Work

|    | Name of Incubator                    | Method of Reaching Survey Participants             |                                                               |
|----|--------------------------------------|----------------------------------------------------|---------------------------------------------------------------|
|    |                                      | Distribution of survey links by incubator managers | Submission of survey links to entrepreneurs by the researcher |
| 1  | Accelerate2030                       |                                                    | x                                                             |
| 2  | Acıbadem Kuluçka Merkezi             | x                                                  |                                                               |
| 3  | Albaraka Garaj                       |                                                    | x                                                             |
| 4  | ANAÇ Kuluçka Merkezi (Arıkom)        | x                                                  |                                                               |
| 5  | Bilgiyi Ticarileştirme Merkezi (BTM) | x                                                  | x                                                             |
| 6  | Cube Incubation (Teknopark İstanbul) | x                                                  | x                                                             |
| 7  | Gazi Teknopark                       |                                                    | x                                                             |
| 8  | Inovent (former SUCool)              | x                                                  |                                                               |
| 9  | ITU Çekirdek                         |                                                    | x                                                             |
| 10 | Kworks                               |                                                    | x                                                             |
| 11 | Lonca                                |                                                    | x                                                             |
| 12 | Mobilite Hızlandırma Programı        |                                                    | x                                                             |
| 13 | ODTU YFYI                            |                                                    | x                                                             |
| 14 | TEB-TİM Girişim Evi                  |                                                    | x                                                             |
| 15 | Türk Telekom Pilot                   |                                                    | x                                                             |
| 16 | Workup (İş Bankası)                  | x                                                  |                                                               |
| 17 | Yeditepe Üniversitesi TTO            | x                                                  |                                                               |