PhD. Thesis

The Determinants of Startups and the Impact on Foreign Direct Investment (FDI): A Case Study on the Israeli Economy

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A thesis is submitted in partial fulfilment of the requirements of

the University of Salford for the degree of PhD in Business & Management

Supervised by Dr Tony Syme

November 2023

ABSTRACT

This interdisciplinary study examines the long-term causality relationship between Foreign Direct Investment (FDI) inflows into a country and innovative startups. This study further examines the influence of latent variables related to the founders and co-founders of these startups through Psychological Capital.

Using a vector error correction model (VECM), this study establishes a long-term causality relationship between innovative startups in Israel and FDI inflows into the country. From 1990 to 2019, the number of ongoing innovative startups in Israel increased significantly from 19 to 649, coinciding with a substantial increase in FDI inflows from $151 million to $17.3 billion (BoP, current US $). Furthermore, this study employs Panel Cross-Section analysis using an Autoregressive Distributed Lag (ARDL) cointegration technique across eight countries: Australia, Canada, China, Germany, Sweden, Switzerland, the United Kingdom (UK), and the United States of America. The findings show that innovative startups in these eight countries, similar to Israel, have a long-term causality effect on FDI inflows into their respective economies.

The research further examined the influence of latent variables inherent in founders and co-founders of innovative startups using the Psychological Capital Index. To what extent do the four latent variables - Hope, Efficacy, Resilience, and Optimism- influence people to form Startups? Using a five-point Likert questionnaire sent to thousands of Founders and Co-founders in Israel, the United Kingdom, Germany, and Sweden, their Psychological Capital Index was higher than all three control groups from Israel, the UK, and twenty-eight previous research papers on different population groups.

The outcome of this twin-track research design establishes two critical aspects of the interdependence of macro- and micro-economic impacts on the economies of various nations. This study establishes that innovative startups have a long-term causal effect on FDI inflows into an economy. The second aspect relates to the finding that individuals who establish innovative startups exhibit a higher PsyCap Index than the overall population. The output of this research ought to serve as a favourable indication for governments to enhance support and initiatives aimed at nurturing and strengthening the startup ecosystem within their respective countries.

ACKNOWLEDGEMENT

"*I love to travel but hate to arrive***"**

Albert Einstein

Now that I have arrived at my destination, I want to thank all those involved in making this a successful and enjoyable journey for me with the summation of this thesis.

I sincerely thank my supervisor, Dr Tony Syme, for his constant support, patience, motivation, encouragement, direction and criticism. His guidance helped me during the whole period of my research and writing this thesis. I am fortunate to have a supervisor who cared so much about my work and conducted our monthly meetings in a friendly and cordial manner, always enlightening the discussion with ideas for the next session.

My great appreciation goes to 'Peli the Tiger', from Peoples and Computers, a friend and colleague for over 40 years. With his vast connections in the Israeli business community, he could help mail the PsyCap questionnaire to executives of Israeli companies as a control group, as well as coordinate the connection with 'Startup Nation Central'.

I would also like to thank Rinat Korbet – director of Data & Information from 'Startup Nation Central', for her positive attitude in helping access their database of startups while invoking the highest ethical standards.

Many thanks go to Ruth Moshe for her help in obtaining a vast mailing list and mailing the questionnaire to the public.

I would also like to thank Dr Mohammad Mahbubur Rahman for his invaluable assistance and insight into the econometric model.

My sincerest thanks and appreciation to my wife and friend of 57 years, Esther Gonen, for her patience and encouragement during this journey. There was always a good cup of tea and a hot meal ready at the exact time of the day when my mind was glued to the computer screen for hours on end, tackling this thesis.

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List of Abbreviations

AGFI – Adjusted Fit Index

ASA – Attraction-Selection-Attrition

CFA – Confirmatory Factor Analysis

CFI – Comparative Fit Index

CWB – Counter-Productive Work Behaviour

EFA – Exploratory Factor Analysis

FFDI – Financial Foreign Direct Investment

FDI – Foreign Direct Investment

GDP – Gross Domestic Product

GFI - Goodness of Fit Index

GLM – General Linear Model

HERO – Hope, Efficacy, Resilience, Optimism

KMO – Kaiser, Meyer, Olkin

MHO – MacDougall, Hecksar, Ohlin Model

MLR – Multinomial Logistic Regression

MNC – Multinational Companies

MNE – Multinational Enterprises

MSA – Measure of Sampling Adequacy

NFI – Normal Fit Index

OB – Organisational Behaviour

OCB – Organizational Citizenship Behaviours

OECD – Organisation for Economic Co-operation and Development

OLR – Ordinal Logistic Regression

OR – Odds Ratio

PCA – Principle Component Analysis

PGFI – Parsimony Goodness-of-Fit Index

PNFI – Parsimony Normal Fitness Index

POB – Positive Organisational Behaviour

PsyCap – Psychological Capital

RMSEA – Root Mean Square Approximation Error

SEM – Structural Equation Method

SES – Socioeconomic Status

SRMR – Root Mean Square Residual

SSA – Sub-Saharan Africa

VC – Venture Capital

Word Cloud of Thesis

CHAPTER 1: INTRODUCTION

1.1 Introduction

Globalisation has contributed to foreign direct investment (FDI) as nations and corporations engage in overseas markets to meet their requirements. In the early 2000s, FDI began to focus on the home country's money flow. However, technological and human capital development focuses on acquiring technology and human capital (Qu & Green, 2018). Several governments have devised methods to attract foreign investment; such as offering investment incentives and tax breaks.

FDI also depends on foreign investors' numerous methods of joining foreign markets (Moon, 2015). Using these techniques, one can use their investment to support the local economy by purchasing shares in the local firm, either by merging, acquiring, or creating an equity joint venture. The distribution of foreign direct investment in Asian markets depends on development, with China, Singapore, and Japan accounting for more than 50% of the region's total FDI. In other words, in the Asian market, middle and low-level economies use less foreign direct investments, and these factors, such as a lack of modern technology, contribute to this pattern (Witkowska, 2009). In Europe, similar features are referred to as high-level economies, such as Germany and the United Kingdom, which make up significant FDI investment. They use human capital and technological improvements to boost the GDP. Poland, Hungary, the Czech Republic, and Slovakia take average levels of all foreign direct investment. Economic growth was significantly affected by several variables. These elements include government policy, political stability, and human capital development. The effects of these elements play an essential role in economic development.

There appears to be a continuous cycle of economic turmoil in many emerging countries, as most of their inhabitants survive inadequate subsistence levels. Sustained economic growth has remained elusive in many countries in Asia, Africa, and Latin America.

Israel has been considered a developing country for most of its 70 years. This connotation has changed from developing to "Startup nation". This study examines various developmental variables and their effects on foreign direct investment from 1990 to 2019 using statistical techniques to distinguish between short and long-run economic

relationships. A particular focus will also be on the effects of startups via Foreign Direct Investment (FDI). Special attention is paid to the possible latent variables inherent in entrepreneurs of new startups and their effect on FDI.

Experts agree that foreign direct investment (FDI) is vital to the progress of developing countries' because it supplies the money and currency required and produces additional tax income from foreign investors (Quazi, 2007).

Foreign direct investment has also been attributed to growth and development due to capital, technology, managerial skills, jobs, and wealth. Inflows of capital enable a country to import products and services, pay off foreign debt, and have foreign currency required to import. Whether foreign direct investment (FDI) flows bring about genuine growth in developing countries should be considered.

Current studies indicate that FDI benefits economic growth in Sub-Saharan Africa (SSA), Asia, and Latin America, although gains are not spread equally or consistently (Egan, 2010; Adams, 2009; Mengistu & Adams, 2007). In nations that are members of the Organisation for Economic Co-operation and Development (OECD), in which Israel is a member, FDI seems to lead to domestic investment and yield growth (Adams, 2009).

The relationship between foreign direct investment (FDI) and economic growth is questionable if domestic investment fails. FDI is positively and substantially associated with economic growth and has influenced emerging Asian nations more than other countries.

This assessment significantly disagrees with Adams' findings for SSA nations (2007). Accordingly, foreign direct investment (FDI) supports growth by exerting efficiency-inducing effects rather than acting as a supplement to local investment. The crowding-out of indigenous investment is a direct result of FDI.

Recent studies on foreign direct investment and economic growth in Africa, Asia, and Latin America indicate that certain circumstances must exist before investment initiatives benefit the economy.

Various factors influence economic growth. Alfaro et al. (2004) examined cross-country differences in the efficiency of FDI. Nations with more robust financial systems could take advantage of foreign investment better than those with inefficient financial

systems. FDI inflows tend to be favourable for Latin American countries as long as their policies encourage more investment (Bengoa & Sanchez-Robles, 2005). It was discovered that foreign direct investment (FDI) was more productive than local capital formation in African countries (Sharma & Abekah, 2007).

Diverse influences on successful nation-building include political stability, human capital development, and governmental policy. Of these many components, the impact of these elements is the most crucial for overall economic growth.

1.2 What is considered a Startup?

The most popular definition is from Eric Ries (2011),

"*A startup is a human institution designed to create a new product or service under conditions of extreme uncertainty."*

Rooted in innovation, a startup aims to remedy the deficiencies of existing products or create entirely new categories of goods and services, disrupting entrenched ways of thinking and doing business in all industries. That is why many startups are known within their respective industries as "disruptors".

Another key factor that distinguishes startups from other companies is their speed and growth. Startups aim to quickly build ideas.

Startups typically begin with a founder (solo founder) or co-founders who have a way to solve a problem. The founder of a startup will begin market validation by problem interview, solution interview, and building a "Minimum viable product" (MVP), i.e. a "Prototype", to develop and validate their business models. The start-up process can take a long time (by some estimates, three years or longer), and hence sustaining effort is required. Sustaining effort are especially challenging in the long term because of the high failure rates and uncertain outcomes.

A minimum viable product (MVP) is a version of a product with just enough features to be usable by early customers who can then provide feedback for future product development.

1.2.1 How are Startups Funded?

Startups generally raise money through several funding rounds.

A preliminary round is known as **bootstrapping**, when the founders, their friends and family invest in the business.

- After that comes **seed funding** from so-called “angel investors,” high-net-worth individuals who invest in early stage companies.

Next, there are **Series A, B, C and D funding rounds**, primarily led by venture capital firms, which invest tens to hundreds of millions of dollars in companies.

- Finally, a startup may decide to **become a public company** and open itself up to outside money via an IPO an acquisition by a special purpose acquisition company or a direct listing on a stock exchange. Anyone can invest in a public company, and start-up founders and early backers can sell their stakes to realize a large return on investment.

This study will employ the terms "Startup" and "Innovative Startups" interchangeably, with the acknowledgement that the collected research data pertains specifically to Innovative Startups.

1.3 Importance of Startups within Israel

The Israeli economy has made strides by, increasing GDP per capita over the past 30 years. The GDP per capita for 2019 was recorded at 43,603 US dollars, with projected numbers of 2020, 2021, and 2022 for 44,177, 51,430, and 54,688, respectively (based on IMF numbers). This was compared with the value of $24,288 in 1990.

As shown in Table 1.1, Israel is ranked 3rd in startup ecosystems. If the total population count is considered and compared, Israel would be ranked number ONE, proportionate to the other countries. Given this crucial phenomenon, the immense importance of advancing the Israeli economy cannot be overlooked. A more detailed evaluation could reveal more information about which startups influence the economy.

Table 1. 1*:* **Global Countries Ranking of Startup Ecosystem**

Rank 2021	Change from 2020	Country	Population	Total Score	Quantity Score	Quality Score	Business Score
1	0	USA	331,449,281	124.420	19.45	101.17	3.80
2	0	UK	68,224,429	28.719	8.16	16.86	3.70
3	0	Israel	8,783,994	27.741	5.48	19.14	3.13
4	0	Canada	38,056,808	19.876	6.58	9.75	3.55
5	0	Germany	84,038,309	17.053	3.64	9.93	3.49
6	+4	Sweden	10,159,012	15.423	2.40	9.24	3.78
7	+7	China	1,444,615,335	15.128	1.33	11.46	2.34
8	0	Switzerland	8,714,309	14.943	3.82	7.58	3.54
9	-2	Australia	25,780,993	13.835	4.46	5.88	3.50
10	+7	Singapore	5,894,102	13.745	3.21	7.69	2.84

Startup BLINK 2021 Global Report

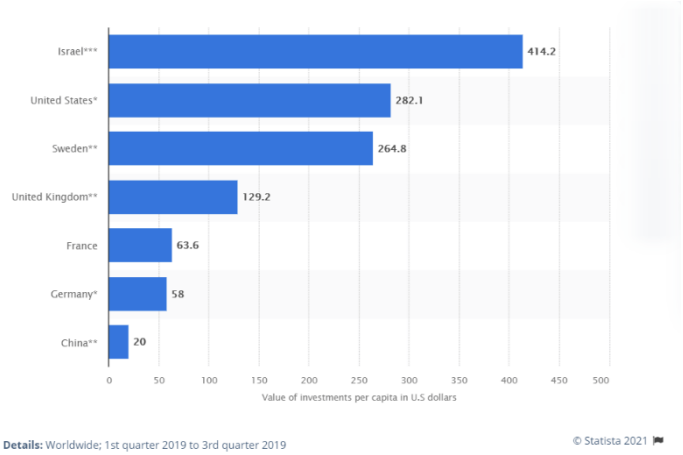
Quantity: Startups, co-working spaces, accelerators, and startup events.

Quality: Global influences that can boost ecosystems.

Business: This mixture of the success of local ecosystems, the general business environment and the ability to freely operate as a startup founder in the country or city.

The inflow of Venture Capital into Israel has risen tremendously, and as can be seen in Figure 1.1, Israel is the number one in the world as of 2019, with Venture Capital per capita at $414.20, almost double that of the United States and triple the United Kingdom. Venture capital is the number one indicator of investment in innovative startups.

Figure 1. 1: *Total value of Venture Capital Investments per capita in selected countries worldwide as of the 3rd quarter of 2019 (in U.S dollars)*

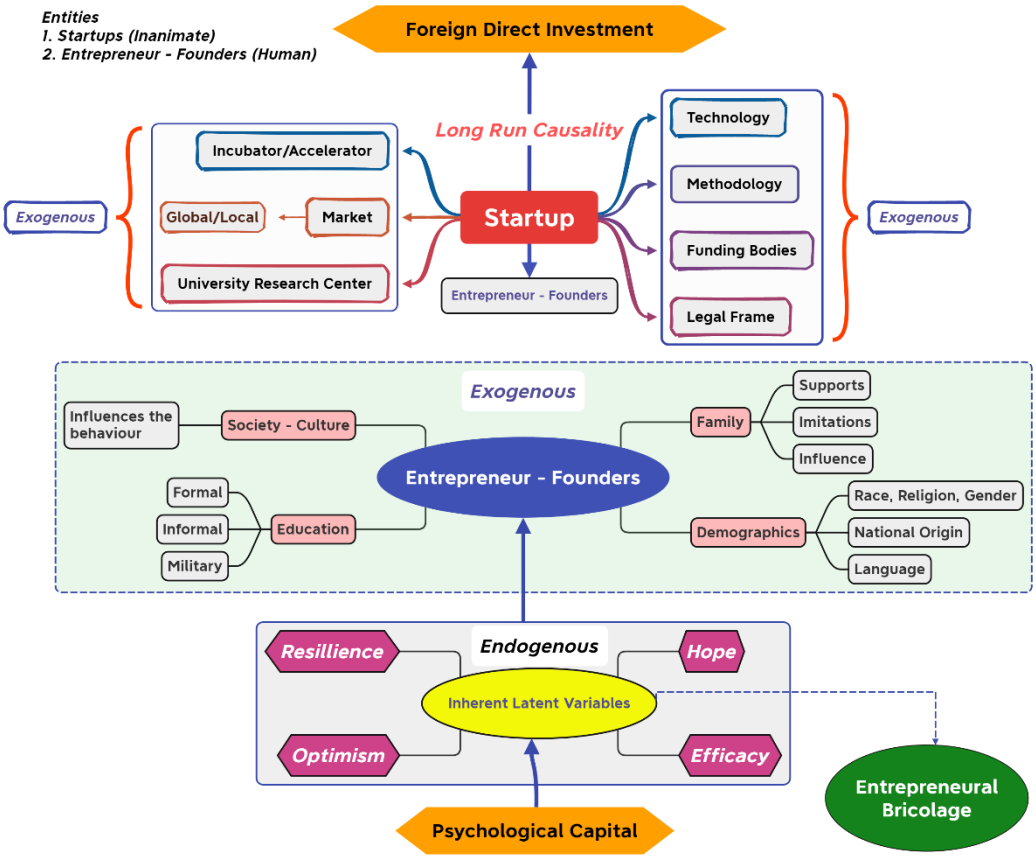


Statista estimates. (November 15, 2019). The total value of venture capital investments per capita in selected countries worldwide as of 3rd quarter 2019 (in U.S dollars) [Graph]. In *Statista*. Retrieved September 28, 2021, from https://www-statista-com.salford.idm.oclc.org/statistics/1071105/value-of-investments-by-venture-capital-worldwide-by-key-market/

1.4 The Makeup of a Startup Ecosystem

The startup ecosystem consists of two entities: an inanimate and a human. The inanimate entity is the startup, and the human entity is the entrepreneur or founder.

Figure 1. 2: *The Makeup of a Startup Ecosystem*



1.4.1 The Startup entity

The startup entity comprises numerous **Exogenous** variables that include this entity's composition: Technology, Methodology, Funding bodies, Legal frame, Incubator/Accelerator, local market and global, University research centres, the Entrepreneur or Founder. These variables are all exogenous, making the startup entity a heterogeneous group. Not all startups have the same number of variables, with one exclusion, all of which have an entrepreneur or founder.

This study shows that the startup entity has a long run causality effect with Foreign Direct Investment.

1.4.2 The Entrepreneur–Founder entity

The entrepreneur–founder entity also includes many **Exogenous** variables that influence their makeup. Family surroundings can impact the type of support, imitations, and influence; the demographic orientation of race, religion, gender, national origin and language, society and culture influence behaviour, and formal, informal, or military education. Again, all these exogenous variables contribute to a heterogeneous group, as not all of these variables are found in each entrepreneur.

The human entity of entrepreneurs-founders belongs to a larger group of all humans who possess inherent latent variables found in Psychological Capital theory, comprising Hope, Efficacy, Resillience, and Optimism. As these latent variables are found in all humans, this constitutes a homogeneous group to which the entrepreneurs-founders belong.

Using a homogeneous group, it is possible to differentiate between subgroups using an acceptable index to evaluate the level of each group. The Psychological Capital Index (PsyCap) evaluated and distinguished the entrepreneur-founder group from all other groups. This group is called Entrepreneural Bricolage – to make something out of nothing – the process individuals or firms adopt in the early stages of addressing a challenge.

1.4.3 Summary

Figure 1.2 shows that the Entrepreneur-Founder is an exogenous variable in the startup entity. However, it can also be called an endogenous variable in the same startup entity because it has four latent variables of psychological capital. This is an oxymoron. When investors or venture capitalists look at a startup today, they first scrutinise the capabilities of the founders over and above the innovative idea. Have the founders all the inherent capabilities (psychological capital) to make this a successful venture? This study shows that the entrepreneurs'-founders have a higher PsyCap index than other groups in the human entity, which strengthens the possible success of the startup entity and the flow of investment capital into it.

1.5 Problem Statement

Globalisation has led to increased competition and integration worldwide as businesses enter markets that suit them (Corcoran & Gillanders, 2014). This has led to the increase in FDI worldwide, significantly impacting different economies. However, countries have realised significant benefits from foreign direct investment entering their markets and have committed to developing strategies that would ease the entry of foreign companies into their markets. However, countries have numerous strategies that can be used to increase FDI, each unique to a specific variable that determines their success (Corcoran & Gillanders, 2014). The problem is identifying an appropriate strategy to increase FDI without wasting resources. Choosing the right strategy and increasing globalised competition are significant in European and Asian economies. Both regions have made significant attempts to increase FDI to realise its benefits, such as improved Gross Domestic Product (GDP), employment, and others. However, stakeholders in both regions must choose the correct strategy to increase their FDI. Both European and Asian nations face the challenge of identifying their weaknesses, the needs of foreign companies, and future changes to select the best strategies for attracting FDI. Lack of such information hinders the resolution of this daunting process. This study evaluated this lack of knowledge in unique and unprecedented research on the Israeli market that integrates startups and FDI's macro and microeconomic influences.

1.6 Purpose of the Study

The main objective of this study is to examine the possible interdependence between startups and FDI in Israel. This study analyses the concepts behind foreign direct investment and how it has gradually increased in the modern economy. Factors such as globalisation, technology, competition, and others are investigated to identify their correlation with FDI increases (Moon, 2015). Previous studies related to FDI have not attempted this unique method to evaluate the possible connection of psychological capital (PsyCap) as a latent variable in the influence and productivity of entrepreneurs and their effects on the flow of FDI into the country.

Furthermore, other economic variables, such as GDP, Impex – the openness of the economy, the Heritage Index – economic freedom, and the number of startups and

policies, were correlated with FDI strategies to showcase the success or failure of the strategies used in foreign direct investment.

The results can be presented to the academic and business worlds to participate in effective decision-making while identifying ways to boost FDI.

1.7 Theoretical Framework for Foreign Direct Investment

According to Dobbelaere and Kiyota (2018), market imperfections theory has contributed to foreign direct investment. This theory postulates that FDI would not have started in the world without market imperfections. The theory of market imperfections identifies imperfections as the inefficient allocation and distribution of resources. Scale economies, governmental rules, trade restrictions, tariffs, and other factors, as well as excellent markets that observe the uneven distribution of allocation of resources and markets worldwide, can all contribute to imperfections.

Worldwide companies move to markets to satisfy their demands or meet their needs. Vyas and Giri (2019) argued that if resource allocation and distribution were perfect under the market imperfections theory, FDI would not exist, as only international trade would be needed.

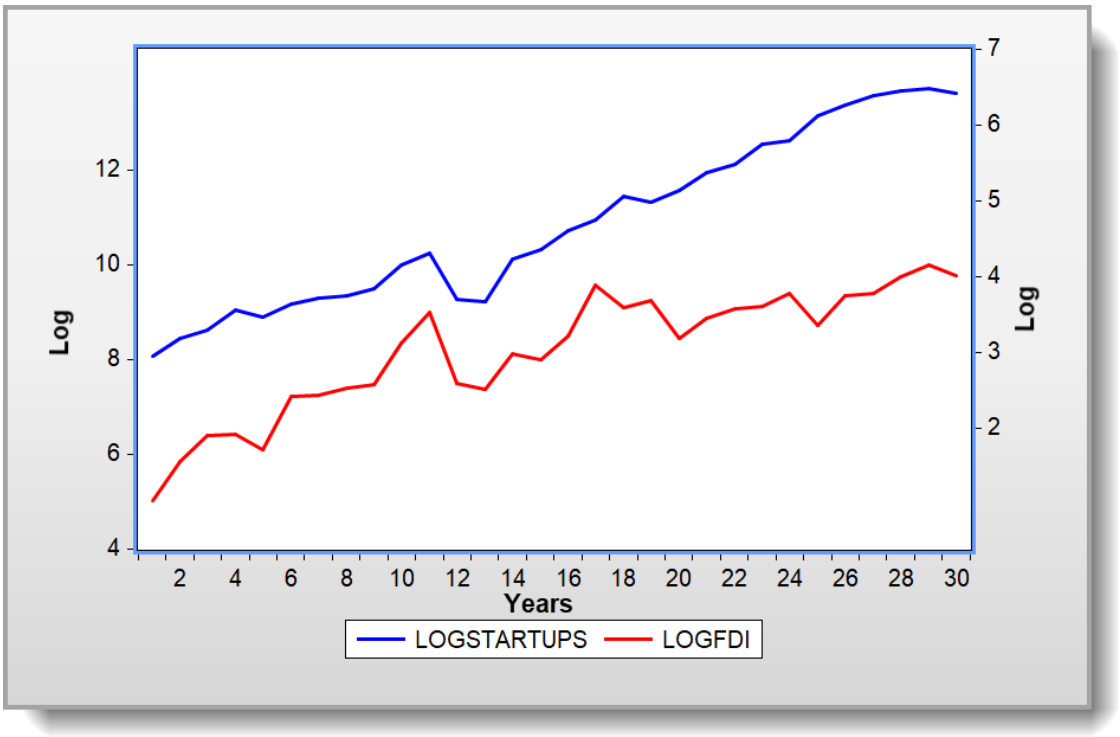
The portfolio capital theory is inadequate for identifying FDI (Qian, 2018). The portfolio capital theory focuses on interest rates and capital to describe the movement of direct investment (Qian, 2018). However, FDI involves the movement of variables other than capital and interest rates; hence, portfolio capital theory is inefficient in describing it (Colombo et al., 2018). Furthermore, foreign direct investment involves the transfer of resources other than capital, such as managerial skills, international markets, technology, and human resources.

The product cycle hypothesis can also be used to show the traits of FDI worldwide. According to the product cycle theory, businesses innovate products based on threats or promises in the market; they intend to sell the final goods and services (Tolentino, 2017). As such, FDI increased because of the opportunities presented by international markets concerning their production goals. However, the product cycle emphasises that the home market is vital for the growth of innovative businesses (The Business Professor, 2021). This theory argues that the home market presents market variables that can be controlled and understood. Therefore, to start FDI, original companies must have initiated their

business in domestic markets before entering international markets, which is the case with many multinational companies.

With this in mind, the relationship between FDI and startups must be researched, as, in the past, each was studied separately, one on the macroeconomic arena using various statistical techniques for FDI and a separate unrelated study of entrepreneurship / Startups at the micro level, while no direct cause-and-effect relationship between the two. The comparison chart (Figure given below 1.3), shows the relationship between the number of new startups in Israel per year and the increase or decrease in capital flow into the country, that is, foreign direct investment (FDI). This relationship was investigated in this study.

Figure 1. 3: *Comparison of FDI & Startups 1990-2019*

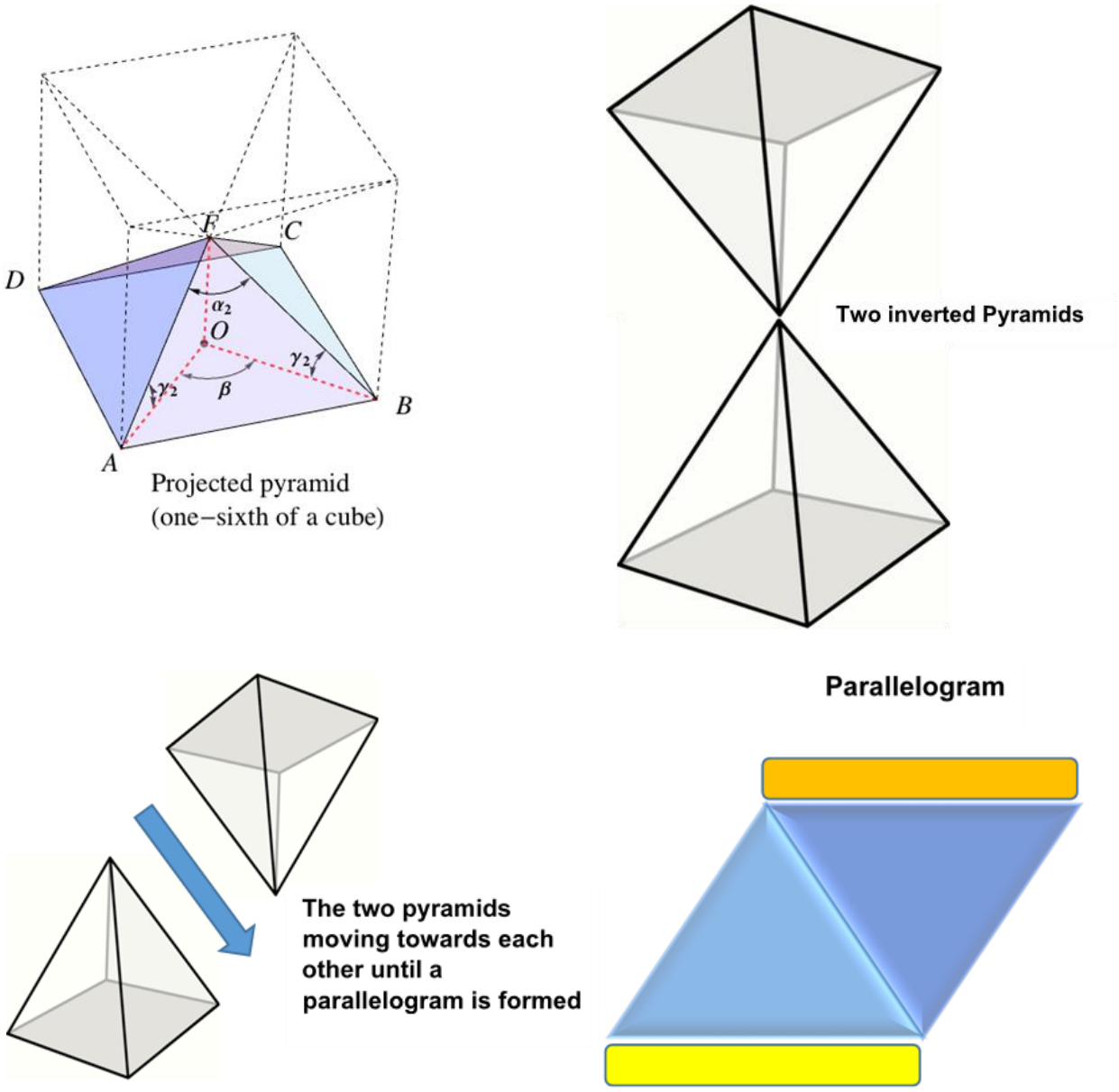


Source: World Bank for the FDI data, Start-Up Nation Central for the innovative startups

In section (2.4) on Global Capital Flow, it is noted that there are four classes of investment arms; short-term, long-term, portfolio, and direct investments. FDI is considered a long-term direct investment, while portfolio investments are near-term investments. The above chart shows that as the number of startups increased per year, FDI investments increased. This process increased until 2018, when a distinct decline in new startups caused a decline in FDI (long-term investment).

The proposed model is based on the relationship between the number of new startups in Israel and global capital flow into Israel. The model is entitled 'Inverted Pyramid and Parallelogram Theory or Paradigm', created by Perry Gonen. The model is based on the geometry of two opposing pyramids at the apex (Figure 1.4). A parallelogram is formed when the two pyramids slide downward towards each other. One pyramid contains all Global Capital Flows, while the second pyramid contains startup elements, as shown in section 2.6 on factors affecting startup success.

Figure 1. 4*: The Inverted Pyramid and Parallelogram Theory or Paradigm*



The initial starting model is a pyramid of International Capital Flow with layers of short-term investment, second layer of long-term investment, third layer of portfolio investment, and last layer at the apex, direct investment or FDI. At its base the opposing pyramid initiates a new inherent layer of psychological capital, technology and product layer, a strategy layer, a marketing layer, a management layer and at the apex, a financial layer. (Figure 1.5).

The process begins when the first new startup is formed. Usually, this startup has a revolutionary product or idea, strategy, and marketing ideas. Entrepreneurs can initially invest their funds in new ventures but will need short-term financing at some stage. Financing can be conducted either locally or internationally, depending on where interested parties want to invest in the short term. As more startups evolve, they also need initial capital, which increases short-term investments in the market. As this process continues, the top pyramid of international capital flow becomes heavier and starts sliding down towards the opposite pyramid (Figure 1.6). The first startups in this process advanced and shifted short-term financial capital to longer-term funds. Again, this process causes the upper pyramid to slide even further towards the base of the startup pyramid. As this process continues, startups increasingly enter the market until the pyramids form a parallelogram.

Figure 1. 5: *The Initial Starting Model*

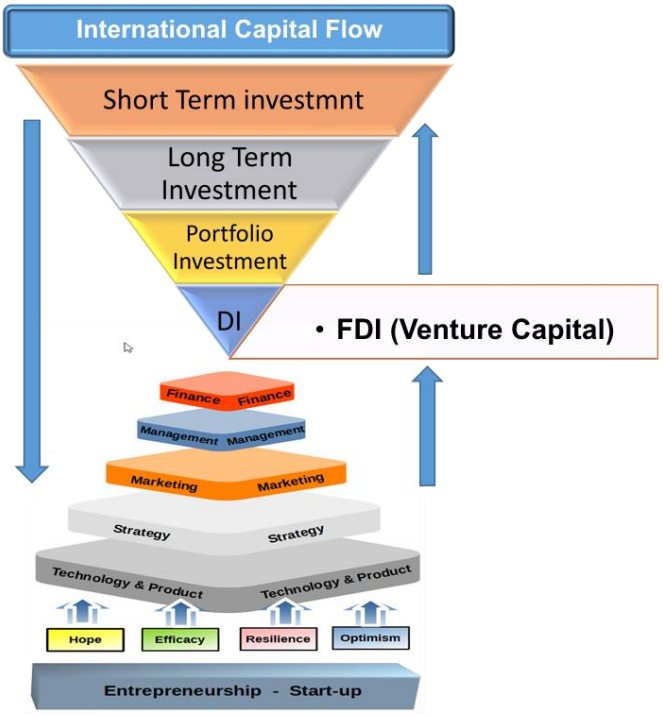
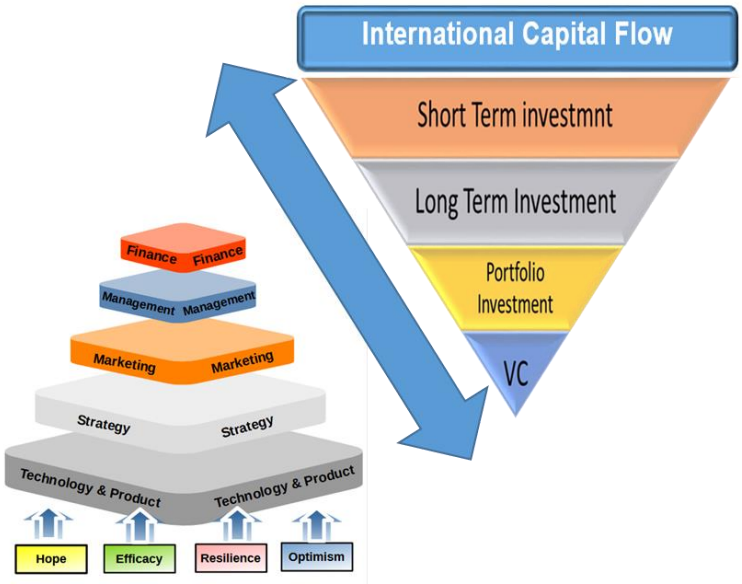
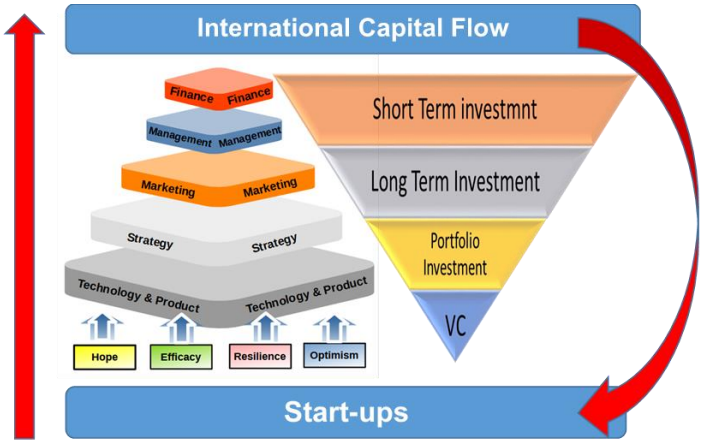


Figure 1. 6*: The Intermediate Model*



Once a parallelogram was formed (Figure 1.7), the entire system was in equilibrium. As new startups are formed, the lower base of the parallelogram expands, and geometrically, the upper and opposite sides expand, increasing the international flow of funds into the economy. If there is a decrease in the number of startups, there will eventually be a decrease in capital flow. As this process expands or contracts, increasing short-term money is converted into long-term and direct investment, or vice versa, known as FDI. Increasingly, FDI investments are funnelled through venture capital funds, which are not speculative because they are tied to economic development.

Figure 1. 7: *The Final Parallelogram Model*



Source: Author's elaboration

1.8 Fundamental underlying Latent effects influencing Startups

1.8.1 Theoretical Background

The researchers will use a structured questionnaire from startups and "incubator accelerator centres" in Israel, under which a Likert-scale type of question will be used. A Psychological Capital Questionnaire (PCQ-24) on a sample set of startup companies and incubator centres will be used for primary data from startups and incubator initiatives. One set of data comes from a sample of incubator initiatives, while the sample of startup companies is divided into industry categories. Owing to the impact of COVID-19, primary data from startups and incubators will be collected using online surveys.

Luthans et al. (2015, p. 2) define PsyCap as "*an individual's positive psychological state of development that is characterised by (1) having confidence (efficacy) to take in and put in the necessary effort to succeed in challenging tasks; (2) making positive attribution (optimism) succeed now and in the future; (3) persevering towards goals and when necessary, redirecting paths to goals (hope) to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success*".

According to Luthans (2002a), these four constructs are the best fit: **H**ope, **E**fficacy, **R**esilience, and **O**ptimism. This finding was confirmed by Luthans et al. (2004) and Luthans and Youssef (2004). This has been summarised using the acronym **HERO.**

The integrated framework of the determinants and effects of firm creation by Gómez-Gras et al. (2010) is a comprehensive tool for understanding the factors that influence the formation of new businesses. The researcher believes that using HERO will reveal the inherent attributes that drive the startup and entrepreneurship community in Israel and other determinants of government intervention. The Israeli Software Startup Ecosystem proposed by Kon et al. (2014) can also be linked to this.

1.8.2 Introduction to Psychological Capital

The current business environment requires a flexible, innovative, and speed-to-market strategy that focuses on developing and managing human capital assets. Extensive research has shown that human resources are a crucial victory element when positioned within corporate strategy and are entirely engaged in the company (Harter et al., 2002). Luthans et al. (2004) define human capital as employees' knowledge, experience, skills, and expertise. Apart from human capital ("what you know"), other

capital such as economics ("what you have") and capital ("whom you know"), is also needed for all types of organisations to seek improvement, which is a sustainable and competitive advantage. Previously, a competitive advantage was viewed and decided by firms using financial methods or a plan that exceeded what their competitors might imitate. The wide availability of information makes it extremely difficult to emulate a competent and motivated workforce. This leads to a fairer playing field based on more traditional resources, which has minimised its importance for competitive advantage. Consequently, it allows the emergence of valuable models of organisation and practices by investing and developing precious workplace resources.

1.9 The Psychological Capital (PsyCap)

Psychological capital is a person's psychological state of growth characterised by self-efficacy, which has the confidence to undertake and make the necessary efforts to ensure success in tasks that are relatively challenging (Luthans et al., 2007). Having positive thoughts (optimism) on how to succeed in the present and the future; redirecting paths to objectives when necessary to realise success; persevering towards purpose; attaining success by bouncing back beyond resilience in problematic situations. PsyCap is developed by investing in gifts such as human, social, and economic capital. This is done to maximize the chances of success in the future; however, PsyCap also receives practical gifts of upcoming advantages. As explained by Kersting (2003, p. 26), PsyCap is about one's life component condition. Combining constituents, capital, and experience forms a value. Optimism, Effectiveness, Resilience, and Hope (Luthans, 2012) comprise the importance of PsyCap.

1.9.1 Self-Efficacy

According to Albert Bandura's theory and research, self-efficacy is expressed as self-confidence, motivation, cognitive resources, and actions that must be performed based on the surrounding circumstances (Luthans & Youssef, 2004). Self-efficacy refers to employee’s confidence in their ability to gather the morale, cognitive assets, or action channels required to effectively perform a particular situation.

1.9.2 Hope

It can be defined as ‘a *cognitive set built on a mutually generated feeling of successful agency and planning routes’* (Snyder et al., 1991). Hope shares standard

features with other positive capacities, but in-depth research supports its conceptual distinctiveness and discriminatory legitimacy. In particular, the hope pathway factor causes notable variations in its regular application and remaining capacity of PsyCap (Luthans et al., 2004). Therefore, hope entails initiatives to achieve one's goals.

1.9.3 Optimism

Seligman (1998) defined optimism as a lively illustrative style that links positive events to internal, long-term, and pervasive causes and adverse circumstances to external and short-term events. Optimistic individuals tend to attribute positive outcomes to their personal choices and abilities. This can help to boost self-esteem and confidence. In addition, it allows them to disassociate from life events that are considered harmful. Therefore, they could protect themselves against self-blame, guilt, and depression.

1.9.4 Resilience

Developmental psychology is a source of resilience, which refers to the potential of people and organisations to recover from adversity or stress (Luthans, 2002a). Compared to the other characteristics of PsyCap, resilience differs in that it has a responsive quality rather than a proactively promoting strength.

1.10 Significance of the Study

FDI has significant benefits for host countries because it boosts stagnant economies, increases employment and improves GDP rates, among other advantages (Corcoran & Gillanders, 2014). Additionally, FDI rates have been increasing with the rise in globalisation and competition and have caused nations to devise strategies to improve their foreign direct investment. There is a need for governments and international companies to develop effective strategies for their FDI. However, developing and selecting the correct strategy can be daunting as the scope of the information and variables to be analysed can be vast. The findings of this study highlight the possible interrelation between startups and FDI and promote a new understanding of the relevance of nurturing the latent variables found in the psychological capital concept. This study will help stakeholders in different markets to make effective decisions about their FDI strategies.

The academic world would also benefit significantly from this study, as it will add to the knowledge pool on FDI. With increasing globalisation and technological development, foreign direct investment is constantly changing; therefore, updates on how FDI strategies evolve are required.

Aim of the Research

Analyse the possible co-integration of FDI and startups in Israel and the effect of latent variables as a forceful motivation for startup founders in Israel.

Research Objectives

- Identify the connections between FDI and startups in the Israeli economy.
- Identify other FDI strategies used in the Israeli market.
- To compare the underlying motivations of founders of startups in Israel with those of studies worldwide.

Research Questions

Economic aspects remained the main attraction for foreign direct investment companies and were the main drivers for international companies to enter Israel. The literature review section details the various strategies that different countries and regions have used to attract foreign direct investment companies and become one. This chapter shows a significant research gap between the features and effects of Israel's foreign direct investment and the local startup ecosystem from a comparative perspective. The review noted a significant research gap in Israel's foreign direct investment separately, but few or no publications have compared them intricately. This project contributes to this research. This study focuses on the following research questions:

- *RQ1: What are the latent factors that affect entrepreneurs in Israel venturing into Startups?*
- *RQ2: Does age affect these latent factors?*
- *RQ3: Is there a positive or negative influence between certain latent variables?*
- *RQ4: Is there an independence between FDI and Startups in Israel?*
- *RQ5: Is there interdependence on Startups in other countries?*

1.11 Proposed Methodology

The research chosen is a twin-track design with FDI theory on the one hand and psychosocial capital on the other. This is an explanatory sequential mixed-method approach, that enables the researcher to deal with the WHAT (quantitative) side using statistical methods and the WHY (qualitative) question using a Likert questionnaire. It is prudent to divide the research methods into two sections explaining each instant's different methodologies using this approach.

This research collected FDI information from secondary sources, such as government websites and reports, regional bodies' reports, the EU and World Bank, and the Heritage Foundation.

The data for the startup and control groups were collected using a Likert-type questionnaire. Several statistical methods have been used to extract the relevant information.

1.12 Outline of the Organisation of the Study

The research progresses into Chapter 2, which details the literature review that analysed various publications regarding FDI and PsyCap. Chapter 3 reviews the Israeli economy. Chapter 4 presents the methodology approach for FDI and Psychological Capital. This is followed by Chapter 5 detailing the statistical analysis of FDI, Chapter 6, which details the results of the applied statisitcs of Psychological Capital. Chapter 7 presents the discussion and correlations found in the Results section. Chapter 8 provides a final discussion and recommendations.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction to the Literature Review

This chapter critically synthesises the previous scholarly work on foreign direct investment and psychological capital. Parameters such as methodologies, results, and limitations of existing studies have been identified. The reviewed studies, including journals, conference proceedings, and doctoral theses, were compared and contrasted, allowing for the identification of research gaps and suggestions on which the current research has bridged informational gaps. The first sub-section examined previous scholarly works regarding the long-term causality relationship between foreign direct investment inflows and innovative startups. In this sub-section, the literature review highlights the key determinants of foreign direct investment inflows, innovative capabilities and absorptive capability of startups. Synthesis of the existing literature on long-term causality between the two variables enhances an understanding of the impact of foreign capital on the innovation ecosystem in the country and potential areas for further research. Additionally, the subsection unravelled the intricate connections between startup innovations and foreign direct investment. Owing to the evolving global economy, the potential research areas and implications of previous scholarly findings in the current study have been highlighted. The influence of variables such as technology transfer, local entrepreneurial ecosystem, and sectorial differences in foreign direct investment, have been explored. Exploration of the wide range of factors allowed the identification of the key drivers and barriers to entrepreneurial actions, especially the growth and development of startups. Findings from previous scholarly works allowed the identification of interventions implemented to promote innovative startups and limitations associated with the measures.

The second subsection examines the influence of latent variables related to the founders and co-founders of startups through psychological capital. Using previous literature, the subsection examines the complex interplay between the success of startups and founders of psychological capital. This aspect is achieved through examining the collective and individual impact of resilience, hope, optimism, and efficacy on entrepreneurial endeavours. The literature review on these parameters provides supportive and contrasting views about the influence of founders' psychological capital.

The subsection also discusses how they inform training programs and design interventions that aim to enhance the psychological factors and sustainability of startups. By reviewing existing studies on resilience, optimism, hope, and efficacy, the literature review provides insights into ways psychological factors within co-founders and founders influence the growth of startups. The impact of entrepreneurial team dynamics within the context of psychological factors has also been examined. Notably, the dynamics of co-founders and their combined psychological influence on the decision-making processes and growth of startups have been examined. Additionally, supporting and contrasting opinions from previous scholarly works have been established, and the potential ways the current research has addressed informational gaps have been delineated.

The following subsection provides the research gaps identified in the existing studies. The research gaps from the reviewed studies guided the formulation of the research questions.

The final subsection summarises the main arguments and findings of the literature review and introduces the methodology that guided the collection and analysis of data.

2.2 Foreign Direct Investment Background

Foreign trade is by no means, a modern trend. In the ancient era, the fortunes of Phoenicians and Carthaginians were highly focused on foreign commerce. Commercial development involves internationalisation, foreign direct investment (FDI), cooperative ventures, and strategic partnerships (Moore & Lewis, 1999). In Europe, as early as the Middle Ages, individual Multinational Companies (MNCS) were identified in early modern times (Dunning, 1993a).

However, the roots of modern multi-national market enterprises are related to industrial revolution. Current MNEs originated from a significant international influence movement in the nineteenth century (Dunning, 1993a: p. 99). The historical background refers to foreign direct investment's actual definition and effects (FDI). While several firms crossed the Atlantic by 1850, the search for capital became FDI's most common motivation across borders, to define investment as market seeking (Dunning, 1993a: p. 100). Economists have argued over this issue and its particular effects on different world economies. Much research has been conducted to find the main underlying motivations

for advancing FDI, especially the works produced by John Dunning, Stephen Hymer, and Raymond Vernon.

Throughout the 1950s and the 1960s, multinational companies (MNCs) increased in popularity, including foreign investments. The power of globalisation appeared at the end of World War II, which gradually cultivated FDI growth. Increasing flows of FDI from the US to European countries have created an impetus for other investigators to examine MNCs' questions and industrial development. In this context, efforts have been made to analyze various FDI hypotheses.

Subsequently, FDI's startups have defined capital market concepts and equity transactions. Initially, direct investment was the only foreign flow of money (Kindleberger, 1969). FDI, in turn, was a subset of fund assets until 1950. Accordingly, the fundamental explanation for capital transfers is a disparity in interest rates. This strategy suggests that capital continues to migrate to regions with the best returns without uncertainty or threats. However, the fundamental distinction between equity and direct investment is excluded. Direct investment implies that there is power. A crucial theoretical disadvantage of the interest rate hypothesis is that it does not articulate control. A borrower can suggest investing capital in the international sector when interest rates are higher in foreign countries. However, there is no reason to monitor the businesses to which they loan capital (Hymer, 1976).

In the 1960s, the terminology for correct FDI descriptions was attempted. Moreover, with the rising position of MNCs, academics have attempted to incorporate their research into FDI theories (Rayome & Baker, 1995). Since then, these ideas have illuminated the numerous forces that regulate foreign capital movements. Many studies view business shortcomings as explaining FDI movements, whereas others consider oligopoly and monopoly advantages. FDI ideas often fall into the category of foreign exchange. An effort is made in the following section to analyse these hypotheses.

1. FDI and MNC are used interchangeably in this review because international companies primarily power FDI.

2. This attempt has three objectives: (i) to obtain an awareness of the significant incentive for businesses to move abroad; (ii) to highlight the shortcomings of these

hypotheses; and (iii) to study the hypotheses that describe the influx of FDI from developed countries.

Caves (1996) suggests that many countries' efforts to draw foreign direct investment result in possible favourable economic impacts. FDI will improve efficiency, technological transition, managerial expertise, skill sets, and international trade networks, and decrease unemployment, and exposure to global markets. Globally, FDI is known as a driver of jobs, high-efficiency growth, and technical spill-over. FDI is a significant source of finance, replacing bank loans for higher production and exports, exposure to foreign markets, and foreign currencies.

Findlay (1978) also emphasised the value of technological transition, assuming that FDI contributes to the distribution of new technologies to local businesses. These thoughts, supported by Borensztein et al. (1998), see FDI as a way to achieve spillovers in manufacturing, with a higher contribution to economic development than national expenditure.

However, FDI can overpower local businesses and negatively affect their economic development. Hanson (2001) believes that there are a few beneficial consequences; Gorg and Greenaway (2003) suggest that the rest will be detrimental. Lipsey (2004) concludes that the effect is strong, but the relationship between FDI and economic growth is not specific. Hirschman (1958) suggested that agriculture and mining have minimal positive impacts. The possible impact on the economy depends on the investment's quality.

Foreign investors look for markets in which their superior technology and knowledge can be advantageous for gaining market share. One possible reason for this is that foreign markets do not attract multinational corporations (MNCs) to invest in FDI.

Although several scholars have attempted to clarify the FDI effect, we cannot assume that a general explanation was adopted. However, according to Kindleberger (1969), there is a consensus that FDI would not exist in the world economy of "perfect competition".

Therefore, free trade is the best option to compete in the world economy if economies operate successfully without obstacles to commerce or competitiveness. There must be a form of distortion to assess the understanding of direct investment, first understood by Hymer (1976). He argues that local companies should often have more substantial knowledge of local economic conditions and that two conditions are required for FDI.

- The viability of any investment by a foreign firm must have a distinct financial advantage.
- The investment market must be imperfect (Kindleberger, 1969).

The flow of capital from one economy to another across borders is an accomplishment of FDI. This can be found in the balance of payments of each country, host, and origin country.

The revenues obtained from these investments are related to the capital flows of stocks and interest (Lipsey, 2001).

Ricardo's "competitive benefit" principle was the first attempt to describe the FDI. However, this hypothesis, based on two economies, two goods, and extensive heterogeneity of variables at the local level, cannot justify FDI. Thus, this theory has never been considered as an explanation for FDI. Because Ricardo's theory of competitive advantage does not justify the growing share of FDI, other models have been used, including the theory of portfolios. Again, this idea was doomed to fail, as the underlying assumption was that international participation in a portfolio could not clarify direct investment. If the hypothesis prevails, money can go from a low-interest rate to a high-interest rate economy, as long as there is no danger or obstacle to capital flow. However, these claims have no clear foundation, and the implementation of threats and challenges to the movement of capital erodes the theory's reliability and free flow of capital in either direction (Hosseini, 2005).

Although more plausible, the latest foreign trade models cannot grasp FDI dynamics and other modes of global development. The new international trading hypotheses do not clarify global equity or other foreign investment sources (Hosseini, 2005).

Table 2.1 summarises all theories of FDI determinants over the years. None of these theories has investigated the cause and effects of startups and their primary underlying effect on the influence of FDI. Most studies on FDI based on the macroeconomic level use various statistical methods to examine the different determinants that could influence the outcome of FDI in a country, while ignoring non-economic determinants at the micro-level. This study uncovers the link between the underlying latent determinants of startups and their impact on Israel's foreign direct investment. The list of determinants found in 103 empirical studies over 50 years is shown in Table 2.2.

Over time, FDI is essential for a country's economic growth while instrumentally improving business performance and productivity. Entrepreneurship, or synonymously, startups, is a vital factor of economic growth and is becoming increasingly acceptable among economists worldwide.

Two significant features of the Israeli economy are vital startups and strong FDI. This study explores how these two are interlinked.

Over time, governments have invested in large funding schemes to encourage and attract FDI. Many incentives have been implemented, including tax holidays, subsidies, and special exemptions. One of the objectives of this study is to highlight the connection between startups and FDI and influence the tunnelling of government funds and programmes into startups.

Table 2. 1: *Summary of FDI Theories & Determinants*

Theory/Theoretical approach	Determinants	Author(s) (year)
Heckscher-Ohlim Model / MacDougall-Kemp Model	Higher return on investment, lower labour costs, exchange risk	Heckscher and Ohlim (1933), Hobson (1914), Jasay (1960), MacDougall (1960) Kemp (1964), Aliber (1970)
Market imperfection	Ownership benefits (product differentiation), economic of scale, government incentives	Hymer (1976), Kindleberger (1969)
Product differentiation	Imperfect competition	Caves (1971)
Oligopoly markets	Following rivals, responding to competition in domestic market	Knickerbocker (1973)
Product life cycle	Production function characteristics	Vernon (1966)
Behaviour theory	Fear of loss of competitive edge, following rivals and increased competition at home	Aharoni (1966)
Internalisation	Market failures/inefficiencies	Buckley and Casson (1976)
	Know-how (leads to horizontal internalization), market failures (leads to vertical internalization)	Hennart (1982, 1991), Teece (1981, 1985),Casson (1987)
Eclectic paradigm (OLI-Ownership, location, internalization)	Benefit of owning productive processes, patents, technology, management skills	Dunning (1977, 1979)
	Advantage of locating in protected markets, favourable tax systems, low production and transport costs, lower risk	
	Advantage of internalization cutting transaction costs, lowering risk of copying technology, quality control.	
New Theory of Trade	Market size	Dixit and Grossman (1982), Sanyal and Jones (1982), Krugman (1983), Helpman(1984, 1985), Markusen (1984), Ethier (1986), Horstmann and Markusen (1987, 1992), Jones and Kierzkowski (1990, 2001, 2005), Brainard (1993, 1997), Eaton and Tamura (1994), Ekholm (1998), Markusen and Venables (1998, 2000), Zhang and Markusen (1999), Deardorff (2001)
	Transport costs	
	Barriers to entry	
	Factor endowments	
Institutional Approach	Political variables: Financial and economic incentives	Root and Ahmed (1978), Bond and Samuelson (1986), Black and Hoyt (1989), Grubert and Mutti (1991), Rolf et al (1993), Loree and Guisinger (1995), Haaparanta (1996), Devereux and Griffith (1998), Haufler and Wooten (1999), Haaland and Wooteon (1999, 2001), Mudambi (1999), Barros and Cabral (2001), Benassy-Quere et al (2001), Hubert and Pain (2002).
	Tariffs	
	Tax rate	

Source: FEP Working papers N 433 Oct. 2011

Table 2. 2*: List of Variables from previous studies relating to FDI*

List of Variables from 103 Empirical studies relating to FDI (Appendix B)

Advertising	Firm size	Political instability
Average effective day	Foreign savings	Political rights
Average effective work day	Fuel costs	Poverty rate
Average gross production	GDP	Price of capital goods
Bank deposits	Government consumption	Price of crude oil
CO2 emissions	Gross fixed capital	Price of labour services
Coastal cities	The growth rate of real GDP	Quality of institutions
Common language	Human capital	R&D spending
Country Portfolio	Imports	Rate of growth GNP
Credit allocation	Income velocity of money	The ratio of white to Blue-collar workers
Debt services	Inflation rate	Return on Capital
Debt stock	Infrastructure	Sector investment
Distance between trading countries	Interest rates	Special economic zones
Domestic Savings	Labour Wages	The stock of fixed and current assets
Education level	Literacy ratio	Tariff discrimination
Employment ratio	Market size	Tariff rates
Exchange Rate	Mining and Petroleum industries	Tax rates
Exports	Natural resources	Time and demand deposits
FDI	The net flow of private capital	Total credits to total debts
FDI % of GDP	The net inflow of foreign capital	Total investments
FDI by sector	Net worth and liabilities	Total population
FDI in manufacturing	Number of employees in Foreign Companies	Trade balance
FDI profit	Number of internet users	Trade liberalization
FDI stock in construction	Number of telephones per 1000	
FDI stock in the Mining industry	Per capita GDP	

2.3 Theories of Foreign Direct Investment (FDI)

FDI is viewed as a positive influence, as it stimulates growth by contributing to overall economic development and diversification (Wang, 2009). Governments from both advanced and developing countries consider that FDI helps alleviate economic stagnation and surround poverty strata (Brooks et al., 2010). Specific research has proven to be useful as a determinant of foreign direct investment.

Since the 1960s, various theories have been introduced to explain international investments. Several variables (both organisational and resource considerations) exist, but no single mechanism exists to describe how foreign investment flows can be explained, both macro and micro (Dunning & Lundan, 2008). The internal and external features inherent to the company, such as proprietorship and economy of scale on the micro side, lack of capital and a favourable business environment on the macro side, resources and starting conditions, political and regulatory security, and stability enter the market (Faeth, 2009).

The rapid expansion of foreign direct investment (FDI) and international trade over the last few decades (Mohamed & Sidiropoulos, 2010) has prompted a detailed investigation of MNC behaviour and the determinants of FDI (Faeth, 2006). Empirical studies have addressed the critical variables that explain the concentration of multinational investments in particular regions and their geographic location decisions (macro dimension). However, there is disagreement among studies regarding whether there is a general relationship between the specific determinants. Most authors (referenced in Table 2.1) have emphasised the importance of FDI determinants at the forefront of their discussions and have developed (various) differing theories to expand on this phenomenon.

2.3.1 Theory: Heckscher-Ohlin Model / MacDougall-Kemp Model

Determinants: Higher return on investment, lower labour costs, exchange risk.

From the expositions of Heckscher-Ohlin (1933) and MacDougall (1960; 1964), the first assumption about foreign direct investment was the MacDougall-Hecksar-Heckscher-Ohlin (M-H-O) model, which held the view that investment in foreign markets generated higher profitability and lower employment costs than competing in other markets.

One of the first theories was developed by G.D.A. MacDougall (1960), which was eventually expanded by M.C. Kemp (1964). They demonstrated that capital flows from developed to undeveloped countries move between themselves. When the price of capital is equal to its marginal productivity, it is interpreted that the marginal productivity of capital in both countries tends to equalise. This phenomenon eventually improves welfare, leading to efficient use of resources.

2.3.2 Theory: The Hymer-Kindleberger hypothesis of Market imperfection.

Determinants: Ownership benefits (product differentiation), economies of scale, and government incentives.

Hymer-Kindleberger suggests that all firms have advantages (not just individual ones, such as market knowledge) in foreign production (Hymer, 1960; 1968). Furthermore, overseas direct investment does not involve transferring capital and can be provided in various ways other than direct investment. It is about moving tangible and intangible resources, including business models and human resources (Hymer, 1960: p.69). FDI is, in no small part, related to the immaturity of international financial markets. Institutes replace market failures by directly investing in them (Hymer, 1960: p.48).

2.3.3 Theory: Product Differentiation

Determinants: Imperfect competition

Caves (1971) well-defined scientific principle is based on two conditions. First, consumers must realise that although products ("brands") within a commodity class are near alternatives to each other, goods outside the class provide only marginal substitutes. Simultaneously, these products must be flawed alternatives that each seller perceives to have a downward-sloping demand curve.

An empirical study of industrial organisations has failed to define the methodological underpinnings of commodity distinctions. Two sets of criteria are logically sufficient: one is based on complicated attribute systems and fixed costs, whereas the other is based on the expense of guiding purchasers' knowledge regarding brand preference. Factor analysis of measurable decision factors and business dynamics elucidates and validates the root triggers. The approximate variables effectively evaluate the assumptions about the impact of commodity distinctions on the reciprocal sensitivity of Australian domestic manufacturers and competition for importation costs.

2.3.4 Theory: Oligopoly markets

Determinants: Following rivals, responses to competition in the domestic market.

Knickerbocker (1973) based his theory on market imperfection. According to academic publications, there are two main factors for choosing a particular country as a location for a new facility: (a) for enterprises, access to the host country's market is a top priority and (b) companies want to take advantage of the country's relatively abundant factors. According to Knickerbocker, a third reason for choosing a venue is that companies can invest in a country that matches a competitor's transfer. In other words,

companies often imitate rivals' internationalisation to maintain a competitive edge. Knickerbocker argues that firms in the same industry tend to follow each other's location decisions in an oligopolistic economy. The theory compares firms' uncertainty about the cost of production in the countries in which their products are exported with the risk of a competitor setting up a production facility or subsidiary, thus undermining it and its products. The firm stops underpriced by emulating the competitor's FDI (Pennings & Altomonte, 2003).

Knickerbocker (1973) calculated an entry concentration index based on data from many US MNCs', showing how closely subsidiaries' entry dates were grouped over time. He proposed that the oligopolistic response grew more substantially with increasing product absorption and weakened with increasing product variety.

A small group of large firms controlled numerous industries worldwide, including automobiles, electronics, and chemicals, thus demonstrating his oligopolistic reaction theory. Oligopolistic industries have few firms that consider the impact of their decisions on their competitors and vice versa (Gwynne, 1979). When costs in the host country become uncertain, the hypothesis of Knickerbocker's oligopoly of reaction holds; in other words, a risk-averse oligopoly company establishes a unit in a foreign country when one or more of its rivals invest. However, in the event of certainty, rival investments reduce the desire to go abroad. Similarly, this theory does not justify why the former firm decides to engage in FDI.

2.3.5 Theory: Product Life Cycle

Determinants: Production function characteristics

The Product Life Cycle (Vernon, 1966) is an intricate model that describes long-term changes in a country's trade status. According to this statement, the comparative advantage shifts from country to country when an asset matures throughout its existence. If a developing country exports a new product, it will inevitably be manufactured elsewhere as technology is transferred to lower-cost nations.

In summary, the model suggests that, in general, the manufacturing trade monitors a four-phase cycle: launch, rise, maturity, and decline. First a commodity is manufactured in a country that covers it early in its cycle. The new product is primarily used in the domestic market, and has limited export potential. At this early point, the innovating company was interested only in the product's domestic market. Because of

the "technological gap" between the innovating country and others, the innovating country has a competitive advantage at this early stage of the cycle. This creates an innovating country monopoly. Typically, manufacturing occurs in a developed nation, such as the United States, where the innovator is attracted by a potentially lucrative market (Gichamo, 2012).

In phase two, increasing demand in importing countries can provide sufficient volume to justify local manufacturing by the innovating firm and potential competitors. In the second phase, manufacturing typically occurs in other industrialized countries, such as Europe. As production spreads internationally, the country's exports plummet as other producers assume their market share.

As a product matures, it enters the third level. A mature product uses well-established technology and requires less skilled labour. Less developed countries can undercut more developed countries by using their low-cost, low-skilled labour for already planned manufacturing technology. As a result, less developed countries become desirable manufacturing locations for multinational corporations, exporting commodities to more developed nations.

The concentration in emerging economies characterises the decline stage. A nation that innovates is a net importer of the products it produces in the first place. When a commodity matures, its comparative advantage moves from one country to another, and FDI follows suit.

However, since government regulations protect domestic businesses from foreign competition, this is not the only factor that influences foreign investors to invest in less developed countries. This, typically seen as a challenge for MNEs, has prompted them to invest directly in these markets in order to avoid tariff barriers.

2.3.6 Theory: Behaviour Theory

Determinants: Fear of loss of competitive edge, following rivals and increased competition at home

The performance of multinational companies (MNEs) is characterised by management capabilities and actions related to business or environmental characteristics. MNE executives, like all managers, exhibit individual shortcomings, such as excessive confidence, which impairs judgement. However, business analysts seem to omit management in their study, considering the firm a black box. It is presumed that

management acts rationally according to classical economic laws, but behaves differently and according to codes as to what is typically expected in the international business literature. Additionally, executives are not group members but are distinct individuals. Because of this gap, the theory struggles to model human action and provides inadequate advice for policy choices.

This theory was developed by Aharoni (1966) who observed a clear failure of US manufacturing investments in less-developed countries. Most attempts to encourage overseas investments in the form of FDI have failed. As expcted, he quickly discovered that tax benefits were not a dicing function. The decision-making phase does not resemble classical economic theory of capital spending. The central theme is that investments are rarely the product of a single, unambiguous judgment.

He elaborates on the different factors that influence this comprehensive decision-making method. Although the economic and revenue aspects are essential, Aharoni found that operational and human factors play an essential role in most decisions. In other words, they occur because of a series of projects, discoveries, and decisions that eventually gain steam to the point where ultimate acceptance, usually by the board of directors, is minimal and, not just a formality. For example, prior initiatives and business policies on product lines and the ability to participate in joint ventures are commonly considered equally significant as the current venture’s earnings potential. Similarly, he indicated that "*investigators tend to avoid areas of possible friction with other executives*", stressing that "*participants in the decision process is part of the social system*."

The central principle focuses on how the decision-making mechanism works and the factors influencing Israel's less developed country in attracting foreign direct investment. The central theme is that investments are rarely the product of a single, unambiguous judgment. In addition, they are achieved through a series of projects, discoveries, and resolutions that eventually gain steam to the point where ultimate acceptance, usually by the board of directors, becomes a formality. He elaborates on the different forces that influence this comprehensive decision-making method. Although the economic and business aspects are essential, Aharoni discovered that operational and human factors play an essential role in most decisions.

2.3.7 Theory: Internalisation

Determinants: Market failure/inefficiencies, Know-how (leads to horizontal internalisation), market failures (leads to vertical internalisation).

The FDI internalization theory proposed by Buckley and Casson (1976) proposes that multinational corporations coordinate their internal operations to create unique advantages that can be exploited. Internalisation is the name given to the theory since the authors emphasised this point when forming Multinational Corporations. They developed their theory based on the following three basic premises:

1. In an imperfect market, firms optimise their profits;

2. When intermediate commodity markets are imperfect, there is an opportunity to circumvent them by developing internal markets.

3. MNCs have emerged as a result of global market internalisation.

This theory illustrates what occurs when a multinational company cannot provide an efficient environment for its technology to flourish. Processes, know-how, and brand names play a role in manufacturing. In such a scenario, the organisation will likely establish an internal market by investing in several countries, thus generating the market it should achieve its goals. The firm develops a hierarchy if there is no external market for the intermediate goods needed by MNCs or if the external market is unsustainable. Compared to their business costs, intra-firm contracts have a nominal transaction rate.

2.3.8 Theory: Eclectic paradigm (OLI–Ownership, location, internalisation)

Determinants: Benefits of owning productive processes, technology, and management skills. Located in protected markets, favourable tax systems, low production and transport costs, and lower risk. The advantages of internalisation include cutting transaction costs, lowering the risk of copying technology, and quality control.

Dunning’s (1977) eclectic hypothesis, also known as OLI, is a three-theory integration. According to this theory, firms engage in FDI when ownership benefits outweigh the costs.

The combination of position and internalisation makes FDI attractive. A corporation's profit from owning a unique strength, such as a robust product, intellectual property, technological expertise, or management capacity, is known as ownership advantage. The value of choosing a particular location for an economic operation because of its natural or acquired characteristics is known as location advantage.

Internalisation advantage refers to the benefit of doing a corporate operation in-house rather than outsourcing it to an unreliable sector. According to Nayyar (2014), FDI is the product of companies with ownership-specific (income-generating) advantages (O) that they want to leverage in international locations (L), which they can only do profitably through internalisation (I).

This theory also incorporates the idea of a "seeker" (Dunning & Lundan, 2008), in which a company or person is identified as a "seeker" who is interested in investing and is typically motivated by four factors. The "natural resource hunters" prefer abundant natural resources at a lower cost than their home nation. Second, some are "business seekers", or those who want to gain complete market access. Finally, "efficiency-seekers" tend to invest in several countries to benefit from economies of scale. Finally, "strategic asset hunters" search for assets to boost global competitiveness.

2.3.9 Theory: New Theory of Trade

Determinants: Market size and, transport costs. Barriers to entry and, factor endowments.

The definition of concurrent trade movements of intermediate and finished goods was expanded in the theory of foreign supply fragmentation by emphasising vertical FDI. Dixit and Grossman (1982), Sanyal and Jones (1982), Deardorff (2001), and Jones and Kierzkowski (1990, 2001, 2005) contribute to international fragmentation. Jones and Kierzkowski (1990) demonstrated that production methods could be separated (or segmented) into many manufacturing components (excluding head offices and overseas subsidiaries), based on locations at multiple places, and linked via service links. This allows production facilities in different countries to specialise in different technologies, thus presenting comparative advantages. When situated in separate places, intermediate products, services, and finished products can be manufactured cheaply through trade between specific manufacturing facilities.

Brainard (1993a, 1997), Eaton and Tamura (1994), and Ekholm (1994) empirically check new trade models (1998). The horizontal FDI model has received much encouragement. In an interdisciplinary analysis of industry and country pairs, Brainard (1993b) examines the different trade factors used to measure FDI in a country. These factors include average import tariffs, exchange rates, appreciation, per capita income, freight costs, and the average effective corporate income tax rate. Rising affiliate

revenues have supported the theory of proximity to trading obstacles and shipping costs by declining investments and plant economies. One of the additional factors to be included in the theory of trading location propsed by Brainard (1997) is large company size, resource dependence, R&D expenditure, the occurrence of a political coup, EU membership, and their impact on the distribution of different domestic and foreign affiliates' sales. Again, the proximity-concentration was maintained. In another report, Brainard (1993a) used the same variables for MNE, revenue, and commerce but chose different factors such as profits and general freight in determining how much of a country's GDP affiliate accounted for. The hypothesis of factor proportions was rejected, as it did not explain the activity of multinational enterprises due to an increase in sales relative to income shares.

Eaton and Tamura (1994) used variables such as population, per capita income, land-labour ratio, and educational attainment to examine the impact of countries on FDI on world trade. Therefore, outward, inward and inward FDI rose, whereas the density of outward Japanese FDI declined. The analysis of proximity advantages and economies of scale by Ekholm (1998) is comparable to that of the procedure applied by Brainard (1997) for American firms. Bilateral commerce facilitates direct investments. A broader demand and market produces a more significant portion of affiliates' revenue but a smaller GDP and more educated human resources. These facts strongly support the theory of proximity-concentration for increasing sales.

In conclusion, it proved reliable when the proximity-concentration hypothesis was tested empirically. FDI has been boosted by market size, transportation expenses, and trade barriers. The factor endowment was valid only in a few cases. These findings support the notion that MNEs have a competitive advantage in ownership.

2.4 Global Capital Flow

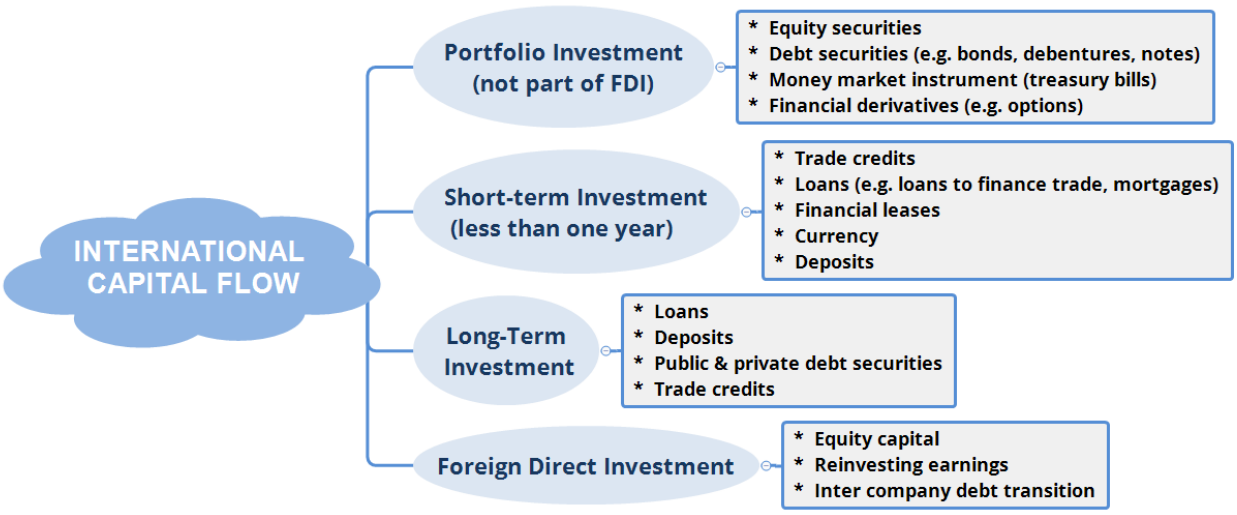
Four broad investment classes are defined in the balance-of-payments statistics: short-term investment, long-term investment, portfolio investment, and direct investment. Certain classifications are deemed more unpredictable than others. International 'hot money' is often refered to as a short-term investment. This has caused particular concern in developing countries, where frequent transfers of short-term foreign capital may trigger feelings of sudden and unpredictable reversals in capital movements, which could cause

economic instability (Fernandez-Arias, 1996). Foreign direct investment is commonly thought to be more reliable because it is linked to the capital items themselves, whereas Foreign Portfolio Investment may be better seen as a much more amorphous type of capital flow. In theory, capital flows could be understood as different means of financing similar economic activities, they are different varieties of financing in practice. Coupling this with the analysis of substitute forms of financing allows us to conclude that the significant categories of capital flow might be equal. The economic community has not produced objective evidence to support the common perception that international capital flow matters. However, there is limited empirical evidence to support this view. The literature seems to accept the opinion that flows are identical. Claessens et al. (1995) demonstrate frequent parallels between the univariate behaviour of various capital flows.

2.4.1 The Different Categories of Capital Flow

Different forms of capital movements can be distinguished. Direct investment is recognised when foreign companies invest directly with local companies, including equity investment, reinvested earnings, and intracompany debt. Portfolio investment is recognised in corporate equities and bonds. Loans, bonds, public and private debt instruments, trade credits, and other collateral with a maturity greater than one year are considered long-term investments. All other investments in assets with a maturity of less than one year are considered short-term.

Figure 2. 1: *International Capital Flow*



In a research paper by Chuhan et al. (1996), they examined the quarterly net flows of four broad investment classes in 15 countries. These findings indicate that the composition of foreign capital flows is significant. Although this affirms previous observations of similarities in the univariate properties of the flows, these univariate similarities conceal certain significant underlying variations. It was shown that short-term investments tend to react more significantly than direct investments in different countries and capital flow types. This provides evidence and consensus that short-term investment is "hot money" and direct investment is not. The distinctions between portfolio and long-term investments are less pronounced. This could be due to the misclassification of overseas debt and equity trades.

However, these findings suggest that the different categories of capital flow examined here allow for meaningful distinctions across various capital movements. However, these financial products do not seem to be ideal replacements. Owing to the discrepancies between flows, retaining any differentiation in future studies on capital flows could be beneficial.

Developing foreign direct investment (FDI), continuing globalisation, and regional production diffusion have dramatically changed many countries' comparative advantages. For instance, research on the determinants of capital flow can profit from different classification distinctions (Fernandez-Arias, 1996). Such studies of the determinants of different flows should shed light on the origin of the observed variations. In several small countries, development is facilitated by exports and other types of foreign commerce, and as such, a country must establish a competitive advantage to promote growth. Exports and foreign market operations include commodity exchanges between companies. Regarding technology, ownership benefits drive multinational companies to establish production facilities in foreign countries, benefiting from lower production costs. In this way, FDI and globalisation result from redistribution of fundamental forces through commerce and geography. At the turn of the twenty-first century, there was a growing amount of proof of foreign economic investment and globalisation, driven by foreign capital flows. The phenomenal growth rates of private equity and venture capital funds invested in emerging markets attest to this phenomenon.

Unlike traditional foreign direct investment (FDI), where multinational companies (MNCs) in developing countries export infrastructure, logistics, and marketing expertise

to firms in emerging markets, capital flow is a crucial exchange factor (Helpman, 2006). Data recently published by IVC Data and Insights (April 2021) showed a staggering $5.374 billion invested in 172 Israeli tech deals in Q1/2021, another good quarter for Israeli technology. The average VC share of all deals, 78%, was the highest in a decade. If the figures for Q1/2021 are notable, the explosive increase in dollar sums is strongly associated with valuations of the NASDAQ index. These have recently been affected by a change in investor sentiment, implying that Israeli technology-financing activity may underperform in Q2/Q3. We refer to this form of capital as Wong's (1994) sector-specific capital.

Financial capital transfers are classified into four types of balance-of-payment statistics: short-term investment, long-term investment, portfolio investment, and direct investment. Short-term stock movement and portfolio management are typically considered risky. As such, they are not called growth factors and, in certain circumstances, are also considered damaging. Direct investment, sometimes referred to as foreign direct investment (FDI), is more secure than indirect investment in physical wealth. Chuhan et al. (1996) discovered significant variations in the characteristics of various forms of capital flow, primarily when the flows interacted. Short-term capital flows tend to be highly vulnerable to fluctuations in all other foreign capital flows, although domestic expenditures tend to be mostly unaffected by these changes. According to Helpman (2006), long-term FDI flows are often correlated with significant companies headquartered in the north, gaining manufacturing capacity in developing countries in the south. As with FDI, financial foreign direct investment (FFDI) – Venture Capital - capital flows are predictable and non-speculative because they are tied to the actual economic development in the target region. However, unlike FDI, they often correlate with companies, thus strengthening their competitiveness in global markets. Foreign direct investment has shown resilience despite the financial crises. For example, despite the global financial crisis of 1997-1998, such investments remained surprisingly steady in East Asian countries. In comparison, other types of private capital flows (e.g. portfolio equity and debt flows), especially short-term flows, experienced significant reversals simultaneously (Dadush et al., 2000; Lipsey, 2001). Stability was also observed during the Mexican crisis of 1994-1995 and the 1980s Latin American debt crisis. This characteristic of FDI and FFDI has led several developing countries to choose FFDI over

other sources of capital flow - a pattern found in Israel and other countries over the last two decades.

For emerging countries, the share of FDI and FFDI in GDP has increased exponentially, making them the primary sources of capital flowing from industrialised to developing countries. The FFDI offers several distinct benefits over equity and debt capital flows.

The participation of foreign companies in the domestic industry promotes the transition of new technology to and from the host nation and the development of human resources capable of competing in global markets. Local companies can gain strategic advantage by revealing their comparative advantages globally and in the best industry arenas of established economies. FFDI is more macroeconomically resilient than other forms of capital flow. For instance, the life expectancy of Private Equity and Venture Capital assets is between 7 and 12 years, implying that the funds they invest in and run are dedicated to those periods.

Owing to the relative stability and long-term nature of FFDI, it has been the primary source of foreign capital for several emerging economies. The increase in FFDI as a percentage of overall inward foreign investment is projected to positively impact new manufacturing opportunities in the host nation and financial stability security as countries open up their capital accounts. In comparison, equity and short-term debt are notoriously volatile, and their positions in igniting and escalating financial crises since the 1990s have been carefully monitored (Summers, 2000). Finally, equity and debt transactions can have different courses and magnitudes of investment effect than FFDI. With FFDI accounting for a growing share of foreign investment in developed countries, host countries should see less variability in investment flows.

Unfortunately, analysts can still determine whether these capital flows are being 'pushed' by unfavourable conditions in industrialized countries or 'pulled' by favourable conditions in developing countries, the sustainability of these sharp rises in capital inflows, and what can be done about it.

Figure 2.2 and Figure 2.3 show the fundamental trends in private capital inflows into Israel from 2015 to 2021.

Figure 2. 2: *Israeli Tech Investments Q1/2015 – Q1/2021*

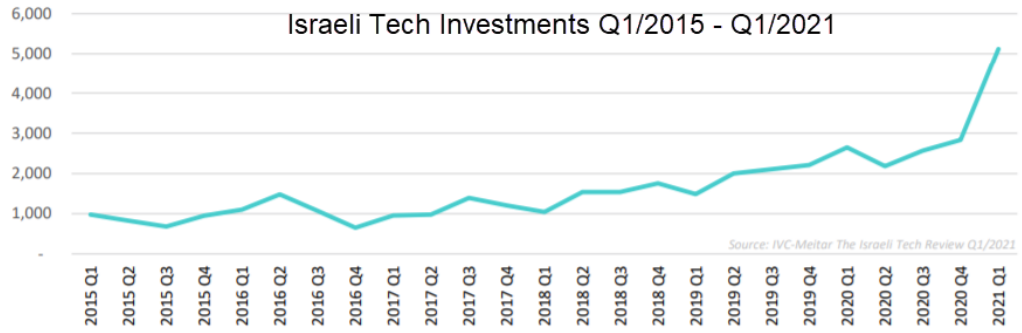
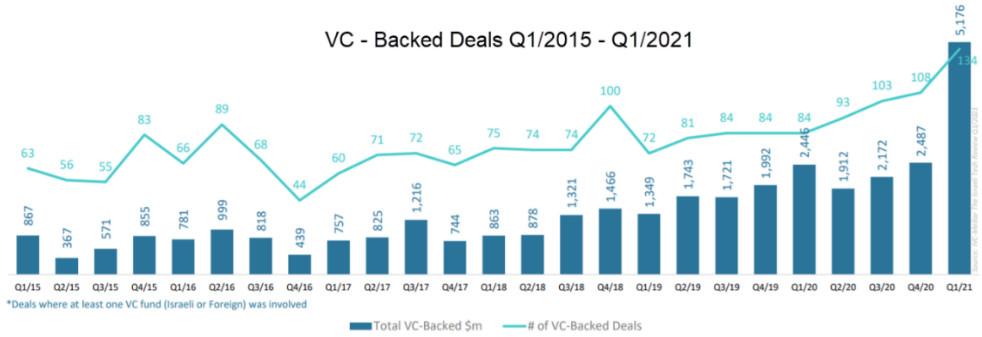


Figure 2. 3: *VC-Backed Deals Q1/2015 – Q1/2021*



According to others, this recent surge in voluntary capital inflows and quickly enhanced creditworthiness demonstrates that debt programmes have succeeded and domestic policies are on track. Domestic influences, rather than external factors, are more significant for understanding these flows. This is the storey of ‘pull’. This finding suggests that developed countries' domestic policies significantly impact the stability of these flows. In comparison, some (Calvo et al., 1993) argue that the increase in capital inflows is primarily the product of external causes, such as the decline in foreign interest rates. This ‘push’ narrative reinforces that these flows are particularly unpredictable due to conditions outside policymakers' influence.

2.4.2 The Lucas Paradox

In contrast to neoclassic theory, which predicts that capital should flow from rich countries to emerging countries, under the assumption of a typical production function and diminishing returns to capital, Lucas (1990) questioned this phenomenon which has

since become known as the Lucas paradox. He continued his theory (Lucas, 1990, p.92) and strongly related it to the failure of financial globalization.

Theoretically, capital may have migrated from industrialised to emerging countries due to the relative lack of capital in developing countries and higher capital yields than in high-income countries. The Lucas paradox illustrates, in aggregate, capital transfers from emerging to industrialised countries. This is a sign of the failure of the developed countries to grow.

Alfaro et al. (2008), argued that accounting for institutional quality differences eliminates the Lucas paradox. Alfaro et al. (2008) later refuted this claim. It has been argued that the Lucas paradox remains in effect by finding outliers in previous controlled studies.

2.4.3 Push and Pull Theory

To evaluate the influence of international capital flows on middle-income countries, Fernandez-Arias (1996) evaluated a fundamental question: whether these flows are attracted to domestic conditions and are considered a "Pull" force or, due to unfavourable conditions in developed countries, they are deemed as a "Push" force. He concluded that the country's creditworthiness and favourable international interest rates were the main factors.

The Lucas paradox and the Push-Pull effect bring us closer to this research's proposed framework, which will be fully explained and outlined in the forthcoming paragraphs.

2.5 Critical Evaluation of Empirical Studies of FDI

This study empirically evaluates the possible long-term causality of Israeli startups with foreign direct investment. In the previous sections, the main discussion focused on the theoretical aspects of FDI evaluations. A closer look at previous studies is imperative to understand which variables were implemented and the economic reasoning behind these decisions.

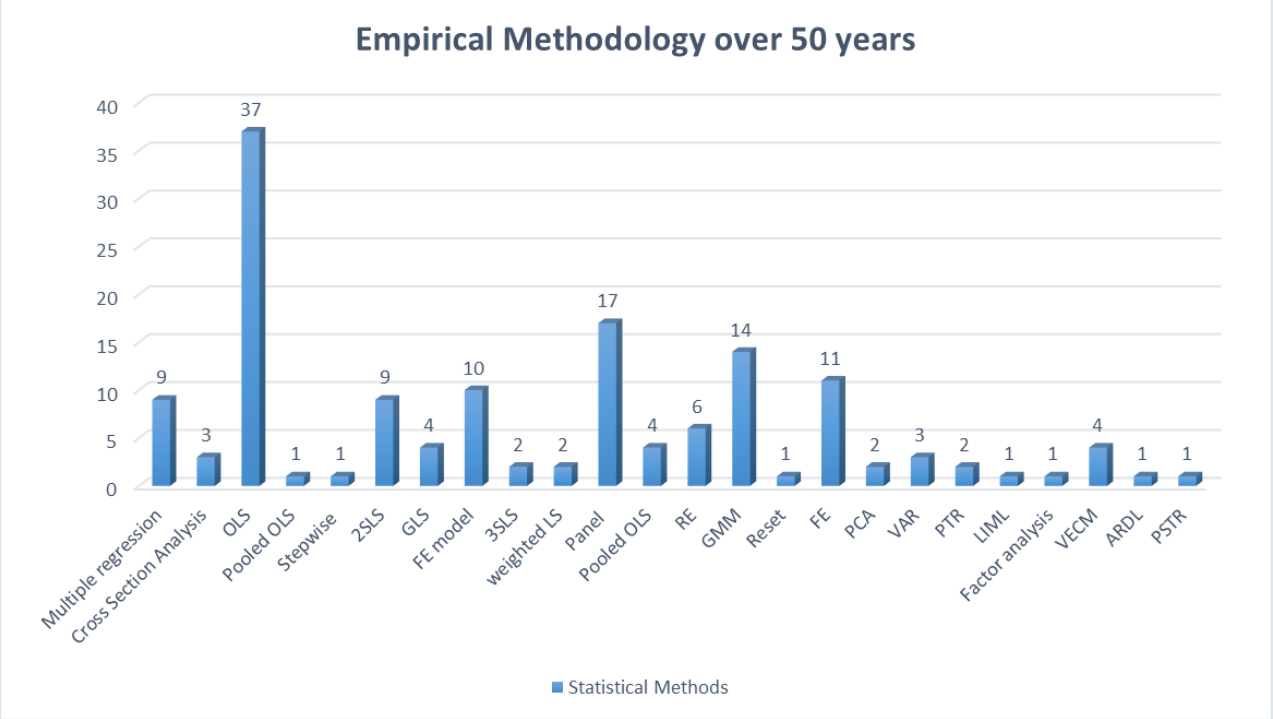
FDI has been the subject of scholarly research over the past few decades. Numerous theoretical and empirical studies have been conducted on FDI drivers and the influence of FDI inflows on a host nation's economy. This review includes research

published between 1950 and 2015 (see Appendix B) and Table 2.2 (76 variables). Statistical models and variables were examined in this review. The purpose, statistical approach, variables, and results of each study were detailed. Empirical research cannot include all these variables, therefore, over time, each researcher makes an informed choice about using various variables according to country, region, and economic effects.

FDI has been analysed as a dependent variable in particular articles and as an independent variable in others. This ensured that the nations in the sample were representative of all world regions. FDI inflows were the subject of this analysis; consequently, empirical publications focusing purely on FDI exports were excluded. Empirical studies mainly deal with nations under the "developing" or "underdeveloped" categories. Due to the study's increased sample size, the research covered over 100 empirical papers for inclusion.

Furthermore, empirical articles were chosen instead of theoretical ones (Table 2.1) to examine the statistical approaches used in the study. A wide range of periods was covered in this study, based on each article's publication date. Figure 2.4 shows the different empirical methods used together with an explanation of each abbreviation.

Figure 2. 4*: Statistical methods (Appendix B)*



Explanation of the above Methodologies Used over the past 50 years

Multiple regression	RE – Reduction of error
Cross-section analysis	GMM – Gaussian Mixed model
OLS – Ordinary Least Square	Reset
Pooled OLS	FE
Stepwise	PCA - Principal component analysis
2SLS – Two-stage least squared	VAR - Vector Autoregression
GLS – Generalized least square	PTR - Peak transaction rate
FE Model – Fixed effect reg.	LIML - Limited information Max. Likelihood
3SLS – Three-stage	Factor analysis
Weighted LS	VECM - Vector Error Correction Model
Panel	ARDL - Autoregressive distributed lag
Pooled OLS	PSTR – Panel smooth transition Regression

Owing to the large number of variables used over the years in various studies, it would not be feasible to cover each separately. The approach was to identify the most used variables in 88 research papers and evaluate the percentage of usage of the most prominent variables. Most of the variables chosen in each study were country oriented, so any general conclusion would be biased and not depict a general use or pattern of the most appropriate variables used in FDI research. Table 2.3 was constructed to show the most commonly used variables in FDI studies and their percentages of usage.

Table 2. 3: *Most commonly used variables in 88 FDI types of research*

	Variable	*Quantity used*	*% usage*
1.	GDP	47	53.4
2.	Trade Openness	24	27.2
3.	Inflation	9	10.2
4.	Interest rates	8	9.1
5.	Gross Domestic savings	6	6.8
6.	Economic Freedom	5	5.7
7.	Exchange rates	3	3.4
8.	OTHERS: 2-10 variables	195	-

*Note***:** A list of the papers included is outlined in Appendix B

The above table shows that the choice of variables is not standardised and must be incorporated into a research paper on FDI. There is wide variance in the choice of each variable or group of variables found over 50 years. The use of GDP in 53.4% of all the studies points to a variable that should be studied in more detail. These studies justify the use of this variable in FDI research. What are the empirical findings and conclusions of this study?

2.5.1 Initial Review

The 1980s and the 1990s witnessed a rapid increase in foreign direct investment (FDI). This increase renewed the enduring and challenging discussion concerning the advantages and disadvantages of FDI. Foreign direct investment can improve the economic climate of countries with adequate policies and at least some level of development. In contrast, some argue that shortcomings such as weakening the balance of payments from the reparation of profits can harm the competitiveness of domestic markets. The current consensus is that there is a beneficial relationship between economic growth and FDI. This association arises only if the receiving economy has attained a fundamental quality of technological, educational, and infrastructural progress. Despite this seemingly consensus, as well as areas of development economics, there is no general consensus on the clear benefits of FDI on economic growth. Even if there is a beneficial relationship between foreign direct investment and economic development, causality remains possible. Whether FDI results in long-lasting development or developing economies appeals to foreign investors as transition organisations explore new markets and opportunities to increase profits. Neither of these possibilities has been academically excluded, which is why several studies have addressed the issue of causality. As highlighted in the following part of this review, which examines at least 12 previous studies, it is reasonable to inquire into the necessity of having another perspective on the causality of FDI and economic growth in any country.

2.5.2 A closer look at FDI and Economic Development (GDP)

As mentioned above, the large number of variables used in FDI research could be prudent in evaluating model specifications. The one that stands out most is the study by Carkovic and Levine (2002), which showed that the level difference among specific countries, the endogeneity of the inflow of FDI and the consideration of the convergence

effect show that there is no significant effect on FDI on economic growth. In principle, the work by Carkovic and Levine changes the approach from the association between the ratio of FDI to GDP and gross domestic product to an association between logarithmic GDP and FDI ratio. Their assumption-based model excludes neoclassical growth models (three driving forces – labour, capital, and technology) and includes only the GDP growth rate, excluding endogenous growth models. By contrast, Hansen and Rand (2006) tested for Granger causality using yearly data and included trends and levels specific to countries, similar to the gross domestic product log-level analysis. The findings, which focus on approximates that allow differences in all aspects of countries, show a causal association between the FDI ratio and GDP. The amount of foreign direct investment (FDI) relative to gross domestic product (GDP) affects the GDP. GDP also results in the Granger causality of FDI, but this study did not find any effect on the future FDI ratio. This outcome contradicts other Granger causality findings between growth and FDI. It is assumed that the change in the model formulation is the cause of the new results. The second aspect of their study addresses the economic importance of FDI inflows apparent in the outcome of statistical significance. This study uses the Solow approach as a reference point to examine the economic significance of foreign direct investment. According to the Solow model, capital is a one-third of the steady income elasticity because of the half-saving ratio. Considering a savings ratio of 20%, a 1% increase in savings ratio yields a 2.5% increase in income level. The findings of this study show that a one per cent increase in the mean FDI ratio results in a 2.25% growth in gross domestic product. Therefore, foreign direct investment appears to have an almost equal effect on domestic investments.

Adopting new technology (De Mello, 1999) and transferring knowledge are usually highlighted as the main elements that enhance growth channels for FDI inflow. However, the essence of these models is not readily identified in approaches that use log levels of FDI or FDI-to-GDP ratios. Thus, when examining the value of these channels, it is essential to develop models that consider FDI as a share of gross capital formation (GCF). This is because FDI/GCF ratios separate the knowledge and structural outcomes of FDI inflows from the requirement for developing gross capital. The study establishes that FDI/GCF to Granger causes a gross domestic product that has a statistically meaningful effect on foreign direct investment structure.

2.5.3 FDI and Economic Growth

Over the last decade, several studies have considered the role of FDI in stimulating economic growth. De Mello (1997) outlines two basic approaches for enhancing growth through FDI. First, FDI can inspire the implementation of novel technologies in the manufacturing process through capital spill-over. The other is that foreign direct investment can encourage knowledge transfer concerning skill acquisition, labour training, and the introduction of different management practices and improve organisational engagement. Another review by the OECD (2002) supports these findings and shows that 11 reviews have established that foreign direct investment positively contributes to factor production and income growth. Both the de Mello and OECD surveys highlight essential findings from the evaluated surveys. This finding shows that foreign direct investment impacts growth depending on the technology and economic structure of the domestic economy. Developing economies must achieve a specific level of growth in education and structure to take advantage of the possible benefits of FDI.

Four studies that relied on various cross-country regressions considered the situations needed to achieve positive contributions of FDI to economic growth. Strangely, they looked at various, albeit connected, features of development. The first study is by Blomstrom et al. (1994), who show that foreign direct investment provides economic growth when an economy is adequately endowed with per capita income. The second study is by Balasubramanyam et al. (1996), who indicate that free trade is vital in acquiring the growth effect of foreign direct investment. Borensztein et al. (1998) established that foreign direct investment only increases growth in economies in which workers have attained basic educational training. The fourth study by Alfaro et al. (2004) examined financial markets to establish that FDI supports growth in countries with adequate financial sectors. By contrast, the findings of these four studies seem to fail to assess the effects of FDI by Carkovic and Levine (2002) after adjusting for likely biases from endogeneity, omission of initial income, and country-specific effects. They conclude that FDI does not affect long-run growth.

FDI and growth have been examined more freely in other publications. Granger causality between the two has been studied in six separate studies with various samples and estimation approaches. A country-by-country analysis by Zhang (2001) examined and classified 11 nations in terms of their time-series characteristics. Using error

correction models, researchers have found a substantial Granger causal link between GDP growth and FDI in the long term. Granger causality was observed only in one of the six nations where the log of FDI and growth did not have a cointegration connection. When testing for causation, Chowdhury and Mavrotas (2006) employed the Toda and Yamamoto (1995) specification. Granger causality is established between FDI and GDP in Thailand and Malaysia using data from 1969 to 2000. However, no Granger causality was found in Chile. This approach avoids the likely protesting issues related to cointegration tests between the series.

By looking at FDI to growth in 32 economies, where 17 are not OECD members, de Mello (1999) looked at the time series aspect of FDI and growth. He found that the future effect of FDI on growth varies between economies. He also supplements time series analysis using information from panel data estimates. de Mello (1999) finds that in the sample with non-OECD countries, there is no correlation between foreign direct investment and growth founded on fixed regression features with country-dependent values. He also finds an undesirable short-run effect of FDI on GDP using estimations of the mean group.

Just as de Mello, Nair-Reichert and Weinhold (2001) focus on the differences as a significant issue and employ the mixed fixed and random (MFR) coefficient approach to check the effect of FDI on economic growth. They examined the causality of cross-country panels using data from the period 1971 to 1995 from 24 countries. Their findings show that FDI typically influences growth, but that the association differs significantly from country to country. Using the MFR approach allows the testing of the differences in long-run coefficients, which avoids the prejudices that arise from the similarity of the coefficients of dependent variables.

Choe (2003) used Holtz-Eakin et al. (1988) causality testing technique to assess 80 nations. Choe's (2003) findings suggest that FDI and growth are causally linked. Although FDI has had poor influence on growth, this continues to be the case. The final study by Basu et al. (2003) examined the double association between economic growth and FDI. Using specific country- and time-fixed effects and country-specific co-integrating paths, they identify a relationship between economic growth and FDI using data from 23 countries. They noted that long-run causality flows from economic growth to FDI in reasonably closed economies. They stress that the openness of trade is an essential

element of the effect of FDI on growth. They also find two-way causality in the short- and long-run open economies.

According to this survey, FDI and economic growth are positively correlated. Although the correlation between FDI and growth in the causal Granger meaning differs from country to country, there is agreement that FDI influences growth. The findings of Carkovic and Levine (2002) are lone exceptions to this rule.

2.5.4 Which came first, the chicken or the egg

As previously indicated, the link between FDI inflows and economic development is not universally accepted. There is no clear distinction between whether FDI causes GDP to increase or whether GDP causes FDI inflow. Which one is first?

The Greek philosopher Aristotle provides one possible answer. Aristotle introduced the ideas of potentiality and actuality. Concerning the question at hand, the purpose of the egg (GDP) is to become a chicken (FDI); therefore, the egg is a potential chicken. The hatched chicken (FDI) is, well, the actual (or actualized) chicken (FDI). Through a complex argument involving the perishability of anything potential and the eternal idea of the actual chicken, Aristotle deduced that **actuality** always **precedes potentiality**. With this logic, FDI precedes GDP. The question then arises: Are other variables influencing FDI flows into the country? This research endeavours to show that Startups have a long-run Granger causality with FDI, which, in turn, will increase the flow of FDI and influence the economic growth of GDP or GDP per capita.

2.5.5 Other variables of interest

Over the years, research papers have used numerous variables for FDI. The most prominent are inflation, the economic openness, interest rates, exchange rates and economic freedom.

Trade openness is the amount of trade one country allows for another. It comprises of all types of open-trade links. This is advantageous for attracting foreign investment and for investing in other nations. To attract foreign direct investment (FDI), market size, growth, and other qualities are critical, although these variables are less significant for export-oriented businesses. Several studies have shown that an open economy is essential for attracting foreign direct investment (FDI) in export-oriented

industries. Natural resources and capital goods required for local and international investments are easier to import in an open economy. According to Bibi et al. (2014), FDI flows are strongly influenced by exports, notably manufacturing exports. Evidence suggests that exports precede foreign direct investment (FDI).

According to Mahmood et al. (2011), exports are boosted by an increase in exchange rate, resulting in an increase in product demand.

Research has highlighted the importance of a non-linear relationship between growth rates, and low inflation has been identified as a growth booster in this context (Khan & Senhadji, 2001; Mubarik, 2005; Hussain, 2005). The consumer price index and GDP deflator are two of the most commonly used inflation indicators. Inflation of double digits is highly damaging to the economy. According to Fischer (1993), inflation slows growth because of a decrease in investment and output growth. Nell (2000) found that inflation of less than ten per cent was preferable, whereas inflation of more than ten per cent was associated with slow economic development.

Fahed (2013) used the 'Index of Economic Freedom" published by the Heritage Foundation to capture the implications of economic freedom. This all-encompassed index is based on 50 variables, including monetary policy, trade policy, fiscal burden, and property rights. The potential use of this index as a variable incorporates almost all other variables used in research over the years into one comprehensible variable. His findings showed a positive relationship between FDI and economic freedom and that foreign companies are unwilling to invest in countries that lack economic freedom. Further evidence shows that governments should liberate their economies to attract foreign capital.

FDI can also be affected by interest rates, as higher rates tend to limit the expansion of an economy and diminish the demand for products from multinational corporations, which also influences FDI inflows into the country.

Summary

The above summary of studies related to FDI shows that the majority are country-specific or related to relevant elements between countries. Each study used different dependent variables, proving how diversified this research field has been for over 50 to 60 years. However, GDP was starred as a prominent variable. As expected, it was not

used in most of the studies. One of the most exciting pieces of research was by Weisskopf (1972b), who showed that gross domestic product (GDP) growth and real gross fixed capital creation have a solid long-term association with FDI. Another study by Hansen and Rand (2006) use a VAR model to link the long-term influence of FDI on GDP in a bidirectional fashion. The emphasis is on the long term, as no other study has recognised long-term causality. These findings may be relevant to the current research on startups and FDI.

The most prominent result of this review is that there are no studies related to the long-term causality between innovative startups and FDI, which is the essence of this study. Several other influential variables could be considered for inclusion in this study: the openness of the economy, inflation, and the Heritage Index.

2.5.6 Recent studies using VECM

Increasingly, studies have used VAR and VECM models to investigate FDI recently. These models show long and short-term causality between dependent and independent variables. Thus, it seems appropriate to examine several of these studies.

The literature does not adequately address the topic of what are the essential factors in driving foreign direct investment. From the 1980s to 2018, Mugableh (2021) investigated the causal relationships between foreign direct investment (FDI) inflow and the drivers of FDI (i.e., gross domestic product, education, trade openness, infrastructure, and technological capability) in Jordan. VECM was used in this study. According to the study's findings, gross domestic product, trade openness, education, infrastructure, and technical capacity are the key drivers of foreign direct investment in the country (both long and short-term). Consequently, the findings are critical for helping Jordanian policymakers develop internal and international strategies. The findings of this study are based on three critical components. First, foreign direct investment (FDI) is a crucial source of money that stimulates economic growth.

Fedderke and Romm (2006) study the growth, impact, and determinants of foreign direct investment in South Africa. This study estimated the growth impact and determinants of FDI using a VECM structure. The second model uses nine variables. FDI was again used as a dependent variable with several independent variables: GDP, employment, private sector, capital, stock, private sector- fixed capital, stock, and actual

FDI liabilities (stock). The results show that if FDI and domestic capital complement each other, it suggests a positive technical spill-over from foreign capital to domestic capital in the longer term.

Soto and Pérez (2020). Trade openness and macroeconomic determinants of FDI reception in Latin America: a VECM approach. The independent variables used in this study were GDP per capita, exchange rate, inflation rate, trade openness, and real interest rate, using FDI as the dependent variable. Trade openness is a necessary but insufficient prerequisite for attracting more foreign capital, as evidenced by the results. Stable social and political conditions are prerequisites for achieving macroeconomic stability.

Hansen and Rand (2006) investigated the causal relationship between FDI and growth in developing countries. This study used a bivariate vector autoregressive model (VAR) for the log-GDP and FDI ratio and the log-GDP and FDI as a percentage of gross capital formation (FDI/GCF ratio). It was found that, on average, FDI has a significant long-term impact on GDP regardless of the level of development.

Kikerkova et al. (2018) used the Vector Error Correction Model of FDI and its Impact on the Republic of Macedonia. They applied the Vector Error Correction Model (VECM) to FDI's impact on the Macedonian economy. The FDI indicator is calculated as a function of certain fundamental economic variables (GDP growth rate, labour productivity rate, openness to trade, and current account balance) and Worldwide Governance Indicators (control of corruption, government effectiveness, political stability, regulatory quality, and the rule of law). The results obtained from the econometric model should provide relevant conclusions on the impact of the latest FDI inflows on the growth and development of the Macedonian economy.

From the above five examples, four used multivariate VECM models and one used a bivariate vector autoregressive model (VAR). One of the main reasons for choosing the VECM is the strong linear relationship between independent variables. An advantage of the VECM over traditional dynamic specifications is that multicollinearity tends to be lower because combining a variable or variable with differences and levels reduces the linear correlation, allowing a more precise estimation of the parameters (Soto & Pérez, 2020).

As in the previous section, there is no evidence of startup use as an independent variable to show long-term causality with FDI.

2.5.7 Research papers on FDI and Startups appertaining to Israel

Few research papers have been written over the years on Israel and FDI. Most studies are relevant to other countries but have included Israel as an additional option. Several studies have been reviewed.

In 2011, Aharoni explained the complexity of the Israeli market in his research titled ‘Inward FDI in Israel and its policy context’. Israel's small economy is the most competitive because of its conservative fiscal and monetary policies and various economic reform measures aimed at liberalising it. Despite ongoing tensions, Israel has transitioned from an emerging economy to an industrialized economy in just 20 years. The Israeli market economy thrives because it is resilient, open to the world, and cutting-edge in terms of technology. Israel's high-tech capabilities, notably telecommunications, information technology, electronics, and life sciences, have become well-known over the last two decades. FDI has attracted the country due to its innovative capabilities and highly educated and competent workforce.

Roper's study (2000) compared the UK, Israel, and Ireland with innovation and R&D in the economy. The UK, Israel, and Ireland have long been aware of the importance of innovation in economic progress, but they have also been concerned about their ability to take advantage of scientific discoveries. Governments have adopted various approaches to encourage businesses to be more innovative. There are noticeable contrasts in attitudes among Israel, the United Kingdom, and Ireland. Development of the National Innovation System (NSI) has long been a key policy objective in Israel, with generous research, development, and innovation funding. Israel's public funding for civil R&D and innovation covers a more significant percentage of R&D expenses, is automatic rather than discretionary, and covers a broader range of R&D activities than the UK or Ireland. Israel appears to have the most vigorous internal dynamics, producing different innovation behaviours among the three countries. Israeli universities, immigration, and higher education research have contributed to this dynamic. The high degree of government funding for business R&D and inventive activities also contributes to this dynamic.

International R&D spillovers have been facilitated by the advent of information technology (IT), which has made knowledge transfer faster and more efficient. Owing to the increasing rate of economic integration, a country's productivity is now dependent on both local and international R&D. Zhu and Leon (2007) looked at trade, FDI, and information technology as spill-over channels. This study examines trade, foreign direct investment (FDI), and information technology (IT). Co-integration and dynamic OLS analysis of data from 21 OECD nations and Israel between 1981 and 1998 revealed that bilateral commerce is still an important route for international R&D. International R&D spillovers are also linked to bilateral FDI. However, this relationship only has a small effect on productivity growth. Information technology has also played a more significant role in the spread of R&D worldwide R&D spillover and productivity.

Relatively recent research by Razin (2017) studied Israel's high-tech products and FDI. Israel has progressed significantly from a low-income developing economy in the 1970s to a medium to high-income advanced economy in the 2000s, and is increasingly linked to the global economy through trade, supply networks, and financial ties. Israel's high-tech sector has grown at a rate that has never before, mainly owing to the worldwide upswing in information technology. Economic globalisation is essential for a country's emerging high-tech industry to grow and thrive. The scale necessitates commerce, and trade necessitates new ideas. Innovation cannot thrive in an isolated tiny economy. Entrepreneurs are motivated to invest time and effort in providing extraordinary services because they know that they can use the information they eventually gain. Foreign direct investment provides incentives to move from the insecure invention stage in a small economy to the execution stage in international markets.

Kon et al. (2014) are most probably the closest to the subject and context of this research paper. The study under consideration is called "A Panorama of the Israeli Software Startup Ecosystem", where Kon et al. (2014) consider the software business and startups to be an effective means of stimulating innovation. Israel's case, home to one of the world's most productive software startup ecosystems, was examined to increase theoretical and practical knowledge of the fundamental aspects and characteristics that support effective ecosystem growth. Semi-structured interviews, observations, and questionnaires were used to collect data. Data analysis provided answers to study questions on entrepreneurship, startups and their ecosystems from

sociocultural, institutional, technical, methodological, and educational perspectives. This study also provides a conceptual foundation for the Israeli startup ecosystem for entrepreneurs and policymakers. Finally, it suggests a more extended version of the framework that might serve as a platform for future studies on this topic.

This study sheds new light on one of the world's most thriving hotbeds of technological innovation, specifically software startups, by revealing previously unknown facts about the region. The Israeli software startup scene was the focus of this research and examined the role of immigrants, military service members, and conflict in Israeli society, as well as the role of technology, government funding, angel and VC investment, incubators and accelerators, innovation-focused events and universities, R&D centres, and entrepreneurship education.

The best age to start a new business seems to be between 30 and 50 years old. This is contrary to the cliché of a 20-year-old genius entrepreneur. Thus, older entrepreneurs are more likely to succeed. Entrepreneurs should learn from their prior mistakes, have excellent managerial experience, and have worked in larger teams, startups, or larger businesses.

Entrepreneurs should learn from these failures. The founding team’s diversity is a significant asset. Teams with diverse expertise create better founding teams. Such a variety may be seen, for example, in the composition of an organisation's design team, which includes one business-oriented individual and one created one.

Good networking is essential for achieving our goals. Everyone in an ecosystem can be easily reached. People are more willing to help each other in Israel as there are no expectations.

Having a brilliant concept is easy, but turning that idea into profitable business is more complicated. The most challenging component is the years of preparation and follow-up necessary before and after launching a firm (thousands of hours of work to reach a sustainable business).

Thus, the amount of money spent on development and marketing is essential. According to some entrepreneurs, their previous businesses failed because of a lack of marketing validation or investment in product development and concept validation. As a result, establishing a balance between product development and marketing is critical.

Summary

The Israeli startup ecosystem is composed of 11 significant divisions: Agrifood-tech & water, Life Science & Health Tech, Retail & Marketing, Smart Mobility, Aerospace & Aviation, Industrial Technologies, Security Technologies, Content & Media, Enterprise – IT & Data Infrastructure, FinTech, and Energy Tech. There are almost no published studies relevant to these sections, and as can be seen from the few research papers stated above, they are related to the software and high-tech industries and their connection with FDI. This fact strengthens the need for further research into the vast startup ecosystem for which this study is aimed.

FDI in Israel is highly focused on technology and investment. There are no studies on startups and FDI in Israel, but FDI appears in technology and similar sectors and plays a role in technology and spill-over. Studies by Kon et al. (2014) focus more on socio-cultural aspects as part of the technological ecosystem.

This relatively small set of studies shows that trade plays a vital role in FDI in Israel. From a macroeconomic perspective, this fact enhances the use of an independent variable in this study, conveying the use of an openness index.

2.6 Factors Affecting Startup success

The search for an ideal solution to the success of startups has been researched over time, and numerous books and papers have been written on different aspects that can influence success. What are the causes and effects of successful startups? In their book, Bell and McNamara (1991) outlined a quantitative diagnostic method to discover and assess a startup venture's health. These rules objectively question the existence and content of the specific plans and processes. Their focus was on the first two stages of a new startup: the initial seed concept and viability. Bell argued that a further twelve dimensions interact together, of which the following are a few examples: People, Business plans, Cash finance and control, Technology and Product, Marketing and sales. According to Cunningham (2000), most failure problems arise from business rather than technology-related issues. Cooper et al. (1994) suggest that initial human capital and financial capital are the initial determinants of success. Human capital is defined as education, gender, race and management know-how or skills. Cooper et al. (1994) confirmed and collaborated with further research from Dahlquist et al. (2000). The idea

of a Business Platform model by Klofsten (1992) was further pursued by Davidson and Klofsten (2003), which defined a firm's early development process. This was defined as an eight-level model consisting of a Business idea, Market, Product, Organisation, expertise, motivation, customer relationship and other relations. Similarly, MacMillan et al. (1987) proposed a four-dimensional model: entrepreneur, market, product and finance. A further study by Kakati (2003) showed three critical determinants of reasonably viable success, i.e. competitive strategy, entrepreneur quality and resource-based capability.

The literature shows that six domains can outline startups' potential development and success: entrepreneurship, strategy, technology and products, marketing, finance, and management.

The researcher believes that there is no mention or suggestion of underlying latent factors that could influence the outcome or the initial initiative of starting a new startup entity in all relevant literature. This research paper will deal with this issue and will elaborate on it in detail after analysing the main ideas stated above.

2.6.1 Strategy

This approach benefits startups by allocating resources in demand in an uncertain environment and the organisation's long-term direction and scope (Johnson & Scholes, 2001). Two schools are advocating different startup tactics to achieve a comparative advantage; a systematic approach under the direction of systems such as Porter's 'Five Forces' model (1980) analyses the forces underlying competition in the market, and the adaptive 'visionary' approach suggested from Mintzberg (1994), by which the organization is created.

One of management's most critical business decisions is whether to participate broadly around the globe or concentrate on local markets or a limited market set. Consider a choice to concentrate on high growth and mature markets or on the early stages of the product.

Chandler and Hanks (1994); Mahoney and Pandian (1992) promote multiple strategies. Further research by Kakati (2003) advocates the same, provided adequate resources are acquired. However, small startups find it challenging to build tools that can

be deployed effectively as part of a comprehensive approach. A realistic option would be to follow a focus/custom plan.

2.6.2 Marketing

Gardner et al. (2000) differentiate between high and low technology products from a marketing perspective. This differentiation should be made during the earlier business cycle stages due to a higher degree of instability between the two types, concerning life cycle expectancy, market growth and technological advancement, and the ease of market entry and penetration.

'Market-orientation' is a method that gathers and accepts information gathered from the context of market patterns (Day, 1999; Jaworski & Kohli, 1993; Slater & Narver, 1995). Cooper (1994) states that success can be achieved by concentrating on novel methods vis-à-vis new customer orientation.

Given the limited scale of Israel's domestic economy, local companies should enter international markets to survive. Businesses that consider consumer needs can create strategies to address them (Kohli & Jaworski, 1990; Slater & Narver, 1995). Christensen and Bower (1996) argue that companies concentrating on locked-in clients ignore current customers' interests and, disregard future goods and development prospects, whereas scholars, such as Slater and Narver (1995), disagree.

According to Frenkel et al. (1994), Steinberg (1999), and Goldman (2001), entry into international markets is an essential factor in the sustainability and growth of startups.

There is also controversy among researchers about the value of consumer appeal. Nesheim (1997) suggested that the target market should be broad and increasingly growing to consider market size, competitive strength, future sales over five years and prospective consumers.

Mishra et al. (1996) have found that business growth and scale are also more strongly associated with the popularity of new goods. Conversely, Stuart and Abetti (1987) find a clear negative association between the attainment and attractiveness of young technology firms. Their research indicates that businesses entering small, slow-growing markets perform better than startups in more significant, faster-growing markets.

This may be attributed to the reduced productivity and avoidance of frontal rivalry with large and healthy companies. However, a strong consensus exists that the experience of marketing practices and the marketing efficiency of new product transmission are essential for the growth of new products (Cooper & Kleinschmidt, 1990; Gardner et al., 2000).

2.6.3 Technology & Products

According to Cooper (1979, 1994) the creativity and novelty of new products are essential to innovative breakthroughs in the market. According to Davidow (1986), inventions are made in the laboratory, while the marketing department produces incredible products. Cooper (1993) relates to this statement but emphasises that the expected products should coincide with the market's requirements. Thus, innovative, groundbreaking ideas are believed to have a competitive edge; they are easily distinguished and pose substantial hurdles for competing companies. However, according to Christensen (1997), it is more difficult to validate any market potential and even harder to prove profitability. One problem in assessing future consumer markets for new products is that market research may display little interest. According to Perlmuter (2003), entrepreneurs should consider customer needs and plan their new novelty accordingly into a strategy that would provide the end-user with a fully-fledged product.

Success is not determined by being the first to market, according to Cooper (1973), or by the development of new technology (Berry, 1996). As the market does not always know what it needs, marketing and technical skills should be combined to suit these requirements including a buyer/seller liaison (Birou & Fawcett, 1994). It is generally accepted that close ties are required between R&D and other practical fields (Goupta et al., 1986; Roberts, 1978, 1979; Von Hippel, 1978; Wind, 1981, 1982). Goupta and Wilemon (1990) say that effective marketing methods can help invent goods. Young (1973) and Souder (1977, 1981) noted that the weak alignment of R&D and marketing is one of the main contributors to new product failure.

2.6.4 Management

The world of startups is complex, fast, and rapidly moving, and success depends on managing that development by astute management (Leonard-Barton, 1992). According to Eisenhardt and Brown (1998), startups must be managed by professional

entrepreneurs and teams capable of handling various markets. A management team with several people with experience in diverse fields, such as technology, finance, and marketing, is marked (Cooper 1973; Roberts, 1968). Roure and Maidique (1986) noted that active entrepreneurs appeared to have larger teams.

Individuals seldom initiate high-performance startups, which are usually coordinated by teams (Reynolds, 1993). Chandler and Hanks (1998) and Roure and Keely (1990) found that a firm's performance is strongly influenced by the team's completeness and previous joint experience.

2.6.5 Finance

The startup's oxygen is the funding process. Many entrepreneurs receive early-stage financing and then boost later stages until acquisition or exit, or the more successful ones are bought by larger companies or eventually go public. Lerner and Avrahami (1999) noted that venture capital is a significant funding source in Israel and that funds are readily available for new enterprises. A problem occured when the government reduced guarantees for new startups.

(Gorman & Sahlman, 1989; Goupta & Sapienza, 1992; Hellman & Puri, 2001; MacMillan et al., 1989; Sapienza, 1992; Sapienza et al., 1996), Show that venture capitalists provide significant additional benefits. These financial incentives include extra fundraising, investment planning, decision-making and non-financial aid, including strategic planning and support for scouting key executives. A substantial decrease occurred in foreign investment in Israel in 2000 after the Nasdaq crash, but since 2004 VC funding has been back on track. Recently, studies have shown overconfidence in Israeli VCs and associates, which has negatively affected their decision-making (Zacharakis & Shepherd, 2001). Bainerman (2002) asserts that they are only interested in a rapid exit strategy and not in a long-term strategy for the country's benefit.

2.6.6 Theoretical Model

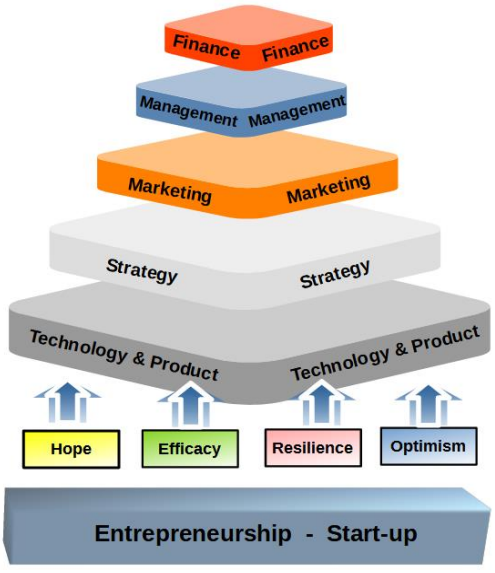
As explained previously, the fundamental structure of a successful startup, which eventually influences foreign direct investment in the country, is established in the literature pertaining to five fundamental exogenous domains. The researcher proposes a new or improved model by introducing an endogenous variable defined as an underlying latent factor pertaining to the psychological makeup of a potentially successful

entrepreneur, followed by the other elements outlined. The proposed model is a **StartUp Pyramid** (Figure 2.5) with the entrepreneur's new variable as a latent variable called Psychological Capital (PsyCap). Luthans et al. (2015, p. 2) define PsyCap as "an individual's positive psychological state of development that is characterised by (1) having confidence (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 (resilience) to attain success."

The following were the best fits: **H**ope, **E**fficacy, **R**esilience, and **O**ptimism (Luthans 2002a; Luthans et al. 2004; Luthans & Youssef 2004). This can be summarized using the acronym HERO.

The researcher believes that using HERO will show the inherent attributes driving the startup and entrepreneurship community in Israel, in addition to other determinants and government intervention. Another aspect of this latent factor is that it can be improved over time by implementing training programs. Luthans et al. (2006) created a short and cost-effective training programme. Further research by Luthans et al. (2010) showed a substantial positive effect on the participants. During ten days, Luthans et al. (2008) improved the ratings and development of Hope, Efficacy, Resilience and Optimism, providing evidence that the development of PsyCap can be efficient, beneficial and inexpensive. Therefore, the proposed model could be a good basis for improving the success rate of startups and the targeted population of this unique community.

Figure 2. 5 ***:*** *Startup Pyramid*



2.7 Fundamental underlying latent effects influencing Startups

2.7.1 What is an Entrepreneur

To understand whether there are underlying effects that can influence entrepreneurs to venture into an innovative startup, different elements surrounding the entrepreneur should be evaluated. The number one question to be presented is "What is Entrepreneurship"?

The literature is full of hundreds of definitions ranging from: "An entrepreneur is an individual who creates a new business, bearing most of the risks and enjoying most of the rewards" to "A person who starts a business and is willing to risk loss in order to make money", "starting and running your own business**",** to **"**Entrepreneurs are driven by the need to succeed and control their destiny".

Professor Howard Stevenson postulated the most overwhelming and possibly contrasting definition from the Harvard Business School. According to Stevenson,

*"Entrepreneurship is the **P**ursuit of **O**pportunity **B**eyond resources controlled".*

"**Pursuit**" connotes a single-minded dedication. Entrepreneurs have a sense of urgency, which is uncommon in established organisations, where every opportunity is part of a portfolio and resources are more easily accessible. Entrepreneurs frequently believe that the window of opportunity for growth is closing quickly, and that the sheer passage of time depletes their monetary reserves, which they require to recruit resources.

"**Opportunity**" refers to a unique product or service in four ways. Developing a new business model, creating a better or cheaper version of a current product, or targeting new clients for an existing product can all be opportunities. These types of opportunities are not mutually exclusive. Consider a new firm that sells an innovative product using a new business strategy. Likewise, the preceding list does not represent an organisation's full array of options. For example, raising the price of a product or hiring more sales representatives once a company has developed a scalable sales strategy, is a common profit enhancement alternative that is not entrepreneural.

The phrase "**Beyond resources controlled**" suggests limits on the number of resources available. Entrepreneurs control their resources alone when starting a new

business. Most business owners bootstrap, meaning they spend only their own time and money when essential. Sometimes, this is enough to obtain a new business and create enough cash flow to support itself. Even with the highest potential, most founders must mobilise resources that they do not directly control: the firm eventually needs manufacturing facilities, means of distribution, and working capital, among other things.

While entrepreneurs must manage uncertainty, they must also recognise that some risks are beyond their control. Entrepreneurs face risks because they chase new opportunities with limited access to necessary resources. Demand risk refers to the willingness of potential customers to embrace an entrepreneur's solution. There is significant technological risk when a breakthrough in engineering or science is required to bring a solution to the market. Entrepreneurs face execution risks when hiring and retaining staff and partners who can implement a company's strategies. The availability of external money determines a company's exposure to financing risk under acceptable conditions.

Entrepreneurs are caught in a dilemma. On the one hand, reducing risk without resources might be challenging. For example, a product's development and marketing may require external funding to establish technical and market risk limits. However, persuading resource owners to join a business when the risk remains high may be challenging. To address this dilemma, entrepreneurs use four different strategies:

- Using a "minimum viable product", the lowest feasible set of activities necessary to test a business model hypothesis, they may eliminate risks quickly and with little resource investment via lean experimentation.
- Staged investment helps entrepreneurs deal with risk in stages, committing only the resources necessary to reach a particular milestone before committing the resources required to reach the next milestone.
- When entrepreneurs join forces, they can benefit from the resources of the other firm, which distributes risk to those who are better equipped or more willing to handle it. Renting resources are an alternative to purchasing them, as they keep pricing flexible while avoiding the large up-front expenditures associated with resource ownership.
- To urge resource owners to minimise risks and commit more resources, entrepreneurs might conjure visions of a better future that their company

> could make possible. People like Steve Jobs, who had a robust "reality distortion field" that compelled people to go to unusual lengths to assist him in achieving his goals, were famous for it.

Does this definition matter in practice? There are several reasons for this: First, it regards entrepreneurship as a different approach to management rather than a particular stage in the life cycle of an organisation (e.g., predisposition for risk-taking and preference for independence). The second reason is that it also serves as a roadmap for businesses, outlining risk management and resource mobilisation techniques. According to this theory, entrepreneurs may be found in various organisations, from small businesses to multinational conglomerates. Therefore, if there is a belief in the power of entrepreneurialism to drive economic growth and social change, this news should be heard.

In summary, one could say that one needs to be inventive, creative, opportunistic, and persuasive because one rarely has enough resources. Can the above be accomplished via the conventional four exogenous Capital Theories: Social Capital, Relation Capital, Human Capital and Structural Capital, or is there another endogenous theory comprising latent variables that influence the entrepreneur from the base?

2.7.2 Social Capital

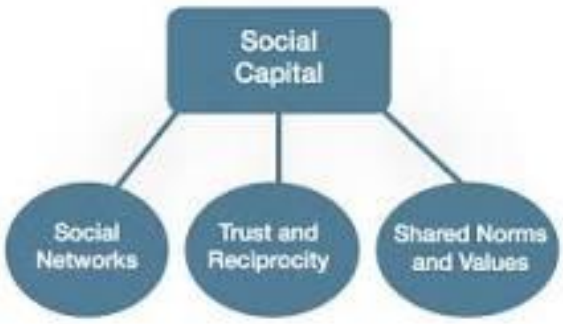
> Social capital is “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition - or in other words, to membership in a group -which provides each of its members with the backing of the collectivity-owned capital, a 'credential' which entitles them to credit, in the various senses of the word” (Bourdieu1986: 248-249; 1983: 190-191).

Accordingly, social capital is immanent relationship capital that provides helpful support when needed. Stable relationships create honour and reputation among their members and are, thus, most effective for building and maintaining trust (Bourdieu, 1984: p. 204). The members of a group provide safety and status credit to each other. The relationships among group members are sustained by material and symbolic exchanges (e.g. gifts or greetings when meeting on the street). These exchanges reinforce existing relationships and can be used to socially guarantee or institutionalise them. Here, exchanges serve as institutional acts (Bourdieu, 1983: p. 191). Exchange relations link

material and symbolic aspects of the social world. They must stay visible to start and maintain relationships (Bourdieu, 1983: p. 191).

Several social issues in the United States have arisen due to decreased social capital over the past three decades (Putnam 1993). Putnam's social capital theory comprises three main parts: moral responsibilities and standards, social values (particularly trust), and social networks (predominantly voluntary associations). Putnam argues that an area has the ability to build up social capital (see 1993) when it has an efficient economic system and solid political integration. Similarly, Adam Seligman penned: 'Modern societies' reliance on consensus is founded on trust networks that connect people, families, volunteer organisations, religious denominations, and other groups such as the American Red Cross. Similarly, contemporary societies' entire "legitimacy" is based on people's "confidence" in authorities and governments (1997, 14). Proponents of American Communitarianism frequently use the same types of arguments. Putnam's theories are, in many ways, a continuation of the American notion of pluralism that came before them. Moreover, they are evocative of functionalist notions of social integration that were popular in the 1950s and 1960s.

Figure 2. 6*: Social Capital Concept.*



2.7.3 Intellectual Capital (Human, Relational and Structure Capital)

Intellectual capital (IC) management frameworks and methodologies have many shapes and sizes. Many management concepts in which firms are already implementing IC-related concerns have also been addressed. An example is business process management (BMP). Lonnqvist and Kujansivu (2007) determined whether BPM can be used to manage IC. Even though it may consume too many resources, the rationale for not including an IC management system is that doing so could complicate management control because of the overlap, and the concepts related to IC could be confusing to

employees even if the issues being managed, such as competencies and the company image, are well known. A single case study empirically examines the role of BPM in IC management. The authors conducted an action research study at a case firm to examine the research question in action and gain more profound knowledge of the phenomenon. These results suggest that business process management can be used to control IC. However, it was found that managing IC with BPM is mostly about producing IC at an operational level rather than strategically regulating IC. By showing how IC management may be used in practise without resorting to a specialised IC management paradigm, this study adds to earlier research.

Figure 2. 7: *Intellectual Capital Standard*.

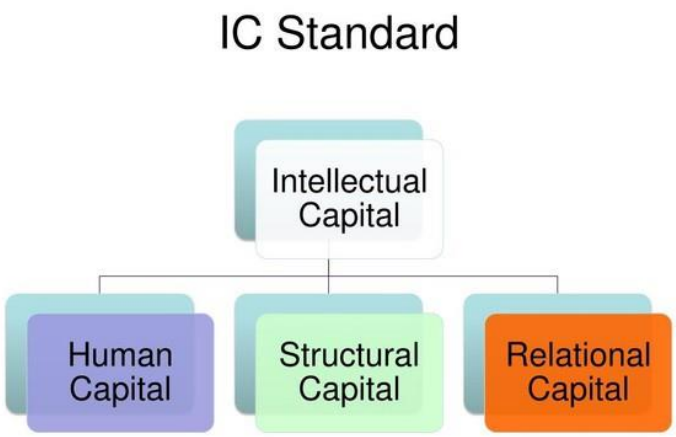


Table 2. 4*: Intellectual Capital in different business processes*

Examples of IC in different business processes

		Types of IC		
		Human capital	Relational capital	Structural capital
Business processes	Providing service for the needs of customer	Expertise on alcoholic beverages	Creating customer contact	Developing work planning
	Customer communication	Communication skills	Whole process is based on relational capital – no specific IC-related factors were identified	Utilising customer feedback
	Utilisation of customer communications	Positive attitude	Understanding customer feedback	Data bank
	Designing and controlling customer-based selection	Special capabilities (e.g. sensory assessment of beverages)	Knowledge of customer needs	Systems and sub- processes
	Ordering and delivering beverages	Materials control	Taking care of availability of products	Development and maintenance of electronic connections
	Developing network of shops	Personal networks	Creating image through e.g. opening ceremonies	Cost accounting
	Developing competencies	Interest of developing own competence	Identifying competence needs of other processes	Assessment of the effects of education

Source: Business Process Management as a tool for IC management. DOI: 10.1002/kpm

From Figure 2.7, Intellectual Capital comprises Human Capital, Structural Capital and Relational Capital. It can also be seen in Table 2.4 how the different processes of each element are implemented in the business process.

None of the above four types of Capital are inclined towards the fundamental underlying elements that may cause specific individuals to become innovative entrepreneurs. All of the above theories are exogenous and influence people and businesses after establishing a business or influencing the group or the individual in certain social activities. There is no connection or answer to WHY or WHAT that influences individuals to venture into entrepreneurship.

The researcher believes that this gap could be filled using another capital advantage, Psychological Capital.

2.7.4 Positive Psychology paves the way for Psychological Capital

Abraham Maslow (1954) introduced positive psychology in his Motivation and Personality book. In 1998, Martin Seligman revived the term more than four decades later as it became the theme during his tenure as the American Psychological Association's (APA) president. A movement for positive psychology was formed because it was felt

that enough attention was directed to the strengths and individuals' positive traits, teams, and communities instead of negative characteristics, destructive behaviours, and mental challenges (Snyder & Lopez, 2002; Seligman & Csikszentimihalyi, 2000). This has led to the development of new exploration initiatives and the execution of these initiatives has exceeded the field of conventional psychology.

Origin and Definition

The positive psychology movement has increased interest and directed attention to positive-aligned organisational behaviour studies (OB). Luthans (2002a, 2002b) has spearheaded this initiative. According to Luthans (2002b: p.59), positive organisational behaviour (POB) can be described as the investigation and execution of positively directed human asset robustness and mental capabilities that are measurable, advanced, and controlled successfully for enhancing accomplishment in the current system. Youssef and Luthans (2011) explored five broad needs perceived to introduce focused studies on POB. These requirements include the following:

Balanced Approach

Since the beginning, OB has been dominated by negative studies, and there is a need to overcome this historical unfairness. Achieving this goal requires a technique that focuses on the positive and negative effects of the workplace.

Evidence-based Positivity: OB should use a philosophical and analytical approach with reliable and valid measurements as the critical determining factor in considering psychological resources.

Uniqueness

Studies targeting organisations should adopt new ideologies, constructs, and techniques to address the challenges of emerging 21st-century environments.

Developmental Approach

Regarding organisational needs, attention has always been directed toward selecting people with stable characteristics for increased productivity, assuming that they will continue to perform exceptionally. However, the BOP adopts a developmental technique and builds, develops, and promotes workplace positivity.

Performance Orientation

POB finally recognises and tackles the need for attention to attainment by highlighting psychological assets that can have quantifiable effects on achievement and ensure that the organisation receives returns.

Since then, the POB field has received significant attention from researchers who emphasise the value of a positive approach in the workplace. Can it be argued that the POB typically frames the OB premise that exists positively? This is not the case, as the POB has established inclusion standards beyond simply framing the existing concepts of OB. Therefore, POB does not claim to introduce new positivity importance; however, it focuses on developing theory and research and using positive characteristics, behaviours, and organisational states (Youssef & Luthans, 2007). Therefore, it follows positive psychology footsteps, which focus on the positive strengths of individuals and their psychological capabilities. Constructs such as Self-Efficacy, Resilience, Hope, and Optimism met the criteria for POB research inclusion, which jointly represent psychological capital (PsyCap). Presently, PsyCap, developed by Luthans and Youssef (2004), is considered to be one of the most relevant constructs of POB.

2.7.5 Psychological Capital (PsyCap)

According to a study by Luthans et al. (2007), PsyCap refers to "the constructive psychological condition of individual's growth that is designated by "(1) being courageous (efficacy) to embrace and put the needed effort to prosper under challenging tasks; (2) making a productive impact (cheerfulness or optimism) regarding becoming victorious presently and in upcoming challenges; (3) staying focused towards objectives and changing directions when required to (hope) to achieve success and (4) when faced by challenges, the ability to stay committed and bounce back to and become more successful (resilience)".

Avey et al. (2014) proposed that PsyCap is a multi-established and multi-dimensional construct. When measured on a scale ranging from pure characteristics at one end to a pure state at the other end, the construct is conceptually located at the end of the scale (Youssef & Luthans, 2011). PsyCap is more stable over time than other psychological constructs (Luthans & Youssef, 2007).

Hope

"Hope" is the first of the four constructs that make up PsyCap, and it was developed by Rick Synder (2000), a positive psychologist. It comprises two components: pathways and agency (willpower) (Synder, 2000; Synder et al., 2002). Snyder (2002) stated that Hope gives a person the agency to set and work after meaningful targets and generates several pathways to realise those targets if single or more pathways are blocked. It entails the urge to prosper and the skill to recognise, explain and follow the path to victory.

A scale for state-hope developed by Snyder et al. (1996); Snyder (2000) was perceived to be convergent but different from some functional and psychological constructs. Furthermore, many empirical studies by Bryant and Cvengros (2004); Carifio and Rhodes (2002), Magaletta and Oliver (1999); and Youssef and Luthans (2007) have demonstrated that Hope constructs discriminant viability to the same triumphant constructs.

Adams et al. (2002) noted that Hope has good relationships with several expected organizational outcomes, including success, employee retention, financial performance, job satisfaction, and job unit performance (Peterson & Luthans, 2003). Luthans and Youssef (2004), found that hope positively impacts three areas: business financial performance, employee job comfort, and employee retention. Merit salary increases, supervisory-rated progress (Luthans et al., 2005), organisation dedication, and work happiness (Youssef & Luthans, 2007). Hope is associated with athletics and academic success outside the work environment (Snyder, 2000; 2002).

Effectiveness

Most of the work on the individual effectiveness construct concentrates on Bandura's (1977) study. Stajkovi and Luthans (1998b, p. 66) defined workplace effectiveness as employees' confidence in their abilitiy to rally the morale, cognitive assets, or series of actions required to successfully implement a particular assignment in a particular scenario.

The investigation found that efficacy is strongly associated with job performance (Stajkovic & Luthans, 1998a; Bandura & Locke, 2003; Sadri & Robertson, 1993; Bandura, 2000) and commitment to the job (Salanova et al., 2011). According to research conducted by Luthans and Youssef (2004) in the United States, diverse cultural job

environments champion the connection between job satisfaction and individual effectiveness, dedication to the organisation, and expected efficacy.

Resilience

The premise of Resilience and study primarily originates from clinical psychologists' jobs with children in adolescence that have been successful, notwithstanding their great affliction (Masten & Reed, 2002; Masten, 2001). Resilience may be viewed as positively managing and adapting during adversity or risky situations (Masten, 2001). According to Luthans (2002a, p. 702), durability is the constructive psychological ability to bounce back from affliction, failure, uncertainty, progressive changes, and positive and increased duties. It allows personal and environmental protection systems to enhance assets or minimise individual risk factors. Persistent individuals seem to have adamant acceptance of facts, strong faith, firmly held virtues of a meaningful life, and supernatural capabilities to extemporise and cope with change (Coutu, 2002).

Strumpfer and Kellerman (2005) stated that there are at least three adaptive responses included in Resilience:

I. Ability to adapt or function positively despite obstacles
II. Demands
III. An individual's ability to recover from periods of poor performance or incidents of injury, illness, or natural disasters.
IV. Be ready to anticipate and deal with inevitable demands, for example, those in first responder jobs such as police, soldiers, firefighters and rescue services.

Larson and Luthans (2006) found Resilience to have an excellent positive connection with job satisfaction. A helpful connection between a worker's resilience level and attitudes related to satisfaction, delightfulness and engagement has also been found (Youssef & Luthans, 2007). Changes in the work environment, such as performance rated (Luthans et al., 2005), happiness, health and progress (Maddi, 1987) contain constructive links with flexibility.

Optimism

According to Luthans (2002a), cheerfulness is associated with beneficial outcomes and a good outlook, including the right motivation and emotions, while

maintaining a realistic outlook. Two major complementary theories explain optimism in the field of positive psychology. Seligman (1998) explained optimism using an outlook structure in which idealists refer to individuals who make personal, healthy, and universal attributions of practical occurrences and external, unreliable, and particular attributions of unwanted occurrences. By contrast, Carver and Scheier (2002) used a version of expectancy in which idealists refer to those whose expectation is that the results will come from improved input and continuous persistence in challenging situations. Seligman (1998) later proposed that optimism could be developed by introducing optimism based on learning. In addition, Carver and Scheier (2002) concurred with Seligman's finding that developmental interventions might lead to optimism.

Research has shown that optimism has reasonable and valuable connections with performance (Luthans et al., 2005; Seligman, 1998), job enjoyment, performance, and happiness at work (Youssef & Luthans, 2007). Employees are motivated to take charge of their desires through optimism for the future and reliance on success capabilities (Seligman, 1998). Self-select into problematic ventures (Bandura, 1977), use appropriate labour and assets, and endure hurdles (Stajkovic & Luthans, 1998a, 1998b).

2.7.6 Measurement of Psychological Capital

Meta analytical work revealed multiple ways of measuring the relationship of PsyCap with performance. Luthans et al. (2007) developed the PsyCap questionnaire as an accurate and reliable measure. According to Caza et al. (2010), the instrument was tested in a representative sample and was considered diverse. In addition, the instrument is equally valid and reliable across cultures and genders, and PsyCap can be measured equally using the short version.

A review focusing on PsyCap's psychometric profile established that there had been consistency across studies on the internal reliability of PsyCap (Dawkins et al., 2013) [see the methodology section below, chapter 5.7.3]. Nevertheless, there are notable variations among objective quantification, supervisor assessment, and individual reports (Avey et al., 2011). Nevertheless, suggestions have been made that relying on the PsyCap's composite score without an initial in-depth assessment of the construct using the confirmatory factor analysis (CFA) could decrease the significance of the PsyCap profile of an individual.

PsyCap is considered a higher-order construct that leads to standard method variance (CMV) between sub-elements. The proposed solution is to single out the variance of a marker variable and the variance of an unquantified latent CMV element, using different approaches to PsyCap's sub-dimension and taking measurements of every sub-dimension in different periods (Newman et al., 2014). PsyCap data collected from an individual may lead to social disruption of CMV and response bias. Newman et al. (2014) denoted that these challenges can be tackled by considering PsyCap's alternative measures. These measures may include inquiring from supervisors, partners, and other parties knowledgeable about the instrument to rate employees' PsyCap (Demerouti et al., 2011).

Currently, the concept of PsyCap is being studied at the team and institutional levels. Walumbwa et al. (2010) created a quantification of all-around PsyCap, and McKenny et al. (2013) suggested PsyCap's organisational measure using text analysis assisted by a computer.

Positive Outcomes

Studies have continuously illustrated that PsyCap is positively associated with several job behaviours, attitudes, and organisational outcomes. Additionally, existing research by Avey et al. (2010) considered the positive impact of workers' PsyCap on followers' attitudes (Avey et al., 2008; Luthans et al., 2007). This implies that the construct helps facilitate a positive context for firms with different desirable results, as provided below.

Performance

Several studies have revealed that PsyCap is strongly correlated with higher employee attainment (Youssef & Luthans, 2007; Walumbwa et al., 2010; Peterson et al., 2011). Luthans et al. (2005) proved that workers' PsyCap is a remarkable indicator of accomplishment (Luthans et al., 2008). It has been revealed that notable composite elements may be better performance predictors and satisfaction than individual elements, which are the constructs of PsyCap (Luthans et al., 2007). Furthermore, it has also been established that collective team PsyCap is related to performance (Walumbwa et al., 2010). In addition, Sweetman et al. (2011), PsyCap is the most reliable predictor of creative performance. A comparison was made between the four constructs of

PsyCap. Luthans et al. (2011) reported that PsyCap positively linked performance related to solving challenges. Abbas and Raja (2011) reported that workers higher on PsyCap show more creative behaviours than those with lower PsyCap based on the supervisor's ratings. PsyCap has been positively associated with task focus (Peterson et al., 2011). According to Kahn (1990), workers tend to be fully occupied with freely directing their work.

Positive Emotions

These are multi-component reaction behaviours that occur over short durations. Fredrickson (2001) denoted that they manifest as loosely integrated element structures such as experiences regarded to be subjective, facial expressions, and mental operations. Positive and negative emotions linked to emotional labour originate from PsyCap (Avey et al., 2011). This is the emotional commitment required to accomplish a task (Millard et al., 2011).

Retention & Absenteeism

The development of PsyCap can provide an efficient platform for minimising the costs of behaviours such as absenteeism which can either be voluntary or involuntary (Avey et al., 2006). Empirical evidence suggests that PsyCap can be applied to enhance employee retention rates (Schulz et al., 2014).

Organisational Commitment and Citizenship Behavior

Employees' PsyCap positively affects organizational commitment (Larson & Luthans, 2006). Respondents whose PsyCap was higher revealed that they took part in more OCBs and exhibited minimal deviant behaviour (Norman et al., 2010). Furthermore, people with higher PsyCap demonstrate less incivility than individuals with lower PsyCap levels (Roberts et al., 2011; Lanzo et al., 2016). According to Anderson and Pearson (1999), incivility can refer to insignificant yet widespread interpersonal deviance that breaks standard practices, creating room for a disrespectful work environment.

Change Management

Avey et al. (2008) stated that workers' PsyCap and their feelings might be a vital contribution to recommendable organisational changes. Cascio and Luthans (2014) illustrated that PsyCap can play a positive role in an oppressive environment. This

supports the outcomes relating to the effect of PsyCap on constructive changes in organisations.

Leadership

A constructive connection has been established between self-perception of legitimate leadership (Jensen & Luthans, 2006); transformational leadership and PsyCap (McMurray et al., 2010); legitimate leadership and PsyCap (Wooley et al., 2011), and both followers and leaders (Story et al., 2013).

Well-being & Mental Health

PsyCap has been suggested to be a productive asset for tackling the symptoms of depression (Liu et al., 2013). Culbertson et al. (2010); Luthans et al. (2010) state that PsyCap can lead to desirable results for employees' psychological welfare. The findings also illustrated (Siu, 2013) that the construct had a remarkable constructive relationship with respondents' well-being in the workplace. Luthans et al. (2013) further reported that people with higher PsyCap had lower cholesterol levels. According to Laschinger and Fida (2014), findings from previous studies also suggest that PsyCap is helpful in the prevention of burnout during the early stages of career development and subsequent individual and work-associated outcomes. Soldiers with higher PsyCap levels before deployment are unlikely to be diagnosed with mental health problems (Krasikova et al., 2015).

Job Satisfaction and OCB

Studies have revealed a recognisable connection between job satisfaction and PsyCap (Hwang & Lee, 2015; Larson & Luthans, 2006) and organisational citizenship behaviours (Jung & Yoon, 2015). Furthermore, a constructive connection exists between an individual's job satisfaction and group PsyCap and OCB at the group level (Heled et al., 2016). Individuals whose PsyCap is high have constructive impressions of safety because they are content with their work (Bergheim et al., 2015).

Conflict Management

Entrepreneurs consider PsyCap to be a valuable asset. According to Zou et al. (2016), there is proof of how PsyCap influences the perception of entrepreneurs, their behaviour, and their response when faced with venture capitalist conflict.

Enthusiastic Workaholism

Spence and Robbins (1992) noted that workaholics experience internal pressure, that pushes them to work. These individuals can be classified into two categories. Work addicts are in the first category, comprising individuals with high work engagement and morale with low work enjoyment. The second category comprises enthusiastic workaholics and individuals with high work engagement, and enjoyment. PsyCap is notably associated with enthusiastic workaholism, and constructive connections have been established between construct and enthusiastic workaholism in workplace spirituality (Pedreira & Monico, 2013).

Quality of Work Life

The study outcome of Nguyen and Nguyen (2012) show the significance of PsyCap in marketers' performance and quality of work life. It has also been revealed that workers with high PsyCap have an enhanced work-life balance (Siu, 2013).

Mediator/Moderator and Antecedents

PsyCap was introduced to moderate the association between supportive organisational climate and accomplishment (Luthans et al., 2008) and the connection between racial identity and growth (Combs et al., 2011). The existing literature also reveals a shortage of research on the potential mediators and moderators of the connection between PsyCap and workplace outcomes at various levels of analysis (Newman et al., 2014). Cole et al. (2009) propose that the destructive impact of unemployment on welfare is lower among people whose PsyCap is high. Nonetheless, older entrepreneurs gain more from PsyCap than younger entrepreneurs in terms of reduced stress levels (Baron et al., 2016).

PsyCap has also been found to moderate the connection between followers' perceptions of transformational leadership and their job behaviours (Gooty et al., 2009). Employees' PsyCap has been improved through both transactional and transformational leadership (McMuarray et al., 2010). According to Walumbwa et al. (2010), the legitimate leadership of the team's supervisor impacts their team's accomplishment of OCB through their joint PsyCap and team trust. Another study also reported a positive connection between legitimate leadership and followers' PsyCap partially moderated by a supportive work climate and mediated by gender (Wooley et al., 2011). Authentic leadership can

directly predict workers' innovativeness by moderating workers' PsyCap (Rego et al., 2012).

Psychological capital (PsyCap) mediate the relationship between racial identity and academic achievement (Combs et al., 2011). Buddying is a tactic for socialisation that gives new members professionalism through an informal connection with an individual in the company. Nigah et al. (2012) reported that PsyCap entirely moderates the association between contentment with buddies and engagement at work. According to Mathe and Scott-Halsell (2012), workers' perceptions of external prestige are constructively linked with their PsyCap. Nonetheless, there was a negative association between PsyCap and depressive symptoms, and female health care professionals who felt under-compensated and over-devoted recorded lower PsyCap scores (Liu et al., 2012). Wang et al. (2012) also found PsyCap as a moderator between burnout and work-family conflict. In addition, workers' PsyCap moderates the association between supervisor support and accomplishment (Liu et al., 2013).

Ngo et al. (2013) have also illustrated that different PsyCap elements have various moderating effects. Optimism and self-efficacy moderated the influence of gender role orientation on job satisfaction. Optimism and Hope entirely moderated the impact of masculinity and partly mediated the impact of femininity on contentment with a career. It was found that there was no moderating influence of Resilience on work and career contentment. The outcomes of the study by Fortune 100 multinational companies' global leaders revealed that leaders' PsyCap had a constructive impact on followers' PsyCap; however, quality is the connection that moderates this impact (Story et al., 2013). Empirical evidence supports the notion that PsyCap moderates leaders' mindfulness to avoid dysfunctional results (Roche et al., 2014). In a team-level study, PsyCap was found to be associated with trust in management, which intervened in connection with attainment (Clapp-Smith et al., 2009).

In addition to achieving the criterion for legitimate quantification, there is growing research illustrating that PsyCap affects expected outcomes in the workplace, and it can also be applied in other scenarios including relationships, health, and overall welfare (Luthans et al., 2013; Youssef & Luthans, 2011). In addition, empirical and conceptual proof suggest that the development of PsyCap is possible (Luthans et al., 2006; Luthans et al., 2008). Nonetheless, further investigations need to be conducted to ascertain

whether PsyCap can be developed using the training framework and to establish its effects on individual accomplishments (Luthans et al., 2008; Luthans, 2012; Luthans et al., 2006).

There is an enormous possibility to further our PsyCap knowledge since it is a new research field. Further research is needed to create more PsyCap constructs, execute them in other scenarios and cultures using current techniques and methodologies, and develop training interventions to improve them (Youssef & Luthans, 2011).

PsyCap is considered a vital leadership asset; therefore, it may be interesting to investigate how the problems of the current work environment can be tackled. This can be achieved by making PsyCap an essential part of leadership training. Future studies should also focus on PsyCap as a group or institutional-level phenomenon.

Additional constructive elements have also been assessed, and the possibility of their inclusion has been examined (Luthans & Youssef, 2007). These entail the cognitive assets of innovation and wisdom, the welfare of affective resources, humour, and flow; social assets such as emotional intelligence, forgiveness, and gratitude; and higher constructs of spirituality, legitimacy, and fearlessness. Studies should be conducted to explore these elements and other psychological assets to determine the possibility of inclusion.

Conclusion

As studies on PsyCap continue, a comprehensive framework of impeccable and situational factors and the conditions for their development and effects are evolving. There is robust evidence that PsyCap adds value at the individual, team, and group levels. The possibility of creating a competitive advantage for human assets can be created and sustained since PsyCap has been less investigated (Luthans et al., 2007). Further investigations could help consultants in human resources, academicians, and health professionals plan, change and implement wholesome interventions in various settings. It may also be necessary to explore how institutional-level variables such as human resource systems and practices impact the development of institutional-level PsyCap in Israel.

2.7.7 State-Like Construct as a Psychological Capital

Contrary to other trait-like constructs that are positively oriented such as the "Big Five" personality dimensions (Barrick & Mount, 1991), virtues and individual efforts (Peterson & Seligman, 2004), or significant self-assessments (Judge & Bono, 2001; Judge et al., 2004), PsyCap is similar to state-like, and it is an entity that can be created. Luthans et al. (2007) developed a continuum to explain the meaning of state-like:

1. Positive states are temporary and prone to change; signifying our feelings. Examples include a positive mood or pleasure.
2. State-Like; can be altered and made open to growth; the constructs entail hope, effectiveness, optimism, and resilience, but a scenario has been developed for functional constructs such as welfare, knowledge, forgiveness, acknowledgement, and courage properties to state-like.
3. Trait-Like is highly reliable and problematic to adjust; it constitutes strengths and personality factors. For example, the Big Five dimensions include personality, main self-evaluations, virtues, and personal strengths.
4. Positive Traits; extremely reliable, fixed and challenging to adjust, for example, talent, intelligence and positive characteristics that can be inherited.

Research analysis conducted by Cropanzano and Wright (1999), Chamberlain and Zita (1992), and Luthans et al. (2007), supported the reliability continuum of positive constructs; PsyCap shows stability over a duration. However, its constituents are expected to be less reliable, unlike trait-like constructs or positive states, which are momentary and can be viewed as state-like, adjustable, and growth (Luthans et al., 2007). PsyCap can be developed through an online training program (Luthans et al., 2008), hope components (Snyder, 2000; Synder et al., 2002), effectiveness (Bandura, 1977), durability (Werner & Smith 1982, 1992; Garmenzy, 1974; Bonanno, 2005; Luthans et al., 2006), and idealism (Seligman, 1998).

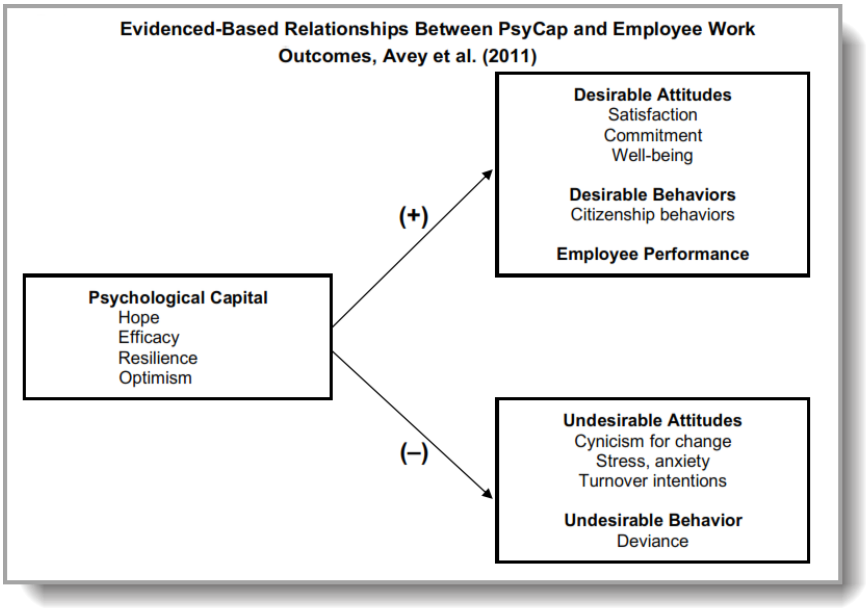
2.7.8 Advantages of Psychological Capital

PsyCap is a construct in the second-order category that is significant and relates firmly to employees' views and how they usually behave as sensible by human resource management, essentially measuring performance through several means (see the meta-

analysis of 51 investigations done by Avey et al., 2011). Avey et al. (2010) proved that PsyCap might be a helpful resource and essential in boosting welfare psychologically (also see Luthan, Youssef, Sweetman & Harms, 2013). Additionally, other studies have indicated a negative connection between PsyCap and motives to leave, which could affect dealing with or minimising levels of stress (Avey et al., 2010; Avey et al., 2009). Some studies also show that PsyCap may facilitate sound adjustment in an organisation (Avey et al., 2008) employee connection, and a supportive atmosphere (Luthans et al., 2008).

Avey et al. (2010) proved that companies with higher PsyCap would primarily engage in more beneficial extra-role behaviours.

Figure 2. 8*: Relationship between PsCap and Employee Work Outcomes*



In addition, this study found that people whose PsyCap was higher engaged less in counterproductive behaviours in terms of work, which are unwanted in firms (Avey et al., 2010). PsyCap is positively related to acceptable attitudes while reporting a poor connection with unwanted behaviours and attitudes (Avey et al., 2011). These relationships are summarised in Figure 2.8. Avey et al. (2011) meta-analysis summarised that PsyCap averagely maximised effective results by 28% while reducing unwanted feedback by 24%.

PsyCap may also have benefits that exceed those of that person. A recent study showned valuable connections between team performance and PsyCap (Clapp-Smith et al., 2009; Peterson & Zhang, 2011).

2.7.9 PsyCap's Competitive advantage

Some capital created by firms for a competitive edge still has an influence; however, PsyCap can be seen as a different essential asset that can be developed further. Figure 2.9 shows the four capitalists who currently influence firms. As mentioned above, technology is currently affordable and easily accessible to firms of different sizes and ages, and traditional capital such as data, financial resources and equipment influence an organisation's competitive advantage. In contrast, a leader's contribution is advantageous to the organisation. Thus, it is more important to focus on how leaders individually control followers and colleagues based on their knowledge, and ability to build a legacy, character, and balance the interests of stakeholders' long-term goals in an organisation (Youssef & Luthans, 2012). Areas such as managerial intelligence, technical expertise and transactional competence are becoming less coveted.

Figure 2. 9*: Expanding Capital for Competitive Advantage*

Firms should now focus on growing extra and challenging capital to replicate a competitive edge by maximising the PsyCap of workers. This allows them to gain an advantage over their competitors. Essentially, a firm could also embrace its PsyCap condition in its problems and circumstances, making it distinct from the company (Luthans & Youssef, 2004). This suggests that a company can create a specific favourable environment that meets the needs of the industry, customers, and employees.

Organisations should consider how individuals fit with the firm and their jobs to develop and adapt PsyCap. Chatman (1989) and Kristof (1996) defined individual-organisation fit as the congruence level between a person and a firm's objectives, wants, norms, capabilities, values and behaviours. Individual-job fit demonstrates how individual traits, skills, ideas, and needs are compatible with job demands (Caldwell & O'Reilly, 1990). PsyCap must meet job demands and complement the firm to acquire the greatest benefit from working there.

Luthans and Youssef (2004) provide a scenario in the next paragraph on why different types of PsyCap are advantageous based on the work and particular needs of a company:

"… *self-efficacy is a realm of psychological capacity that is distinct. New workers who were self-efficacious in their initial jobs may not have confidence in their current roles except when proactive development inputs are expanded on their part. Their leaders and colleagues increase their effectiveness in their new roles. Besides, firms that operate in unpredictable fields are likely to gain further from utilising risk and strategies that focus on processes to buffer the effect of the adjustment on the Resilience of their workers compared to those operating in predictable fields."*

2.7.10 Description of PsyCap

An individual's PsyCap was measured through the Psychological Capital Questionnaire (PCQ), which contains 24 items. The PCQ comprises four aspects, leading to the quantification of an individual's PsyCap. The four proportions are Optimism, Resilience, Effectiveness, and Hope.

Hope: The Way and the Will

Rick Snyder's premise-building and the investigation are the basis of Hope. According to Snyder et al. (1991, p. 287), Hope can be defined as a constructive motivational condition based on the perception of thriving agency and interactive pathways. The power of the will and pathways are constituents of Hope, making it specifically relevant to stress current self-motivation in the workplace, contingency actions, and autonomy.

Effectiveness: Confidence to Succeed

Efficacy was developed based on Albert Bandura's work and his social cognitive theory. In the workplace context, efficacy may refer to an individual's reliance on skills to maximise morale, cognitive capital, and courses of action required to successfully implement a particular assignment in a particular scenario (Stajkovic & Luthans, 1998).

According to Luthans et al. (2007), self-efficacy seems to have features such as setting high individual targets and self-selection into challenging assignments, accepting and prospering on the challenge, being highly self-motivated, and enduring when confronted with challenges and hurdles.

Resilience: bouncing back and beyond

According to Luthans (2002a, p. 702), Resilience refers to the capacity to recover from afflictions, failure, conflict, progress and an increase in responsibility. Resilience features include developing viable strategies, taking measures to execute them, individual positive views and reliance on abilities and robustness, good communication skills, the ability to solve problems, and the capacity to control impulses and strong feelings. It is possible to develop all the three factors.

Optimism: Realistic and flexible

Optimism is a style of attribution that explains valid occurrences in terms of personal, pervasive causes and permanent and unwanted occurrences such as external, provisional and distinct situations (Seligman, 1998). Specifically, applicable to the workplace is achievable, flexible optimism, which provides managers and workers with the skills to use optimism and explanatory styles. Additionally, optimism increases the ability to adapt these styles realistically to immediate circumstances.

2.8 The Link between FDI and Startups

In the previous sections of the literature review, many theories of FDI have been discussed to identify and understand the connection between FDI and startups. A further critical evaluation was conducted on the empirical studies of 88 papers written over 50 to 60 years, including the main theories of FDI. The factors affecting startup success and the fundamental underlying latent effects influencing startups are further discussed.

The standard approach is that FDI affects startups, GDP, and other variables in the short run, with one or two studies showing a long-run effect; however, many also have contradictory findings. No study has shown the reverse effects, namely, startups influencing FDI or from microeconomics to macroeconomics.

The introduction of this new section provides an opportunity to highlight how almost all the literature focuses on the link between FDI and startups and not vice versa, which is a gap in the literature because it does not exist in any literature. The point is that with the inverted parallelogram, which should reinforce each other to create a successful startup ecosystem, founders of startups (Psychological Capital) → startups → FDI are limited in how they are examined in the literature.

2.8.1 The Solution to the Literature Gap

A sound solution to this problem should be based on two solid pillars found in the literature, together with a connecting girder that stabilises the two pillars.

The "Imperfect Market Model" proposed by Hymer (1960) and the "Eclectic Paradigm" by Dunning (1993) are two influential theories in the field of international business and economics, offering insights into the motivations and strategies of firms engaging in foreign direct investment (FDI). While these theories were developed independently, there is a connection between them, and they are often discussed together to provide a comprehensive understanding of the dynamics of multinational enterprises (MNEs). These are the two pillars with the connecting girder from Dunning and Lundan (2008), who stated that: No single mechanism exists to describe how foreign investment flows could be explained, both macro and micro. (Figure 2.10).

Figure 2. 10: *Link between FDI and Startups*

2.8.2 Imperfect Market Model by Hymer:

Stephen Hymer's Imperfect Market Model, developed in the 1960s, challenges the traditional neoclassical economic view that firms operate in perfect markets. Hymer argued that firms engage in FDI to exploit differences in factor costs and overcome imperfections in the market, such as imperfect information, economies of scale, and market power. His work lays the foundation for the modern theory of multinational enterprises. It identifies imperfections as inefficient allocation and distribution of resources. (1) Scale economies, (2) government regulations, (3) trade barriers, and (4) tariffs plus factors.

2.8.3 Eclectic Paradigm by Dunning:

John Dunning's Eclectic Paradigm, known as the OLI framework (Ownership, Location, and Internalization), was developed in the 1970s. This paradigm attempts to explain why firms engage in FDI by considering three main factors: ownership, location, and the internalisation of transactions. According to Dunning, for FDI to occur, a firm must possess specific ownership advantages, its location must offer certain advantages, and internalisation should be needed to exploit these advantages within the firm rather than through external markets.

2.8.4 Connection Between the Models:

Overcoming Market Imperfections:

Both Hymer and Dunning recognise the presence of market imperfections but approach the issue from slightly different perspectives. Hymer's Imperfect Market Model emphasises the role of market imperfections as a driving force behind FDI. On the other hand, Dunning's Eclectic Paradigm incorporates the idea of internalisation (exploiting ownership advantages within the firm) as a response to market imperfections.

Ownership Advantages:

Dunning's concept of ownership advantages aligns with Hymer's idea that firms engage in FDI to exploit proprietary advantages, such as technological know-how, management skills, or brand reputation. These ownership advantages give firms a competitive advantage and drive their internationalisation.

Internalization:

The internalisation aspect of Dunning's paradigm, emphasising the firm's decision to perform certain activities internally rather than relying on external markets, reflects Hymer's insights into firms' strategies to overcome market imperfections. Internalisation in this context is a response to imperfections in external markets.

Location Advantages:

Both models acknowledge the importance of location-specific advantages in driving FDI. While Hymer's work focuses more on the firm's strategies to exploit location-specific advantages, Dunning's paradigm formalises the role of location in the decision to engage in FDI.

Hybridization:

Scholars have often used and expanded upon the Imperfect Market Model and the Eclectic Paradigm. Theories in international business often draw on multiple perspectives to create a more comprehensive understanding of the complexities of multinational operations.

Summary:

In summary, the connection between Hymer's Imperfect Market Model and Dunning's eclectic paradigm lies in their shared recognition of market imperfections and the strategies that firms adopt, such as internalisation and leveraging ownership and location advantages, to overcome these imperfections. Dunning's Eclectic Paradigm can

be viewed as an extension and refinement of Hymer's ideas, providing a more structured framework for understanding the motives and strategies of multinational enterprises.

While these models have distinct historical roots and theoretical underpinnings, they contribute to a broader understanding of multinational enterprise behaviour in imperfect markets. This connection lies in their shared focus on explaining why firms engage in international activities and the advantages they seek in the global marketplace. Researchers often integrate insights from both models to develop nuanced explanations of the internationalisation process.

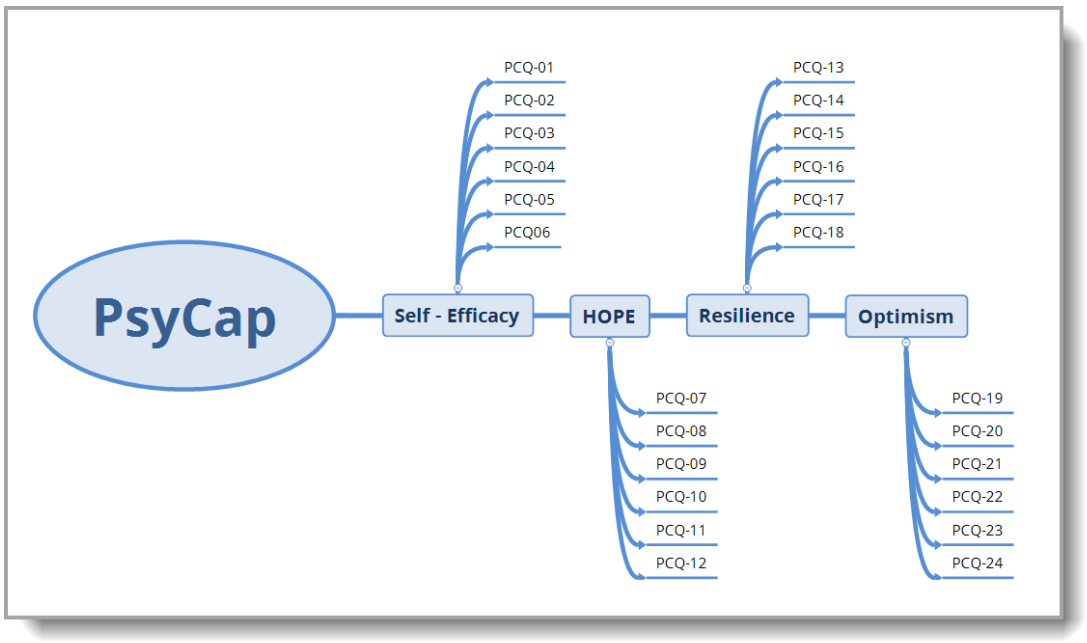
Conclusion:

From the above two models and the connection between them, two additional conditions are relevant for FDI success, according to Kindleberger (1969). (1) The viability of any investment by a foreign firm must have a distinct financial advantage, and (2) the invested market must be imperfect.

As stated previously by Dunning and Lundan (2008), “No single mechanism exists to describe how foreign investment flows could be explained, both Macro to Micro”, and the two models can now be observed instead of macro to micro, but in the opposite direction, microeconomics – the startup–to macroeconomics – FDI.

The Eclectic Model of OLI – Ownership, Location, and Internalisation–is, in fact, the formation of new startups, offering participation in ownership to new investors, location in the international playground, and the offer of internalisation of products. This contradicts the grounded idea of MNEs looking for these types of investments, but new startups offer these conditions to new investors. The involvement of governments in programs to advance the establishment of new startups and investment in R&D comes from the second model of the Imperfect Market. Together, the two models allow for the study of startups influencing the inflow of FDI into the country, and the direct connection with the Inverted Parallelogram is explained in the introduction.

Figure 2. 11: *PsyCap Questionnaire*

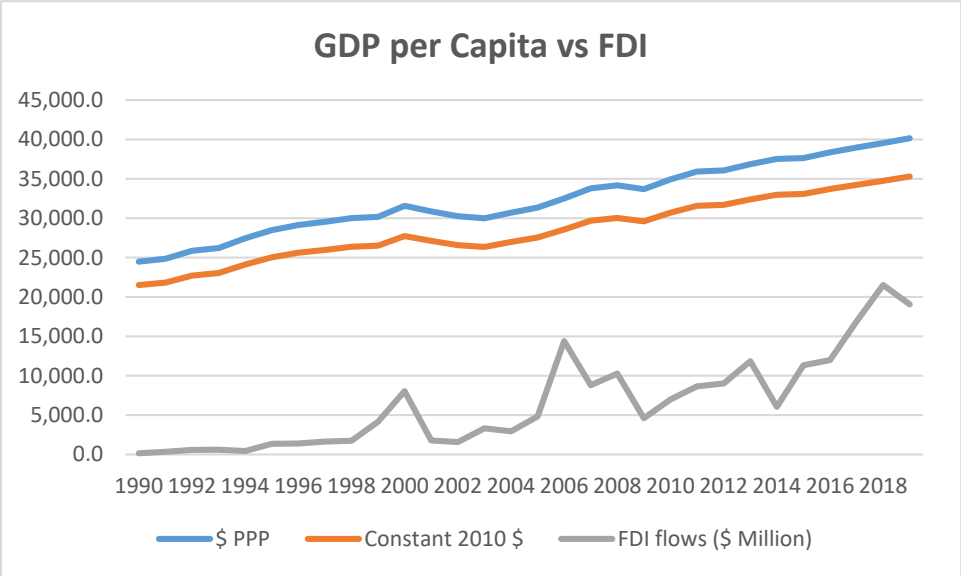


CHAPTER 3: THE ISRAELI ECONOMY

3.1 Introduction

An initial investigation of the Israeli economy showed an enormous surge in new startups over the past 20 years, coupled with a considerable increase in FDI inflow and venture capital into the economy. Israel's gross domestic product per capita was last recorded at 40,161.90 US dollars in 2019, adjusted by purchasing power parity (PPP). This number increased from $24,288.50 in 1990 to this value (Figure 3.1).

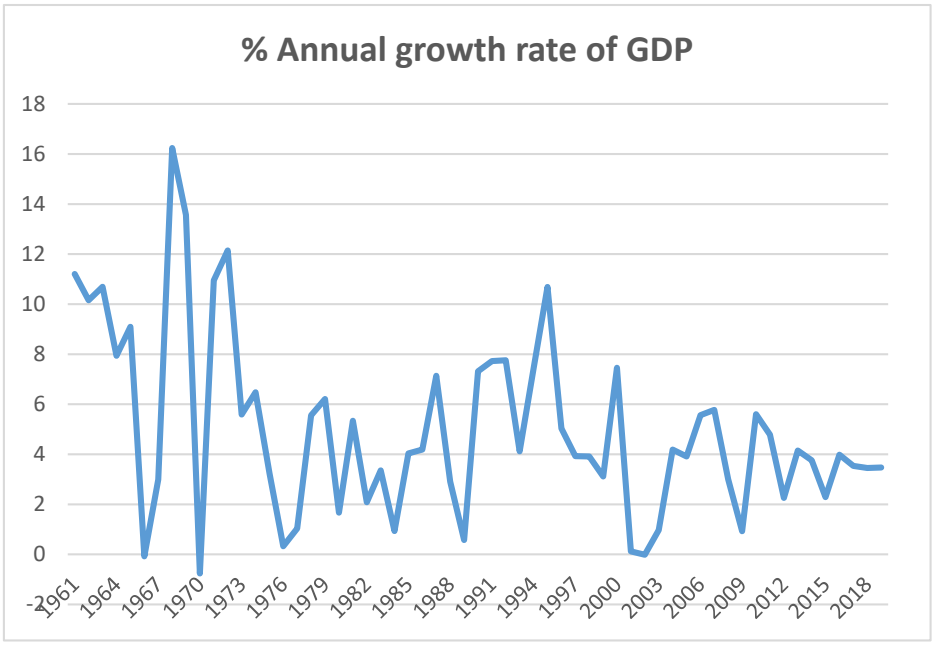
Figure 3. 1: *GDP per Capita vs FDI*



Source: World Bank

During the past 60 years, the Israeli economy has grown at an exceptional rate, with an annual average growth rate of 4.11% real GDP, and over the past 20 years, at an annual rate of 4.34% (Figure 3.2).

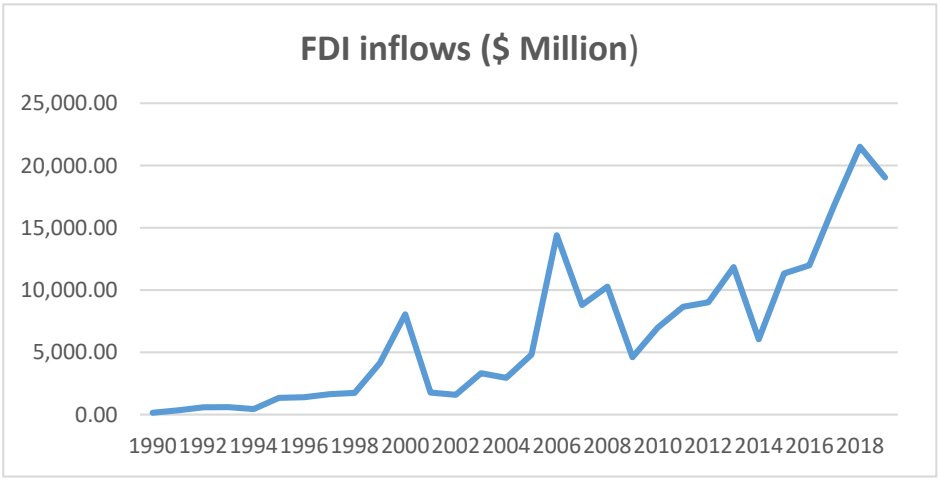
Figure 3. 2: *% Annual Growth of GDP*



Source: World Bank

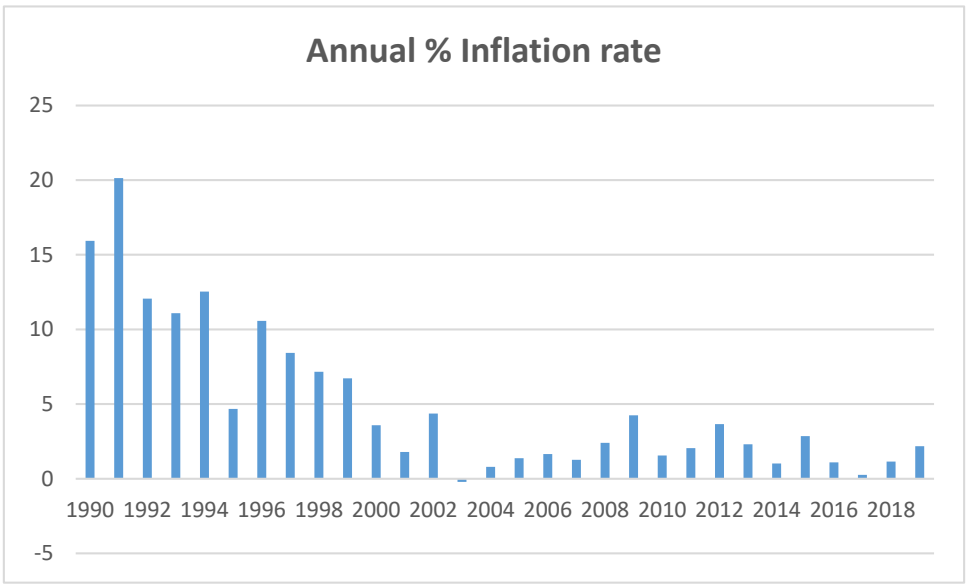
During the same 20-year period, FDI grew at a stunning annual average rate of 36.11%. (Figure 3.3), the inflation rate was the average per year, 4.95%, but it decreased immensely over the past ten years to an annual average of 1.96%. (Figure 3.4).

Figure 3. 3: *FDI Inflows*



Source: World Bank

Figure 3. 4: *Annual % Inflation rate*



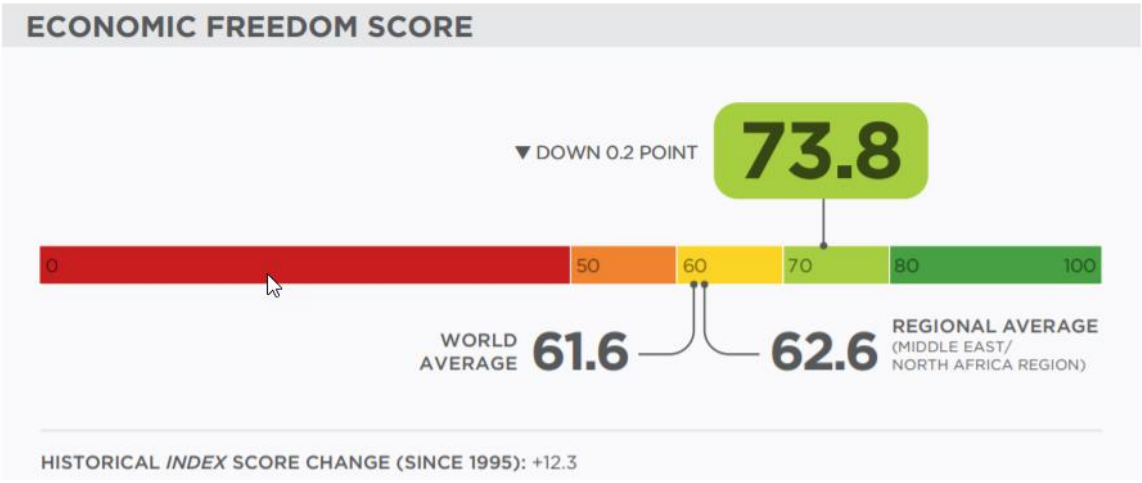
Source: World Bank

Another vital index valued by the international economic community is the Heritage Foundation's 'Index of Economic Freedom', which measures 12 quantitative and qualitative factors grouped into four categories or pillars of economic freedom. The four main variables are as follows:

1. Rule of Law (property rights, government integrity, judicial effectiveness)
2. Government size (government spending, tax burden, fiscal health)
3. Regulatory Efficiency (business freedom, labour freedom, monetary freedom)
4. Open markets (trade freedom, investment freedom, financial freedom)

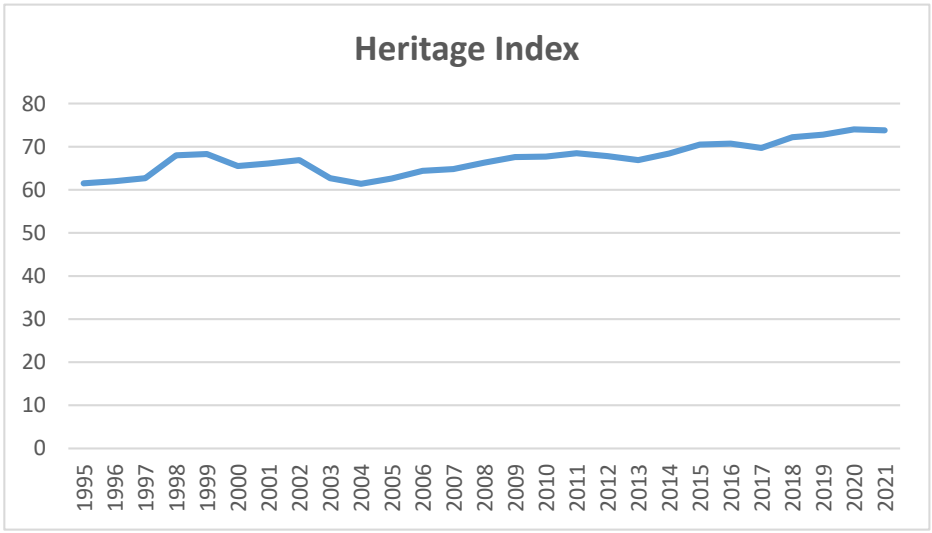
The score for 2021 was 73.8, which can be seen in Figure 3.5.

Figure 3. 5: *Economic Freedom Score for the year 2021*



It can also be seen that there is a steady improvement in this index from 1995 to 2021 (Figure 3.6).

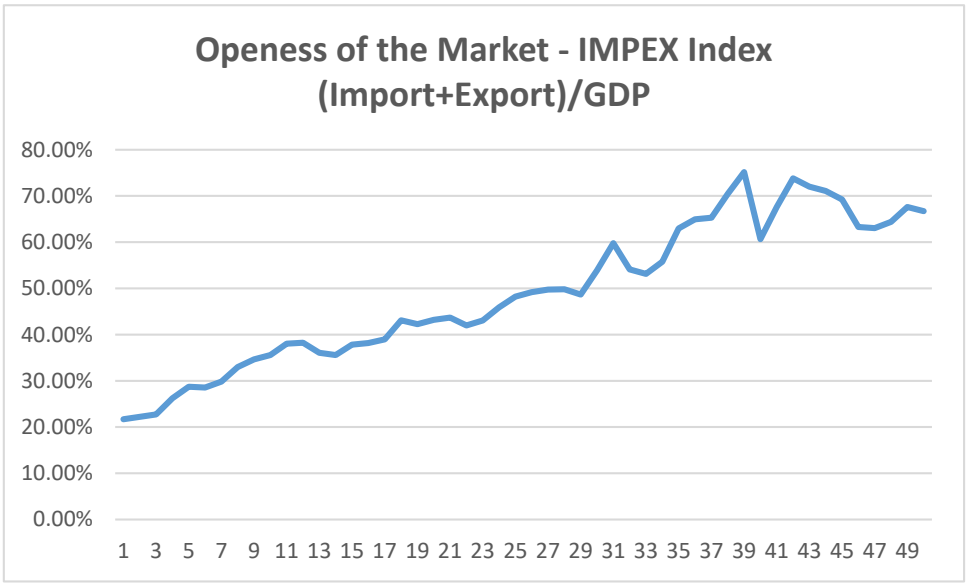
Figure 3. 6: *Heritage Index for years 1995 - 2021*



Source: Heritage Foundation

Another interesting indicator is the openness of the economy, or the Impex index, which is measured relative to the size of the import and export sectors and is calculated as the ratio of exports plus imports to GDP (Figure 3.7). This index has been increasing and shows the openness and socio-economic development of the Israeli economy.

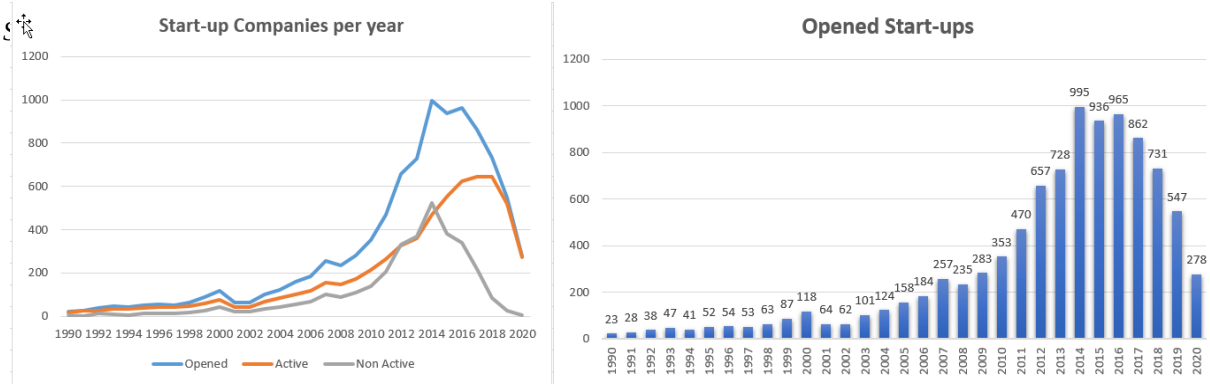
Figure 3. 7: *IMPEX Index – Openness of the Market*



Source: World Bank

Over 20 years, 9,594 startup companies started with a relatively low percentage of 30.4% on average during the same period, which became inactive.

Figure 3. 8: *Startup Companies*



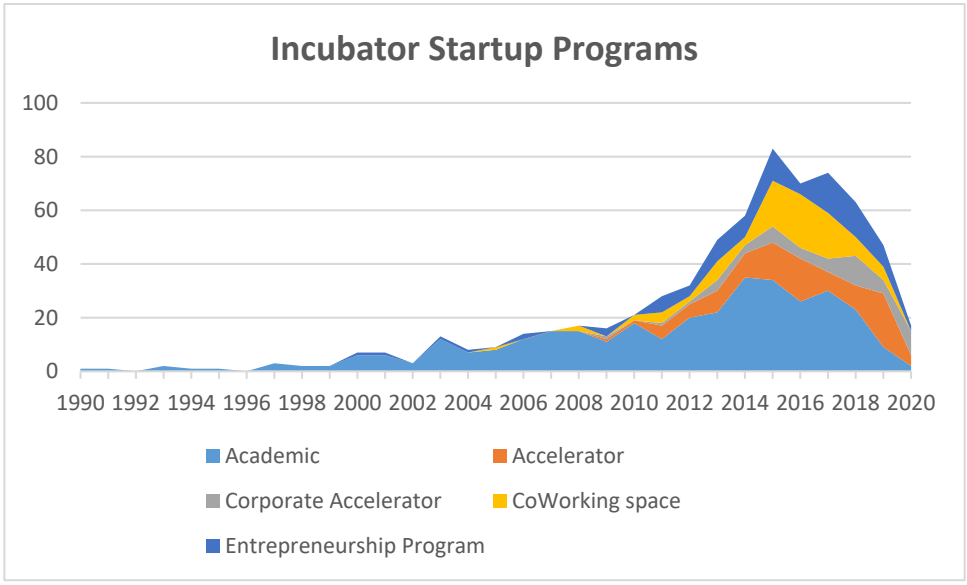
From 1990 Incubator startup programs were initiated, as can be seen in the following chart, Figure 3.8, as well as Table 3.1

Table 3. 1: *Incubator Startup Programs from 1990 - 2020*

Type	*Initiated*	*Active*	*Non-active*	*% Dropout*
Academic	339	275	64	18.8%
Accelerator	99	81	18	18.2%
Corporate Accelerator	50	46	4	8.0%
Co-worker space	87	66	21	24.1%
Entrepreneur program	89	80	9	10.1%

*Source***:** Startupnationcentral.org

Figure 3. 9: *Incubator Startup programs*



Source: Startupnationcentral.org

From the above data, it is interesting to note the relatively low rate of inactive startups and incubator programs over the past 20 years. These figures may show that inherent latent factors influence startup communities.

3.2 Policies that have been successful in Israel for FDI

The above results show that the addition of new startups to the economy has a long-term effect on FDI. It should be a priority for all governments to attempt to improve the local startup ecosystem. Other countries with changes could use an example of what the Israeli government has implemented over the years to facilitate their local economies. Several successful policies have been implemented by the Israeli government to foster

the development of startups. Many of these policies can be implemented in other countries as recommended.

The Israeli government has enacted several laws to encourage investment in Israel. The Encouragement of Capital Investment Law in 1959 (with subsequent modifications) and the Encouragement of Industry (taxes) Law in 1969. Furthermore, there was the Encouragement of Industrial Research and Development Law in 1984, the Income Tax Law (Adjustment for Inflation) of 1985, and the Law for the Encouragement of Investment in 1990 (Capital Intensive Companies) (GATT Secretariat, 1995).

The Israeli government uses various incentives to attract investments. These incentives apply to foreigners and Israelis, with greater benefits for foreigners in some cases. These benefits are directed at investments in specific geographical areas (Development Zones) and sectors, such as tourism.

The incentives range from reduced taxes (including accelerated depreciation for up to ten years, grants, or tax holidays, depending on the investor's choice). However, investors must satisfy specific conditions to qualify for "approved enterprise" status to qualify for these benefits.

Development Zones

One of the main objectives of the Encouragement of Capital Investment Law of 1959 was to provide a means to help the government absorb immigrants and create jobs and regional development. Therefore, the country was divided into three development zones with different incentive packages.

1) Zone A comprises the northern and eastern Galilee region in the north, most of the Negev area in the south, and Eilat on the Red Sea.

2) Zone B comprises Galilee's central part and the country's central southwest, including Jerusalem.

3) The Other Zone comprises most of the Mediterranean coast in the centre of Israel, the most populated area of Israel (Kaplan, 1994).

Zone A is the least populated area, with a higher unemployment rate than the other zones. Therefore, the incentives offered to investors who locate their companies in Zone A are the highest, as Table 3.3 shows.

Incentives are mainly given to projects that can offer jobs in preferred areas, development areas, and sectors that bring foreign currency to the economy, such as exports and tourism (GATT Secretariat, 1995). Other incentives are also available for R&D.

Approved Enterprises

To obtain approved enterprise status companies must have a paid-up capital of at least 30% of the total investment in the enterprise (Kaplan, 1994). The Israeli Investment Center grants this status under the Encouragement of Capital Investment Law to companies incorporated into companies registered in Israel, cooperative societies registered in Israel, and partnerships. Approved enterprises are entitled to grants and tax reliefs that vary according to the country in which the enterprise is located.

Tax Reliefs

Tax relief for approved enterprises is available in terms of reduced tax rates on companies, reduced tax rates on dividends, and accelerated depreciation. Tax rates differ depending on the percentage of foreign ownership and company location. The greater the foreign ownership, the higher is the tax relief, as indicated in Table 3.2. General tax relief can be accompanied by other government incentives, as Table 3.3 shows. Companies that waive their rights to grants can obtain a total tax exemption for up to ten years, depending on their location (Kaplan, 1994).

Tax Holiday

Approved enterprises can choose tax breaks over investment grants. Approved enterprises in Zone A can receive a tax break of up to ten years, six years for enterprises in Zone B, and two years for enterprises in other areas (Chaikin, 1995).

Investment Grants

An approved enterprise is eligible for grants as a percentage of its investment, intangible fixed assets, and general tax relief (Table 3.2), provided that the option of a

tax holiday is not selected. These grants are given to approved enterprises in the industry, industrial equipment rental, buildings, rental, tourism, and agriculture (Kaplan, 1994). An approved enterprise can receive a grant for land development costs but not the cost of land (Chaikin, 1995).

The percentages of grants as a fraction of the total investments in the different zones are listed in Table 3.3.

State Guarantees

According to the Law for the Encouragement of Capital Investments, a foreign-approved enterprise can obtain state guarantees for loans from banks and other financial institutions. Unlike investment grants, which are restricted to physical capital and equipment, state guarantees are available for intangible assets and working capital (Chaikin, 1995). To qualify for a state guarantee, an approved enterprise must invest at least 30% of its total investment requirement, including intangible assets and working capital. Additionally, there is a minimum paid-in capital of $75,000 in Zones A and B and $100,000 in other areas (Kaplan, 1994). Table 3.3 describes the levels of state guarantees according to the different zones.

Table 3. 2*: Tax Rates on Investment in Israel*

	Non-Approved Enterprise		*Approved Enterprise*			
	Locally owned	*Foreign Investor*	*% of Foreign Ownership ***			
			0-48	*48-74*	*74-90*	*90+*
Taxable Income	100	100	100	100	100	100
Corporate Tax rate	37*	25	25	20	15	10
Income Tax rate	0	0	0	0	0	0
Tax rate on dividends	15.75	11.25	11.5	12	12.75	13.5
Total effective tax rate on distributed income	52.75	36.25	36.25	32	27.75	23.5

Note: * The rate was 38% until 1994, and was scheduled to decrease to 37% in 1994 and 36% in 1995 (Saunders et al. 1994). Since January 2020 corporate tax rate has been 23%. ** Depending on location, the rates in 2020 range from 5% - 16%

Table 3. 3*: Government Incentives for Investment in Israel*

Development Zone	*Guarantee*	*Grant*	*General Tax Benefits from Table 2.1 (in Years)*	*Full Tax Exemption (in Years)*
A	0%	38%	10	-
	85%	0%	0	10
	45%	25%	10	-
B	0%	20%	10	-
	85%	0%	4	6
	60%	10%	10	-
C	0%	0%	10	-
	85%	0%	8	2
	-	-	-	-

Combined Path

An approved enterprise can obtain a combined incentive path for grants and state guarantees as shown in Table 3.3.

Research and Development Grants

Incentives were provided in the form of cash, grants and relief. The Israeli government offers R&D grants under the 1984 Law for Encouragement of Industrial Research and Development. The approval of the grant was conditioned on the manufacturers being in Israel, no grants were received from other sources, and the know-how remained in Israel. If the project is commercially successful, grants are repaid in royalties. The grants, repayments, and spread depend on the nature of the project and the area zone in which the project is located (Chaikin, 1995).

1. Cash Grants

Cash grants are provided, as percentage of R&D expenditure. These grants usually range between 50% and 60% of research development expenditures (Kaplan, 1994).

2. Binational Research Agreements

Israel has research agreements with several countries, including the United States. These programs offer financial assistance and help to match local firms with suitable foreign partners (Kaplan, 1994).

In addition to the financial and fiscal incentives the Israeli government offers foreign investors, Israel enjoys free trade agreements with the European Community

(EC), the European Free Trade Association (EFTA), and the United States. The agreements result in lower customs duties on exports and imports, which, with financial and fiscal incentives, make Israel an attraction for foreign investors, who use it as a "free trade bridge."

Tax Treaties

In addition to general tax relief for foreign investors in Israel, the Israeli government has signed double taxation treaties in several countries, such as Germany, Japan, the United Kingdom, and the United States. The underlying principle of all these treaties is that an investor will obtain credit in the country of his residence for taxes paid in the other country.

According to Israeli Law for Encouragement of Capital, foreign investors who receive tax relief are entitled to credit from their home country as if they paid total taxes in Israel, reducing their taxes at home. This tax sparing is not available under the U.S.-Israel tax treaty (Chaikin, 1995).

Free Trade Agreements

Israel signed a free trade agreement with the European Community (EC) in 1975, under which most Israeli exports to the EC countries are entirely exempt from import duties, and vice versa. Rules of origin that ensure minimum local value-added are required. In 1985, the U.S. government signed an agreement to remove all trade barriers between the two countries. Exports from the United States enjoy the same conditions as those from the European Union, but with some differences in terms of their country of origin. Since 1995, all trade under the agreement has been exempt from import tariffs and levies. Israel signed another agreement with the European Free Trade Association (EFTA) countries in 1992 to become effective in January 1993. Tariffs on industrial goods were automatically removed, but those on agricultural products or processed food were not.

It is essential to mention that Israel is the only country that enjoys a free trade agreement with the EC and the US.

To continue its liberalisation, the government introduced a programme in September 1991 to expose the economy to imports from South East Asia, South

America, and Eastern Europe, countries with which Israel previously had no trade agreements. The first step was to replace of non-tariffs (licencing quotas) with tariffs.

The second stage was a gradual reduction in customs duties, which came into effect in September 1992 and was scheduled to take five to seven years until fully applied, starting in September 1991 until a maximum of 12% was reached.

This goal was met with significant objections from some sectors, especially textiles and clothing, so the government extended the process for two additional years in the textile and clothing areas (Bank Israel, 1993).

Restrictions on Foreign Investment in Israel

In general, there are no restrictions on foreign investments in Israel. Foreign investors can invest in local companies, joint ventures, and real estate and repatriate their home proceeds. Foreign investors are still not allowed to invest in specific defense industries, electricity generation, or rail transportation (Chaikin, 1995).

Conclusion

Because of free trade agreements with the US, the EU, and EF countries, the highly skilled and relatively inexpensive labour force, enormous governmental incentives, and its strategic location, Israel qualifies as an ideal local for foreign investment.

Recently updated Data from the Law of Encouragement of Capital Investment (Nimrod Yaron & Co.)

The Grants Program:

- Grants are accorded at up to 20% of the amount of investment in fixed assets
- Investments in the south/Negev area may have an additional 10%
- Applying companies must meet the criteria listed here: https://investinisrael.gov.il/BusinessInIsrael/Pages/Investment_incentives.aspx

Table 3. 4*: Tax rates updated*

	Industrial Companies	***R&D Companies***
Dividend Tax Rates	20%	20% Dividends distributed to a non-Israeli company – 4%
Reduced Corporate tax rate	7.5% - 16%	7.5% - 12%
Reduced Capital gains tax rate		6% - 12% Under certain conditions
Depreciation rate	Accelerated depreciation for productive assets 200% for machinery/equipment 400% for buildings (up to 20% per year)	

Table 3. 5*: Updated Tax Incentives*

Tax Benefits	*Corporate Income Tax Rates*		*Dividends Tax Rate*			*Income Tax on IP Revenue*	*Notes*
	Dev. Area A	*Other areas*	*Individual*	*Foreign Company*	*Israeli Company*		
Without the law	23%	23%	30%	30%	0%	23%	Dividend tax for individuals who are not a major shareholder is 25%
Prioritized Enterprise	7.5%	16%	20%	20%	0%	23%	
Prioritized Enterprise – over IL10B	5%	8%	20%	5%	0%	23%	Foreign Company – Full ownership
Prioritized Technological Enterprise	7.5%	12%	20%	4%	0%	12%	If a foreign entity/individual holds more than 90% of the shares - capital tax benefits will be granted under certain conditions
Special Prioritized Technological Enterprise	6%	6%	20%	4%	0%	6%	Capital tax benefits are under particular conditions.

The government venture capital fund that boosted Israel's startup economy

The most successful government venture capital programme of the 1990s helped propel Israel to the top of the global R&D funding rankings. The Yozma group invested in more than 40 companies between 1993 and 1998.

Over four years, from 1993 to 1998, state funds were used to entice foreign investments in Israeli companies. Israel's private venture capital surpassed public sector investments in less than a decade. The percentage of venture capital investments from public funds in Israel dropped from approximately 50% in 1993 to zero in 2000.

More than 30 foreign-based venture capital companies have opened up stores in Israel due to Yozma's approach to luring global investors into Israel.

As part of the Yozma programme, the government and business sector worked together to create a fund to invest in Israeli companies. Under its central model, the government provides up to 40% of cash raised by outside investors. After seven years, it was repurchased at the same price and interest. Partner investors from the United States, Japan, and Germany are expected to decide where to invest.

The Israeli government spent $100 million on Yozma over its first three years, creating ten public/private funds totalling $20 million.

YOZMA's financial leverage rose from $100 million in 1993 to $250 million in 1996 while it was in operation. Following the assessment of Yozma's ability to function freely, the government sold its stake in 1998. Despite private venture capital making up the bulk of the industry, Israel spends more on R&D than any other country: 4.25 per cent of its GDP. R&D expenditures in the EU total barely 1.95 per cent of GDP.

More than 40 firms have benefited from Yozma's investments, several of which have gone public in the NASDAQ and other major stock markets in the United States and Europe. Working with universities and research institutions, the organisation created close contacts with a primary focus on life sciences and technology.

In addition, the government has invested in international cooperation. Regarding R&D expenditure, Korea is second only to Israel, and the two governments have collaborated on programmes to foster new ideas and technologies. There is also the Korea-Israel R&D Foundation, a joint fund with an annual budget of approximately $1.5

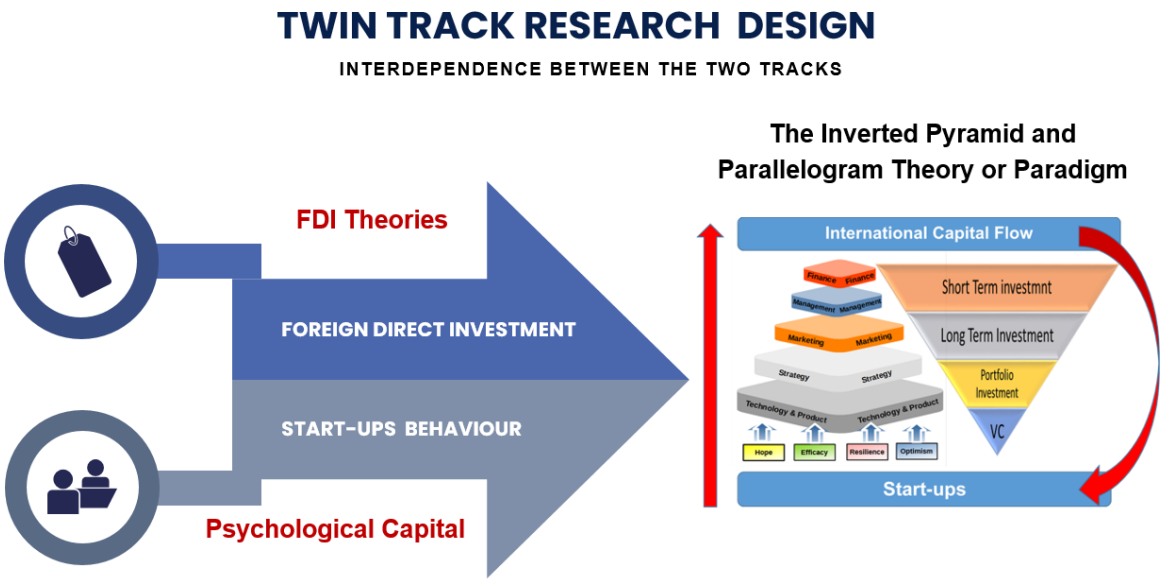
billion, which will invest in goods that will help spur commercial initiatives between the two nations.

CHAPTER 4: METHODOLOGY

4.1 Introduction

This chapter describes the methods adopted to conduct and achieve the purpose of this study. This study investigates and compares Israel's FDI strategies and determinants and identifies their trends. In addition, eight other countries were included for FDI and three for psychological capital. In particular, this study evaluates the effect of FDI determinants at the macroeconomic and microeconomic levels in Israel using the local startup ecosystem. To answer the research questions, a thorough review of the current literature was carried out, and descriptive data that were important for this research were gathered, including a direct Likert questionnaire to founders and co-founders of Startups, including a control group of ordinary companies, the general public in Israel, and a group from Salford's Alumini. Simultaneously, the study focuses on determining the flow, directions, and patterns of FDI and economic growth in Israel. This study examined the economic performance of countries and compared the data. It examines whether a country is better positioned to attract foreign direct investment (FDI) and foster economic growth. This study was based on a twin-track design that demonstrated the interdependence between the two tracks (Figure 4.1)

Figure 4. 1: *Twin Track Research Design*



4.2 Research Approach and Research Philosophy/Paradigm

The research under consideration is a twin-track design with FDI theories on one side and Psychological Capital on the other. It is a sequential mixed-method approach that enables the researcher to deal with the WHAT (quantitative) side using statistical methods and the WHY (qualitative) side using a Likert questionnaire. It is prudent to separate research philosophy into two sections, explaining each instant's different methodologies using this approach.

When good research is implemented, data-gathering techniques are clearly described and communicated. These may include questionnaires, surveys, participant observations, experimental arrangements, and a whole range of potential vehicles for gathering data. Of course, there is a range of analytical techniques such as coding, discourse analysis, and numerous statistical description and inference methods. All of the above methods are called methods.

In many instances, there is confusion regarding the methods used and methodology. The term methodology (ology) means that there has been a debate about what method to use, “the science of, or study of”. In other words, a debate was conducted regarding the correct reasoning for this choice before choosing a method for data gathering. It is implied that some choices have been made regarding the methods and design, such as what to do first, second, last, when, how, and different alternatives. Once a method has been chosen, it implies that a previously executed debate regarding design was also implemented to give an “approach” (i.e. every research has a METHOD-ology). This adds up to an approach, that is the outcome of the research methodology.

The data collection choice for this research was a questionnaire based on the Psychological Capital method proposed by Luthans et al. (2007), and collected data for FDI from the World Bank database. The fundamental idea of this part of the research is to validate the underlying latent variables for the founders of startups in Israel and a few other countries. A questionnaire was sent to a group of 8,000 founders and co-founders of startups in Israel and 7,000 founders and co-founders in the UK, Germany, and Sweden to collect data. As over 15,000 founders and cofounders could target this questionnaire, it was prudent to use a mass mail approach rather than personal interviews. Another issue was the COVID-19 pandemic, which excluded all personal

interviews. The third issue was the financial and time considerations in conducting such a massive survey.

Although a data collection method was chosen, below the methodology lies a much deeper insight into the reasons and directions of this research. The researcher attempted to understand that WHY founders of startups act in a specific manner. Why was this methodology selected? Are there underlying latent variables that influence founders' involvement in a startup? WHY is perhaps the basis of an Ontological question about obtaining the truth related to their hidden internal responses?

The researcher's ontological assumptions shape how they see things (truth). This will shape the way researchers design their research strategy. An experiment in a laboratory would never be able to answer the WHY question. It will be a quantitative objective result without answering why this happened or what caused these specific results. With this in mind, Ontology can be viewed on a continuum line with two polar extremes, Objectivism on one side and Subjectivism on the other.

Figure 4. 2*: Ontology Continuum Line*

The line is a sliding scale; one does not have to be positioned at one end or the other and can be positioned anywhere along the continuum.

The objective laboratory experiment assumes that truth exists independently and that social actors are not part of reality. These numbers provide an evidence base. On the other side of the continuum, there is an assumption that there is no independent status and that reality is a mental process. Here, there are multiple realities, because there are different perspectives. The truth is in a state of continuous revision. The subjectivism side of the continuum is why human beings behave differently. In the case

of the mixed-method approach, the researcher can be positioned anywhere along the continuum line.

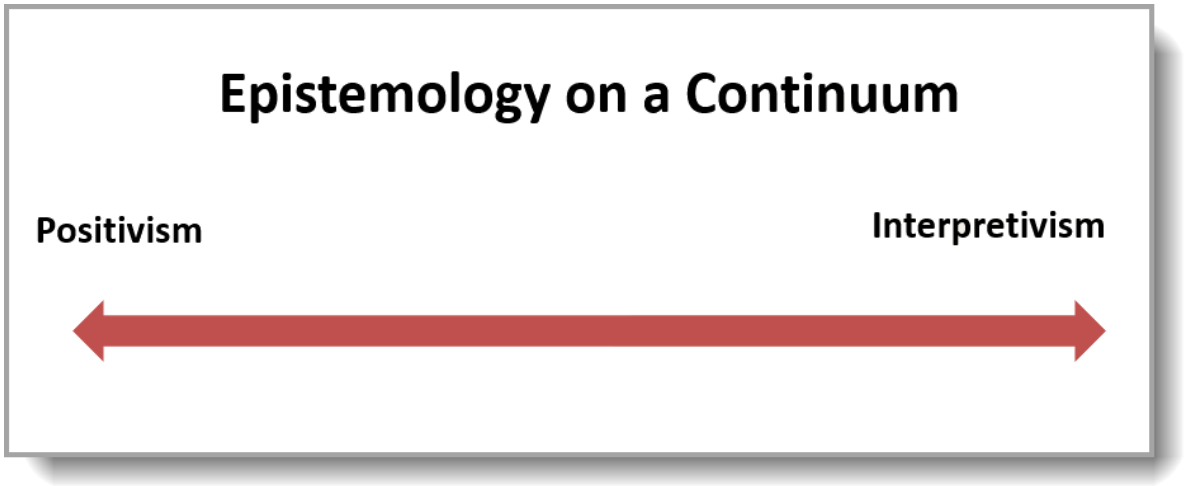
In this study, the researcher is interested in why social actors in Israel form startups and the internal drives that keep them going in that direction. Why is Israel called a “Startup Nation”? There seem to be latent forces not visible to the naked eye that could characterise certain people in the population.

To form a reputable method of investigation, the researcher takes a subjective stance on this problem and will be placed on the extreme right of the continuum line as it entails interaction with people, their feelings, attitudes to different situations, previous experience, education and several other hidden elements. In contrast, this part of the research uses a mixed-method approach because the researcher is interested in quantifying the above, latent factors to evaluate them more statistically.

The PsyCap questionnaire developed by Luthans et al. (2007) fits the objective of this research, which can surface the latent variables and enable a relatively extensive statistical quantitative effort on the other hand. However, this method places the researcher on the continuum line towards Objectivism. Therefore, although the researcher is not positioned at one extreme or the other on the Ontological continuum line, it is more directed towards Objectivism.

The next stage of discussion relates to the quality of the data gathered using the abovementioned method. Can these data contribute to knowledge or any existing knowledge related to founders of startups in Israel or worldwide? What type of knowledge is acceptable in this research field? This research is also interested in people's thoughts and habits, so the data should be in-depth and of good quality. Because this is also a quantitative analysis, can the social world be studied in a manner similar to science? These questions are related to the theory of knowledge, which is the foundation of Epistemological research. How can the researcher present the truth of what is expected in this study? Will this study practically contribute to knowledge by using tables, graphs and statistical inferences similar to a scientific route? Here, again, a continuum line can be drawn to show how knowledge can be presented, showing two extremes, Positivism and Interpretivism.

Figure 4. 3*: Epistemology Continuum Line*



Positivism is more like the scientific side, whereas Interpretivism, as the name implies, is more interpretavistic or interpreting subjective data. Positivism aligns with Objectivism in the previous continuum line, which is very scientific, where the truth exists independently. Facts and numbers form the evidence base, that assumes a universal and enduring truth. All observable phenomena are tested through deductive research, and law-like generalisations contribute to knowledge.

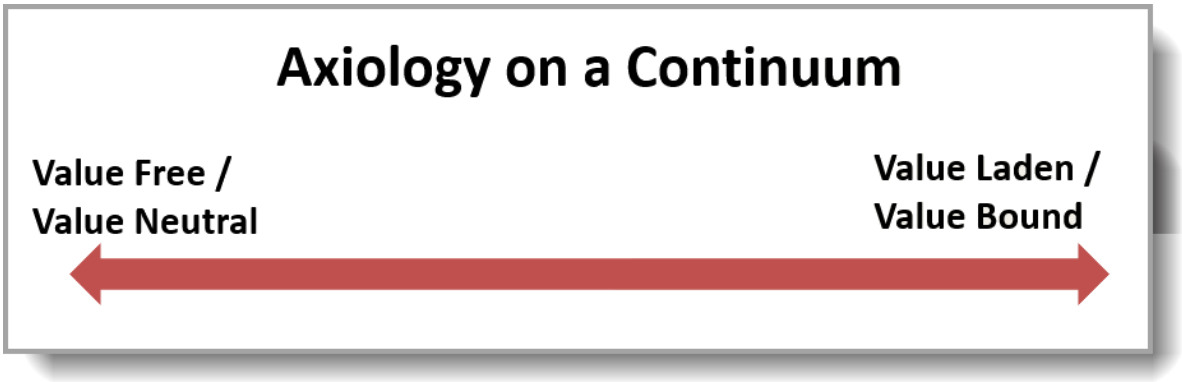
Interpretivism aligns with the subjective assumption of multiple realities, opinions, and judgements. Visual, spoken, and written accounts, including words, pictures, meanings, perceptions, and contextual data.

Using a Likert questionnaire, as proposed by this research, will, on the one hand, extract the inner feelings, thoughts and feelings of founders using a numerical scale to evaluate their answers, such that a more scientific approach can be taken to the gathered data. With reference to the epistemological stance of presenting this knowledge in the best possible way, the researcher of this study is more inclined to the Positivism side of the continuum line. The position of this study is neither categorically based on one side of the philosophies but is positioned closer to one side but not the extreme.

The last question concerning the chosen method is how the researcher's values play a part in this study. How important does the researcher place on the credibility of results? Heron (1996) postulates that our values are a compass for all human activities. Additionally, he believes that researchers show axiological ability to define their beliefs as a foundation for making decisions regarding research and how they conduct it.

Regarding the researcher, are the facts and statistics independent of social actors, and are the collected data detached from the participants? On the opposing side of the argument, are the opinions, judgements, and experiences of both the researcher and participants valued? Here, again, a new continuum line can be constructed for Axiology.

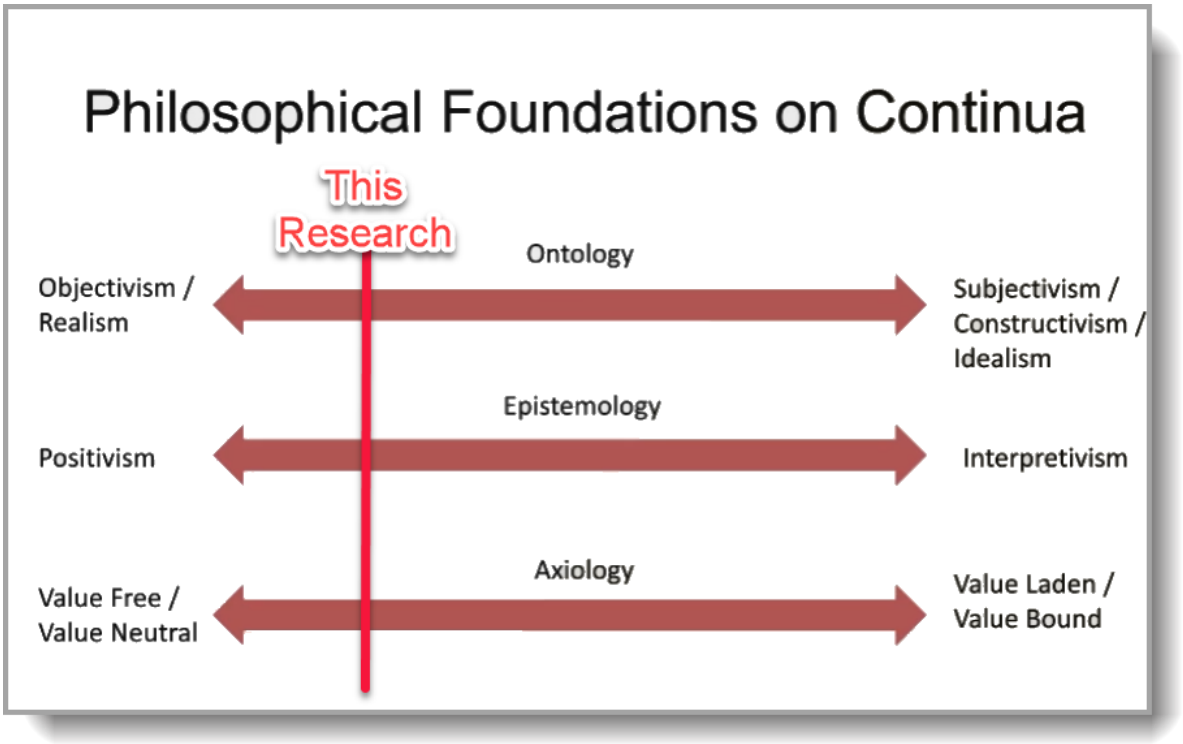
Figure 4. 4*: Axiology Continuum Line*



The extreme left is Value Free or Value Neutral, which aligns with Objectivism and Positivism.

Researcher are inclined to have facts independent of people. The other extreme of the continuum is Value Laden or Value Bound information. The right side is associated with Subjectivism and Interpretivism, where input from social actors is of utmost importance. Once again, the researcher of this study is more biased towards Value Free as the data collected will undergo a statistical manipulation, coherent with the data collected from a Likert questionnaire. The personal values placed by the researcher include the eventual credibility of the collected data and how to capture the personal feelings, thoughts, and experiences of each participant in the survey.

Figure 4. 5*: Philosophical Continua Line*



To conclude the philosophical stance of this researcher, the table above demonstrates the chosen research methodology on a continua line. This research has shifted very much towards Objectivism, Positivism and Value Free/Value Neutral.

4.3 Research Method / Approach

In this study, a sequential mixed method was adopted to address the research objectives. According to Bougie and Sekaran (2019), the sequential mixed method is suitable when a comprehensive understanding of a research problem is required. In this context, the sequential mixed method was the most feasible because it allowed capitalisation of the strengths associated with quantitative and qualitative approaches (Sekaran & Bougie, 2016). Consequently, a combination of qualitative and quantitative methods allows for a robust interpretation of the research findings (Dawadi et al., 2021). For instance, the quantitative method helped explore the long-term causality relationship between foreign direct investment inflows and innovative startups. The qualitative data examined the key determinants of foreign direct investment inflows, innovative capabilities, and startups' absorptive capability. Using the PsyCap24 Likert questionnaire (Luthans et al., 2007), the founders' feelings, attitudes, experience, thoughts, education

and several other hidden elements were extracted. The iterative nature of the sequential mixed method allowed refinement of the research questions based on the initial findings (Bougie and Sekaran, 2019). According to Stern et al. (2021), the sequential mixed method offers the opportunity to strengthen the reliability and credibility of the findings by exploring the same problem from multiple perspectives. Sequential mixed methods allowed the exploration of psychological capital and assessment of the extent to which startups impacts FDI success. For instance, the qualitative method allowed a comprehensive explanation of psychological capital, while the quantitative method allowed the evaluation of the extent to which every parameter impacts innovative startups and foreign direct investment inflows in the country. Despite Harrison et al. (2020) and Stern et al. (2021) highlighting that sequential design may limit flexibility and the high risk of fragmentation, the mixed method was most feasible for the current study because it offers a holistic perspective. In this respect, the issue of fragmentation requires researchers to take extra care to ensure that the integration of findings contributes to a unified understanding of the research phenomenon (Sekaran & Bougie, 2016). The sequential mixed method enhances the transferability of the results. Combining qualitative and quantitative data provides diverse evidence relevant to a broader context (Dawadi et al. 2021). The systematic integration of the qualitative and quantitative data helped strengthen the confirmability and dependability of the results. Therefore, the sequential mixed method offered the opportunity to capitalise on the strengths of quantitative and qualitative approaches.

Several methodologies are unsuitable for the current research. First, the single qualitative research method was inappropriate because of its limited generalisability, subjectivity, and bias (Mwita, 2022). Despite various benefits, such as insights into the motivations, lived experiences, and perceptions of the participants, Mwita (2022) and Smith & Sparkes (2020) stated that the qualitative research method focuses on the contextual understanding of the problem, which limits the making of broader theoretical conclusions. In this context, utilising the qualitative method alone could not provide a clear understanding of the cause-and-effect relationships between foreign direct investment and psychological capital. The Likert Questionnaire enabled the transformation of qualitative metrics such as feelings, attitudes, experience, and education into quantifiable data. These metrics were used in a confirmatory factor

analysis to demonstrate the validity of PsyCap theory. Moreover, the quantitative method alone was not feasible for the current research because the exploration of latent variables related to cofounders and founders in startups through psychological capital required an in-depth approach. Quantitative research methods are associated with limitations, such as the inability to capture contextual insights and the potential for oversimplification (Sekaran & Bougie, 2016). The evolving and dynamic nature of startups requires a qualitative approach to identify emerging insights. The qualitative method allows for an in-depth exploration of perceptions and subjective experiences. Therefore, a sequential mixed-methods approach offers a comprehensive understanding of the complex interplay between entrepreneurial experiences and psychological capital.

4.4 Research Philosophy Analysis

This study adopted a pragmatism research philosophy, as explained in the previous section, which also leads to the following four sets of assumptions shown in Table 4.1. According to Kaushik and Walsh (2019), pragmatism research philosophy emphasises the application and practicality of the strategies that work best for answering specific research questions. From this perspective, pragmatism philosophy acknowledges the importance of flexibility in research design (Kelly & Cordeiro, 2020). This argument implies that pragmatism research philosophy is most suitable when both quantitative and qualitative methods are used in a single study (Hothersall, 2019). In the context of psychological capital and foreign direct investments, the flexibility associated with pragmatism philosophy allowed comprehensive exploration of psychological factors and foreign direct investment trends using qualitative and quantitative approaches, respectively. Kelly and Cordeiro (2020) argued that pragmatism focuses on solving real-world problems. In this case, psychological capital and foreign direct investments required a problem-centred approach, justifying the application of pragmatism research philosophy. In addition, this study adopted an abductive approach. In the context of foreign direct investments and psychological capital, the abductive research approach is the most suitable for exploring potential connections and relationships among the parameters (Janiszewski & van Osselaer, 2022). The abductive approach also allows diverse perspectives to be integrated (Janiszewski & van Osselaer, 2022). In this regard, the abductive approach allowed the development of plausible explanations and insights

with practical applications for individuals and businesses involved in foreign direct investment and those concerned with psychological capital.

Table 4. 1*: Philosophy Stances*

	Ontology	Epistemology	Axiology	Data Collection
Positivism	External, objective and independent of social actors	Only observable phenomena can provide credible data, facts. Focus on causality and law like generalizations, reducing phenomena to simplest elements	Research is undertaken in a value-free way, the researcher is independent of the data and maintains an objective stance.	Mixed or multiple method designs, quantitative and qualitative

4.5 Data Analysis

4.5.1 Foreign Direct Investment (FDI)

A statistical method was used to analyse the quantitative data. Notably, the statistical methods used for the analysis of FDI using Eview v10 were the Vector Error Correction Method (VECM) and Autoregressive Distributed Lag (ARDL) for eight other countries. This was further assessed using an Impulse-Response Shock. According to Winarno et al. (2021), the VECM is used to analyse and model the dynamics of cointegrated time-series variables. In this context, the VECM provides insights into short- and long-term adjustments in foreign direct investments. This model is most feasible for macroeconomics and econometrics. In this case, the VECM allowed an examination of the ways in which FDI and the presence of innovative startups interact over time and the long-term equilibrium relationship between FDI and the development of innovative startups. Regarding psychological capital, the VECM model helped examine ways in which deviations between innovative startups and FDI can be corrected over time.

The significance of considering a method selection criterion is the most basic technique for choosing the appropriate method. This is because the time-series models have several limitations. One way to make non-stationary variables stationary is to use

the first difference. Another way to obtain stationary non-stationary data with long-term trend stationarity is to use a time variable in the regression or a popular filtering method, such as the Hodrick-Prescott (HP) filter. However, it is crucial to remember that modifying variables to make them stationary, such as differencing, detrending, or filtering, may result in losing long-term relationships and relevant information. This method should use a three-stage process.

Stage one: Stationarity test (Unit Root test).

Stage two: Cointegration Test: Two popular cointegration tests are the Engle-Granger and Johansen tests. While many authors believe that the Johansen test outperforms the Engle-Granger and Stock & Watson tests, some researchers argue that the Engle-Granger test is more robust in most situations (Gonzalo & Lee, 1998). Nonetheless, it is generally recommended that both tests be used to ensure reliable results. Cointegration is a process in which economic variables achieve a long-term equilibrium and display a stable link. These variables must be integrated of order one before they can be cointegrated, and the linear combination of these variables is stationary (0).

Stage three: VECM (Vector Error Correction Method).

The following tests were performed after the VECM calculations: Wald Test to test for short-run causality in the equation. Breusch-Godfrey Serial correlation LM test was used to observe any serial correlation. A further test for autocorrelation was performed using the Ljung (Box Q-Test). The test determines whether the errors are i.i.d. (i.e. white noise) or something more behind them, regardless of whether the autocorrelations of the errors or residuals are non-zero. Essentially, it is a test of lack of fit; if the autocorrelation of the residuals is negligible, the model is deemed not to show a “significant lack of fit. The next test of the model is a serial correlation test on the residuals of the model using the VEC Residual Serial Correlation LM Test. Further tests for Skewness and Kurtosis were performed using the Jarque-Bera test. The final test for the model was the residual heteroscedasticity test.

Although long-run causality from Startups to FDI is the objective of this method using a VECM model, a final test using the impulse response shock would confirm this long-run relationship if it existed.

When performing a Pooled Panel Analysis on a number of countries, a pooled panel analysis using an Autoregressive Distributed Lag Model (ARDL) was used. Panel data modelling is used to estimate time series and cross-sectional data. This accounts for the individual-specific heterogeneity. Studying the same cross-sectional unit (firm, country, or industry) is crucial.

4.5.2 Psychological Capital

SPSS and AMOS were used in the PsyCap questionnaire, implementing Confirmatory Factor Analysis (CFA) to prove and collaborate the psychological capital index.

Primary data on startups were obtained using a Likert questionnaire. The Likert questionnaire was used to establish the four latent variables in Psychological Capital. Professor Luthans created a questionnaire for Psychological Capital that has greater stability over time compared to other psychological constructs. According to Sweetman et al. (2011), it is the most reliable predictor of creative performance. Avey et al. (2014) proposed that PsyCap is a multi-established and multi-dimensional construct. When measured on a scale ranging from pure characteristics at one end to a pure state at the other end, the construct is conceptually located at the end of the scale (Youssef & Luthans, 2011). PsyCap is more stable over time than other psychological constructs (Luthans & Youssef, 2007).

To evaluate the suitable response size for this study, the researcher utilized the following techniques: first, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (MSA) was applied to the entire dataset; second, the KMO measure was used for each variable individually; and third, Bartlett's test of sphericity was conducted. The outcomes of these assessments will also help determine if the data is appropriate for conducting Exploratory Factor Analysis (EFA) and Principal Component Analysis (PCA) at a later stage. Bartlett's test determines whether the sample correlation matrix originates from a multivariate normal population with entirely uncorrelated measured variables (Dzuiban & Shirkey, 1974).

To test reliability of the data the Cronbach alpha developed by Lee Cronbach in 1951 to measure reliability or internal consistency. "Reliability" Is another name for consistency.

Cronbach's alpha (internal consistency) is a standard measure of reliability. It measures how closely items on a scale correspond to the same underlying dimensions. It is usually used in surveys/questionnaires with multiple Likert Questions.

If the data collected has been shown acceptable for Exploratory Factor Analysis, then this is implemented by computing the eigenvalues from the data. The underlying idea of EFA is a variable reduction technique that identifies the number of latent constructs and underlying factor structure of a set of variables. These interrelationships can be broken down into several components. Variance and covariance are the focus of this study, not the mean. Factor analysis assumes that the variance can be subdivided into unique and common types.

Once a factor analysis has been established, a CFA can be performed to verify Luthan's PsyCap Index. The CFA's hypothesis-driven methodology is a central trait (Brown, 2015). The researcher established a theory about the model framework, represented as a specific factor(s) underlying a collection of objects. The analysis was then conducted to assess how the hypothesised factor structure captures the covariance between objects (Hooper et al., 2008). In addition to analysing the covariance captured by the model, (Hooper et al., 2008) stipulated that the critical phase in CFA determines the goodness of fit of the proposed model, which indicates how well the model matches the observed results.

4.6 Collection Methods

4.6.1 Useful Types of Sources

This study used qualitative, quantitative, mixed and descriptive data to test the research questions. Primarily, the data were obtained from various sources, including archives, journals, and online articles. Jones (2010) stated that archival data can be obtained from digital records, verbal documents, and visual artefacts such as websites. The archived data were collected primarily from financial records and scholarly journals. Newspapers obtained via the Internet are essential sources of data. They provide official speeches and statements by economists, journalists, and spokespersons about Israel's foreign investment markets. The rise in globalisation and technological advances has led to a significant increase in information on foreign direct investment over the last five years. Therefore, these are crucial data sources for this study.

4.6.2 Record Sampling Method

This can be achieved by considering specific concepts and using them for learning. These records are sourced from the ProQuest, European Commission, and World Investment Report databases. The data are derived from foreign direct investment statistics for Israel. Additional data sources include the UN nation and critical indicators, Annual Publications (UNCTAD) and Yearly Publication (World Bank). These data sources allowed for the collection of more than 250 full-text journals covering economic and business-related topics on entrepreneurship and foreign investment. This approach offers several advantages. For example, one can choose to use data sources selected by date, full text, and title. This filters the search study and creates a collection that reflects the phenomenon or area of research.

4.6.3 Keywords

The sheer volume of published data makes secondary research more difficult. Choosing the correct number of articles, journals, and books for a single study can be challenging. This can lead to exhaustion, time consumption, and search abandonment. Grewal et al. (2016) state that keywords are vital when conducting literature searches to reduce this problem. Establishing the keywords used in record searches is crucial for conducting authentic research. This process demonstrates the identification and evaluation of correct records to identify the research focus. Specific keywords were used to search for records (e.g. archival). This strategy was used to find sources consistent with the hypothesis of the study. The keywords "foreign investment in Israel", "foreign investment strategies", "approach to draw foreign direct investment from Europe", and "foreign investor and gross domestic product" were used. Exact keywords were also used to search for data on entrepreneurship in different countries.

4.6.4 Inclusion and Exclusion Criteria

The exclusion and inclusion criteria were used to ensure accurate and precise data. The most important criteria for record selection were ensuring that articles, archival journals, and newspapers focused on the flow, directions, and patterns of FDI in Israel. The study also sought to identify those showing that certain countries are more likely to attract FDI or promote economic growth. Peer-reviewed articles and journals were also significant. The second target was online records and newspapers. This

research requires grey literature. Robson and McCartan (2016) define grey literature as academic information provided by entities to explain a phenomenon. This includes records published by government agencies and nonstate actors. The Critical Evaluation Program (CASP) was used to achieve this goal. This technique presents various principles that researchers must verify from a source. It is designed to help identify, analyse, sort, and classify relevant studies. A critical appraisal framework was used to ensure that the standards were achievable. Further analysis was conducted on the records used in this investigation to verify and validate their relevance to the research question.

The reliability and credibility of the data were ensured by verifying each author's credentials (Patino & Ferreira, 2018). The sources used in this study were carefully reviewed, including abstracts, discussions, and conclusions. All records were then classified as either "fully supporting the subject", "partially supporting it", or "doing not support the topic".

The research also involves finding sources and comparing foreign direct investments worldwide. Part of the inclusion criterion was to include only records focused on foreign direct investments and entrepreneurial data. This study excluded all other references related to other aspects of the world economy. It was further refined by including filtration features in the selected databases. Additionally, articles and newspapers were considered only in English. There was a substantial loss of information during the translation. This makes it possible for non-English resources to be problematic for study (Timmermans & Tavory, 2012).

4.6.5 Data Collection/Extraction

Fraley and Hudson (2014) claim that data extraction in research provides critical information for the study. This process involved understanding the records and their findings. The rules for data extraction in this study varied depending on the type and level of review. Data extraction requires discovering critical concepts regarding how foreign direct investment worldwide compares with selected sources. The method involves mapping reviews by creating a standard data extraction form that would allow consistency in the review, reduce bias, and increase the validity and reliability of the study (Munn et al., 2014). An interpretative approach was used to include, tabulation and group

information to examine the relationships. This allowed us to examine various studies and identify common themes related to Israel's foreign direct investment. This included collation, combinations, summaries, and conclusions from all records. The process began with a textual description of the source. The descriptions contained the same information for all records and were of the same order. Next, grouping and clustering of data were performed. The sources were grouped in the initial stages of the review (Yin, 2017). This phase was crucial in describing and analysing the data and, looking for patterns between and within groups. This allowed us to identify the main determinants of how foreign investment in other countries. Tabulation will be the next step. This standard method allows for visual representation of the data. It is essential to emphasise the narrative interpretation of tabulated data. This involves converting data into standard measures (Palmer et al., 2010). This was done to accurately reflect the differences and similarities between different countries.

CHAPTER 5: RESEARCH METHODS AND RESULTS APPERTAINING TO FDI

5.1 Analysis of the Data

5.1.1 Time Series Data

Economists face a technique selection challenge when working with time-series data. Typical approaches for evaluating other data types may not be applicable for studying time-series data because they may have specific qualities such as trends and structural breaks. Here, a methodological framework for time-series data analysis is presented, that addresses the quality of time-series data and compares typical data analysis approaches. The framework is a massive asset for narrowing the pool of possible tests.

Data in a time series consist of measurements taken at regular intervals over an extended period. The most prevalent are the annual, quarterly, monthly, weekly, and daily frequency series. It is common for economic time-series data to have distinctive characteristics, such as evident trends, a high degree of shock persistence, and more volatility over time. Researchers must fully comprehend and handle the characteristics of the time-series data.

Erratic behaviour, interaction, and integration over time are critical concepts in time-series analysis. We can perform a fundamental regression analysis using time series data to learn more about the correlations between the variables of interest if some critical criteria are recognised and addressed. This section focuses on the fundamental econometric challenges associated with time-series data and presents a basic framework for time-series analysis.

Framework for selecting a method

Non-stationary time series cannot be studied using the same methods as stationary time series. Accordingly, the essential component of a time-series analysis is to apply a suitable approach to time-series data because incorrect model specifications can lead to biased and erroneous estimates. The Unit Root test findings were used to determine the stationarity of a variable in the time series analysis. The process becomes straightforward if all the relevant variables are stationary. Using OLS or VAR models, unbiased estimates can be obtained in such situations. The OLS and VAR models may

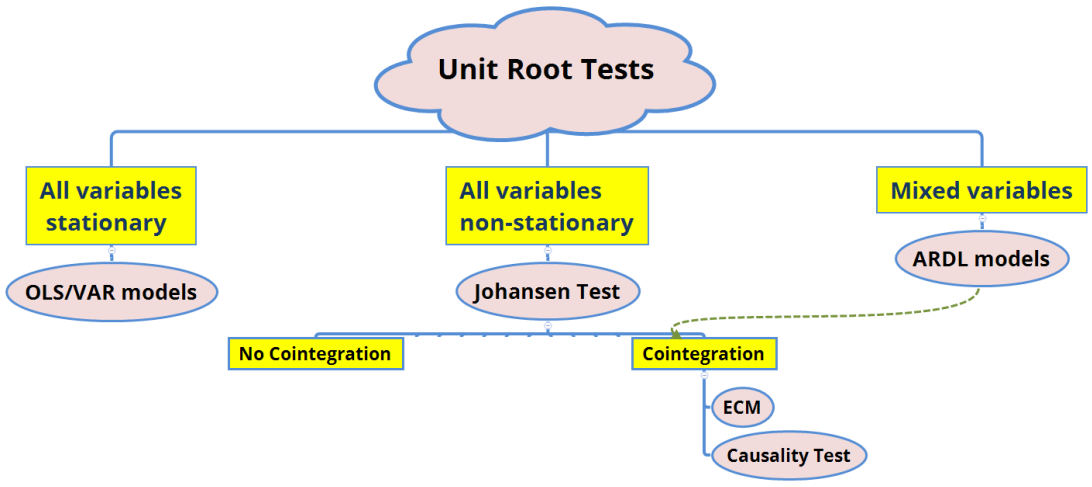
not be accepted if all variables of interest are non-stationary. Additionally, mixed-type variables, that is, some that are stationary and others that are nonstationary, provide additional issues in the analyses.

The methodological framework for time-series analysis is outlined in the following paragraphs in general terms.

Figure 5.1 shows that a method selection criterion should be considered the most fundamental technique in choosing which method to use. This is because time-series models have several additional limitations. The first difference can be used to generate stationery of non-stationary variables. It is also possible to stationary non-stationary data with long-term trend stationarity using popular filtering techniques, such as the Hodrick-Prescott (HP) filter or by including a time variable in the regression. However, it is essential to remember that modifying variables to make them stationary, such as through differencing, detrending, or filtering, may result in the loss of long-term relationships and information.

Figure 5. 1*: Method selection for time series data*

OLS: Ordinary Least Square; VAR: *Vector Autoregressive; ARDL: Autoregressive Distributed Lags; VECM: Vector Error Correction models*.



Cointegration and VECM

A spurious relationship arises in economic time-series analysis when applying a vector autoregressive (VAR) model to an integrated series. Two solutions are recommended: a VAR model for the first difference or a vector error correction model

(VECM). The latter is preferred because it provides a long relationship and produces efficient coefficient estimates (Hoffman & Rasche, 1996).

General Equilibrium Analysis of FDI Decisions and Location

Ideally, FDI literature would have established a model and empirical specification that lays out the main long-term determinants of FDI location. This would enable a sound empirical analysis of how such worldwide FDI patterns are affected by government interventions, such as taxation and trade policies, while controlling for underlying changes in the long-term determinants of FDI activity. The literature on partial equilibrium frameworks discussed above is due to the difficulty of building a model that accounts for general equilibrium features tied back to microeconomic decision making. Evidence from partial equilibrium models ignores the essential long-run general equilibrium factors that affect FDI decisions and location. This can lead to omitted variable bias in empirical specification. This is mainly a concern when studies run cross-sectional data only (which several studies discussed above do) because this implicit assumption is that the data represent some (long-run) equilibrium.

The alternative is to examine time-series data, assuming that the omitted variables reflecting long-term determinants do not change significantly throughout the sample, that is, focus only on the short-run factors, assuming long-run factors are constant. This is probably not reasonable for samples spanning more than a few years. Thus, there is a real need for an empirical specification that can encompass both short- and long-term factors, whereas the literature surveyed above (except for the papers surveyed in the trade protection section) is concerned only with short-term activities.

LeSage (1990), presents the results of experiments using the error correction mechanism (ECM) model and various types of vector autoregressive (VAR) and Bayesian vector autoregressive (BVAR) models.

The results of the forecasting experiments were provided using an error correction mechanism (ECM) model and several types of vector autoregressive (VAR) and Bayesian vector autoregressive (BVAR) models. An error-correcting mechanism (ECM) model was also examined. The Bayesian Error Correction Model (BECM) outperforms Engle and Yoo's predictions for the cointegrated and non-integrated sectors across longer forecast horizons. BVAR and ECM models were combined into this model.

According to his research, which includes 50 industry and monthly data points from the Ohio labour market, the ECM model delivers forecasts with fewer errors than any competing VAR or BVAR models. Findings from previous studies, including those comparing the ECM with the VAR model, corroborate many assumptions made by Granger (1986) and Engle and Yoo (1987).

5.1.2 Choice of Variables

Foreign direct investment (FDI) can attract a sizeable market, stable economy, and degree of free-trade policies. As a result, an analysis of how macroeconomic conditions affect FDI is significant. Foreign investment is influenced by several factors, the most prominent of which are GDP, inflation, and openness to trade. Many studies have included GDP or GDP per capita as independent variables, and in many cases, this variable has shown a positive relationship with FDI (Section 2.5). Many studies refer to this relationship as economic growth.

Since no previous research has studied the long-term causality of startups on FDI, it is essential to analyse the various variables differently. Some studies found a correlation between GDP and FDI, therefore, this variable was included in the analysis. GDP is associated with an increase in consumption, investment, government spending, or exports. Considering startups as the formation of a new business enterprise contributes to consumption, investment, and, in some cases, exports. This study excluded GDP as an independent variable in the initial equation to verify the causality of startups with FDI independently. A positive outcome adds GDP to a robust test equation to verify that the initial results are stable (see Appendix A). Besides the fact that GDP as an independent variable will not be initially introduced, this study has chosen a variable that will incorporate the influence of imports, exports, and GDP into one variable called IMPEX (Import+Export)/GDP, or "Openness of the economy". This variable has most of the ingredients of economic growth, leaving the startup variable alone to contend with FDI.

This study adopted a popular variable, inflation, for inclusion in the equation. This variable fits the economic narrative that fewer new businesses are initialised in times of high inflation, whereas low inflation is a catalyst for new businesses. In this study, the parallel of new businesses is the formation of new startups.

In addition to Startups, the third variable is the Heritage Index (Heritage Foundation “Index of Economic Freedom’, Heckelman, 2000; Cabello et al., 2021). This index incorporates the idea that every person has the inherent right to be in charge of his or her labour and property, which is economic freedom. People in an economically free society can do anything they choose based on their time, money and resources. A free economy is one in which governments do not impose restrictions on the free flow of labour, capital, and products and do not go beyond what must protect and sustain that freedom. This index measures 12 quantitative and qualitative factors and is grouped into four categories: economic freedom or pillars. The four main variables are as follows:

1. Rule of Law (property rights, government integrity, judicial effectiveness)

2. Government size (government spending, tax burden, fiscal health)

3. Regulatory Efficiency (business freedom, labour freedom, monetary freedom)

4. Open markets (trade freedom, investment freedom, financial freedom)

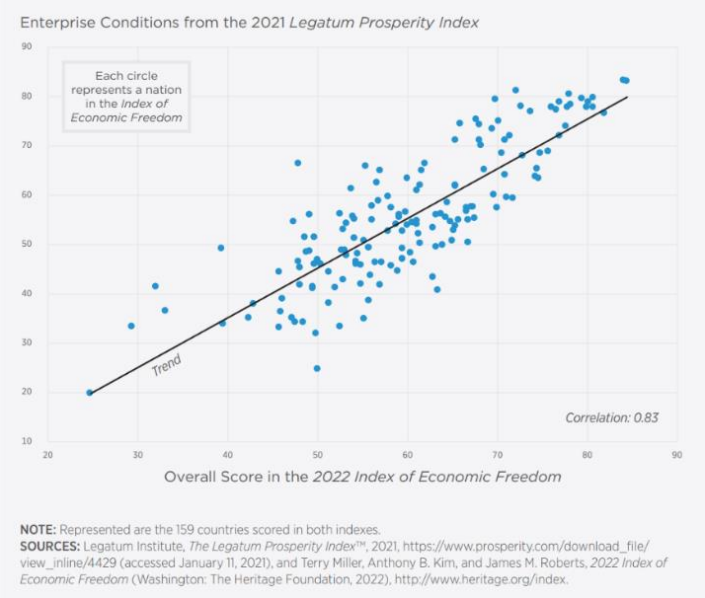
Of the four main variables incorporated into the index, many of the 12 items used to make up each variable or category were used separately as independent variables in many previously discussed studies. By introducing this variable, the researcher believes it covers a handful of other variables used over the years in FDI research.

Greater prosperity is a byproduct of political and economic liberation. Many favourable outcomes are associated with greater economic freedom, as indicated by the Index of Economic Freedom. Healthier communities, cleaner environments, more per capita wealth, human growth, democracy, and poverty elimination are linked to economic freedom.

According to the Index of Economic Freedom, good economic freedom outcomes depend on each component. Countries’ ratings were based on the weight of each type of freedom. These indicators may indicate substantial obstacles to further progress and prosperity in the economy. Countries that consider economic reform may find tremendous room for improvement in areas where they fall short.

The following graph in Figure 5.2 shows the close correlation between economic freedom and entrepreneurial opportunity.

Figure 5. 2: ***Enterprise Conditions & Economic Freedom Go Hand in Hand***



Economic freedom is a critical factor in determining the economic growth rate that eliminates poverty. Figure 5.3 illustrates that greater economic freedom is associated with higher growth rates per capita. There is a strong correlation between changes in economic freedom and growth, regardless of the period (25, 15, or five years). Over time, countries with greater economic freedom tend to have better per capita GDP growth rates than those with fewer degrees of freedom.

Figure 5. 3: *Economic Freedom and GDP per Capita*

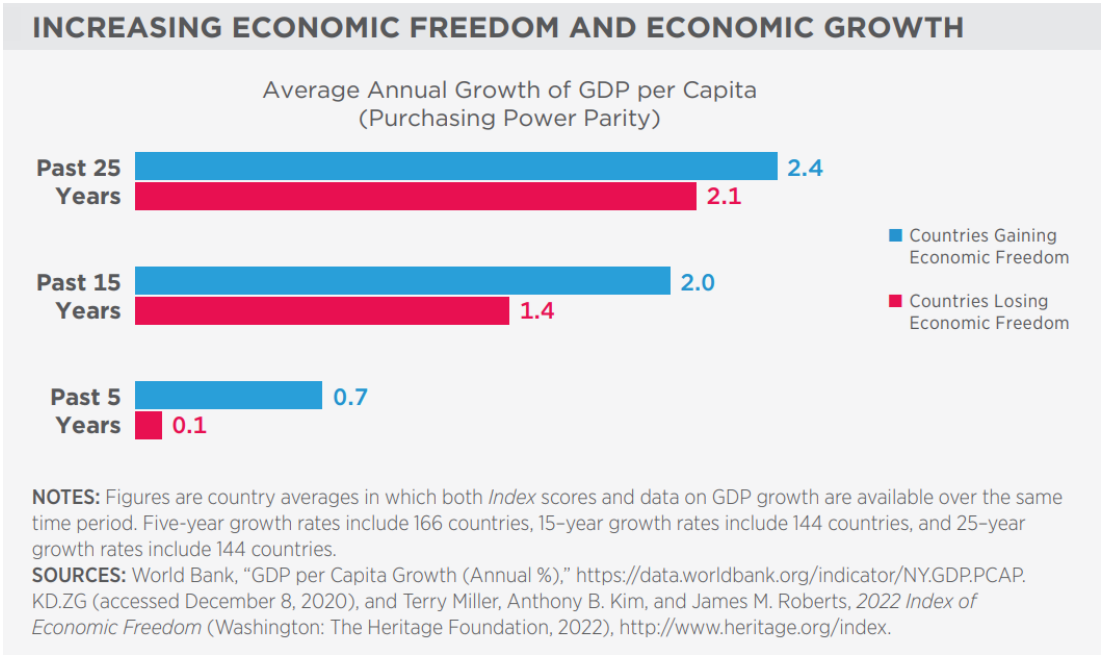
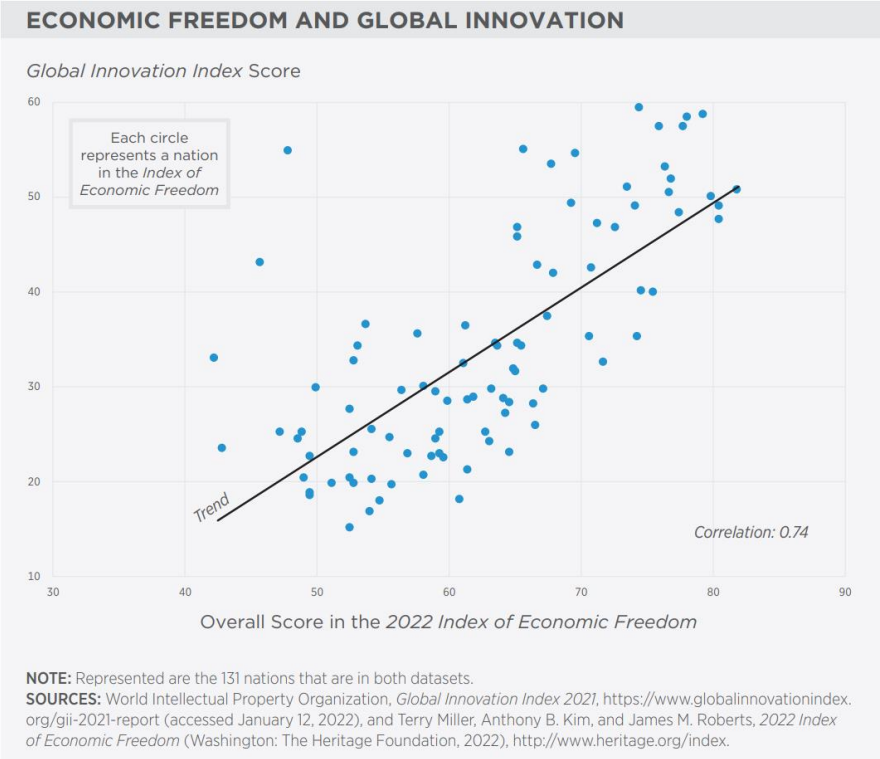


Figure 5.4 shows economic freedom and global innovation, another measure of choosing this index as a dependent variable in this study. The regulatory strength of the market, which is frequently underestimated and misunderstood by supporters of the central government, forces corporations to develop more efficient manufacturing methods and respond to customer demands for environmental sustainability. Economic development and innovation (especially in greener technologies) result from this virtuous cycle and drive investment.

Figure 5. 4*: Global Innovation*



The researcher believes that choosing the four independent variables, Startups, Inflation, IMPEX, and the Heritage Index, will cover most of the causality influences with FDI as a substitute for all those used in previous studies.

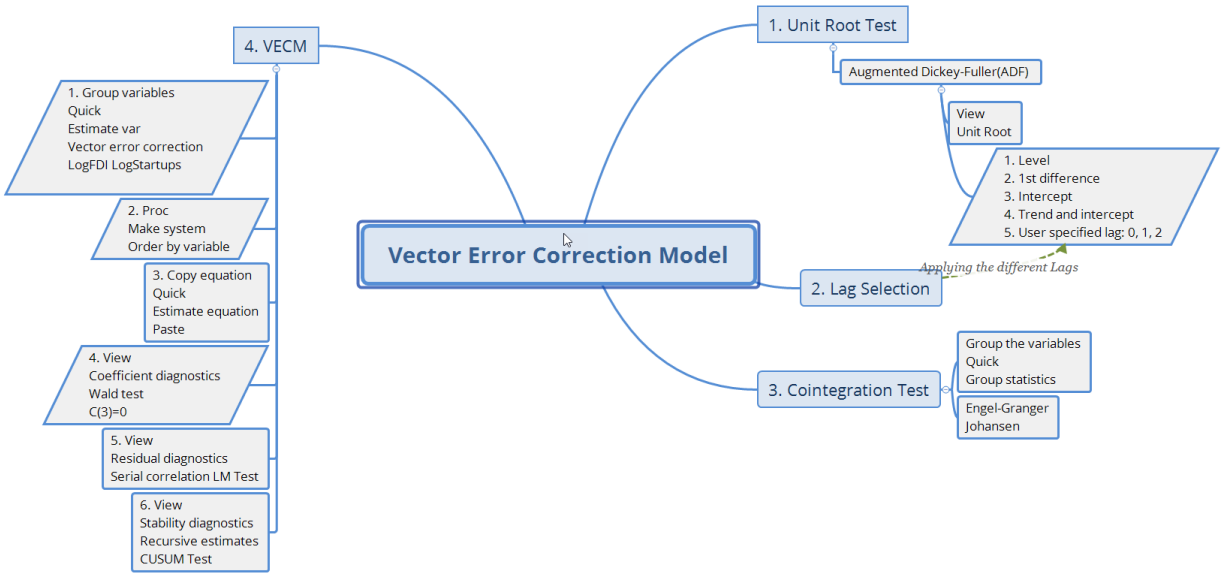
5.1.3 Descriptive Statistics

Table 5. 1: *Descriptive Statistics*

	Mean	Std Dev	Max	Min
Startups	196.50	211.20	649.00	19.00
FDI	6,486.75	5,854.19	21,515.00	151.00
Openness of Economy	59.17	10.05	75.17	41.98
% Inflation	4.96	5.02	20.13	-0.21
Heritage	66.64	3.27	72.80	61.40
% GDP annual growth	4.34	2.44	10.69	-0.01

5.1.4 The Econometric Model

Figure 5. 5: *Mind Map of Econometrical Model using Eview ver 10*



The focus of the study is based on the "Inverted Pyramid and Parallelogram Theory or Paradigm". This study tests the causality between the number of Innovated Startups and inward Foreign Direct Investment (FDI) in Israel. An Error Correction Model (ECM) was used. To estimate the impact of startups on FDI, the economic model is based on the idea that FDI is a function of the number of innovative startups entering the economy each year. This model suggests that more startups lead to greater FDI. This function can be expressed as follows:

$$FDI = f(Startups) \qquad [1]$$

Where

FDI: is the inflow of Foreign Direct Investment into Israel

Startups: is the number of innovative startups

These variables were transformed into their logarithmic form, which measures the elasticity of each variable. Error term (*e*) was normally distributed. The function can then be written in logarithmic form as follows:

$$LnFDI = a_0 + a_1 LnStartups + e_t \qquad [2]$$

The Granger causality test provides an analytical foundation for achieving the study objectives. Granger causality can take two forms, depending on the test findings.

The Unit Root and cointegration tests are necessary for the Granger causality test. Using the initial differences in the variables, the Granger causality test is conducted if the findings show that the variables are integrated of order one (nonstationary at their levels) and not cointegrated (ECM without the error-correction term). An error correction model should evaluate the causal link between the variables if I(1) and the co-integrated variables are stationary. The procedure using the ECM methodology incorporates three stages:

Stage one: The Stationarity Test (Unit Root Test)

Several econometric concerns can influence the estimation of parameters using ordinary least squares (OLS) when working with time-series data. When using the OLS estimator to regress one time series variable on another, a high R^2 can be obtained despite any significant link between the variables. This is a case of erroneous regression caused by a nonstationary process with variables that are not connected. Consequently, a stationarity test (unit root) was proposed to determine the integration order.

A stationary stochastic process simply means that the mean [(E(Y_t)] and the variance [Var(Y_t)] of Y remains constant overtime for all t, and the covariance [covar(Y_t, Y_s)] and thus, the correlation between any values of Y taken from different periods depends on the time difference between the values for all t≠s (Thomas,1993: p.158). Regression analysis cannot be performed unless the data series used are difference stationary or trend stationary. This is a necessary condition for the regression process. The Augmented Dickey-Fuller (ADF) evaluation method was utilised for this analysis. The ADF test regresses the first-difference series against an initial value, a constant, and temporal trend.

$$\Delta Y_t = \propto_0 + \beta T + \delta Y_{t-1} + \sum_{j=1}^{m-1} \beta_j \Delta Y_{t-1} + \varepsilon_t \qquad [3]$$

The regression coefficient (Y_{t-1}) is used to test for the existence of a unit root. It can be inferred that the time series does not have a unit root if the ADF test statistic (t-statistic) is smaller (in absolute value) than the Mackinnon critical t-value. However, a unit root cannot be ruled out in a time series. With intercept only and with intercept and trend, the unit root test examines whether there is a unit root in the data series under consideration. The unit root test results for the two variables at their respective levels are shown in Table 5.2, along with the p-values. All p-values were greater than 0.05 at a 95%

confidence level. There is no way to reject the unit root null hypothesis for the supplied variables; hence, the variables are not stationary at their current levels.

Table 5. 2: *ADF p-values with different lags for Unit Root in Level*

Variables	***Intercept***			***Intercept and Trend***		
	ADF(0)	ADF(1)	ADF(2)	ADF(0)	ADF(1)	ADF(2)
LnFDI	0.1737	0.3529	0.4781	0.0307	0.0898	0.3029
LnStartups	0.8772	0.9127	0.9490	0.3915	0.3358	0.6327

As mentioned above, the test was used on the initial differences to determine the stationarity characteristics of the variables. As shown in Table 5.3, the p-value of the ADF is less than the 0.05 crucial 95% significance level. Thus, the null hypothesis that the series has unit roots in their differences is rejected (they are integrated of order zero).

The Akaike Information Criterion (AIC) and the Schwartz Bayesian criterion (SBC) are also shown in Table 5.4 to establish the number of delays required to turn an error term into white noise with one lag.

Table 5. 3*: ADF p-values with different lags for Unit Root in 1st Difference*

Variables	*Intercept*			*Intercept and Trend*		
	ADF(0)	ADF(1)	ADF(2)	ADF(0)	ADF(1)	ADF(2)
LnFDI	0	0.0001	0.0040	0.0001	0.0008	0.0155
AIC	1.7875	1.7718	1.8667	1.8376	1.8208	1.9099
SBC	1.8827	1.9158	2.0603	1.9803	2.0126	2.1518
LnStartups	0.0002	0.0006	0.0110	0.0012	0.0038	0.0393
AIC	-0.2680	-0.2770	-0.1781	-0.1977	-0.1880	-0.1288
SBC	-0.1729	-0.1130	-0.0153	-0.0550	-0.0040	0.1131

A VAR Lag order selection criterion was used for the first difference to choose the best lag order for this equation. The results showed that a lag of 1 was the best choice.

Table 5. 4*: Lag order Selection Criteria (1st difference)*

Lag	LnL	LR	FPE	AIC	SC	HQ
1	-13.38412	NA	0.011872*	1.241723*	1.432038*	1.299904*
2	-11.16846	3.798277	0.013533	1.369176	1.749805	1.485538

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Stage 2: Cointegration Test

The results show that each time series is non-stationary (i.e., integrated of order one I(1)) derived from the ADF findings. These results enable the next stage, which requires co-integration of the two datasets. Moreover, it examines whether long-term relationships (stable and non-spurious cointegrated relationships) exist between variables (Ramirez, 2000).

Two tests can be used, the Engle-Granger test and Johansen test. Many authors agree that Johansen's test improves the Engle-Granger and Stock & Watson's tests (Stock & Watson, 2012). This avoids the issue of choosing a dependent variable and the problems created when errors occur from one step to the next. The test can detect multiple co-integrating vectors more appropriately than Engle-Granger for multivariate analysis. Another desirable property is that Johansen's test treats every test variable as endogenous (Wassell & Saunders, 2008).

However, this test is far from perfect. Researchers Gonzalo and Lee (1998) reported that, for most situations, Engle-Granger was more robust than Johansen's likelihood ratio test. The authors recommend using both the Engle-Granger and Johansen tests to discover (or avoid) any pitfalls.

According to Engle and Granger (1987), economic variables can achieve long-term equilibrium that displays a stable link. Variables must be integrated of order one (non-stationary) before they can be co-integrated, and the linear combination of these variables is stationary (0). This process is known as cointegration.

In Table 5.5, the results of the Granger causality test show that for the first equation, the Null Hypothesis is rejected, with a p-value of 0.0336<0.05, at (5% significance level), for the second equation, the Null Hypothesis cannot be rejected. This shows unidirectional causality from startup to FDI but not in the reverse direction.

Table 5. 5*: Granger Causality Test*

Sample: 1990, 2019
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
LnSTARTUPS does not Granger Cause LnFDI	30	5.80443	0.0336
LnFDI does not Granger Cause LnSTARTUPS		0.76995	0.3333

The Johansen test's second approach can determine the number of cointegrated vectors for any given number of non-stationary variables of the same order. The results in Table 5.6 suggest that the null hypothesis of no cointegrating vectors can be rejected at the 5% significance level. These results are shown for both the Trace and Maximum Eigenvalue tests. The eigenvalue test also showed a significance level of 5%.

Table 5. 6*: Johansen System Cointegration Test*

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	*Eigenvalue*	*Trace Statistic*	*0.05 Critical Value*	*Prob.***
None *	0.490826	22.78712	18.39771	0.0114
At most 1	0.129650	3.888061	3.841466	0.0486

The trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	*Eigenvalue*	*Max-Eigen Statistic*	*0.05 Critical Value*	*Prob.***
None *	0.490826	18.89906	17.14769	0.0276
At most 1	0.129650	3.888061	3.841466	0.0486

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Stage 3: VECM

If nonstationary time series are integrated of the first-order I(1) and cointegrated, then a vector error correction model can be performed. In doing so, it is possible to examine the short- and long-run dynamics of the cointegrated series. To conduct the VECM, it is essential to carry out the following tests.

1. Unit Root Test

2. Lag Selection

3. Cointegration, Additional Descriptive and Diagnostic Tests

4. VECM

Tests 1, 2, and 3 were completed in stages 1 and 2, as demonstrated above, so a VECM model could be implemented to estimate both short- and long-run outcomes.

The conventional ECM function for the co-integrated series is as follows:

$$\Delta y_t = \beta_0 + \sum_{i=1}^{n} \beta_i \, \Delta y_{t-1} + \sum_{i=0}^{n} \delta_i \, \Delta x_{t-1} + \varphi z_{t-1} + \mu_t \qquad [4]$$

Z is the ECT and OLS residuals from the following long-run cointegrating regression.

$$y_t = \beta_0 + \beta_1 x_t + \varepsilon_t \qquad [5]$$

and is defined as

$$z_{t-1} = ECT_{t-1} = y_{t-1} - \beta_0 - \beta_1 x_{t-1} \qquad [6]$$

The conventional ECM model for a co-integrated time series is shown in [4], which shows the change in Δy as a function of previous changes in y and past changes in Δx. Although all variables are considered endogenous in the model, the error correction term, z, is the variable of the lagged OLS residual from the long-term cointegrating equation [5].

Equation [6] is the full definition of Equation [5]. If solved directly from this equation, it is called a cointegrating equation.

The *error correction* term refers to the deviation from the fact that the last period of the long-run equilibrium (error) influences the dependent variable's short-term dynamics.

Thus, the coefficient of ECT φ, is the **speed of adjustment** because it measures the speed at which Y returns to equilibrium after a change in X.

After running the model, the following equations were obtained:

- Estimated VECM with LnFDI as the Target Variable:

$$\Delta LnFDI_t = -0.447485 ect_{t-1} - 0.224885 \Delta LnFDI_{t-1} + 0.669565 LnStartups_{t-1} + 0.095280 \quad [7]$$

- Co-integrating equation (long-run model):

$$ect_{t-1} = 1.0000 LnFDI_{t-1} - 0.747646 LnStartup_{t-1} - 4.730864 \quad [8]$$

The system equation for determining the p-value for each model from the above equation is essential. The first equation below (marked in red) [9] is again the COINTEGRATING EQUATION, that is, the **long-run model**, with LnFDI specified as the target variable (see equation [8]), whereas the second equation uses LnStartups as the dependent variable. The coefficient of equation [9], which is a cointegrating equation, is C(1). The coefficients C2 and C3 are short-term coefficients, and C4 is the intercept. In the second equation [10], C5 is the coefficient of the co-integrating equation with LnStartups as the dependent variable, C6 and C7 are short-term coefficients, and C8 is the intercept. These equations represent the forced differences between D(LnFDI) and D(LnStarups).

D(LNFDI) = C(1)*(LNFDI(-1) - 0.747645717183*LNSTARTUPS(-1) - 4.73086351731) + C(2)*D(LNFDI(-1)) + C(3)*D(LNSTARTUPS(-1)) + C(4) [9]

D(LNSTARTUPS) = C(5)*(LNFDI(-1) - 0.747645717183*LNSTARTUPS(-1) - 4.73086351731) + C(6)*D(LNFDI(-1)) + C(7)*D(LNSTARTUPS(-1)) + C(8) [10]

Table 5. 7: *P-Values for coefficients of the cointegrated equations*

	Coefficient	*Std. Error*	*t-Statistic*	*Prob.*
C(1)	-0.447485	0.166036	-2.695109	0.0097
C(2)	-0.224885	0.200191	-1.123353	0.2669
C(3)	0.669565	0.572867	1.168797	0.2483
C(4)	0.095280	0.113502	0.839458	0.4054
C(5)	-0.064843	0.068774	-0.942852	0.3505
C(6)	0.023294	0.082921	0.280916	0.7800
C(7)	-0.081147	0.237287	-0.341981	0.7339
C(8)	0.121716	0.047014	2.588962	0.0127
Determinant residual covariance		0.005759		

This research is primarily interested in C(1) and C(5), which are the φ speed of adjustment towards long-run equilibrium concerning equations [9] and [10], respectively. Table 5.7 shows all the coefficients C(1) - C(8) of both equations [9] and [10]. **These coefficients must be NEGATIVE and statistically significant to retain their economic interpretations**. Negative relates to the fact that if there is a departure in one direction, the correction must be pulled back to the other direction to retain equilibrium.

Identifying a long-run causal relationship in the red-labelled equation [9] can be obtained through t-statistics or the p-value of the error correction term.

As shown in Table 5.7 both C(1) and C(5) have negative values, but only C(1) is also statistically significant, with a p-value of 0.0097 at the 1% level. C(5) was not statistically significant, with a p-value of 0.3505>0.05.

This shows that only equation [9], with LnFDI as the target or dependent variable is statistically significant and the correct negative sign for the coefficient. The equation is in logarithmic format for the dependent and explanatory variables; therefore, the explanation is in the elasticity form. The C(1) coefficient of -0.447485 indicates that 44.7% of departures from the long-run equilibrium are corrected for each period. A 1% change in C(1) caused a 44.7% change in the dependent variable. Another way to look at this figure is that if the model experiences a shock in period t, converges to the long-term equilibrium, covering 44.7% in period t+1. Because this value is statistically significant, it also means that startup, the explanatory variable in equation [9], Granger causes FDI.

This inference can be made in the sense of Granger Causality. The long-run causality was negative.

When performing a VECM, if the model is specified correctly, the error term should be between negative 1 and zero. A positive error correction coefficient is not a good sign for the model because it implies that the process does not converge in the long run, which could be due to instability in the model. This might indicate specification problems with the model or data issues that need to be corrected.

Coefficients C(2) and C(3) are short-run in the equation, and it is essential to determine if C(3) causes Granger causality in the short run. This is done using the Wald test coefficient restriction (sometimes called the Wald chi-square test) using the Hypothesis that C(3) = 0. If the null hypothesis cannot be rejected, this suggests that the variable in question can be removed without much harm to the model fit.

Table 5.8 shows that the P-value for the Chi-square returned a value of 0.2425, which is greater than the 5% level for statistical significance, therefore, the Null Hypothesis **cannot** be rejected. There is no evidence of short-run causality from startups to FDI.

Table 5. 8: *Wald Test*

Test Statistic	*Value*	*df*	*Probability*
Chi-square	1.366086	1	0.2425
Null Hypothesis: C(3)=0 Null Hypothesis Summary:			
Normalized Restriction (= 0)		Value	Std. Err.
C(3)		0.669565	0.572867

The restrictions are linear for the coefficients.

At this stage, a test was performed to observe any serial correlations. The null hypothesis for this test was that there is NO serial correlation. From Table 5.9, the Chi-square p-value is 0.7229 > 0.05 significant level, so the null hypothesis cannot be rejected, and there is no evidence of serial correlation.

Table 5. 9: *Serial Correlation LM Test*

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.103784	Prob. F(1,23)	0.7502
Obs*R-squared	0.125778	Prob. Chi-Square(1)	0.7229

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Sample: 1990, 2019
Included observations: 28
Pre-sample missing value lagged residuals set to zero.

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C(1)	0.106401	0.371108	0.286711	0.7769
C(2)	0.122392	0.431240	0.283814	0.7791
C(3)	0.130743	0.711063	0.183869	0.8557
C(4)	-0.037259	0.163581	-0.227773	0.8218
RESID(-1)	-0.257416	0.799045	-0.322155	0.7502

It is prudent to perform several tests on the residuals to enhance the stability of the proposed model.

The Ljung-Box (Q-Test) was used to test for white noise. This test is also called the modified Box-Pierce test and is a method to test for the absence of serial autocorrelation up to a specified lag *k.* The test determines whether the errors are i.i.d. (i.e., white noise) or something more behind them; regardless of whether the autocorrelations of the errors or residuals are nonzero. Essentially, it is a test of lack of fit; If the autocorrelation of the residuals is negligible, the model is deemed not to show a "significant lack of fit'.

The Null Hypothesis claims that the model does not exhibit a lack of fit. The alternative hypothesis confirmed that the model showed a lack of fit.

Table 5. 10: *Ljung-Box Test*

VEC Residual Portmanteau Tests for Autocorrelations
Null Hypothesis: No residual autocorrelations up to lag h
Sample: 1990 2019
Included observations: 28

Lags	*Q-Stat*	*Prob.**	*Adj Q-Stat*	*Prob.**	*df*
1	0.123746	--	0.128329	--	--
2	4.960575	0.5489	5.337222	0.5013	6
3	7.421612	0.6851	8.093583	0.6197	10
4	12.19413	0.5907	13.66152	0.4752	14

*Test is valid only for lags larger than the VAR lag order.
df is degrees of freedom for (approximate) chi-square distribution
after adjustment for VEC estimation (Bruggemann et al., 2005)

The Q-Stat values in Table 5.10 are all greater than 0.5 (5% significance level), indicating that it cannot reject the Null Hypothesis and that the model has a good fit.

The next test on the model's residuals is the serial correlation test shown in Table 5.11.

Table 5. 11: ***VEC Residual Serial Correlation LM Test***

Sample: 1990, 2019
Included observations: 28

Null hypothesis: No serial correlation at lag h

Lag	*LRE* stat*	*df*	*Prob.*	*Rao F-stat*	*df*	*Prob.*
1	2.206782	4	0.6978	0.552933	(4, 42.0)	0.6979
2	6.394113	4	0.1716	1.683414	(4, 42.0)	0.1718

Null hypothesis: No serial correlation at lags 1 to h

Lag	*LRE* stat*	*df*	*Prob.*	*Rao F-stat*	*df*	*Prob.*
1	2.206782	4	0.6978	0.552933	(4, 42.0)	0.6979
2	7.274067	8	0.5074	0.922108	(8, 38.0)	0.5093

*Edgeworth expansion corrected likelihood ratio statistic.

The p-values are greater than 0.5 (5% significance level), ensuring no serial correlation in the residuals.

The Jarque-Bera test includes both Skewness and Kurtosis (Table 5.12), which shows that both p values are greater than 0.5 (5% significance level), accepting that the residuals are normally distributed.

Table 5. 12: *System Residual Normality Test*

Component	Test	Skewness	Kurtosis	Jarque-Bera
1		-0.155558	3.612205	0.550187
	Chi-sq	0.112925	0.437261	-
	df	1	1	2
	Prob	0.7368	0.5084	0.7595
2		0.020824	3.290688	0.100606
	Chi-sq	0.002024	0.098583	-
	df	1	1	2
	Prob	0.9641	0.7535	0.9509
Joint		-	-	0.650793
	Chi-sq	0.114949	0.535844	-
	df	2	2	4
	Prob	0.9441	0.7650	0.9573

The last test on the residuals tests for Heteroskedacity, as shown in Table 5.13. All p-values are more significant than 0.5, confirming no Heteroskedacity in the residuals.

Table 5. 13: *Residual Heteroskedasticity Test*

VEC Residual Heteroskedasticity Tests (Levels and Squares)
Sample: 1990, 2019
Included observations: 28

Joint test:

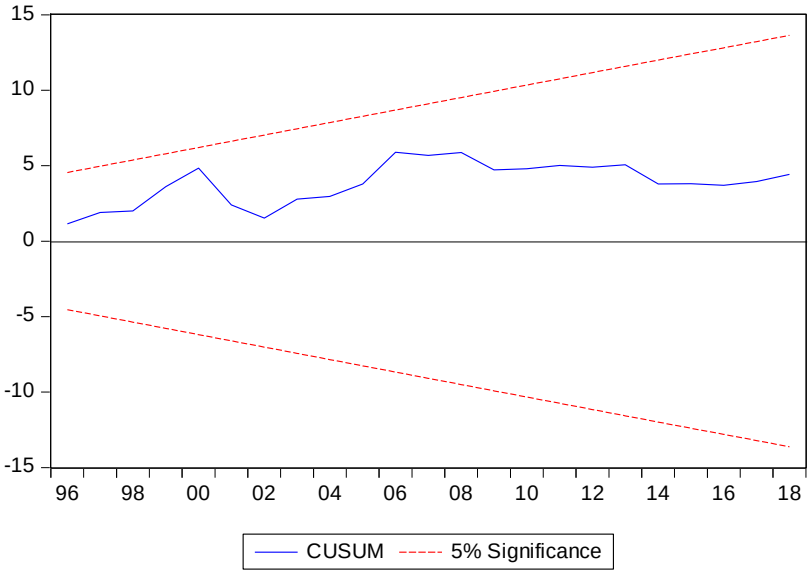
Chi-sq	*df*	*Prob.*
14.48327	18	0.6971

Individual components:

Dependent	*R-squared*	*F(6,21)*	*Prob.*	*Chi-sq(6)*	*Prob.*
res1*res1	0.147091	0.603601	0.7245	4.118535	0.6606
res2*res2	0.244715	1.134011	0.3772	6.852015	0.3347
res2*res1	0.147928	0.607635	0.7215	4.141989	0.6575

Although the model looks good, ceteris paribus, a further examination of the model's stability will further strengthen the outcome. A stability diagnostic was performed to improve the dynamic stablity model, as shown in Figure 5.6.

Figure 5. 6: *Cumulative SUM (CUSUM)*



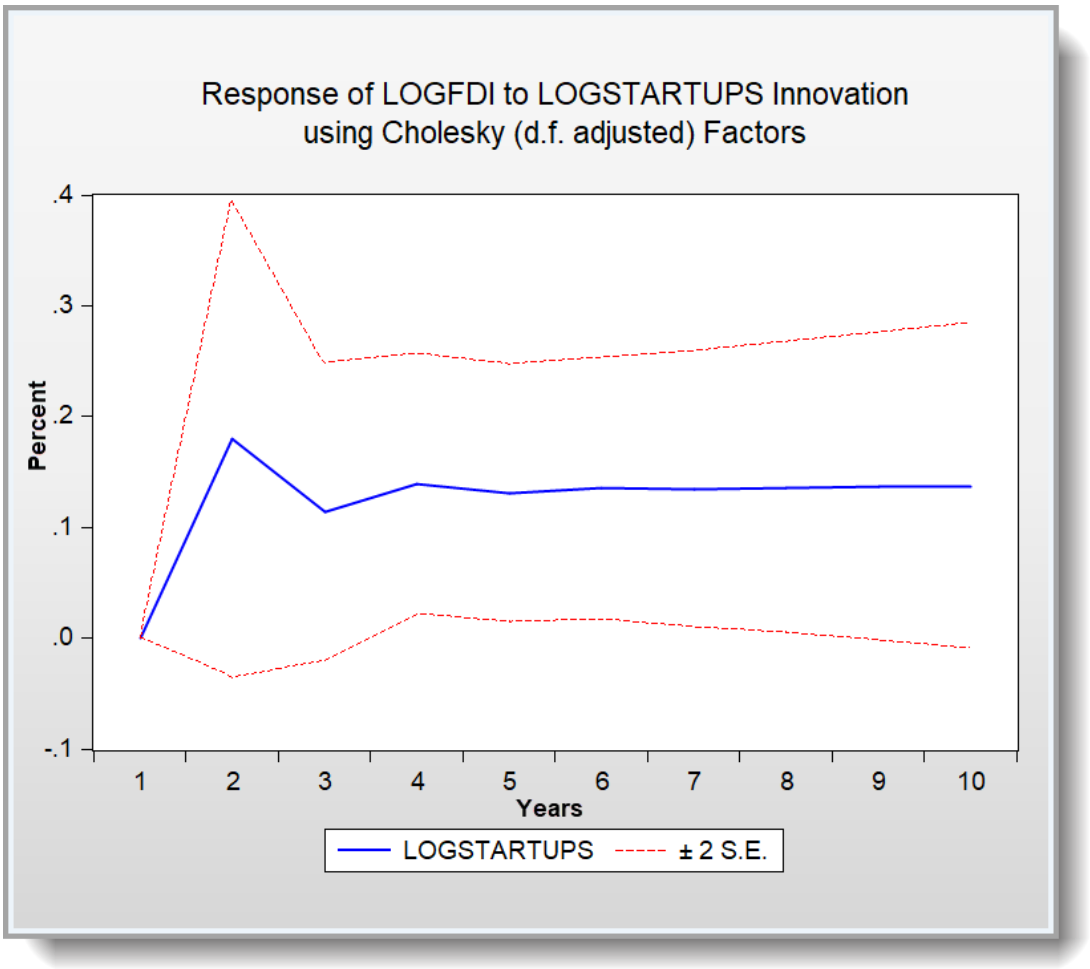
In the CUSUM chart above, the blue line lies within the red boundary, and the model is said to be dynamically stable at the 5% significance level.

The final results of the VECM model show ***unidirectional cointegration*** from startups to FDI in the long run. Startups influence changes in FDI, but the opposite does not exist; FDI does not have a causal effect on startups in the long run.

Impulse Response Shock for Israel

Although long-run causality from Startups to FDI has been shown using a VECM model, a final test using the impulse response shock would confirm this long-run relationship if it existed.

Figure 5. 7: *Impulse response shock for Israel*



- Impulse response functions (IRFs) shed further light on the information revealed by the Granger Causality results.
- IRFs help explain the sign of the relationship and length of these effects.
- IRFs can show how responsive a dependent variable is to a shock in an independent variable.
- Analogy: A bit like dropping a stone in a pond. At first, ripples will be the largest, but as time passes, the ripples become increasingly smaller until equilibrium is restored.
- The effect is permanent when a nonstationary variable experiences a shock (as in the VECM).

In Figure 5.7, a one-standard-deviation shock on Startups has a positive long-term effect on FDI. There is an initial increase from periods 1 to 2, peaking at less than 2%.

This is followed by a decrease from periods 2 to 3, after which there is another increase from period 3 onwards, resulting in a stable value from period 4 onwards. This ratifies the finding that there is long-run causality between Startups and FDI in the Israeli market. Another aspect of these results is that the long-run effect comes into play after the 3rd year, which perfectly correlates with the Inverted Pyramid Parallelogram Paradigm introduced in this study.

5.1.5 Conclusion

This study empirically investigates the causal link (direction of the causality relationship) between the inflow of FDI into Israel and the influence of new startups entering the market between 1990 and 2019. Two co-integrated equations constitute the basic econometric model for economic stability during the period under investigation, based on the “Inverted Pyramid and Parallelogram Theory or Paradigm”.

The stationary test (unit root test) shows that the included variables are non-stationary at their first difference. The cointegration tests (Engle-Granger and Johanson tests) reveal that the variables are cointegrated and have a stable relationship in the long run. Based on Engle-Granger causality, cointegration between variables allows the ECM to determine the causal direction between the variables. The estimation results of the ECM show that a causality relationship runs from startups to FDI but not from FDI to startups, implying that startups stimulate FDI. The estimation results can be used to guide policymakers to take advantage of startup spillover effects. This positive relationship indicates that startups stimulate FDI inflow and economic growth. The results suggest that it is beneficial for the recipient country (host) to attract FDI to stimulate economic growth.

The VECM model shows over 30 years that startups have a long-run causality relationship with FDI, but there is no causality effect in the short run, coinciding with the "Inverted Pyramid and Parallelogram Theory or Paradigm". In this paradigm, it was suggested that all new startups recruit short-term financial loans, which are not part of FDI, and start exchanging them for long-term finance to progress. Long-term finance is the basis of FDI in different forms, such as venture capital (VC). An increase in startups will increase FDI inflow, whereas a decrease in innovative startups will decrease FDI to keep the system in equilibrium. The parallelogram then functions as a long-term effect.

5.2 Other Variables Affecting or Cointegrating with FDI

The macro theory of FDI compares the costs and benefits of production in different locations. In turn, the profitability of production in a specific location depends on the economic environment, general level of technological development, industrial structure, level of human beings, and more general business environment. The literature suggests several explanatory economic variables that affect FDI.

Market size and growth

The size and development possibilities of the host nation are strong attractants for foreign direct investment (FDI) (Chanalert, 2000; Dunning, 1993). Economies of scale are possible in large markets, and transaction costs are lower in nations with more developed economies (Caves, 1971; Zhao & Jhu, 2000). Most low-income nations that fail to attract significant FDI flows identify their small domestic markets as key obstacles. Some researchers believe that regional integration can compensate for the lack of competition in smaller markets. Because of the assumption that rapid economic expansion provides an abundance of productive assets and human capital, inward FDI is projected to be positively connected to the GDP growth rate. However, if market size is considered, the United Nations Center for Transnational Corporations finds inconsistent evidence regarding the impact of growth rates (United Nations, 1993). Although the growth rate was statistically significant, Lunn also discovered that an erroneous sign indicated a negative link between growth rate and FDI (Lunn, 1980).

Exchange Rates, Interest Rates & Inflation

FDI influx has been related to exchange rates in the academic literature. FDI can be encouraged by currency depreciation in countries with less-efficient capital markets. According to other research, the currency depreciation signals future depreciation to prospective investors, resulting in a negative impact on foreign direct investment (FDI). Because higher interest rates hinder economic growth and diminish the demand for Transnational Corporations (TNC) products, interest rates can also affect FDI. Consumer purchasing power can be affected by inflation, which affects demand for TNC products (United Nations, 1993).

The openness of the Economy (IMPEX)

Export-oriented companies are less concerned with the local market's size, growth, and other characteristics, which significantly impact the recruitment of FDI. According to several studies, an open economy is critical for attracting foreign direct investment (FDI) in export-oriented industries. Natural resources and capital goods required for local and international investments are easier to import in an open economy. Sing and Jun (1995) observe that manufacturing exports influence FDI flows. Similarly, according to research, exports appear to come before FDI inflow.

Questions on trade openness have been extensively examined in the academic literature. For example, trade openness and government size have been examined in numerous studies, such as trade openness and stock market returns, as well as the relationship between trade openness, regional development, and regional growth. Trade openness, in turn, has been examined with respect to inflation, as has the relationship between openness and economic growth (Neumayer & Soysa, 2005; Aizenman & Noy, 2006).

Trade openness has been quantified in various ways, but the most popular methods all have one thing: they reflect trade as a percentage of a country's GDP. The three most commonly used metrics: M/GDP, X/GDP, and X+M/GDP, are listed as various options for dealing with outliers. According to Squalli and Wilson (2011), X+M/GDP (Export+Import/GDP) is the most commonly used metric of trade openness in most studies and is referred to as Trade Share (TS). Every trade openness metric measures how open an economy is to global commerce regardless of which one is employed. The more open a country's economy is to international trade benefits, the higher is its TS score. The use of TS-based metrics of openness has the advantage of not being fabricated.

Economic Freedom (Heritage Index)

Economic freedom is the fundamental right of all humans to control their labour and property. In an economically free society, individuals can work, produce, consume, and invest whatever they please. In economically free societies, governments allow labour, capital, and goods to move freely and refrain from coercion or constraint of liberty beyond the extent necessary to protect and maintain liberty.

The benefits of economic freedom bring greater prosperity, and the Index of Economic Freedom documents a positive relationship between economic freedom and various positive social and economic goals. Ideals of economic freedom are strongly associated with healthier societies, cleaner environments, greater per capita wealth, human development, democracy, and poverty elimination.

The Heritage Foundation's ‘Index of Economic Freedom,” which measures 12 quantitative and qualitative factors, comprises four categories or pillars. The four main variables are as follows:

1. Rule of Law (property rights, government integrity, judicial effectiveness)

2. Government size (government spending, tax burden, fiscal health)

3. Regulatory Efficiency (business freedom, labour freedom, monetary freedom)

4. Open markets (trade freedom, investment freedom, financial freedom)

Control Variables

Previous FDI research has highlighted several plausible explanatory factors: exchange rate, economic openness, growth, location-specific benefits, wage rates, natural resources, corruption, and tax rates. Incorporating these variables into the analysis was impossible, and the model did not perfectly represent the real world. Control variables that are most important to the study are incorporated into a model that explains as much as possible with as few variables as possible. Market size, economic growth rate, openness, inflation, and freedom are only a few factors.

1. Inflation

2. Openness of the economy (IMPEX Index): (Export+Import/GDP)

3. Economic freedom (heritage index)

4. Startups

The Research Methodology

The research uses a VECM model as in the previous section and uses several variables simultaneously to test the absolute and relative effects on FDI in the short run, particularly in the long-run. The FDI data were obtained from the World Bank database.

The dataset contains yearly information from 1990 to 2019. The 'Index of Economic Freedom' published by the Heritage Foundation and the Wall Street Journal will be used to capture independent variables. This index is based on 50 variables: trade policy, monetary policy, property rights, and government fiscal burden. This index ranges from 1 to 5, where 1 reflects a more significant deal of economic freedom and 5 reveals little economic freedom. The variable IMPEX, which indicates the openness of the economy, is computed as the ratio of imports plus exports to GDP. Data were obtained from the World Bank Database.

In addition to the long-run causality relationship between startups and FDI, as found in the previous section, three new supposed causality relations are examined using several possible explanatory variables. This model evaluates whether other relevant variables can affect FDI in the long run in addition to startups.

The model chosen is:

[1]. ***LnFDI = f [LnStartups, %Inflation, LnImpex, DiffHeritage]***

Where:

LnFDI = Log value of Foreign Direct Investment

LnStartups = Log value of the number of Innovative Startups

%Inflation = percentage Inflation rate per annum

LnImpex = The Impex Index – X+I/GDP (log value of Impex)

DiffHeritage Index = Heritage Index Index per annum (difference between period n and n-1)

Following the econometric model produced above, it can be deduced that if nonstationary time series are integrated with the first order I(1) and cointegrated, a vector error correction model can be performed. Thus, it is possible to examine the **short- and long-run** dynamics of the cointegrated series. Once again, all variables were considered endogenous.

The conventional ECM function for a cointegrated series using several independent variables is as follows:

$$\Delta Y_t = \beta_0 + \sum_{i=1}^{n} \beta_i \, \Delta Y_{t-1} + \sum_{i=0}^{n} \delta_{1i} \, \Delta X_{1,t-1} + \sum_{i=0}^{n} \delta_{2i} \Delta X_{2,t-i} + \ldots\ldots + \boxed{\varphi ECT_{t-1}} + \varepsilon_{1t}$$

The *error correction* (ECT) term relates to the fact that the last period's deviation from the long-run equilibrium (error) influences the short-run dynamics of the dependent variable.

$$ECT_{t-1} = y_{t-1} - \beta_0 - \beta_1 x_{t-1}$$

The coefficient of ECT φ, is the speed of adjustment to long-run equilibrium. To ensure convergence toward the long-run equilibrium, φ < 0 and significance (the model is considered unstable and explosive if φ is positive). If φ is significant, this also means that X Granger causes Y in the long run.

Variables:

LnFDI, %Inflation, LnStartups, DiffHeritage, LnImpex

The above variables are nonstationary and integrated in order I(1), as indicated in Table 5.14. The p-values of the ADF were less than the crucial 95% significance level of 0.05. The Akaike Information Criterion (AIC) and the Schwartz Bayesian criterion (SBC) are also shown in Table 5.14 to establish the number of delays required to turn an error term into white noise by one lag.

Table 5. 14: *ADF p-values with different lags for Unit Root in 1st Difference*

Variables	*Intercept*			*Intercept and Trend*		
	ADF(0)	ADF(1)	ADF(2)	ADF(0)	ADF(1)	ADF(2)
LnFDI	0	0.0001	0.0040	0.0001	0.0008	0.0155
AIC	1.7875	1.7718	1.8667	1.8376	1.8208	1.9099
SBC	1.8827	1.9158	2.0603	1.9803	2.0126	2.1518
LnStartups	0.0002	0.0006	0.0110	0.0012	0.0038	0.0393
AIC	-0.2680	-0.2770	-0.1781	-0.1977	-0.1880	-0.1288
SBC	-0.1729	-0.1130	-0.0153	-0.0550	-0.0040	0.1131
%Inflation	0.0000	0.0000	0.0869	0.0000	0.0000	0.1253
AIC	4.8154	4.5493	4.2957	4.6112	4.3102	4.2729

SBC	4.9146	4.6933	4.4893	4.7539	4.5022	4.5149
DiffHeritage	0.0001	0.0000	0.0201	0.0009	0.0000	0.0901
AIC	4.2117	4.0189	3.9758	4.9054	4.0326	4.0654
SBC	4.3105	4.1681	4.1750	5.0542	4.2315	4.3144
LnImpex	0.0001	0.0001	0.0130	0.0003	0.0002	0.0171
AIC	-2.3406	-2.4096	-2.2932	-2.3144	-2.4489	-2.3440
SBC	-2.2454	-2.2656	-2.0996	-2.1717	-2.2570	-2.1021

The above results indicate that each time series is non-stationary (i.e., integrated of order one I(1)) derived from the ADF findings. These results enable the next stage, which requires the co-integration of different data sets, also known as examining whether long-term relationships (stable and non-spurious cointegrated relationships) exist between the variables (Ramirez, 2000). The Johansen test for cointegration can be used (Table 5.15).

Table 5. 15*:* *Johansen Cointegration Test*

Equation	*Hypothesized*	*Trace Test*	*Eigenvalue Test*
Model	*No. of C.E. (s)*	**	**
[1]	2*	0.0004 0.0265	0.0061

***Note**: * Rejection of the hypothesis at the 0.05 level, indicating cointegration equation at a level of 0.05 .*
*** MacKinnon-Haug-Michelis (1999) p-value*

In Table 5.15, the equation shows that 1% can reject the null hypothesis of no cointegrating vector for equation [1].

With the establishment that the equation is a nonstationary time series and integrated of the first-order l(1) and cointegrated, the VECM can be performed. It will be possible to examine the short- and long-run dynamics.

After running the VECM model, the following coefficient for the equation was obtained, as shown in Table 5.16.

Table 5. 16*: Estimated VECM Model 1*

Dependent Variable	*CointEquation (φ)*	*Standard error*	*t-statistics*	*p-value*
LnFDI	-1.015344	0.20216	-5.02241	0.0002*

Note: * significance at the 0.01 level

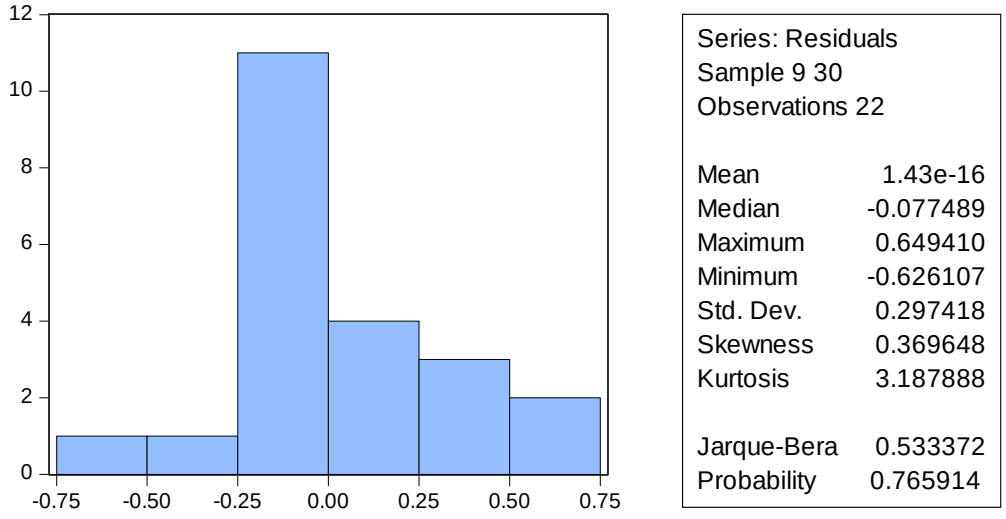
This research focuses on the coefficients φ of the cointegrated equation and the speed of adjustment towards the long-run equilibrium. **This coefficient must be NEGATIVE and statistically significant to retain its economic interpretation**. Negative relates to the fact that if there is a departure in one direction, the correction must be pulled back to the other direction to retain equilibrium. In this equation, φ is a negative, significant, and sufficiently acceptable value.

Model [1] of the Cointegration equation

LnFDI = f [LnStartups, %Inflation, LnImpex, DiffHeritage]

ECT = 1.00000LnFDI(-1) - 0.418501LnStartups(-1) + 0.135056%Inflation(-1) - 0.077808LnImpex(-1) -0.289373DiffHeritage(-1) - 6.869931

Figure 5. 8*: Residual Tests*



The mean of the ECT is close to zero (1.43e-16), as shown in Figure 5.8, therefore, the equation can be set to zero to show the effect of the co-integrated long-run model. It can be observed that there is no skewness or kurtosis, as the Jarque-Bera

p-values are greater than 0.05 (5% significance level), accepting that the residuals are normally distributed. By setting ECT = 0, the cointegrated equation can be written as:

[1] LnFDI = 0.418501LnStartups - 0.135056%Inflation + 0.077808LnImpex + 0.289373DiffHeritagge + 6.869931

This shows that inflation has a negative impact on FDI in the long run, while Startups, Heritage, and Impex all have a positive impact and align with the long-run economic theory.

The estimated VECM with LnFDI as the dependent variable can be seen here with a negative long-run coefficient.

LnFDI = -1.0153445ect* + **0.418501LnStartups - 0.135056%Inflation + 0.077808LnImpex + 0.289373DiffHeritagge + 6.869931**

Note: * p-value = 0.0002

This confirms that the equation in Model 1 is cointegrated with FDI with a statistical p-value of 0.0002 for the ECT.

Short-run Coefficients

Apart from the φ coefficient depicting the long-run effect, all other coefficients of the independent variables are short-run. It is essential to determine if Granger causality is in the short run, which is tested using the Wald chi-square test. If the null hypothesis cannot be rejected, this suggests that the variable in question can be removed without much harm to the model fit. As shown in Table 5.17, two variables in the model show that the P-value for the Chi-square returned values greater than the 5% level for statistical significance, therefore, the null hypothesis cannot be rejected at this instant. This means that there is no evidence of short-run causality from these independent variables to FDI. Three of the other variables show a p-value less than 5%, indicating a short-run causality effect on FDI in these cases.

D(LOGFDI) = C(1)*(LOGFDI(-1) - 0.418501184109*LOGSTARTUPS(-1) – 0.289372739125*DIFFHERITAGE(-1) + 0.135055926613*INFLATION_RATE__(-1) - 0.0778081895407*LOGIMPEX(-1) -6.86993063597) + C(2)*D(LOGFDI(-1)) + C(3)*D(LOGSTARTUPS(-1)) + C(4)*D(DIFFHERITAGE(-1)) + C(5)*D(INFLATION_RATE__(-1)) + C(6)*D(LOGIMPEX(-1)) + C(7)

Table 5. 17: *Wald Test for coefficients*

Restriction	*Test*	*Reject*	*Accept*
C6=C7=0	Chi-Squared	0.4910	-
C3=C4=C5=0	Chi-Squared	-	0.0011

At this stage, a further test was performed to determine whether there was a serial correlation. The null hypothesis for this test was that there is NO serial correlation. From Table 5.18, the chi-square p-value of 0.6007 is greater > than 0.05 significance levels, therefore the null hypothesis cannot be rejected, and there is no evidence of serial correlation.

Table 5. 18: *Breusch-Godfrey Serial Correlation Test L.M.*

Model 1	
Prob. Chi-Square	0.6007

The last test on the residuals tests for heteroskedasticity, as shown in Table 5.19. The p-values of 0.9900 are more significant than 0.05, confirming no heteroskedasticity in the residuals.

Table 5. 19: *Heteroskedasticity Test – Breusch-Pagen-Godfrey.*

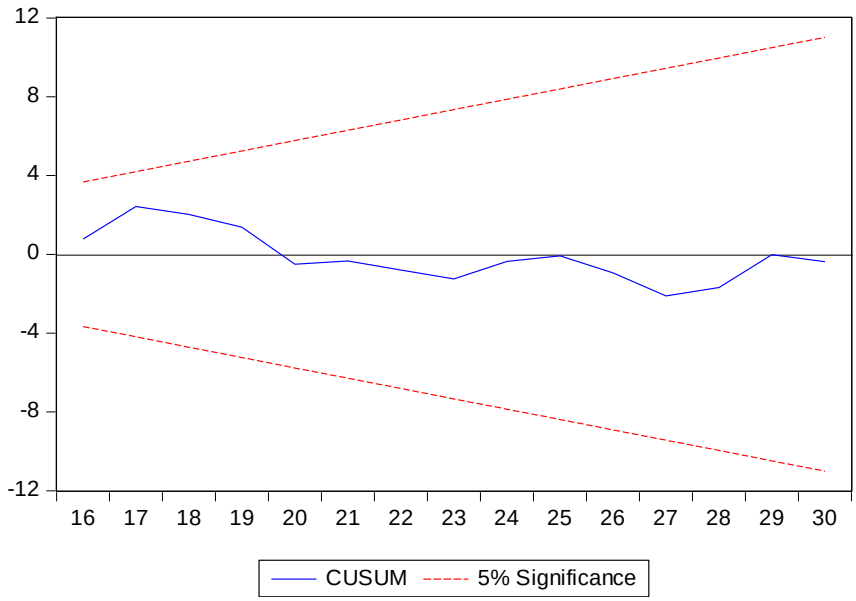
Model 1	
Prob. Chi-Squared	0.9900

A final look at the stability of the model can be made by performing stability diagnostics. All other tests show good cointegration at this stage, ceteris paribus, therefore, the stability diagnostic test will enhance the dynamically stable model.

In the CUSUM graph shown in Figure 5.9, the blue line lies within the red boundary, and the model is said to be dynamically stable at the 5% significance level.

The final results of the VECM models show ***unidirectional cointegration*** of Startups, Inflation, Openness of the economy (Impex), and Heritage of FDI in the long run. Three short-run cointegration variables, Startup, Heritage, and Inflation, affect the dependent variable FDI.

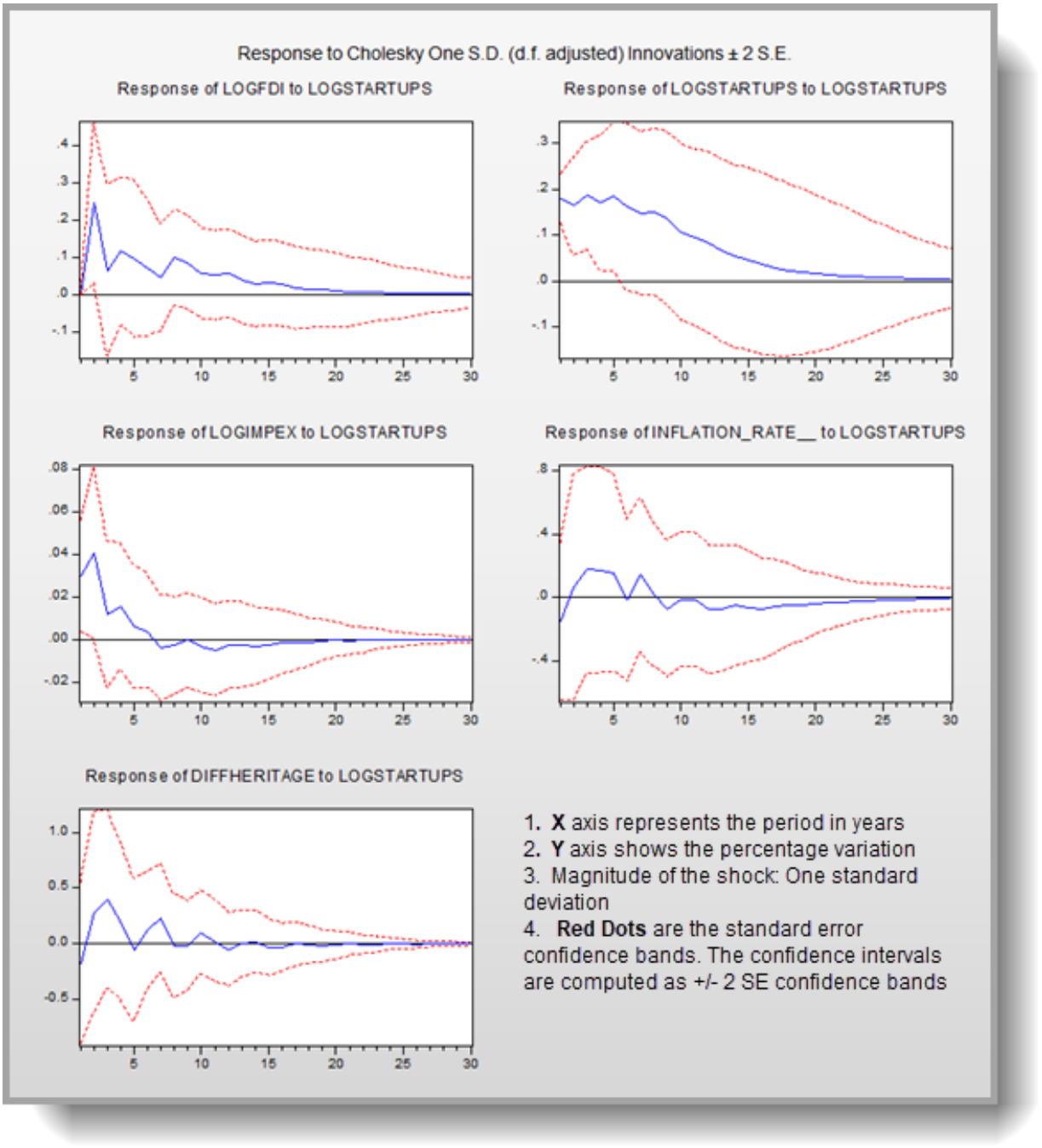
Figure 5. 9*: Cumulative SUM (CUSUM)*



Impulse response shock

Using a multivariate equation with the addition of three different independent variables has not changed the outcome of the long-run causality effect, as seen in Figure 5.10 of the impulse response shocks. Startups have a long-run causality effect even for over 30 years.

Figure 5. 10: *Impulse response shock for multivariate equation (1990 – 2019)*



Conclusion

The model investigated in this study validates other independent variables that could influence and be cointegrated with FDI and startups. The results show that the variables inflation, openness of the economy, the Heritage Index of economic freedom, and Startups are all cointegrated into the long-term FDI inflow into Israel. The inflation rate is negative, indicating that increasing inflation can negatively influence FDI inflow.

Economic openness, calculated as a percentage of (Export+Import)/GDP, has a positive influence on FDI. Startups and the Heritage Index were positively integrated into the equation.

Startups, heritage and inflation have short-run cointegration with FDI, while the Impex variable of openness of the economy was not significant in the short run.

As stated previously, the overall GDP variable was excluded as an independent variable in this study. Appendix A (“A Robust Analysis to confirm the FDI model”) looks at the impact of GDP in these equations and shows that it does not affect the outcome. With these results, it is safe to say that the above model is still the preferred one for use with the variables chosen above.

5.3 Complimentary Analysis - World Countries FDI-Startups

5.3.1 Introduction

This research has shown a long-run causality effect of Startups with FDI for Israel, including three independent variables: the economy's openness, inflation, and the Heritage Index. Are these results unique to Israel, or can the same relationship hold for other countries?

Considering the ten leading countries in Table 5.20, Israel will be removed from the table to evaluate the same relationship with other countries. Unfortunately, Singapore was omitted because of data requirements. In addition to Israel, this study chose eight of the ten countries. This research has taken the top nine countries from the global ranking of startup ecosystems with this selection, Israel on its own and the other eight countries.

5.3.2 Methodology

In the Introduction, Chapter 1.2 is shown in Table 1.1, the Global Country Ranking of the Startup Ecosystem. This table is also presented in Table 5.20. This study chose eight of the ten countries in this list to examine the possible co-integration of startups and FDI.

Table 5. 20: *Global Ranking of Startup Ecosystem*

Rank 2021	Change from 2020	Country	Population	Total Score	Quantity Score	Quality Score	Business Score
1	0	USA	331,449,281	124.420	19.45	101.17	3.80
2	0	UK	68,224,429	28.719	8.16	16.86	3.70
3	0	Israel	8,783,994	27.741	5.48	19.14	3.13
4	0	Canada	38,056,808	19.876	6.58	9.75	3.55
5	0	Germany	84,038,309	17.053	3.64	9.93	3.49
6	+4	Sweden	10,159,012	15.423	2.40	9.24	3.78
7	+7	China	1,444,615,335	15.128	1.33	11.46	2.34
8	0	Switzerland	8,714,309	14.943	3.82	7.58	3.54
9	-2	Australia	25,780,993	13.835	4.46	5.88	3.50
10	+7	Singapore	5,894,102	13.745	3.21	7.69	2.84

5.3.3 Variables Used

- FDI – Foreign Direct Investment (Inflow)
- Startups – Number of Startups

Data related to FDI were collected from the World Bank Database, and data on the number of active startups were obtained from Crunchbase and Startup National Central, Israel.

Transformation of variables

FDI: DiffLnFDI (First Difference of the log FDI for period $X_t - X_{t-1}$)

Startups: DiffLnStartups (First Difference of the log of the number of Startups for period $X_t - X_{t-1}$)

For Germany, the following transformation was used:

FDI: LnFDI

Startups: LnStartups

The transformation of variables is used to accommodate the time series as stationary variables. The following results were obtained from the transformations in Table 5.21.

Table 5. 21*: Transformed variables used for each country*

Country	***FDI***	***Startups***
Australia	DiffLnFDI	DiffLnStartups
Canada	DiffLnFDI	DiffLnStartups
China	DiffLnFDI	DiffLnStartups
Germany	LnFDI	LnStartups
Sweden	DiffLnFDI	DiffLnStartups
Switzerland	DiffLnFDI	DiffLnStartups
United Kingdom	DiffLnFDI	DiffLnStartups
USA	DiffLnFDI	DiffLnStartups

Table 5. 22: *Augmented Dickey-Fuller Test (Stationary)*

	Lag 1	
Country	***DiffLnStartups***	***DiffLnFDI***
Australia	0.0006***	0.0000***
Canada	0.0000***	0.0004***
China	0.0004***	0.0000***
Germany	0.0000***	0.0794*
Sweden	0.0000***	0.0004***
Switzerland	0.0004***	0.0067***
United Kingdom	0.0001***	0.0000***
USA	0.0000***	0.0002***

*Significance level: *** 1%, ** 5%, * 10%*

From Table 5.22, using the Augmented Dickey-Fuller Test for Non-Stationary, all variables for all counties are statistically significant at the 1% level.

Table 5. 23*: Co-integration with Johansen Test*

Country	*Trace Test*	*Eigenvalue Test*
Australia	0.0001***	0.0001***
Canada	0.0193**	0.0115**
China	0.0323**	0.0880*
Germany	0.0186**	0.0117**
Sweden	0.004***	0.0102***
Switzerland	0.0000***	0.0000**
United Kingdom	0.0972*	0.0854*
USA	0.0243**	0.0147**

*Significance level: *** 1%, ** 5%, * 10%*

The Johansen test in Table 5.23 shows that all counties have co-integrated variables with significant values, mainly at the 1% and 5% levels. The UK shows a 10% level of co-integration.

The estimated VECM with DiffLnFDI as the dependent variable for all countries except Germany can be seen in Table 5.24

$$DiffLnFDI = ect(\varphi) + DiffLnFDI(-1) + DiffLnStartups(-1) + C$$

Table 5. 24*: The VECM Equations*

	CointEquat (φ)	*DiffLnFDI(-1)*	*DiffLnStartups(-1)*	*C*
Australia	-2.353727 0.0000***	0.391056 0.0494**	-1.675571 0.0465**	0.008753 0.9366
Canada	-1.255484 0.0001***	0.210318 0.2789	-3.719457 0.0241**	-0.075251 0.6534
China	-0.677398 0.0020***	-0.042235 0.8165	0.374935 0.0479**	-0.036439 0.4380
Germany [1]	-.0576828	0.011088	-1.654064	0.145579

	0.0065***	0.9419	0.1630	0.3080
Sweden	-1.628344 0.0003***	0.420717 0.0620*	-0.878529 0.5468	-.093560 0.6973
Switzerland	-2.409184 0.0000***	0.673139 0.0022***	-0.924494 0.5072	0.062077 0.7693
UK	-1.115423 0.0030***	-0.158618 0.4603	-0.947890 0.6558	-0.143853 0.4822
USA	-1.308244 0.0002***	0.153784 0.4324	0.025706 0.9744	0.016942 0.8317

*Significance level: *** 1%, ** 5%, * 10%.* Note: [1] LnFDI & LnStartups

The Co-integrating equation (long-run model) is defined as:

$ECT_{t-1} = Y_{t-1} - \beta_0 - \beta_1 X_{t-1}$

In this study, the coefficient of the independent variable must have a positive sign for economic validity. Startups should influence FDI inflows into the country to be of any economic value. A negative coefficient would mean that an increase in the number of startups in a country would decrease FDI inflow, which is not a feasible economic reality.

In the VECM equations, coefficient φ should be negative and significant for long-term cointegration. This condition was observed in all the cases.

Table 5. 25: *Coefficients of the co-integrating equation.*

	DiffLnStartups(-1)	*C*
Australia	+0.796060	+0.040108
Canada	+2.879307	-0.008914
China	-0.008669*	+0.148334
Germany	+3.026806	+4.069902
Sweden	+3.182834	-0.116078
Switzerland	+1.158565	+0.076116
UK	+4.178190	-0.051657
USA	+1.127033	+0.044918

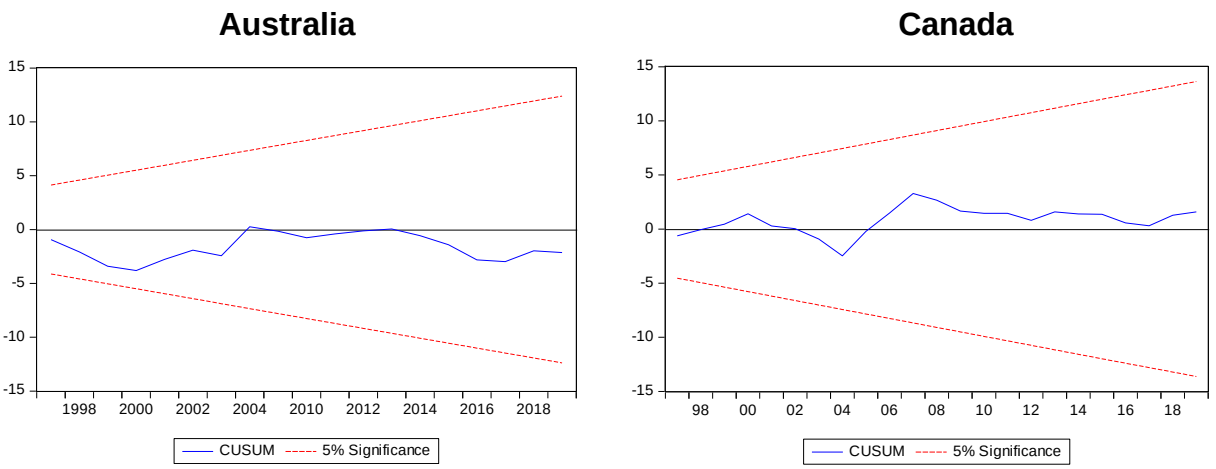
Note: * Not economically feasible

From Table 5.25, all countries have a positive and significant coefficient for the co-integrating equation, except for China, which is negative.

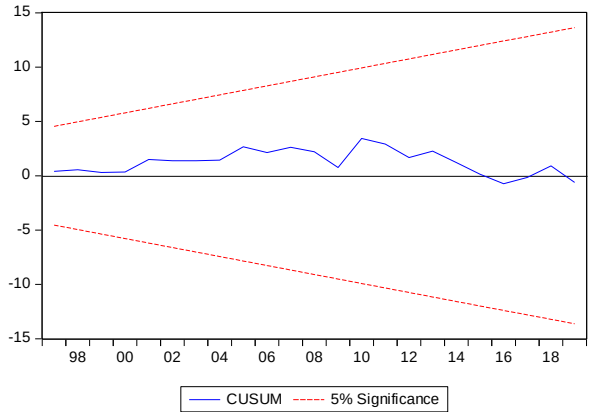
At this stage, all other tests show a good sign of cointegration, ceteris paribus, so the stability diagnostic test enhances the fact that the model is dynamically stable for all countries.

In the CUSUM graph shown in Figure 5.11 below, the blue line lies within the red boundary, and the model is dynamically stable at a significance level of 5%.

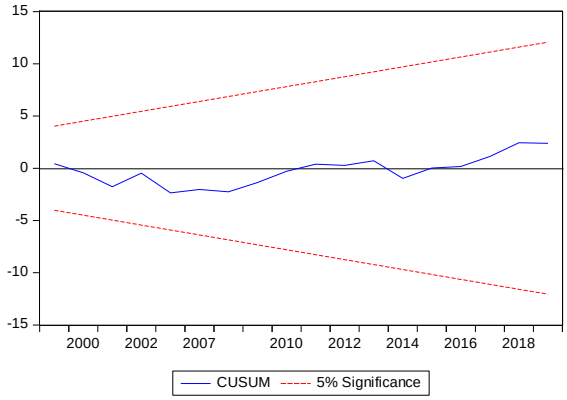
Figure 5. 11*: Cumulative SUM(CUSAM) for all Countries*



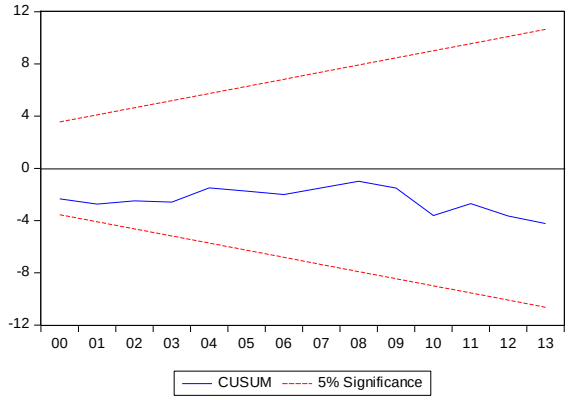
China



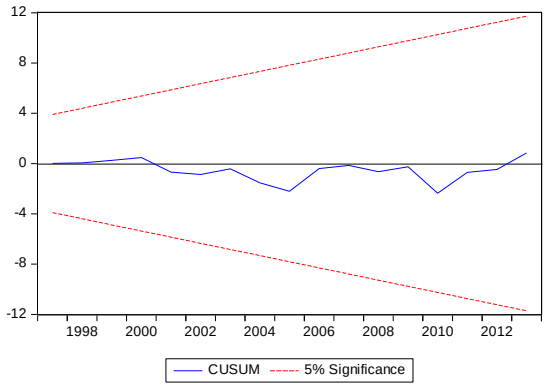
Germany



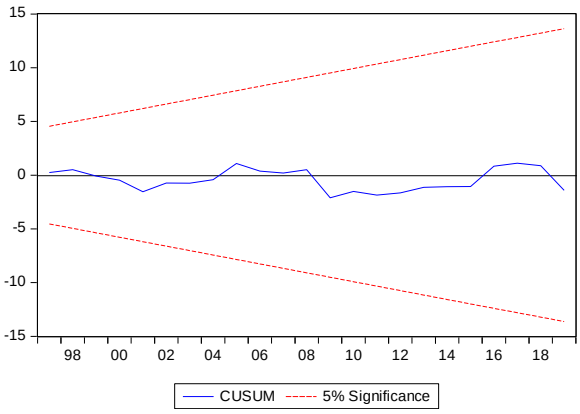
Sweden



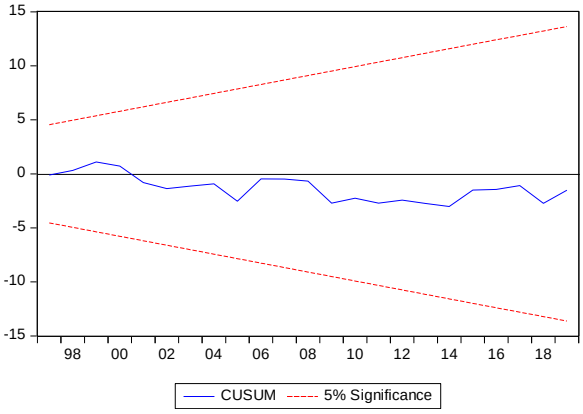
Switzerland



USA



United Kingdom



5.3.4 Conclusion

The VECM for the eight countries shows a long-run co-integrated relationship between startups and FDI for the seven countries. China is the only country in which it does not apply.

China's economic independence remains fragile, and the country's economy is being controlled. Although China has the second largest economy and exports more than any other country, its GDP per capita is lower than that of most other countries in the developed world. Because of the "Socialism with Chinese Characteristics" philosophy, liberalisation has been stifled, trade and investment have been hindered, the rule of law has been undermined, and the opposition to vested interests has become more assertive. Despite the recent increase in China's economic freedom ratings, data measuring economic freedom components based on surveys conducted solely in big cities may create a deceptive sense of conditions for the rural poor.

Those who maintain the status quo often undermine their reform efforts. China's lack of investment and financial independence severely hinders productivity, growth, and development, particularly given the country's declining economy.

5.4 Results of Bivariate VECM Analysis

The following are the results of bivariate VECM analysis using FDI as the dependent variable and the following dependent variables: Startups, Inflation, Impex, and Heritage. The analysis was performed in nine countries, as seen in tables 5.26 – 5.30.

Table 5. 26: *ADF p-values with different lags for Unit Root in 1st Difference*

Country	***Variable***	***Intercept***	***Intercept & Trend***
Israel	Diff(FDI)	0.0015	0.0086
Israel	Inflation	0.0000	0.0000
Israel	Impex	0.0001	0.0002
Israel	Diff(Heriitage)	0.0000	0.0000
Australia	Diff(FDI)	0.0000	0.0003
Australia	Diff(Inflation)	0.0000	0.0000
Australia	Diff(Impex)	0.0149*	0.0648**
Australia	Diff(Heritage)	0.0323*	0.0184*
Canada	Diff(FDI)	0.0034	0.0005
Canada	Inflation	0.0000	0.0000
Canada	Diff(Impex)	0.0027	0.0082
Canada	Diff(Heritage)	0.0165*	0.0960**
China	Diff(FDI)	0.0499*	**0.1763**
China	Diff(Inflation)	0.0000	0.0000
China	Impex	0.0012	0.0045
China	Lag3(Heritage)	0.0000	0.0009
Germany	Diff(FDI)	0.0000	0.0000
Germany	Inflation	0.0000	0.0001
Germany	No Var for Impex	-	-
Germany	Heritage	0.0092	0.0429*
Sweden	Diff(FDI)	0.0002	0.0012
Sweden	Inflation	0.0027	0.0176*
Sweden	No Var for Impex	-	-
Sweden	Diff(Heritage)	0.0001	0.0013
Switzerland	Diff(FDI)	0.0000	0.0000
Switzerland	Inflation	0.0000	0.0000
Switzerland	Impex	0.0007	0.0046
Switzerland	Heritage	0.0009	0.0043
UK	Diff(FDI)	0.0000	0.0000
UK	Diff(Inflation)	0.0000	0.0000
UK	Diff(Impex)	0.0000	0.0003
UK	Diff(Heritage)	0.0001	0.0009
USA	FDA	0.0001	0.0006
USA	Diff(FDI)	0.0000	0.0003
USA	Inflation	0.0080	0.0411*
USA	Impex	0.0001	0.0004
USA	Diff(Heritage)	0.0000	0.0000

Note: All p-values are at 1% significance; * 5% level; **10% level

Table 5. 27: *Johansen Cointegration Test*

Country	***Function***	***Trace Test***	***Eigenvalue Test***
Israel	Diff(FDI) » Inflation	0.0015	0.0272*
Israel	Diff(FDI) » Impex	0.0021	0.0048
Israel	Diff(FDI) » Diff(Heritage)	0.0003	0.0098
Australia	Diff(FDI) » Diff(Inflation)	0.0000	0.0001
Australia	Diff(FDI) » Impex	0.0000	0.0000
Australia	Diff(FDI) » Heritage	0.0000	0.0003
Canada	Diff(FDI) » Inflation	0.0004	0.0175*
Canada	Diff(FDI) » Diff(Impex)	0.0000	0.0004
Canada	Diff(FDI) » Diff(Heritage)	0.0018	0.0194*
China	Diff(FDI) » Diff(Inflation)	0.0000	0.0040
China	Diff(FDI) » Impex	0.0063	0.0080
China	Diff(FDI) » Lag3(Heritage)	0.0022	0.0187*
Germany	Diff(FDI) » Inflation	0.0000	0.0015
Germany	None for Impex	-	-
Germany	Diff(FDI) » Heritage	0.0069	0.0069
Sweden	Diff(FDI) » Inflation	0.0001	0.0025
Sweden	None for Impex	-	-
Sweden	Diff(FDI) » Diff(Heritage)	0.0002	0.0195*
Switzerland	Diff(FDI) » Inflation	0.0005	0.0033
Switzerland	FDI » Impex	0.0115*	0.0083
Switzerland	Diff(FDI) » Heritage	0.0107*	0.0176*
UK	Diff(FDI) » Diff(Inflation)	0.0000	0.0020
UK	Diff(FDI) » Diff(Impex)	0.0001	0.0057
UK	Diff(FDI) » Diff(Heritage)	0.0038	0.0359*
USA	Diff(FDI) » Inflation	0.0007	0.0347*
USA	FDI » Impex	0.0438*	0.0416*
USA	Diff(FDI) » Diff(Heritage)	0.0219*	0.1034**

Note: All p-values are at 1% significance; * 5% level; **10% level

Table 5. 28: *VECM Long Term for Inflation*

Country	***Function***	***Coefficient of ECT (φ) p-value ( )***	***Inflation Standard error ( ) t-statistic [ ]***
Israel	Diff(FDI) » Inflation	-1.522373 (0.0001)	-96.85038 (121.814) [0.79507]
Australia	Diff(FDI) » Diff(Inflation)	-1.569389 (0.0000)	-4.14E+0.9 (1.5E+0.9) [2.72392]
Canada	Diff(FDI) » Inflation	-1.157731 (0.0001)	-2.30E+08 (2.9E+09) [0.07861]
China	Diff(FDI) » Diff(Inflation)	-0.522621 (0.0075)	-1.14E+10 (2.9E+09) [3.87976]
Germany	Diff(FDI) » Inflation	-1.824575 (0.0000)	-9.46E+09 (5.7E+09) [1.65821]
Sweden	Diff(FDI) » Inflation	-1.879585 (0.0007)	-2.54E+08 (2.8E+09) [0.09209]
Switzerland	Diff(FDI) » Inflation	-2.286644 (0.0000)	-2.4E+09 (5.9E+09) [0.40865]
UK	Diff(FDI) » Diff(Inflation)	-0.128164 **(0.1611)***	-1.69E+11 (3.2E+10) [5.29819]
USA	Diff(FDI) » Inflation	-1.996644 (0.0000)	-3.77E+09 (2.0E+10) [0.18513]

Note: All p-values are at 1% significance; * not significant value

Table 5. 29: *VECM Long Term for IMPEX*

Country	***Function***	***Coefficient of ECT (φ) p-value ( )***	***IMPEX Standard error ( ) t-statistic [ ]***
Israel	Diff(FDI) » Impex	-1.431699 (0.0006)	+5645.288 (4015.42) [-1.40590]
Australia	Diff(FDI) » Impex	-2.468776 (0.0000)	+4.98E+09 (9.4E+09) [-0.52822]
Canada	Diff(FDI) » Diff(Impex)	-2.197193 (0.0000)	+1.09E+11 (8.3E+10) [-1.30081]
China	Diff(FDI) » Impex	-1.556567 (0.0045)	+2.39E+10 (2.1E+10) [-1.14511]
Germany	None for Impex	-	-
Sweden	None for Impex	-	-
Switzerland	FDI » Impex	-1.445718 (0.0000)	+4.70E+10 (1.9E+10) [-2.44829]
UK	Diff(FDI) » Diff(Impex)	-0.832441 (0.0051)	+1.89E+12 (4.9E+11) [-3.85783]
USA	FDI » Impex	-0.832560 (0.0002)	+1.41E+12 (2.8E+11) [-5.05905]

Note: All p-values are at 1% significance

Table 5. 30: *VECM Long Term for Heritage*

Country	***Function***	***Coefficient of ECT (φ) p-value ( )***	***Heritage Standard error ( ) t-statistic [ ]***
Israel	Diff(FDI) » Heritage	-0.647870 (0.0184)*	+2338.380 (592.201) [-3.94863]
Australia	Diff(FDI) » Heritage	-2.272443 (0.0000)	+1.09E+09 (5.8E+08) [-1.87577]
Canada	Diff(FDI) » Diff(Heritage)	-1.040874 (0.0000)	+5.58E+09 (5.2E+09) [-1.06283]
China	Diff(FDI) » Lag3(Heritage)	-1.403619 (0.0001)	+1.57E+10 (5.9E+09) [-2.66356]
Germany	Diff(FDI) » Heritage	-1.795771 (0.0002)	+2.33E+09 (2.4E+09) [-0.95757]
Sweden	Diff(FDI) » Diff(Heritage)	-0.935737 (0.0158)	+1.11E+10 (5.0E+09) [-2.20538]
Switzerland	Diff(FDI) » Heritage	-2.260996 (0.0001)	+1.19E+09 (4.9E+09) [-0.24047]
UK	Diff(FDI) » Diff(Heritage)	-1.338531 (0.0043)	+2.91E+10 (1.6E+10) [-1.8036]
USA	Diff(FDI) » Diff(Heritage)	-1.278425 (0.0010)	+1.01E+09 (2.4E+10) [-0.04234]

Note: All p-values are at 1% significance; * 5% level

As seen in the above tables, all error correction terms (ECT) show a negative sign, indicating long-term causality. The signs of all coefficients of the independent variables

are positive, except for inflation, which has a negative coefficient, in line with the economic theory. A summary of the bivariate causation effects is presented in Table 5.31.

Table 5. 31: *Summary of Long Run Bi-Variate Causation Effect with FDI*

Country	*Startups*	*Inflation*	*Impex*	*Heritage*
Israel	Yes	Yes	Yes	Yes
Australia	Yes	Yes	Yes	Yes
Canada	Yes	Yes	Yes	Yes
China	No	Yes	Yes	Yes
Germany	Yes	Yes	No	Yes
Sweden	Yes	Yes	No	Yes
Switzerland	Yes	Yes	Yes	Yes
UK	Yes	Yes*	Yes	Yes
USA	Yes	Yes	Yes	Yes

Note: * not significant value

5.5 Pooled Panel Analysis on Eight Countries

At the outset of this research, the Global Ranking of Startup Ecosystems included the ranking of the first ten countries. This study tested nine of these countries, including Israel.

In Section 5.2, three other independent variables are added together with startups to the equation for the Israeli economy; inflation, Impex, and Heritage. The bivariate VECM model showed that seven counties had a Granger causality effect on FDI in addition to Israel, while China did not.

The data collected make it appropriate to test these countries to verify the same outcome for the Israeli market.

Panel data modelling is used to estimate time series and cross-sectional data. This accounts for the individual-specific heterogeneity. Studying the same cross-sectional unit (firm, country, or industry) is crucial.

The statistical method used here was a pooled panel analysis using an Autoregressive Distributed Lag Model (ARDL). A pooled panel test of data from eight countries was applied: Australia, Canada, China, Germany, Sweden, Switzerland, the United Kingdom and the United States of America. Although the bivariate VECM test shows that startups in China have no causal effect on FDI, they are still included in this model from eight countries, excluding Israel.

5.5.1 Methodology

Unlike previous solutions, ARDL cointegration does not require unit-root pre-tests. To summarise, ARDL cointegration is more resilient and desirable when dealing with variables that have a single long-run connection and are integrated into various orders (I(0), I(1), or a mix of both. The combined stochastic trend of I(2) crashed with this technique. Although not required, testing for unit roots may be prudent in order to avoid futile efforts. To avoid incorrect applications, estimates, and interpretations of ARDL co-integration, it is vital to investigate the necessary circumstances that produce this approach. Inconsistent and unrealistic estimations may result from failure to meet these requirements. Using OLS on panel data can cause problems of correlation and correlation in error terms. Therefore, pooled panel regression is a weakness.

This research opted to test for unit roots on all variables.

Table 5. 32: *Intercept and Trend test*

Variable	*C**	*Trend**
FDI	0.1496	0.0000
Startups	0.0030	0.0306
LnInflation	0.0000	0.0027
Heritage	0.0000	0.0037
DiffLnImpex	0.0000	0.0156

* P-value

The above results (Table 5.32) show that when testing the Unit root, include a trend (p-value < 0.05) in the equation for all variables, where an individual intercept is used.

Table 5. 33: *Unit Root Test*

Variable	*Test*	*Level*	*1st difference*	
FDI	ADF - Fisher Chi-square	0.0002	0.0000	0.0000
	ADF - Choi Z-stat	0.0002		
Startups	ADF - Fisher Chi-square	0.9997	0.0306	0.2603
	ADF - Choi Z-stat	1.0000		
LnInflation	ADF - Fisher Chi-square	0.0012	0.0000	0.0000
	ADF - Choi Z-stat	0.0033		
Heritage	ADF - Fisher Chi-square	0.2469	0.0005	0.0000
	ADF - Choi Z-stat	0.6509		
DiffLnImpex	ADF - Fisher Chi-square	0.0000	0.0000	
	ADF - Choi Z-stat	0.0000	0.0000	

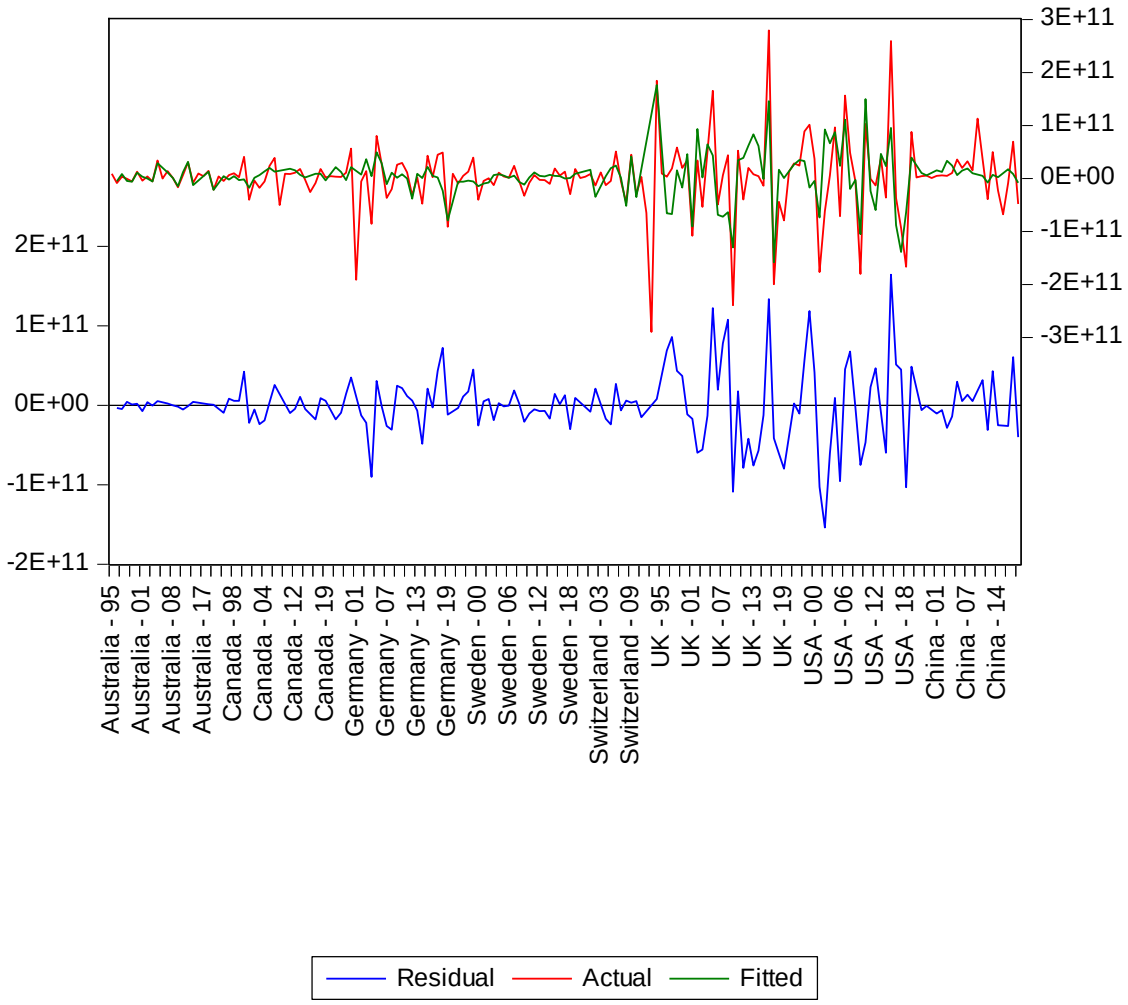
The unit root (Table 5.33) test shows that all variables are stationary at the level or first difference, meaning that a Panel ARDL can be performed on the data. Using a pooled mean group/AR Distributed Lag Model of (1,1,1,1,1), the following results were obtained.

Table 5. 34: *ARDL Model*

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.**
	Long Run Equation			
HERITAGE (Economic Freedom)	3.56E+09	4.79E+08	7.438335	0.0000
STARTUPS	28902878	9761298.	2.960967	0.0037
LnINFLATION	-9.04E+09	1.61E+09	-5.625626	0.0000
DiffLnIMPEX (Openness of the Economy)	1.32E+11	1.28E+10	10.29905	0.0000
	Short Run Equation			
COINTEQ01	-0.658695	0.167289	-3.937475	0.0001
D(DiffHERITAGE - Economic Freedom)	2.96E+09	4.64E+09	0.638080	0.5246
D(DiffSTARTUPS)	18927287	38717381	0.488858	0.6258
D(DiffLnINFLATION)	-1.56E+09	1.61E+10	-0.096785	0.9231
D(DiffLnIMPEX - Openness of the Economy)	3.65E+10	6.77E+10	0.539593	0.5904
C	-1.69E+11	4.76E+10	-3.560958	0.0005

The above results show that all four independent variables have long-run causality with FDI, which aligns with the results obtained using the VECM model for Israel. The error correction term COINTEQ01 was negative, less than one, and significant at the 1% level (p-value = 0.0001). Table 5.34 shows the long-run relationship between the four independent variables and FDI. The long-run equation results show that all the independent variables are significant at the 1% level. The coefficient signs are positive, except for inflation, so the results align with economic theory.

Figure 5. 12*: Actual Fitted Residual Graph*



5.5.2 Conclusion

It can be deduced from the above statistical tests that startups have a Granger causality effect with FDI for all tested countries and that by adding three more dependent variables – Inflation, Heritage, and Impex - this long-run causality effect with FDI is still retained. The initial study was first conducted in Israel, and with the positive outcome that Startups have long-run causality with FDI, the decision to evaluate eight other countries has shown that the results are not unique to Israel but can be extrapolated to affect other countries. This contribution to the literature and knowledge is paramount to advancing our understanding of the long-run relationship between certain independent variables, especially startups with FDI.

CHAPTER 6: RESEARCH METHODS APPERTAINING TO STARTUPS

6.1 Collection Method

Primary data on startups were obtained using a Likert questionnaire sent to over 8,000 founders and co-founders of startups in Israel. The second set of questionnaires was sent directly to regular companies in Israel as a control group for the comparative analysis. The total feedback is presented in Table 6.1.

Table 6. 1*: Questionnaire Feedback*

	Startups	***Control Group***
Total Invitations	8,108	-
Opened	4,283	-
Unopened	2,947	-
Bounced	472	-
Clicked through	446	-
Opted out	406	-
Complete	235	119
Partial	77	98
TOTAL Response	312	217

To validate the response size for this research based on the data obtained, the following approaches for determining sampling adequacy were used: (1) the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (MSA) for the overall data set; (2) the KMO measure for each variable; and (3) Bartlett's test of sphericity. The answer to these questions will also validate whether the data are suitable at a later stage for Exploratory Factor Analysis (EFA) and Principle Component Analysis (PCA).

Bartlett's test determines whether the sample correlation matrix originates from a multivariate normal population with entirely uncorrelated measured variables (Dzuiban & Shirkey, 1974). [Essentially, Bartlett's test tests whether the sample correlation matrix differs significantly from an identity matrix, with 1's on the primary diagonal and 0's on the off-diagonal (Field, 2018)]. Suppose Bartlett's significance test indicates that it is appropriate to conduct PCA or EFA on the sample correlation matrix. Tables 6.3 and 6.4

show that both the Startup and the Control groups are significant, as they are both significant: = 0.000 (p<0.001).

Note that the power of this test to reject the null hypothesis – that the correlation matrix is equal to an identity matrix is affected by the **sample size**. This test can be overpowered in large samples (Dzuiban & Shirkey, 1974). This can be problematic, given that PCA and EFA are generally large-sample procedures. Even correlation matrices, including small correlations, may deviate significantly from an identity matrix when the sample size is large (Field, 2018).

Given that the test is significant (p<0.001), we can infer that this assumption was met. However, it is also prudent to examine other measures of sampling adequacy, such as the KMO MSA.

The total KMO MSA evaluates the suitability of the measured variables for EFA and PCA. Values may range from 0 to 1, with values closer to 1 indicating that a correlation matrix is necessary for the procedures (Field, 2018; Kim & Mueller, 1978).

A KMO MSA < 0.50 indicates that performing PCA or EFA on a correlation matrix is inappropriate. Tabachnick and Fidell (2013) suggest a threshold of 0.60 “for good EFA” (p. 620). See Kaiser and Rice’s (1974) description below (Table 6.2), for the interpretation of the KMO MSA.

Table 6. 2*: Kaiser and Rice suitability table*

Kaiser and Rice (1974)	
In the .90s	marvellous
In the .80s	meritorious
In the .70s	middling
In the .60s	mediocre
In the .50s	miserable
Below .50	unacceptable

In the output, the overall KMO value is 0.816 for Startups and 0.898 for the Control group (Table 6.3 and Table 6.4), which is consistent with the assertion that it is appropriate to conduct EFA and PCA on the data (in the “meritorious” range).

From the above data, both the startup and control groups adhered to the measure of sampling adequacy for the overall dataset obtained and showed that the sample matrix in both cases is significantly different from an identity matrix using Bartlett's test.

Table 6. 3*: KMO and Bartlett’s Test for Startups*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.816
Bartlett's Test of Sphericity	Approx. Chi-Square	1436.573
	df	276
	Sig.	0.000

Table 6. 4*: KMO and Bartlett’s Test for Control Group*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.898
Bartlett's Test of Sphericity	Approx. Chi-Square	1422.226
	df	276
	Sig.	0.000

There were no problems in analysing our correlation matrix regarding sampling adequacy. Generally, we look for the off-diagonal elements to be close to 0 (zero) and the elements on the principal diagonal to be acceptable using Kaiser and Rice’s (1974) criterion (see above). The MSA's for each variable fall in the "marvellous" and “meritorious” ranges.

Table 6. 5*: Anti-image Correlation Matrix for the Startups*

Q1	.892[a]	-.079	-.064	-.112	-.059	.083	-.102	-.009	.022	-.072	.014	.098	-.042	-.014	-.031	-.012	-.073	.038	-.014	-.146	.057
Q2	-.079	.879[a]	-.094	-.180	-.115	-.262	-.093	-.135	.061	.106	-.063	.022	.075	.027	.007	-.094	.070	.055	-.075	-.026	-.063
Q3	-.064	-.094	.757[a]	-.409	.056	-.222	.088	-.122	.037	-.068	.072	.089	-.129	-.006	.061	-.043	.064	-.022	-.095	.174	-.056
Q4	-.112	-.180	-.409	.840[a]	-.114	.017	.017	.045	-.038	-.051	-.096	-.084	.101	.004	-.135	-.019	-.068	.000	.061	-.089	.088
Q5	-.059	-.115	.056	-.114	.877[a]	-.280	-.077	-.187	-.007	.014	.020	-.061	-.071	-.032	.024	-.075	.031	-.027	-.035	.125	-.015
Q6	.083	-.262	-.222	.017	-.280	.828[a]	-.085	.061	-.064	-.085	.005	-.090	-.082	-.015	-.006	.150	-.128	.079	.033	-.027	-.040
Q7	-.102	-.093	.088	.017	-.077	-.085	.882[a]	-.154	-.091	-.115	-.154	-.019	-.134	-.057	-.055	-.040	-.057	.118	-.035	.004	.137
Q8	-.009	-.135	-.122	.045	-.187	.061	-.154	.888[a]	-.108	-.095	-.029	-.074	.097	.049	-.141	.004	-.028	-.075	.073	-.167	-.095
Q9	.022	.061	.037	-.038	-.007	-.064	-.091	-.108	.654[a]	.076	-.335	.028	.011	.077	-.031	.050	-.028	-.016	-.043	.118	.039
Q10	-.072	.106	-.068	-.051	.014	-.085	-.115	-.095	.076	.882[a]	-.100	-.246	.076	.046	.033	-.088	-.032	-.141	.042	-.109	-.081
Q11	.014	-.063	.072	-.096	.020	.005	-.154	-.029	-.335	-.100	.861[a]	-.109	-.091	-.075	.058	.053	-.086	-.026	-.119	-.072	-.106
Q12	.098	.022	.089	-.084	-.061	-.090	-.019	-.074	.028	-.246	-.109	.839[a]	-.093	.132	-.063	-.065	-.074	.004	.002	-.088	.046
Q14	-.042	.075	-.129	.101	-.071	-.082	-.134	.097	.011	.076	-.091	-.093	.768[a]	-.217	-.179	-.262	.041	.045	.005	-.032	-.213
Q15	-.014	.027	-.006	.004	-.032	-.015	-.057	.049	.077	.046	-.075	.132	-.217	.631[a]	-.097	-.111	-.031	-.055	.016	-.001	.081
Q16	-.031	.007	.061	-.135	.024	-.006	-.055	-.141	-.031	.033	.058	-.063	-.179	-.097	.742[a]	.011	.073	-.130	.106	-.120	.014
Q17	-.012	-.094	-.043	-.019	-.075	.150	-.040	.004	.050	-.088	.053	-.065	-.262	-.111	.011	.803[a]	-.264	-.008	.009	-.085	-.022
Q18	-.073	.070	.064	-.068	.031	-.128	-.057	-.028	-.028	-.032	-.086	-.074	.041	-.031	.073	-.264	.869[a]	-.155	-.067	-.006	-.006
Q19	.038	.055	-.022	.000	-.027	.079	.118	-.075	-.016	-.141	-.026	.004	.045	-.055	-.130	-.008	-.155	.713[a]	-.403	.135	-.065
Q21	-.014	-.075	-.095	.061	-.035	.033	-.035	.073	-.043	.042	-.119	.002	.005	.016	.106	.009	-.067	-.403	.769[a]	-.430	-.167
Q22	-.146	-.026	.174	-.089	.125	-.027	.004	-.167	.118	-.109	-.072	-.088	-.032	-.001	-.120	-.085	-.006	.135	-.430	.814[a]	-.036
Q24	.057	-.063	-.056	.088	-.015	-.040	.137	-.095	.039	-.081	-.106	.046	-.213	.081	.014	-.022	-.006	-.065	-.167	-.036	.801[a]
Q13R	-.085	.004	-.151	-.085	.020	.054	-.125	-.033	.023	.003	-.037	-.043	-.008	.082	.016	.055	-.066	-.020	.027	-.064	-.032
Q20R	.036	.009	.089	-.034	-.018	-.059	-.040	-.035	-.031	-.004	.139	.210	.014	-.036	.063	-.064	-.045	.046	-.214	-.024	.018

Table 6. 6*: Anti-image Correlation Matrix for the Control Group*

Q1	.888[a]	-.141	.042	-.150	-.073	-.259	-.305	.081	.017	.120	.074	-.155	.052	-.269	.102	.080	-.131	-.075	.059	-.027	-.007
Q2	-.141	.960[a]	-.108	-.014	-.137	-.113	.012	-.118	-.002	-.098	-.080	.217	-.020	-.025	-.054	-.116	-.040	-.038	-.050	-.024	.031
Q3	.042	-.108	.926[a]	-.302	-.172	-.185	-.092	-.052	-.172	.085	-.109	-.133	-.063	.142	.020	-.129	-.241	.050	.156	.004	.055
Q4	-.150	-.014	-.302	.935[a]	-.100	-.112	.139	-.126	-.086	-.154	-.049	.121	-.062	-.120	-.026	.052	-.003	.004	.020	-.033	.060
Q5	-.073	-.137	-.172	-.100	.927[a]	-.309	-.105	-.061	.008	-.127	.067	-.083	.012	.091	.069	.009	.114	-.052	-.101	.055	.061
Q6	-.259	-.113	-.185	-.112	-.309	.916[a]	-.040	-.021	-.011	-.023	-.054	-.023	-.162	.079	-.108	-.028	.181	.196	-.001	.004	-.005
Q7	-.305	.012	-.092	.139	-.105	-.040	.937[a]	-.099	-.105	-.138	-.103	.144	-.115	-.078	.040	.013	-.172	-.017	.069	-.128	.035
Q8	.081	-.118	-.052	-.126	-.061	-.021	-.099	.912[a]	.189	.021	-.050	-.358	-.032	-.071	.101	.062	-.161	.110	-.021	-.081	-.222
Q9	.017	-.002	-.172	-.086	.008	-.011	-.105	.189	.905[a]	.184	-.178	-.127	-.092	-.154	-.036	-.027	.006	.100	-.205	.026	-.252
Q10	.120	-.098	.085	-.154	-.127	-.023	-.138	.021	.184	.909[a]	-.093	-.375	.066	-.091	-.013	-.041	-.148	.072	.025	-.246	-.119
Q11	.074	-.080	-.109	-.049	.067	-.054	-.103	-.050	-.178	-.093	.948[a]	-.075	.116	-.029	.029	-.049	-.013	-.257	-.139	-.039	.031
Q12	-.155	.217	-.133	.121	-.083	-.023	.144	-.358	-.127	-.375	-.075	.852[a]	.104	-.053	-.046	-.004	.097	-.170	-.108	.062	.085
Q14	.052	-.020	-.063	-.062	.012	-.162	-.115	-.032	-.092	.066	.116	.104	.950[a]	-.035	-.065	-.121	-.091	-.127	-.107	-.010	-.109
Q15	-.269	-.025	.142	-.120	.091	.079	-.078	-.071	-.154	-.091	-.029	-.053	-.035	.877[a]	-.073	-.376	.113	.054	.036	-.078	.143
Q16	.102	-.054	.020	-.026	.069	-.108	.040	.101	-.036	-.013	.029	-.046	-.065	-.073	.914[a]	-.238	-.088	-.083	-.101	-.013	-.237
Q17	.080	-.116	-.129	.052	.009	-.028	.013	.062	-.027	-.041	-.049	-.004	-.121	-.376	-.238	.906[a]	-.164	.088	.044	.061	-.071
Q18	-.131	-.040	-.241	-.003	.114	.181	-.172	-.161	.006	-.148	-.013	.097	-.091	.113	-.088	-.164	.906[a]	-.215	-.033	.073	-.052
Q19	-.075	-.038	.050	.004	-.052	.196	-.017	.110	.100	.072	-.257	-.170	-.127	.054	-.083	.088	-.215	.801[a]	-.221	-.114	-.115
Q21	.059	-.050	.156	.020	-.101	-.001	.069	-.021	-.205	.025	-.139	-.108	-.107	.036	-.101	.044	-.033	-.221	.884[a]	-.366	.056
Q22	-.027	-.024	.004	-.033	.055	.004	-.128	-.081	.026	-.246	-.039	.062	-.010	-.078	-.013	.061	.073	-.114	-.366	.920[a]	-.103
Q24	-.007	.031	.055	.060	.061	-.005	.035	-.222	-.252	-.119	.031	.085	-.109	.143	-.237	-.071	-.052	-.115	.056	-.103	.880[a]
Q13R	.185	-.040	-.098	.022	.137	-.078	-.099	.007	-.054	-.068	-.042	.082	.056	-.111	.067	.010	-.029	-.074	.002	.073	-.047
Q20R	-.201	.058	-.075	.151	.108	.038	-.101	-.110	-.012	-.012	.114	.058	.024	.062	-.033	-.170	.203	-.243	.033	-.043	-.007
Q23R	-.151	-.007	.000	.059	-.041	.096	.064	.004	.124	.059	-.060	-.108	-.030	.097	.082	-.015	-.136	.378	-.149	-.133	.055

6.2 Ethics, Reliability, and Validity

The key ethical considerations for this research included ensuring that the data obtained from available websites or materials from books were accredited to the original owners. Simultaneously, to ensure the replication of the study, it was crucial to keep the research process transparent and to preserve its integrity. The acknowledgement of all data sources implies permission for use. Additionally, ethical clearance was obtained from the Ethics Board of the University of Salford, Application ID 1653, and all ethical rules per the institution's requirements were observed. Approval included the PCQ-24 questionnaire from the Mind Garden Publishing House, which required that the

questionnaire's questions not be divulged entirely. The questionnaire was reviewed and distributed via Survey Monkey on a professional network. The Control group was sent via a reputable publishing house to a database of non-startup companies. After acceptance, a consent form was inserted into the mailing lists with explanation and permission to access the questionnaire. Websites and organisational reports were informed of the purpose of this study. Consent was obtained for data use. It is imperative to indicate that the data were properly recognised to avoid copyright violations. It was critical to ensure that the data procured for this study's analysis were relevant, adequate, but not excessive, and were achieved using the evaluated criteria.

Secondary research can offer reliable, consistent, credible, and precise data when conducted correctly and by following specific rules. This research adhered to the record assessment technique followed in this study, and the study results corresponded to the study's research questions. This study can be repeated using the established technique to obtain accurate results. The reliability of this study was ensured by prioritising data collection from peer-reviewed publications.

Validity, which refers to the extent to which the survey accurately assesses the topic under investigation, is a crucial property of appropriate research tools. Thus, ensuring the legitimacy of the research and the data to be obtained are crucial. This was accomplished by determining whether the data gathered from diverse sources met the research purpose and objectives. Similarly, it was vital to analyse whether the sources provided correct information and produced exact results that were adequately connected with the research topics. Other considerations evaluated included the date of publication of the data and whether they were congruent with the tested hypothesis.

6.3 Statistic and Analytical Tools used in the research

6.3.1 Cronbach Alpha

Cronbach's alpha, α (or)*Alpha coefficient.* Lee Cronbach developed the α in 1951 to measure reliability or internal consistency. "Reliability" Is another name for consistency.

Cronbach's alpha (internal consistency) is a standard measure of reliability. It measures how closely items on a scale correspond to the same underlying dimensions. It is usually used in surveys/questionnaires with multiple Likert Questions. These questions

form a scale or subscale to determine the scale's reliability. It is also often used with data reduction techniques, such as principal component analysis (PCA) or factor analysis.

Multiple-choice questionnaires are often used to indirectly measure psychological constructs. These questions can be grouped to measure underlying constructs. These are called the scales. The questionnaire included multiple scales. These scales can be used to calculate the average score or summed score for the underlying construct. Higher scores indicated a more significant 'amount' of this construct. These constructs can also be refered to as dimensions. Cronbach's Alpha attempts to determine how well a group of questions is 'grouped', but it cannot determine whether the items it is analysing contain a single dimension. A Cronbach's test was performed on each dimension. Therefore, this study must run multiple Cronbach's alpha tests on multiple dimensions.

The researcher must ensure that every question (i.e. each item) contributes to that construct, regardless of its underlying construct. A higher score for one item might indicate more of the measured constructs. This should be true for all the questions. This could mean that specific questions, such as those negatively worded, must be reverse coded to ensure consistency.

Cronbach's Alpha tests were used to determine whether multiple-question Likert-scale surveys can be trusted. These questions measure unobservable or invisible variables such as a person's Efficacy or Hope, Resilience, or Optimism. However, these variables are difficult to measure. Cronbach's Alpha shows the similarity of a set of test items.

Cronbach’s alpha is used to assess the reliability, or internal consistency, of a set of scales or test items. In other words, the reliability of any given measurement refers to the extent to which it is a consistent measure of a concept, and Cronbach’s alpha is one way to measure the strength of that consistency.

To interpret dichotomous questions regarding alpha, the rule of thumb was questions with two answers or questions on a Likert scale (Table 6.7).

Table 6. 7*: Cronbach's Alpha Interpretation*

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

The definition of good internal consistency varies depending on the source, but all recommended values are at least 0.7 (DeVillis 2003; Kline 2005). A score greater than 0.7 is generally acceptable. Some authors have recommended higher scores of 0.90 to 0.95.

Avoiding Issues with Cronbach's Alpha

Aware of the following rules of thumb: high levels of alpha could indicate that items in the test have a high correlation. The number of items in a test can affect one's ability to calculate the correct value. An increase in the number of items may result in a higher value, and smaller items at a lower value. This could indicate redundant questions (i.e. they may ask the same question). A low alpha could indicate that the test has not been completed owing to a lack of questions. Alpha can be increased by adding more relevant items to the test. Low values can also be caused by poor interrelatedness among the test questions.

Unidimensionality in Cronbach's alpha assumes that the questions measure only one latent variable or dimension. The test results may be meaningless if the research measures more than one dimension (knowingly or unknowingly). The test can be broken into parts, measuring each part's latent variables or dimensions. When unsure if the test is unidimensional, a Factor Analysis is performed to identify the dimensions in the test.

6.3.2 Exploratory Factor Analysis (EFA)

After the initial data collection, an EFA was performed on the data, and the following steps were deliberated when using and carrying out exploratory factor analysis (EFA)

1. To address whether it makes sense to conduct a factor analysis of the correlation matrix. Tabachnick and Fidell (2013) recommend examining the correlation matrix for measured variables. The matrix is not worth factoring if the absolute value of no correlation is above 0.30 in absolute value. Next, we address this question by referring to Bartlett's test results and the Kaiser-Meier-Olkin Measure of Sampling Adequacy (i.e., KMO MSA). See Dziuban and Shirkey (1974).

    a. If Bartlett's test is significant, it is considered an indication that it is appropriate to factor analyse the matrix (as significance indicates that the sample correlation matrix is significantly different from an identity matrix).

    b. KMO MSA < 0.50 indicates that the matrix is "unacceptable" for factoring. However, using Kaiser and Rice's (1974) terminology, the factorability of a matrix can be considered with the following ranges in mind: 0.50's (miserable), 0.60's (mediocre), 0.70's (middling), 0.80's (meritorious), 0.90's (marvellous).

2. Field (2018) suggested that if a variable exhibits no correlations > 0.30 with the other variables in a matrix, consider deleting those variables that do not meet this threshold. Additionally, consider the MSA's of the individual items, which can be performed by examining the principal diagonal of the anti-image correlation matrix [Kaiser and Rice's (1974) system to identify potentially problematic items]. We consider the contributions of each item to the matrix and potential factor solution.

3. To address the question of whether multicollinearity may be problematic. One way to do this is to examine the determinants of the correlation matrix. Values close to 0 (zero) may signal a problem (Tabachnick & Fidell, 2013). Field (2018) suggested a threshold of 0.00001 for identifying collinearity. Additional approaches include (a) examining the correlation matrix for correlations in the 0.80's or 0.90's (Field, 2018) and examining the R-squares after regressing each variable onto the remainder [in the latter, high R-squares signal that the variation in one variable is a linear function of the other variables included in the analysis; see Tabachnick & Fidell, 2013].

4. Once it has been determined that it is appropriate to factor analyse the correlation matrix, identify the number of factors that account for the correlations among the

variables. Potential considerations/strategies: (a) Eigenvalue cut-off rule (not generally recommended with Population Attributable Fraction - PAF); (b) scree test; (c) parallel analysis; (d) retain as many factors as account for a certain percentage of the variations; and (e) factor meaningfulness (this last is considered by examining factor loadings). See Pituch and Stevens (2016).

5. Name and description of factors. This often involves performing some type of rotation and interpreting the factor loadings. The factors were named by considering the measured variable loading at a minimum threshold (e.g., 0.30, 0.32, or 0.40). Pituch and Stevens (2016) suggest that a threshold of 0.40.

In paragraph 6.1, Collection Methods, it has been shown that questions 1 and 2 have been adequately answered. The validation of the response size of the data obtained was confirmed, and the data were used in an Exploratory Factor Analysis. This confirmation was performed using EFA to validate the other conditions outlined above.

Table 6. 8*: Correlation Matrix*

Correlation Matrix[a]

		Efficacy 01	Efficacy 02	Efficacy 03	Efficacy 04	Efficacy 05	Efficacy 06	Hope 07	Hope 08	Hope 09	Hope 10	Hope 11	Hope 12	Resilience 14	Resilience 15	Resilience 16	Resilience 17	Resilience 18	Optimism 19	Optimism 21	Optimism 22	Optimism 24	Resilience 13R	Optimism 20R	Optimism 23R
Correlation	Efficacy 01	1.000	.264	.234	.319	.205	.141	.277	.228	.036	.224	.183	.111	.167	.070	.140	.192	.204	.071	.197	.302	.068	.230	.064	.050
	Efficacy 02	.264	1.000	.385	.443	.410	.474	.329	.380	.066	.216	.259	.216	.180	.021	.111	.201	.163	.053	.252	.267	.176	.231	.136	.191
	Efficacy 03	.234	.385	1.000	.536	.268	.392	.151	.268	.042	.228	.151	.135	.206	.036	.087	.160	.125	.116	.173	.094	.173	.271	.034	.078
	Efficacy 04	.319	.443	.536	1.000	.339	.341	.258	.304	.117	.298	.286	.275	.139	.026	.203	.193	.227	.116	.190	.258	.085	.296	.078	.116
	Efficacy 05	.205	.410	.268	.339	1.000	.471	.326	.371	.120	.232	.230	.261	.247	.080	.125	.210	.179	.099	.177	.145	.146	.165	.097	.129
	Efficacy 06	.141	.474	.392	.341	.471	1.000	.313	.273	.141	.270	.251	.280	.243	.047	.106	.103	.212	.035	.167	.176	.165	.160	.105	.149
	Hope 07	.277	.329	.151	.258	.326	.313	1.000	.384	.205	.313	.373	.268	.302	.121	.188	.251	.272	.035	.209	.280	.073	.263	.099	.056
	Hope 08	.228	.380	.268	.304	.371	.273	.384	1.000	.178	.361	.311	.312	.163	-.011	.232	.201	.243	.188	.258	.362	.223	.249	.101	.113
	Hope 09	.036	.066	.042	.117	.120	.141	.205	.178	1.000	.055	.401	.105	.036	-.035	.077	-.010	.117	.109	.120	.026	.066	.039	-.009	-.090
	Hope 10	.224	.216	.228	.298	.232	.270	.313	.361	.055	1.000	.338	.448	.174	-.018	.111	.246	.287	.249	.284	.367	.210	.226	.091	.206
	Hope 11	.183	.259	.151	.286	.230	.251	.373	.311	.401	.338	1.000	.361	.246	.078	.132	.174	.295	.241	.362	.341	.258	.181	-.011	.093
	Hope 12	.111	.216	.135	.275	.261	.280	.268	.312	.105	.448	.361	1.000	.229	-.059	.179	.207	.244	.149	.202	.316	.131	.174	-.056	.214
	Resilience 14	.167	.180	.206	.139	.247	.243	.302	.163	.036	.174	.246	.229	1.000	.291	.250	.387	.181	.070	.186	.230	.272	.131	.059	.121
	Resilience 15	.070	.021	.036	.026	.080	.047	.121	-.011	-.035	-.018	.078	-.059	.291	1.000	.153	.213	.091	.059	.041	.048	.005	-.049	.030	-.028
	Resilience 16	.140	.111	.087	.203	.125	.106	.188	.232	.077	.111	.132	.179	.250	.153	1.000	.140	.058	.133	.046	.197	.078	.047	-.083	-.049
	Resilience 17	.192	.201	.160	.193	.210	.103	.251	.201	-.010	.246	.174	.207	.387	.213	.140	1.000	.384	.153	.226	.278	.195	.099	.064	-.057
	Resilience 18	.204	.163	.125	.227	.179	.212	.272	.243	.117	.287	.295	.244	.181	.091	.058	.384	1.000	.282	.322	.381	.180	.198	.100	-.015
	Optimism 19	.071	.053	.116	.116	.099	.035	.035	.188	.109	.249	.241	.149	.070	.059	.133	.153	.282	1.000	.480	.205	.251	.092	.053	.011
	Optimism 21	.197	.252	.173	.190	.177	.167	.209	.258	.120	.284	.362	.202	.186	.041	.046	.225	.322	.480	1.000	.556	.354	.209	.279	.138
	Optimism 22	.302	.267	.094	.258	.145	.176	.280	.362	.026	.367	.341	.316	.230	.048	.197	.278	.281	.205	.556	1.000	.255	.247	.183	.148
	Optimism 24	.068	.176	.173	.085	.146	.165	.073	.223	.056	.210	.258	.131	.272	.005	.078	.195	.180	.251	.354	.255	1.000	.106	.017	-.063
	Resilience 13R	.230	.231	.271	.296	.165	.160	.263	.249	.039	.226	.181	.174	.131	-.049	.047	.099	.198	.092	.209	.247	.106	1.000	.264	.207
	Optimism 20R	.064	.136	.034	.078	.097	.105	.099	.101	-.009	.091	-.011	-.066	.059	.030	-.083	.064	.100	.053	.279	.183	.017	.264	1.000	.415
	Optimism 23R	.050	.191	.078	.116	.129	.149	.056	.113	-.030	.206	.093	.214	.121	-.028	-.049	-.057	-.015	.011	.138	.148	-.063	.207	.415	1.000

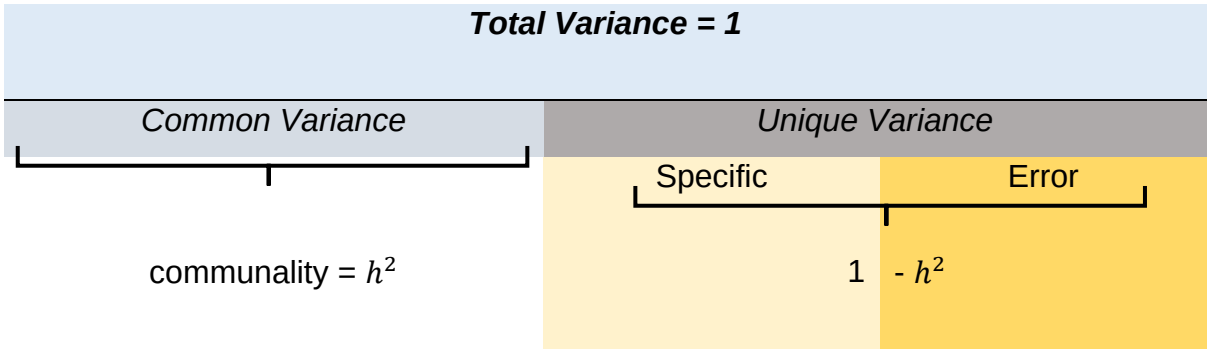
a. Determinant = .002

The correlation matrix in Table 6.8 shows numerous correlations greater than 0.30, indicating that the data are suitable for factor analysis. Additionally, it can also be noted that there is no evidence of multi-collinearity as none of the bivariate r's is more significant than 0.80 (r's > 0.80) (note paragraph 3 above). The Determinant – shown at the bottom of the matrix – is another way to determine multi-collinearity. Field (2018) states that the determinant should be more significant than 0.00001. In the above output, the determinant measured 0.002 > 0.00001, confirming that the threshold for this data was satisfied.

It has been shown that the data collected have been proven acceptable for Exploratory Factor Analysis, and the following technique was implemented by computing the eigenvalues from the data.

The underlying idea of EFA is a variable reduction technique that identifies the number of latent constructs and underlying factor structure of a set of variables. These interrelationships can be broken down into several components. Variance and covariance are the focus of this study, not the mean. Factor analysis assumes that the variance can be subdivided into unique and common types (Figure 6.1).

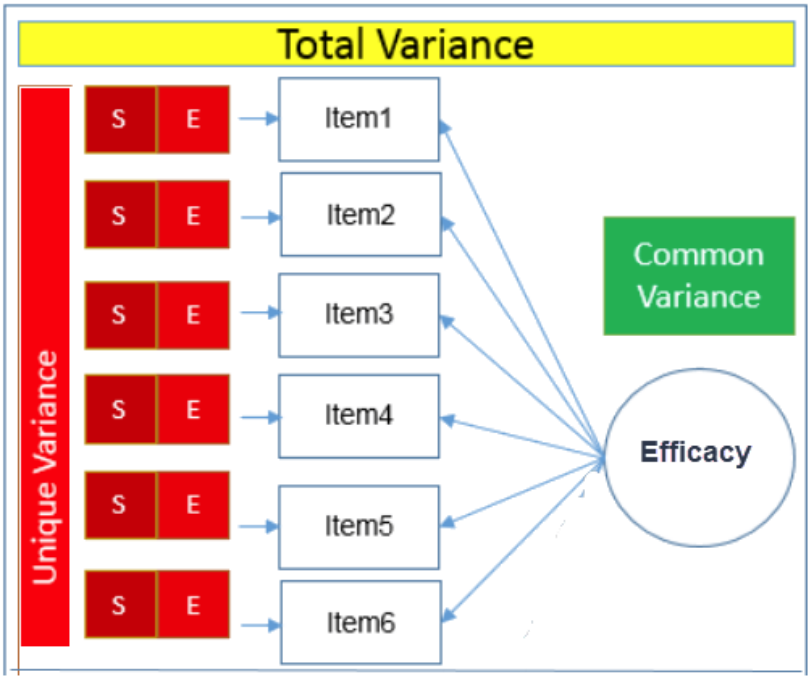
Figure 6. 1*: Break down of Total Variance*



Most of the variance is shared by highly correlated items and is shown as a Common Variance. Uncommon variances are named Unique variances and are subdivided into Specific and Error types. The explicit variance of a specific item is called a Specific variance. Unexplained information or measurement error is categorised as error variance.

Figure 6.2 shows how the factor model is subdivided and applied to the different segments for a latent variable, Efficacy.

Figure 6. 2*: Subdivision of Total Variance for Latent variable*



The factor Efficacy contained a common variance for all six items. It should also be noted that there is a specific variance and error variance for each item that makes up the total variance. Once the variance was divided, the next step was to reduce the number of variables required to explain and interpret the results. The following two steps were used to implement (1) factor extraction and (2) factor rotation.

Much has been written concerning the initial Exploratory Factor Analysis (EFA) or Confirmatory Factor Analysis (CFA) of the relevant data. CFA is often driven by theoretical expectations regarding the structure of data. As Gorsuch (1983) noted, *"Whereas the former [EFA] simply finds those factors that best reproduce the variables under the maximum likelihood conditions, the latter [CFA] tests specific hypotheses regarding the nature of the factors"* (p. 129). For further extensive treatment of these approaches, see Stevens (1996), Tabachnick and Fidell (1996), and Thompson (2004).

The factors that make up a model are either exploratory (or confirmatory), but modern concepts of factor analysis include exploratory and confirmatory techniques as well as hybrids in which exploratory factor extraction is combined (Thompson, 1992) or confirmatory maximum likelihood (Joreskog, 1969). The factor structure or model for collecting variables is identified using EFA (Bandalos, 1996, p. 389). Exploratory Factor

Analysis is a research technique used to search for smaller k latent factors to reflect larger groups of j observed variables. As Pedhazur and Schmelkin (1991) noted, “Of the various approaches to studying the internal structure of a set of variables or indicators, probably the most useful is some variant of factor analysis” (p. 66).

CFA (confirmatory factor analysis) can test theories when there is sufficient evidence that the analyst can justify which factors and variables should be included in the data. The critical difference between EFA (and CFA) is that the outcome of an EFA depends entirely on the "mechanics of the technique". (Kieffer, 1999, p.77). While the researcher may have preconceived ideas about the factors, the EFA does not use a strong a priori theory (Daniel, 1989). CFA is often driven by theoretical assumptions about the data structure.

Theoretical development and score validity assessments are inextricably linked to factor analysis. This research has taken the most accepted route by applying EFA to the collected data because latent constructs, or factors, are believed to explain and summarise observed variable responses. Hendrick and Hendrick (1986) accentuated, “*Theory building and construct measurement are joint bootstrap operations*” (p. 393). Thus, factor analysis simultaneously validates the measurement integrity and provides a direction for future theoretical development. Kieffer (1999) referred to this as “the utilization of factor analytic techniques in the social sciences has been indelibly intertwined with [both] developing theories and evaluating the construct validity of measures [i.e., scores]” (p.75).

Principal Component Analysis was used for the initial extraction analysis, and the results are shown in Table 6.9. Subsequently, the Principal Axis Factoring extraction method is used in conjunction with the EFA standards.

The eigenvalue quantifies the extent to which the observed variance of the variables can be explained by an identified factor. A factor with an eigenvalue that is more significant than one fully accounts for more variance than a single observable variable. Table 6.9 also shows the eigenvalues of the extracted factors.

As shown in Table 6.9, seven factors were extracted, all with eigenvalues > 1. A procedure was implemented to help determine the number of factors and further reduce the number of variables in the analysis. This procedure is called Parallel Analysis, and

Patil et al. (2008) developed the software, “Parallel Analysis Engine to Aid Determining Number of Factors to Retain” software [Computer software]. The software determines the eigenvalues of the ramdomly produced correlation matrices. The eigenvalues of the research data can then be compared with randomly computed numbers. According to Horn (1965), the number of eigenvalues to be retained as factors is generated from randomly generated numbers that are more significant than the eigenvalues produced from the research data.

Table 6. 9*:* *Total Variance Explained*

Total Variance Explained

	Initial Eigenvalues			*Extraction Sums of Squared Loadings*			*Rotation Sums of Squared Loadings*		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.614	23.391	23.391	5.614	23.391	23.391	2.752	11.469	11.469
2	1.790	7.459	30.850	1.790	7.459	30.850	2.249	9.372	20.841
3	1.648	6.867	37.717	1.648	6.867	37.717	2.068	8.615	29.456
4	1.433	5.970	43.687	1.433	5.970	43.687	1.838	7.656	37.112
5	1.230	5.123	48.810	1.230	5.123	48.810	1.835	7.645	44.757
6	1.135	4.728	53.538	1.135	4.728	53.538	1.637	6.821	51.579
7	1.091	4.544	58.083	1.091	4.544	58.083	1.561	6.504	58.083
8	.992	4.133	62.216						
9	.912	3.802	66.017						
10	.859	3.579	69.597						
11	.799	3.331	72.927						
12	.697	2.902	75.830						
13	.670	2.790	78.619						
14	.646	2.692	81.312						
15	.599	2.495	83.806						
16	.567	2.363	86.170						
17	.538	2.243	88.412						
18	.510	2.127	90.539						
19	.472	1.967	92.506						
20	.429	1.786	94.292						
21	.387	1.611	95.903						
22	.369	1.537	97.440						
23	.343	1.428	98.869						
24	.272	1.131	100.000						

Extraction Method: Principal Component Analysis.

Table 6.10 shows that the first four eigenvalues based on the original data (Table at the right) are more significant than random (Table, at the left). A four-factor solution was suggested using a Parallel Analysis.

Table 6. 10: *Parallel Analysis*

Component or Factor	Mean Eigenvalue	Percentile Eigenvalue
1	1.628248	1.729904
2	1.524526	1.596825
3	1.446579	1.508367
4	1.377501	1.428804
5	1.317403	1.367410
6	1.262697	1.311178
7	1.213412	1.258819
8	1.164940	1.208093
9	1.118853	1.157884
10	1.074702	1.108252
11	1.031709	1.067041
12	0.990098	1.022616
13	0.950535	0.984467

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	5.614	23.391	23.391
2	1.790	7.459	30.850
3	1.648	6.867	37.717
4	1.433	5.970	43.687
5	1.230	5.123	48.810
6	1.135	4.728	53.538
7	1.091	4.544	58.083
8	.992	4.133	62.216
9	.912	3.802	66.017
10	.859	3.579	69.597
11	.799	3.331	72.927
12	.697	2.902	75.830
13	.670	2.790	78.619
14	.646	2.692	81.312
15	.599	2.495	83.806
16	.567	2.363	86.170
17	.538	2.243	88.412
18	.510	2.127	90.539

Forcing a four-factor solution and using Varimax rotation, the following Total Variance table (Table 6.11) is produced, showing that 52% of the variance has been explained. A four-factor solution was used to produce a Pattern Matrix, from which seven variables were removed to form good and separate loadings for the four factors. The variables removed are: 1, 9, 16, 18, 20R, 22, 23R. With this solution, a Rotated Component Matrix was created, Table 6.12

Table 6. 11*: Total Variance Explained*

Total Variance Explained

	Initial Eigenvalues			*Extraction Sums of Squared Loadings*			*Rotation Sums of Squared Loadings*		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.700	27.645	27.645	4.700	27.645	27.645	2.845	16.732	16.732
2	1.604	9.437	37.082	1.604	9.437	37.082	2.419	14.231	30.964
3	1.401	8.243	45.325	1.401	8.243	45.325	1.892	11.130	42.093
4	1.152	6.777	52.102	1.152	6.777	52.102	1.701	10.009	52.102
5	.960	5.644	57.746						
6	.875	5.145	62.892						
7	.862	5.069	67.961						
8	.775	4.556	72.517						
9	.679	3.991	76.509						
10	.656	3.860	80.368						
11	.586	3.449	83.818						
12	.552	3.244	87.062						
13	.528	3.104	90.166						
14	.452	2.661	92.827						
15	.434	2.551	95.377						
16	.426	2.507	97.884						
17	.360	2.116	100.000						

Extraction Method: Principal Component Analysis.

Table 6. 12: *Rotated Component Matrix*

Rotated Component Matrix[a]

	Component			
	1	2	3	4
Efficacy 02	**.710**			
Efficacy 03	**.780**			
Efficacy 04	**.722**			
Efficacy 05	**.541**			
Efficacy 06	**.651**			
Hope 07		**.614**		
Hope 08		**.517**		
Hope 10		**.650**		
Hope 11		**.573**		
Hope 12		**.737**		
Resilience 14				**.723**
Resilience 15				**.747**
Resilience 17				**.594**
Optimism 19			**.783**	
Optimism 21			**.741**	
Optimism 24			**.616**	
Resilience 13R				

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Note that although the research data had a solution of four factors, Efficacy, Hope, Resilience and Optimism, it was obtained by removing seven variables from the original PsyCap24 questionnaire.

A principal axis factoring extraction method was used to perform complete EFA analysis. Varimax orthogonal rotation analysis was then conducted to assume that the factors were not correlated.

The results in Table 6.13 were obtained by implementing this method.

Table 6. 13: *KMO and Bartlett's Test*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.837
Bartlett's Test of Sphericity	Approx. Chi-Square	946.828
	df	136
	Sig.	0.000

Bartlett's test is statistically significant ($p<0.001$), and the KMO is 0.837 ("meritorious"). These results suggest that factor analysis is appropriate.

From the Correlation Matrix produced (not shown here), the determinant was 0.016 > 0.00001, showing that the threshold was met for multicollinearity according to Field (2018).

Table 6. 14*: Total Variance Explained for Four Factor Solution*

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.700	27.645	27.645	4.102	24.128	24.128	2.179	12.818	12.818
2	1.604	9.437	37.082	1.030	6.059	30.187	1.850	10.880	23.699
3	1.401	8.243	45.325	.779	4.583	34.771	1.389	8.169	31.868
4	1.152	6.777	52.102	.573	3.370	38.140	1.066	6.272	38.140
5	.960	5.644	57.746						
6	.875	5.145	62.892						
7	.862	5.069	67.961						
8	.775	4.556	72.517						
9	.679	3.991	76.509						
10	.656	3.860	80.368						
11	.586	3.449	83.818						
12	.552	3.244	87.062						
13	.528	3.104	90.166						
14	.452	2.661	92.827						
15	.434	2.551	95.377						
16	.426	2.507	97.884						
17	.360	2.116	100.000						

Extraction Method: Principal Axis Factoring.

Each row in the Extraction column of the Total Variance table (Table 6.14) is lower than that in the initial column. We assume that the total variance can be divided into common and unique variations, which means that the explained common variance will also be lower. Factor 1 accounted for 24.128%, whereas Factor 2 accounted for 6.059%. With more extracted factors, the minor variance is explained by each successive factor.

Following rotation, the factors accounted for 12.818%, 10.880%, 8.169%, and 6.272%, respectively.

The new Rotated Factor Matrix (Table 6.15) had slightly lower correlation coefficients than the previous matrix, which was generated using principal component analysis. This is because the variance is divided into Common and Unique variances.

Table 6. 15*: Rotated Factor Matrix*

Rotated Factor Matrix[a]

	Factor			
	1	2	3	4
Efficacy 02	**.597**			
Efficacy 03	**.712**			
Efficacy 04	**.640**			
Efficacy 05	**.441**			
Efficacy 06	**.538**			
Hope 07		**.534**		
Hope 08		**.464**		
Hope 10		**.522**		
Hope 11		**.470**		
Hope 12		**.564**		
Resilience 14				**.684**
Resilience 15				**.458**
Resilience 17				**.431**
Optimism 19			**.655**	
Optimism 21			**.666**	
Optimism 24			**.411**	
Resilience 13R				

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

The above model shows that with 17 out of the 24 original variables, an excellent best fit was obtained using four latent factors: efficacy, hope, resilience, and optimism. Evaluating the outcome of a complete model that incorporates all 24 variables is essential. This analysis was performed using the following results:

Table 6. 16*: KMO and Bartlett's Test*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.816
Bartlett's Test of Sphericity	Approx. Chi-Square	1436.573
	df	276
	Sig.	0.000

Bartlett's test in Table 6.16 is statistically significant ($p<0.001$), and the KMO is 0.816 ("meritorious"). These results indicate that it is appropriate to conduct factor analysis.

From the Correlation Matrix produced (not shown here), the determinant was 0.002 > 0.00001, indicating that the threshold was met for multicollinearity according to Field (2018).

The following Rotated Factor Matrix, Table 6.17 (all 24 variables), shows a distinct difference from the previous matrix with 17 variables. The previous model perfectly fits the original PsyCap24 proven hypothesis by dividing the variables into the exact factors laid down by Luthans et al. (2007) in their original model.

From the following table incorporating all 24 variables, it can be seen that although there are four factors, as in the previous analysis, the loading of the variables into different factors is slightly different. The first factor, Efficacy, is a combination of efficacy and hope. The second factor, Hope, is a combination of hope and optimism. The third factor, Resilience, is on its own, as is the fourth factor, Optimism, with variables from optimism.

Table 6. 17*:* *Rotated Factor Matrix*

Rotated Factor Matrix[a]

	Factor			
	1	2	3	4
Efficacy 01				
Efficacy 02	**.633**			
Efficacy 03	**.542**			
Efficacy 04	**.627**			
Efficacy 05	**.559**			
Efficacy 06	**.620**			
Hope 07	**.448**			
Hope 08	**.479**			
Hope 09				
Hope 10		**.443**		
Hope 11		**.538**		
Hope 12				
Resilience 14			**.572**	
Resilience 15			**.470**	
Resilience 16				
Resilience 17			**.536**	
Resilience 18		**.430**		
Optimism 19		**.524**		
Optimism 21		**.702**		
Optimism 22		**.559**		
Optimism 24				
Resilience 13R				
Optimism 20R				**.727**
Optimism 23R				**.490**

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Confirmatory Factor Analysis was used to create a new factor model from a four-factor solution of 17 variables. A full 24 model will be determined afterwards.

6.3.3 Confirmatory Factor Analysis (CFA)

After the initial Exploratory Factor Analysis was performed and confirmed, Confirmatory Factor Analysis was implemented to create a new factor model from the results of the EFA analysis. Alternatively, verify the original Psychological Capital model proposed by Luthans et al. (2007).

According to (Alavi et al., 2020), confirmatory factor analysis (CFA) is a subset of the broader multivariate methodology of structural equation modelling (SEM) that attempts to validate a theoretical construct using empirical evidence.

The CFA's hypothesis-driven methodology is a central trait (Brown, 2015). The researcher established a theory about the model framework, represented as a specific factor(s) underlying a collection of objects. The analysis was then conducted to assess how the hypothesised factor structure captures the covariance between objects (Hooper et al., 2008). In addition to analysing the covariance captured by the model, (Hooper et al., 2008) stipulated that the critical phase in CFA determines the goodness of fit of the proposed model, which indicates how well the model matches the observed results.

Many mathematical programs can estimate model fit and produce various fit indices (e.g. Joreskog & Sorbom, 1989). Various indicators were used to measure the model's fit. These indices quantify the interaction of the observed data with the theoretical predictions of the model. To determine whether a model should be rejected, or retained, form fit indices must be used along with hypothesis checking or thresholds (Costa Sarmento and al., 2019). This study used AMOS (Ver 25) and IBM SPSS (Ver 25) software.

Model Fit Indices

CFA model fit indices can be found for local and global flavours. (Brown, 2015; Kline, 2005). Local fit indices analyse model components, such as factor associations, inter-item residual variability, and proposed model specification statistics. Global model fit indices measure the global recovery from observational data without considering the covariance or mean.

(Hooper et al., 2008; Kline, 2005) Global models fit indicators into absolute, incremental (comparative or relative), and parsimony. Absolute fit indices assess the final fit of the theoretical model to the actual results. These indices can be calculated using either model residuals or control statistics to determine the population's total fit to its covariance structure. These equate to the model in the absence of a model, indicating how closely it matches the results. Other representations of absolute fit indices are the Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Root Mean Square Approximation Error (RMSEA), and Root Mean Square Residual (SRMR) (Joreskog & Sorbom 1989; Steiger 2007).

Incremental fit indices were used to compare a hypothesised model with the minimum or baseline model. No relationships between the variables were defined in this model, and only the observable variances of the variables were used. The baseline model assumes that there is no significant relationship between the variables. The incremental fit indices show the fit of the model to the expectation of freedom. These indices include the Comparative Fit Index (CFI), the Normed-Fit Index (NFI), and Non-Normed Fit Index. (Bentler 1990; Bentler & Bornett 1980).

The fit of the model improved when additional parameters were added. Therefore, simpler models with fewer parameters are preferred for more complex models. Parsimonious fit indices penalise model sophistication to address this problem. The result is a compromise between the model fit and freedom. Two such indices are Parsimony Goodness-of-Fit Index (PGFI) (Mulaik et al., 1989) and the Parsimony Normed Fitness Index (PNFI) (James et al., 1982).

The large number of available fit indices causes complications in documenting outcomes and the appropriate usage of the selection of available fit indices. Not all indices are supposed to be used or recorded to fit some hypothesised models. The study's intent and the characteristics of the fit indices determine the implementation of each fit index.

The use of the Chi-square index

The chi-square index measures the ability of the model to fit data from a set of measurement objects (the observed variable). The maximum likelihood equation was used to calculate the chi-square statistic of the model. The likelihood ratio test coefficient

can be used to assess the overall goodness and fit the maximum probability. (Joreskog, 1969, Maydeu-Olivares et al., 2017). The probability ratio test statistic approaches the central chi-square distribution if the model is defined correctly. The model's chi-square test determines the CFA's most commonly used global fit index. This method is often used to create other fit indices. It checks whether the population covariance matrix of the model is accurate. The chi-square statistic can be considered an indicator of the model fit. A low chi-square value relative to the degrees (and a higher significant p-value) indicated a better fit. The chi-square test can be used to disprove the null hypothesis that an ideal fit is appropriate. It is also known as a "badness of fit" or a "lack of fit" index (Kline, 2005).

Chi-square limitations

A sufficient sample size may be determined in many ways by using CFA. This depended on the sample size. Larger sample sizes reduce the p-value for cases with only a small misfit (Babyak & Green, 2010). A preference for smaller studies, where the null hypothesis can be rejected, may result from excessive reliance on the model's chi-square statistic. This increases the likelihood of accepting suboptimal models and results in unreliable or imprecise parameter estimation. Parameter calculations are also seen in the model fit indices because they often have clinical relevance. Cut-off values included a minimum sample size of 200, a model variable ratio of ≥10, or a sample size to model a parameter count ratio of ≥5. (Myers et al., 2011).

When using the chi-squared fit index, it is essential to evaluate the model assumptions. The chi-square distribution does not always apply to the model statistic, particularly when the data are not normally multivariate and have a small sample size. Additionally, as is the case for any predictive evaluation, it is often viewed as a conditional outcome; in this case, a match or no-fit judgement that determines whether the model is kept or discarded. It is preferable to assess the test statistic, which indicates the degree to which the formula is erroneous. Because the chi-squared model fit is a non-optimal solution, it improves with increasing model size (Schermelleh-Engel et al., 2003). Increased parameterisation may make overly complicated models more likely to be adopted than parsimonious models. When evaluating model fit with the chi-square test, it is essential to understand the model's difficulty.

A larger sample size confirms the validity of the model. The minimum sample size should be tenfold the number of available parameters (Hoogland & Boomsma 1998). A minimum of 300 is possible (Muthen & Muthen, 2002).

The number of indicator variables is essential for a large sample size. Marsh et al. (1998), as well as Marsh and Hau (1999), support Boomsma's (1985) recommendations. They stated that when confirmatory factor analyses are performed with 6-12 indicator variables per factor, N= 50 is sufficient. For 3-4 indicators per factor, a sample size of ***N****=100* was required. With two indicators per factor, ***N*** ≥ 400 should be considered. (cf. Marsh & Hau, 1999; Boomsma & Hoogland 2001). The mutual compensatory effect of sample size and the number of indicators per factor seems to exist; larger samples may be compensated by more indicators. By contrast, smaller sample sizes may allow for fewer indicators.

Evaluation of Model Fit

While there is general agreement that it is best not to report all fit indices created because of the Standard Error of the Mean (SEM), there is some disagreement about which fit indices should be considered for model evaluation.

The Chi test is sensitive to sample size and violations of multivariate normality assumptions (Curran et al., 1996; Hu et al., 1992; West et al., 1995). Therefore, it should not be used as the only basis for judging the model fit. Bollen and Long (1993), and Mueller (1997) suggest that multiple indices be evaluated simultaneously to evaluate different goodness-of-fit categories. These criteria are a selection of indices often presented in current publications: χ and ***p***-value, in χ /***df***, **RMSEA** and its confidence interval, **SRMR*,*** **NNFI*,*** ***a***nd **CFI**. The fit indices **RMSEA,** **NNFI,** and **CFI**, which are sensitive to model misspecification, do not depend on the sample size (Fan et al., 1999; Hu & Bentler, 1998; Rigdon, 1996); thus, they should always be considered. Hu and Bentler (1998) recommend using **SRMR** supplemented by **NNFI, CFI,** or **RMSEA,** both determined from Statistical Machine Learning **(**ML) and Generalised Least Squares (GLS) estimations. (**NNFI a**nd **RMSEA,** especially for small samples, are less desirable). **SRMR, NNFI** and **CFI.** Indices are derived from Weighted Least Square (WLS) estimation.

A model with fewer factors may be more suitable than one with more factors. A test with more indicators provides a more precise and powerful test than a similar model with fewer indicators. (MacCallum et al., 1996). Parsimony-reward fit coefficients, such as ***RMSEA, AIC, PGFI,*** and ***PNFI,*** can be used to adjust for this tendency. Additionally, parsimony indices can be used to help choose between the different models.

Table 6. 18: *Recommendations for Model Evaluation: Some Rules of Thumb*

Fit Measure	Good Fit	Acceptable Fit
χ^2	$0 \leq \chi^2 \leq 2df$	$2df < \chi^2 \leq 3df$
P-value	$0.05 < p \leq 1.00$	$0.01 \leq p \leq 0.05$
χ^2	$0 \leq \chi^2/df \leq 2$	$2 < \chi^2/df \leq 3$
RMSEA	$0 \leq$ RMSEA ≤ 0.05	$0.05 <$ RMSEA ≤ 0.08
P-value for the test of close fit (RMSEA < 0.05)	$0.10 < p \leq 1.00$	$0.05 \leq p \leq 0.10$
Confidence interval (CI)	Close to RMSEA, Left boundary of CI = 0.00	Close to RMSEA
SRMR	$0 \leq$ SRMR ≤ 0.05	$0.05 <$ SRMR ≤ 0.10
NFI	$0.95 \leq$ NFI ≤ 1.00	$0.90 \leq$ NFI < 0.95
NNFI	$0.97 \leq$ NNFI ≤ 1.00	$0.95 \leq$ NNFI < 0.97
CFI	$0.97 \leq$ CFI ≤ 1.00	$0.95 \leq$ CFI < 0.97
GFI	$0.95 \leq$ GFI ≤ 1.00	$0.90 \leq$ GFI < 0.95
AGFI	$0.90 \leq$ AGFI ≤ 1.00, Close to GFI	$0.85 \leq$ AGFI < 0.90, Close to GFI

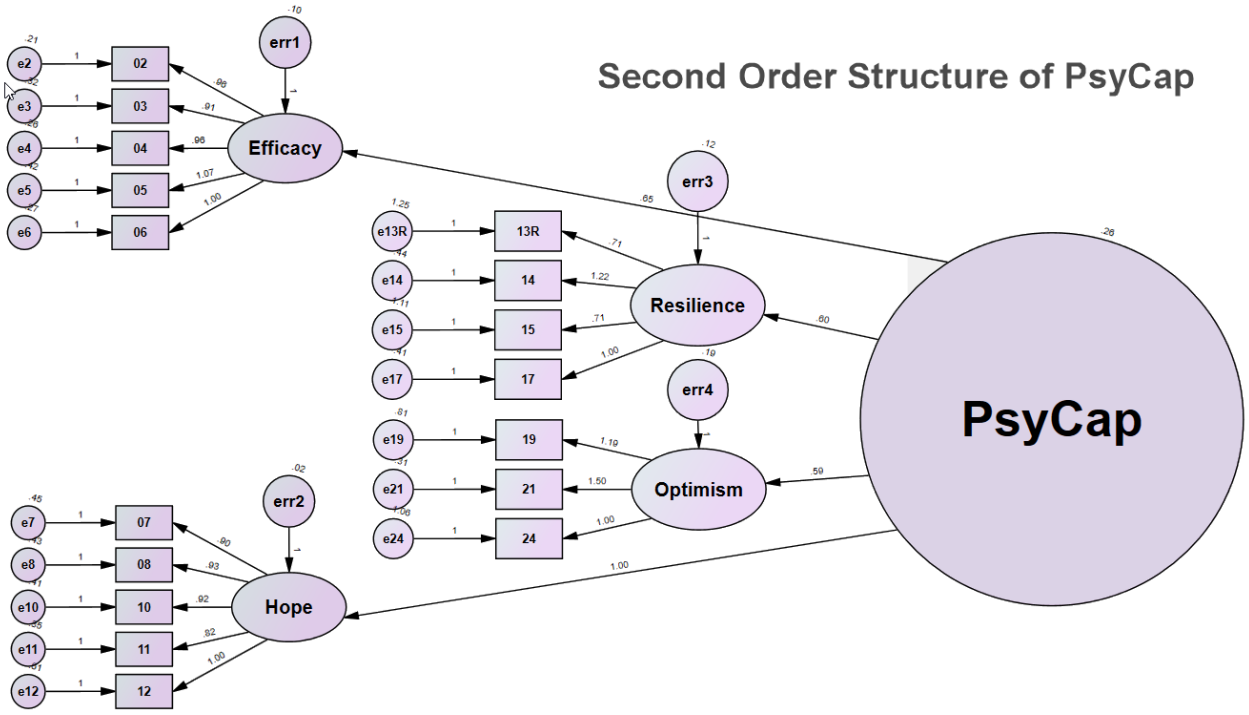
Source: Methods of Psychological Research Online 2003, Vol.8, No.2, pp. 23-74

These rule-of-thumb cut-off criteria can be arbitrary and, subject to small-sample biases, violation of normality, independence and estimation method effects. A model can fit the data, even if one or more suitable measures indicate a poor fit. However, this should not be considered a serious issue. Model misspecification can affect the fit indices.

Based on the previous factor analysis results, a second-order structural model was built (Figure 6.3). The basis for the above model is 17 variables that proved to be

significant in the Exploratory Factor Analysis. The results of this model are statistically stable and comply with all the rigorous statistical tests explained above.

Figure 6. 3*: Second-Order Structure of PsyCap*



Model Fit Summary

Table 6. 19*: CMIN*

Model	*NPAR*	*CMIN*	*DF*	*P*	*CMIN/DF*
Default model	38	190.141	115	0.000	1.653
Saturated model	153	0.000	0		
Independence model	17	973.880	136	0.000	7.161

Table 6. 20: *Baseline Comparisons*

Model	*NFI Delta1*	*RFI rho1*	*IFI Delta2*	*TLI rho2*	*CFI*
Default model	0.805	0.769	0.913	0.894	0.910
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

The CMIN in the output is the chi-square value, which is typically used for the goodness of fit. According to Kline (2016), this test evaluates whether a model departs significantly from the one that fits the data perfectly. Traditionally, if p≤0.05, the null hypothesis of an exact fitting model is rejected, this shows a “poor” fit, but using another method like $0 \leq \chi^2 \leq 2df$ and $0 \leq \chi^2/df \leq 2$, the model has a good fit in both cases, $0 \leq \chi^2=190.141 \leq 230$ and $0 \leq 1.653 \leq 2$ respectively.

Several indices can be used to compare the fit of a model against a null or independent model (Byrne, 2010; Schumacker & Lomax, 2016). These include the Normed fit index (NFI), Relative fit index (RFI), Incremental fit index (IFI), Comparative fit index (CFI), and Tucker-Lewis Index (TLI), also referred to as the Non-normed fit index (NNFI).

RFI, IFI, NNFI, and CFI all account for model complexity/parsimony in their computations (to a greater or lesser degree). These indices generally range between 0 and 1 (although it is possible to exceed 1 slightly). Values ≥ 0.90 for these indices are treated as indicative of an acceptable fitting model (Whittaker, 2016), although values ≥ 0.95 may be considered evidence of a more ‘superior fit’ (Byrne, 2010, p. 79). The TLI and CFI are two of the more commonly reported comparative fit indices. The TLI and CFI values were consistent with the conventional thresholds for an acceptable fitting model.

Table 6. 21: *RMSEA*

Model	*RMSEA*	*LO 90*	*HI 90*	*PCLOSE*
Default model	0.053	0.039	0.066	0.350
Independence model	0.162	0.153	0.172	0.000

The Root-mean-square error of approximation (RMSEA) can be considered an ‘absolute fit index’, with 0 indicating the ‘best fit’ and values > 0 suggesting a worse fit (Kline, 2016). Values of 0.05 or below on the RMSEA generally indicate a close-fitting model. Values between up to 0.08 (Browne & Cudeck, 1993; Whittaker, 2016) or 0.10 (Hu & Bentler 1995; Whittaker, 2016) are considered acceptable. According to Kline (2016), Browne and Cudeck suggested RMSEA ≥ 0.10 as a model that may have more severe specification problems.

The results indicate that the model is acceptable as an RMSEA of 0.053 is borderline. A further look shows that the RMSEA lies between the 90% CI interval, indicating an acceptable fit: 0.039 < RMSEA= 0.053 ≤ 0.066, (Kline, 2016).

Table 6. 22*: RMR, GFI*

Model	*RMR*	*GFI*	*AGFI*	*PGFI*
Default model	0.055	0.914	0.885	0.687
Saturated model	0.000	1.000		
Independence model	0.164	0.507	0.446	0.451

Table 6.22 shows the Goodness of Fit (GFI) and adjusted goodness of fit (AGFI). The GFI indicates a good fit, whereas the parsimony adjusted fit index (AGFI), (Schumacker & Lomax, 2016) suggests a weaker fit. According to Pituch and Stevens (2016), an acceptable model is one for values greater than 0.90.

Table 6. 23: *Standardized Regression Weights: (Group # 1 – Default Model)*

			Estimate
Efficacy	<---	PsyCap	.723
Hope	<---	PsyCap	.961
Resilience	<---	PsyCap	.658
Optimism	<---	PsyCap	.570
Q6	<---	Efficacy	.657
Q5	<---	Efficacy	.600
Q4	<---	Efficacy	.649
Q3	<---	Efficacy	.594
Q2	<---	Efficacy	.686
Q12	<---	Hope	.561
Q11	<---	Hope	.595
Q10	<---	Hope	.606
Q8	<---	Hope	.601
Q7	<---	Hope	.581
Q17	<---	Resilience	.588
Q15	<---	Resilience	.298
Q14	<---	Resilience	.653
Q13R	<---	Resilience	.284
Q24	<---	Optimism	.455
Q21	<---	Optimism	.816
Q19	<---	Optimism	.571

Table 6.23 above shows the standardised path coefficients. It can be observed that all factor loadings were strongly positive. As each item is loaded onto a single factor, these loadings are interpreted as correlation coefficients.

Table 6. 24*: Squared Multiple Correlations: (Group # 1 – Default Model)*

	Estimate
Optimism	.325
Resilience	.433
Hope	.923
Efficacy	.522
Q19	.326
Q21	.666
Q24	.207
Q13R	.080
Q14	.426
Q15	.089
Q17	.345
Q7	.337
Q8	.361
Q10	.368
Q11	.353
Q12	.314
Q2	.471
Q3	.353
Q4	.421
Q5	.360
Q6	.432

The squared multiple correlation table can be considered as the communalities for the items in this analysis. They reflect the variation in the items accounted for by the latent factors. It can be observed that the Optimism factor accounted for a significant amount of the variation in the Optimism item (32.5%) and Q21 (66.6%).

A second CFA was performed using a full-scale model with 24 variables, as shown in the EFA analysis. The following results were obtained from these data:

Figure 6. 4: *Second-Order Structure of PsyCap24*

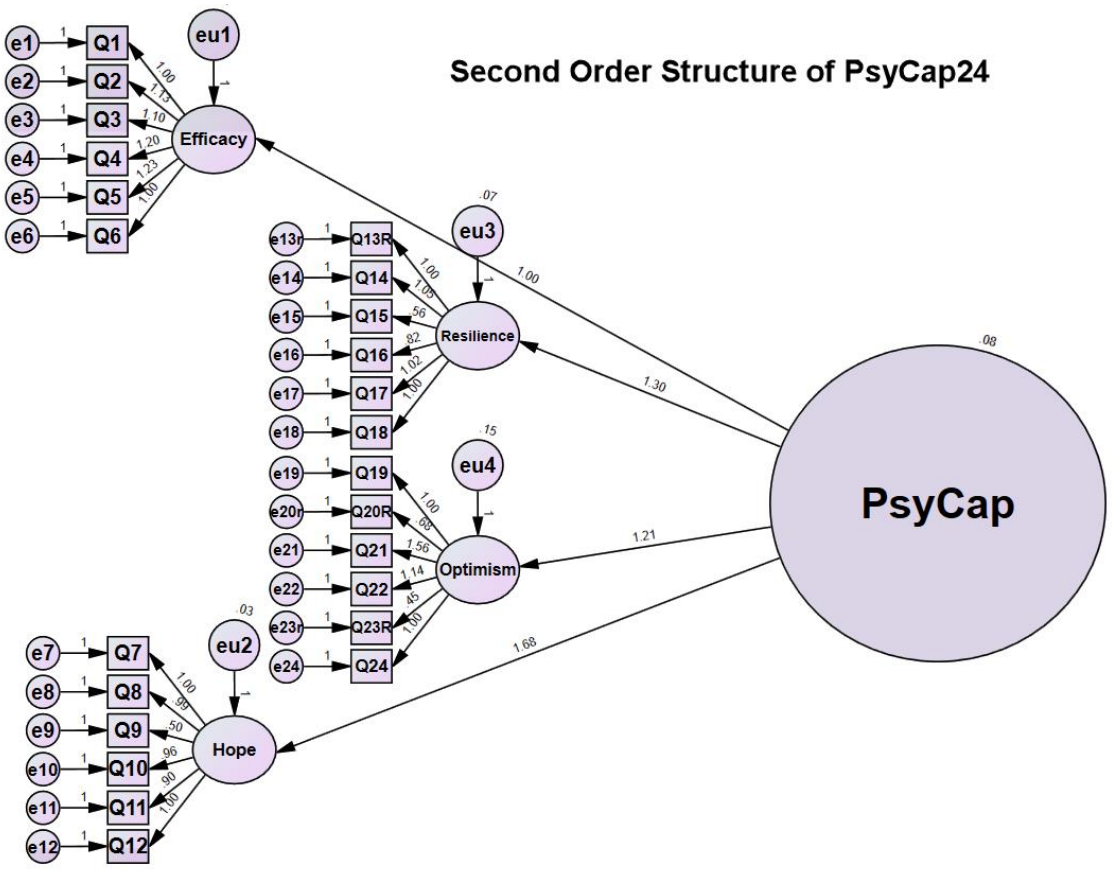


Table 6. 25*: CMIN*

Model	*NPAR*	*CMIN*	*DF*	*P*	*CMIN/DF*
Default model	48	485.196	252	0.000	1.925
Saturated model	300	0.000	0		
Independence model	24	1492.930	276	0.000	5.409

Table 6. 26: *RMR, GFI*

Model	*RMR*	*GFI*	*AGFI*	*PGFI*
Default model	0.069	0.855	0.827	0.718
Saturated model	0.000	1.000		
Independence model	0.159	0.479	0.433	0.440

Table 6. 27: *Baseline Comparisons*

Model	*NFI Delta1*	*RFI rho1*	*IFI Delta2*	*TLI rho2*	*CFI*
Default model	0.675	0.644	0.812	0.790	0.808
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Table 6. 28*:* *RMSEA*

Model	*RMSEA*	*LO 90*	*HI 90*	*PCLOSE*
Default model	0.063	0.054	0.071	0.007
Independence model	0.137	0.130	0.144	0.000

The above data show that the statistical parameters were obeyed, yet the values show a much weaker model than those with 17 variables.

The chi-square test $0 \leq \chi^2=485.196 \leq 504$ and $0 \leq 1.925 \leq 2$ showed an acceptable fit, but were weak. GFI = 0.855, again on the weak side, although acceptable. The TLI= 0.79 and CFI=0.808 should be greater than 0.90, but are acceptable values on the weak side.

The fact that the second model is statistically weaker does not imply that the more robust model is, the more fitting for the conclusion regarding the makeup of latent variables in startup founders.

6.4 Analysis of Data

6.4.1 Cronbach's Alpha Results

Introduction

Cronbach alpha coefficient were calculated for the PsyCap24 scale, which consisted of Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q20, Q21, Q22, Q23, and Q24. The Cronbach's alpha coefficient was evaluated using the guidelines suggested by George and Mallery (2018) where > 0.9 excellent, > 0.8 good, > 0.7 acceptable, > 0.6 questionable, > 0.5 poor, and ≤ 0.5 unacceptable.

Results

The items for PsyCap24 for Startups had a Cronbach's alpha coefficient of 0.82 and 0.91 for the Control Group, indicating excellent reliability. Tables 6.29 and 6.30 present the results of the reliability analysis.

Table 6. 29: *Reliability Table for PsyCap24 Startups*

Scale	*No. of Items*	*α*	*Lower Bound*	*Upper Bound*
PsyCap24	24	0.82	0.80	0.85

Table 6. 30: *Reliability Table for PsyCap24 Control Group*

Scale	*No. of Items*	*α*	*Lower Bound*	*Upper Bound*
PsyCap24	24	0.91	0.88	0.93

Note. The lower and upper bounds of Cronbach's α were calculated using 95% confidence intervals.

6.4.2 Pearson Correlation Analysis (Results)

Introduction

Pearson correlation analysis was conducted for Resilience, Efficacy, Optimism, and Hope. Cohen's method was used to assess the strength of relationships. Coefficients between 0.10 and 0.29 indicate a small effect size. Coefficients between 0.30 and 0.49 indicate a moderate effect size, and coefficients higher than 0.50 indicate an enormous effect size (Cohen 1988).

Assumptions

Linearity. Pearson correlations require each pair of variables to have a linear relationship (Conover & Iman, 1981). This assumption is invalid if the curvature is found among the scatterplot points between any pair of variables. Figure 6.5 shows scatterplots for the correlations. A regression line was used to aid the interpretation of charts.

Figure 6. 5*: Scatterplots between each variable and the regression line added*

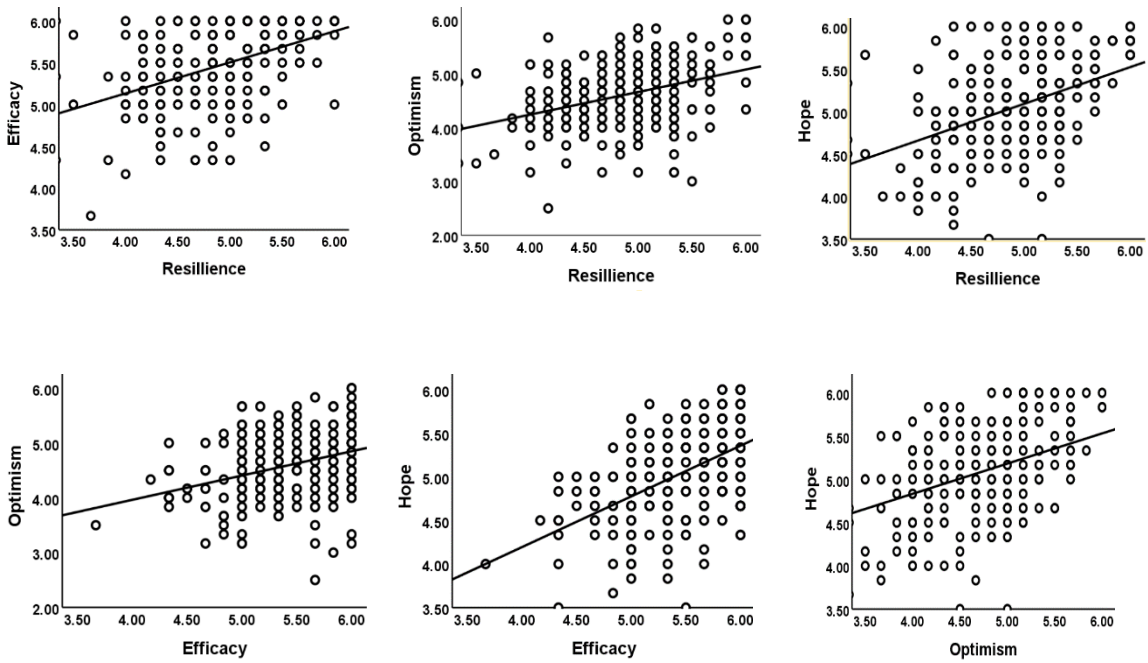


Table 6. 31: *Explanation of Pearson's & Spearman's Correlation Coefficients*

Interpretation of the Pearson's and Spearman's correlation coefficients.

Correlation Coefficient		Dancey & Reidy (Psychology)	Quinnipiac University (Politics)	Chan YH (Medicine)
+1	−1	Perfect	Perfect	Perfect
+0.9	−0.9	Strong	Very Strong	Very Strong
+0.8	−0.8	Strong	Very Strong	Very Strong
+0.7	−0.7	Strong	Very Strong	Moderate
+0.6	−0.6	Moderate	Strong	Moderate
+0.5	−0.5	Moderate	Strong	Fair
+0.4	−0.4	Moderate	Strong	Fair
+0.3	−0.3	Weak	Moderate	Fair
+0.2	−0.2	Weak	Weak	Poor
+0.1	−0.1	Weak	Negligible	Poor
0	0	Zero	None	None

The naming on the 1) Left: Dancey & Reidy.[4] 2) Middle: The Political Science Department at Quinnipiac University, 3) Right: Chan et al.[5].

The correlations were examined using Holm corrections to adjust for multiple comparisons based on an alpha value of 0.05. A significant positive correlation was observed between Resilience and Efficacy (r_p = 0.43, p < .001, 95% CI [0.32, 0.53]). The correlation coefficient between Resilience and Efficacy was 0.43, indicating a moderate effect size. This correlation indicates that, as Resilience increases, Efficacy tends to increase. A significant positive correlation was observed between Resilience and Optimism (r_p = 0.37, p < .001, 95% CI [0.26, 0.48]). The correlation coefficient between Resilience and Optimism was 0.37, indicating a moderate effect size. This correlation indicates that, as Resilience increases, Optimism increases. A significant positive correlation was observed between Resilience and Hope (r_p = 0.44, p < 0.001, 95% CI [0.34, 0.54]). The correlation coefficient between Resilience and Hope was 0.44, indicating a moderate effect size. This correlation indicates that, as Resilience increases, Hope tends to increase. A significant positive correlation was observed between Efficacy and Optimism (r_p = 0.33, p < 0.001, 95% CI [0.21, 0.44]). The correlation coefficient between Efficacy and Optimism was 0.33, indicating a moderate effect size. This correlation indicates that as Efficacy increases, Optimism tends to increase. A significant positive correlation was observed between Efficacy and Hope (r_p = 0.52, p < 0.001, 95% confidence interval (CI) [0.42, 0.61]). The correlation coefficient between Efficacy and Hope was 0.52, indicating a large effect size. This correlation indicates that as Efficacy increases, Hope tends to increase. A significant positive correlation was observed between Optimism and Hope (r_p = 0.41, p < 0.001, 95% CI [0.30, 0.51]). The correlation coefficient between Optimism and Hope was 0.41, indicating a moderate effect size. This correlation indicates that as Optimism increases, Hope tends to increase. Table 6.32 presents the correlations results.

Table 6. 32*: Pearson Correlation Results for Resilience, Efficacy, Optimism, Hope*

Combination	r_p	*95% CI*	*p*
Resilience-Efficacy	0.43	[0.32, 0.53]	< 0.001
Resilience-Optimism	0.37	[0.26, 0.48]	< 0.001
Resilience-Hope	0.44	[0.34, 0.54]	< 0.001
Efficacy-Optimism	0.33	[0.21, 0.44]	< 0.001
Efficacy-Hope	0.52	[0.42, 0.61]	< 0.001
Optimism-Hope	0.41	[0.30, 0.51]	< 0.001

Note. *n* = 232. Holm corrections used to adjust *p*-values

Posterior Distribution Characterization for Pairwise Correlations

			Efficacy	*Hope*	*Resilience*	*Optimism*
Efficacy	Posterior	Mode		.517	.432	.331
		Mean		.512	.427	.327
		Variance		.002	.003	.003
	95% Credible Interval	Lower Bound		.412	.326	.203
		Upper Bound		.602	.533	.432
	N		232	232	232	232
Hope	Posterior	Mode	.517		.444	.410
		Mean	.512		.439	.405
		Variance	.002		.003	.003
	95% Credible Interval	Lower Bound	.412		.336	.300
		Upper Bound	.602		.543	.515
	N		232	232	232	232
Resillience	Posterior	Mode	.432	.444		.373
		Mean	.427	.439		.369
		Variance	.003	.003		.003
	95% Credible Interval	Lower Bound	.326	.336		.259
		Upper Bound	.533	.543		.481
	N		232	232	232	232
Optimism	Posterior	Mode	.331	.410	.373	
		Mean	.327	.405	.369	
		Variance	.003	.003	.003	
	95% Credible Interval	Lower Bound	.203	.300	.259	
		Upper Bound	.432	.515	.481	
	N		232	232	232	232

a. The analysis assumed reference priors (c = 0).

Bayes Factor Inference on Pairwise Correlations

		Efficacy	Hope	Resilience	Optimism
Efficacy	Pearson Correlation	1	.518	.433	.332
	Bayes Factor		.000	.000	.000
	N	232	232	232	232
Hope	Pearson Correlation	.518	1	.445	.410
	Bayes Factor	.000		.000	.000
	N	232	232	232	232
Resillience	Pearson Correlation	.433	.445	1	.373
	Bayes Factor	.000	.000		.000
	N	232	232	232	232
Optimism	Pearson Correlation	.332	.410	.373	1
	Bayes Factor	.000	.000	.000	
	N	232	232	232	232

a. Bayes factor: Null versus alternative hypothesis.

6.4.3 Psychological Capital (PsyCap)

The PsyCap24 Index was measured using the PsyCap24 questionnaire as shown in Table 6.33.

Table 6. 33: *PsyCap24 Index*

	Startups	*Control Group of Regular Companies*
Efficacy	5.46	5.48
Hope	5.05	5.06
Resilience	4.89	4.85
Optimism	4.61	4.62
Total PsyCap24	**5.01**	**5.00**

This index comprises four subscales with equal weight and 24 questions with six questions allocated to each group: (1) Efficacy, (2) Hope, (3) Resilience, and (4) Optimism. The questionnaire was arranged on a six-point Likert scale with response options ranging from 1 (“strongly disagree”) to 6 (“strongly agree”). Luthans et al. (2007), obtained good internal consistency - **Cronbach’s alpha,** α - for the dissimilar subscales (self-efficacy: 0.75, 0.84, 0.85, 0.75; hope: 0.72, 0.75, 0.80, 0.76; resilience: 0.71, 0.71, 0.66, 0.72 optimism: 0.74, 0.69, 0.76, 0.79;). The Luthans et al. (2007) subscales were drawn from previously published and proven research. Hope items were adapted from the study by Snyder et al. (1996) State Hope Scale, the optimism stems from Scheier and Carver’s (1985) Measure of Optimism, the self-efficacy from Parker’s (1998) measure of self-efficacy in the workplace and resilience from Wagnild and Young’s (1993) Resilience scale.

Over time, there have been numerous studies concerning the workplace, all of which have confirmed the positive value of PsyCap. Luthans et al. (2010) established that using PsyCap can positively predict performance and satisfaction, as Luthans et al. (2007) demonstrated. According to Gooty et al. (2009), in-role performance can be expected. Other prominent studies have shown that PsyCap has an impressive impact on subjective and objective performance over time. This was a longitudinal study conducted by Peterson et al. (2011).

Table 6.34 illustrates 29 research papers using the Psychological Capital questionnaire based on the concept of Luthans et al. (2007).

Table 6. 34: *Descriptive information of 29 published PsyCap studies*

	Study	PsyCap measure	Data Type	Sample	Mean PsyCap (SD)
1.	Avey, Avolio, and Luthans (2011)	PCQ–Short Version(12 items)	SR	341 university employees	4.69 (.62)
2.	Avey, Hughes, Norman, and Luthans (2008)	PCQ	SR	106 engineers	4.56 (.70)
3.	Avey, Luthans, and Jensen (2009)	PCQ	SR	416 employees (CSI)	4.77 (.57)
4.	Avey, Luthans, Smith, and Palmer (2010)	PCQ	SR	280 employees (CSI)	4.78 (.61)
5.	Avey, Luthans, and Youssef (2010)	PCQ	SR	336 employees (CSI)	4.63 (.67)
6.	Avey, Patera, and West (2006)	PCQ	SR,OD	105 engineering managers	4.83 (.45)
7.	Avey, Wernsing, and Luthans (2008)	PCQ	SR	132 managers	4.56 (.63)
8.	Chen and Lim (2012)	PCQ	SR	179 retrenched professionals	5.25 (.77)
9.	Cheung, Tang, and Tang (2011)	PCQ	SR	264 teachers	4.23 (.71)
10.	Clapp-Smithet al. (2009)	PCQ	SR, OR, OD	89 retail employees (26 teams)	NR
11.	Combs, Milosevic, Jeung, and Griffith (2012)	PCQ – short version (12 items)	SR	380 undergraduate students	4.83 (.77)
12.	Culbertson, Fullager, and Mills (2010)	PCQ	SR	102 community workers	4.70 (.51)
13.	Gooty, Gavin, Johnson, Frazier, and Snow (2009)	PCQ	SR, OR	138 marching band members	4.48 (.76)
14.	Hughes (2008)	PCQ	SR	87 employees (CSI)	4.11 (.70)

	Study	PsyCap measure	Data Type	Sample	Mean PsyCap (SD)
15.	Luthans et al.(2010)	PCQ	SR, OR	80 managers (CSI)	4.79 (NR)
16.	Luthans, Avey,Clapp-Smith, and Li (2008)	PCQ – short version (12 items)	SR, OR	456 mining employees	4.33 (.46)
17.	Luthans, Avolio,Avey, et al.(2007)	PCQ	SR,OR,OD	571 students	NR
18.	Luthans, Norman, Avolio, and Avey (2008)	PCQ	SR,OR,OD	Study 1: 404 students Study 2: 163 insurance employees Study 3: 170 engineers	4.33 (.41) 4.82 (.47) 4.67 (.51)
19.	Luthans, Youssef, and Rawski (2011)	PCQ	SR, OR	1526 employees (CSI)	NR
20.	McMurray, Pirola-Merlo, Sarros, and Islam (2010)	PCQ	SR	43 employees from NPO	NR
21.	Norman, Avey, Nimnicht, and Pigeon (2010)	PCQ – short version (12 items)	SR	199 employees (CSI)	4.61 (.82)
22.	Peterson et al.(2011)	PCQ	OR, OD	179 financial advisors	3.56 (.86)
23.	Peterson and Zhang (2011)	PCQ	SR, OD	311 managers/67 teams	3.54 (.53)
24.	Rego et al.(2010)	PCQ	SR, OR	278 civil servants	3.9-4.0 (.5)
25.	Rego et al.(2012a)	PCQ	SR, OR	201 employees (CSI)	3.7 (.63)
26.	Roberts, Scherer, and Bowyer (2011)	PCQ	SR	390 (CSI)	3.55 (.46)
27.	Walumbwa et al.(2011)	PCQ 8 items	SR	526 bank employees (146 teams)	3.17 (.68)
28.	Walumbwa, Peterson, Avolio, and Hartnell (2010)	PCQ – 19 items	SR, OR	264 police sergeants and 79 police leaders	Followers: 2.97 (.50) Leaders: 2.92 (.74)
29.	Woolley, Caza, and Levy (2011)	PCQ – 12 items	SR	828 employees (CSI)	4.78 (.63)

Notes: CSI, cross-section of industries; NPO, not-for-profit organisations; NR, not reported; OD, objective data, OR, other raters; SR, self-report.
Source: Building on the positives: A psychometric review and critical analysis of the construct of Psychological Capital. Descriptive information and statistics of 29 published Psychological Capital study: Dawkins, S., Martin, A., Scott, J., & Sanderson, K. (2013). Journal of Occupational and Organizational Psychology, 86(3), 348-370.

From the above table of 29 research papers, it can be seen that, on average, the mean of all 29 studies returned a value of 4.28. The spread of the results ranges from a Min 2.92 to a Max 4.83, with one outlier valued at 5.25

To understand this outlier value at 5.25, the researcher explored this specific study in more detail to understand the reason or reasons for this significant variance as related to all other research papers.

A sample of 179 retrenched professionals, managers, executives and technicians was administered the PsyCap24 questionnaire. This study examined the influence of psychological capital on job searches among displaced employees. A closer look at the actual questionnaire used in this survey showed that part of the original wording in certain questions had been changed to use the specific word “job search” to suit the research purpose. Two problems have arisen from this discovery.

(1) According to the copyright condition, when using the PsyCap questionnaire, it was prohibited to change the original wording. The following is a direct quote from the letter of approval:

Validity and Reliability

> *“When a psychological instrument is altered, it may affect the validity and/or reliability of the instrument because the meaning of the items and/or the instructions change. This meaning change has unknown consequences on how well the instrument predicts behavior and/or represents the constructs measured by the instrument. Typically, journal editors and reviewers will ask for a complete construct validation study when items and scale anchors are changed, which indicates the importance they assign to changing original items in scales and instruments.”*

Research and Publication

> *“When research from an altered instrument is published, it brings in a degree of ambiguity about:*

a) the nature of difference from the original instrument,

b) the results of the study as a characterization that might differ from the original instrument,

c) how the validity and reliability reported might be affected by the alteration."

(2) With the wording changed to suit the specific study, it is unreasonable to accept the PsyCap index as a number representing the outcome of this research and the conditions governing the original questionnaire. This did not disqualify the rest of the research based on additional assumptions and five other questionnaires; perceived employability, seeking employment assistance, seeking financial assistance, preparatory job search and active job search.

With these facts, it can be safe to exclude the PsyCap Index of this specific study from the other studies, showing similar results relating to the PsyCap index. The remaining 28 studies, as shown in Table 6.34, can now be used to evaluate the strength or standards of other research papers.

As explained earlier in the section on Ethics, the Psychological Capital questionnaire used in the Startup Research Paper was the originally approved questionnaire administered by the Mind Garden Publishing House. Consequently, it is acceptable to compare the PsyCap Index for Startups with the remaining 28 studies in Table 6.34.

The PsyCap Index for Startups shown previously is 5.01 and 5.00 for the Control group. These numbers were substantially higher than those in any of the 28 studies previously quoted. The variance ranged from the lowest value of 2.92 to the highest value of 4.83, or a percentage change from 71.5% to 3.7%. Based on these results, there seems to be a very positive and strong influence on the relationship between Psychological Capital and Startups' latent variables compared to 28 different studies worldwide.

In the above 29 studies, five (1,11,16,21, 29) used the PsyCap12 questionnaire, which has the exact wording of questions as in PsyCap24, and only fewer questions. Two additional studies (27,28) used 8 questions and 19 questions. The EFA section

showed that a model with 17 variables yielded excellent results for this dataset. Calculating the PsyCap Index for this new model produced a value of 5.04, which is even higher than the index using 24 variables and higher once again than any other study.

Finally, to evaluate and establish the above findings in more detail, a more in-depth evaluation must be conducted of the whole concept of PsyCap.

An in-depth look at PsyCap and its implications

According to Luthans et al. (2007), psychological capital (PsyCap) can describe a development's positive psychological state. PsyCap is characterised by several psychological elements including: self-efficacy, resilience, hope, and optimism. According to Youssef and Luthans (2012), studies have continuously illustrated that PsyCap is positively associated with different workplace attitudes, organisational outcomes, and behaviours. In the recent past, Avey et al. (2012) performed a meta-analysis which further illustrated the proof of notable, good connections linking PsyCap and organisational commitment, job fulfilment, organisational citizenship behaviours (OCBs), and workplace performance. The research also demonstrated negative connections between stress related to job, cynicism, and turnover intentions. PsyCap is primarily bases on personal-level positivity. However, recent studies such as Peterson and Zhang (2011) have revealed positive relationships between collective PsyCap, group accomplishment (Walumbwa et al., 2010) and group OCBs.

Despite the rapid growth in publications, PsyCap's critical and synthesised assessment concerning its psychometric features and conceptualisation is yet to be carried out. It is necessary to conduct such a review in order to establish foundational research. Avey et al. (2011) noted that more than 45 papers were published on PsyCap, and the initial meta-analysis further revealed the expanding research on PsyCap. Nevertheless, although the current meta-analysis aligns with PsyCap's utility criterion, it does not provide a critical evaluation of other elements related to PsyCap formulation, psychometric features, and quantification. Likewise, summaries by PsyCap originators (Youssef & Luthans, 2011, 2012) also failed to tackle the critical assessment of PsyCap conceptualisation and its psychometric features. Instead, it focuses on how PsyCap can be applied in the future.

Caution has been expressed over novel research paradigms that may risk gaining widespread popularity among individuals in the field. Hackman (2009) stated that paradigms could face substantial endorsement challenges that cause researchers to overlook viable alternatives used to conduct the study. Therefore, more study perspectives should be promoted to minimise model-endorsed overreliance approaches and provide further directions for the PsyCap model.

PsyCap Formulization

Positive organizational behaviour (POB) is referred to by Luthans (2002, p.54) as the study and utilisation of personnel's strongholds and psychological capabilities that are positively oriented, quantified, grown, and controlled appropriately, improving accomplishment in the current place of work. Multiple psychological capacities were assessed at the time of its introduction. This examination has been conceptually and empirically based on POB's perception. Luthans et al. (2007) stated that, to date, four constructs are the most appropriate for inclusion in the POB criteria. These factors include hope, resilience, self-efficacy, and optimism. Increased attention to the synergy of individual capacities, referred to as PsyCap, has led to a better understanding of how these elements work together to improve performance. According to Luthans et al. (2007, p.3), PsyCap can be a higher-order component of motivational tendencies and behavioural features. Self-efficacy (having the courage to persevere and put the required force to ensure success in challenging situations), hope (having perseverance directed toward achieving the desired objectives and adjusting direction to objectives), optimism (having a positive mindset towards realising success now and in the future), and resilience (the ability to bounce back and continue the path to success when confronted by problems).

Luthans et al. (2007) noted that the constructs were analysed to connect with various possible results. For example, Stajkovic and Luthans (1998) reported positive connections among self-efficacy, accomplishment, and engagement in the workplace (Salanova et al., 2011). Similarly, optimism has been theorised as giving propensity motivations that impact the effort expended, thus improving work performance (Luthans et al., 2007).

Research has also supported the relationship between hope and performance. Hope allows people to pursue their objectives and helps develop several pathways that allow an individual to realise their objectives (Snyder, 2002). This concept has been supported empirically in instances in which managers considered more hopeful tend to have more units performing better (Peterson & Luthans, 2003). Finally, research proves that resilience allows individuals to rebound with enhanced job performance after facing a challenge (Luthans et al., 2006).

According to the authors, PsyCap has a higher independent correlation with performance results than its components (Luthans et al., 2007). It can be argued that PsyCap has synergistic effects in which the entire unit may perform better than its parts. This impact is believed to occur because PsyCap combines the coping mechanisms shared by the four distinct components (Avey et al., 2011). This mechanism is associated with the theory of psychological resources (Hobfall, 2002). This theory argues that some components are indicators of broader, multidimensional primary elements that help individuals produce desired results, such as job performance (Winkel et al., 2010). Therefore, it can be said that the independent constructs are the makers of far-reaching multidimensional primary constructs.

Avey et al. (2010) described PsyCap and its independent constructs as ‘state-like’. There have been several debates in the literature regarding this assertion regarding wider persistence and positive psychology. For instance, Bandura (1977) wrote on Self-efficacy, Snyder (2002) debated Hope, Master and Reed (2002) debated Resilience, and Seligman (1998) debated Optimism. Finally, research in social psychology has conceptualised these constructs, mostly optimism, as dispositional (Caver et al., 2010). In contrast, clinical psychology has mainly focused on improving these constructs, especially among individuals with chronic conditions (Steinhardt et al., 2009). It is not surprising that this confusion and disagreement in the broader psychology literature is also present in organisational behaviour, where proponents of PsyCap (Luthans et al., 2007) report an ongoing debate on whether PsyCap and its components are state-like.

A continuum divided between ‘pure' poles of state and trait has been proposed to solve this issue philosophically, with PsyCap positioned in the middle and, therefore, ‘state-like' (Luthans & Youssef, 2007). PsyCap is separated from features such as intelligence (Schmidt & Hunter, 2000) and more established characteristics such as the

Big Five personality traits (Barrick & Mount, 1991) and Core Self Evaluations (Judge & Bono, 2001) because PsyCap is viewed as fluid (Luthans et al., 2007) and flexible (Luthans et al., 2010). Luthans et al., 2007) denoted that it is also distinguished from the 'pure' states, like emotions, since PsyCap demonstrates considerably more stability across time than the transitory effect.

Provisional support has been obtained for labelling PsyCap as 'state-like'. Brief interventions resulted in significant increases in PsyCap, with modest to medium effect sizes (d =0.31–0.40; Luthans et al., 2010). There is also evidence of intra-individual variability in PsyCap, with a significant latent slope mean of 0.07 (SE =0.03, p.05), indicating that PsyCap eroded with time (Peterson et al., 2011). Nevertheless, there is still no clarity regarding the possible connections between traits and states, specifically the association between psychological states and dispositional features such as PsyCap. For instance, since different studies have considered the components of PsyCap as both trait and state-like, it can be anticipated that state-like self-efficacy, hope, optimism and resilience moderate or mediate the relationship between trait-like self-efficacy, hope, optimism, resilience, and outcomes such as performance.

The debate relating to state-trait-like behaviour is not unique to PsyCap (Ashkansay & Daus, 2005); however, it remains a significant problem, as far as the paradigm is concerned. Similarly, correlations between various state/trait constructs were revealed. For instance, it has been demonstrated that (state) emotions mediate the association between affectivity (trait) and work attitudes. (Grandey et al., 2002). Moreover, when adjusting for state optimism, research has shown that trait optimism does not significantly improve variance in predicting job performance (Kluemper et al., 2009). This implies that both state and trait optimism may have the same features regarding explanatory influence and self-regulation. The midrange of the continuum is unclear, although both constructs are distinguishable at either end.

A possible direction for future research is the need for more investigation and theorisation to ascertain PsyCap's components and further examine their connections with trait-like conceptualisations and coping processes.

A suggested section for conceptual growth is expanding PsyCap to accommodate more elements that satisfy the criteria for POB (Youssef & Luthans, 2012). Scholars in

this field have established multiple psychological capacities that can be included in PsyCap. They have been widely classified into four components: cognitive (creativity, wisdom), affective (well-being, flow, humour), social (gratitude, forgiveness, emotional intelligence), and higher-order strengths (authenticity, spirituality, courage). Empirical evaluations about the 'fit' of any extra constructs are yet to be published relating to the PsyCap framework. This will enable further comprehensive and potential PsyCap research (Youssef & Luthans, 2011, 2012).

Caution should be taken to avoid rushing towards an all-inclusive approach to a situation in which there is no clarity regarding the specific components of PsyCap that are valuable to outcomes that attract significant interest. Researchers conducting studies of PsyCap should articulate a theoretical model that guides the expansion of future constructs.

A general criterion was provided by Luthans et al. (2002) that can be used to evaluate potential constructs for future inclusion under the umbrella of PsyCap inclusion. Nevertheless, this research initially proposes that further research needs to be conducted with the existing components of PsyCap before choosing and assessing more dimensions.

The continuous development of PsyCap is conceptually granted; nevertheless, any possible expansion should adhere to the construct's refinement as it presently stands. Caution should be taken and performed procedurally with keen interest in appropriate theoretical models.

PsyCap Measurement

The PCQ was constructed on the basis of previously published self-efficacy (Parker, 1998), hope (Snyder et al., 1996), optimism (Scheier & Carver, 1985), and resilience measures (Wagnild & Young, 1993). These measures varied in the number of points on the Likert scale and the number of items. Given that these measures varied in terms of item count and Likert scale points, and their degree of state-likeness and relevance to the workplace, specific questions were modified or omitted throughout the development of the PCQ (Luthans et al., 2007).

The PCQ has been endorsed in the literature, though critics have been against its measures. Propositions have been made that most of the psychometric validation

included in the PCQ's original scale was not organisationally based (Little et al., 2007). Luthans et al. (2010) acknowledge that the procedures used to develop the PCQ may jeopardise its construct validity and PsyCap. Therefore, there is a need for different refinement measurements to improve the PsyCap construct validity.

Moreover, the process of recording PCQ values requires further clarity. The present mechanisms require that 24 elements be added to obtain the total score from the 144 possible points. Nevertheless, studies tended to register scores as general averages obtained from the average measurements of the subscales, providing a score of 6. Higher scores on the scale indicate more positive PsyCap from the aggregate scores. This scoring mechanism is common in multidimensional tests involving associated elements. Furr and Bacharach (2008) noted that if the subscales are correlated, high scores on one subscale should be reflected in other subscales. Therefore, it is assumed that the four elements of PsyCap are interrelated and equally impact the overall PsyCap. This can occur when focusing on the composite scale.

Consequently, it is recommended that future studies expand the statistical analysis carried out with PCQ to integrate the standard error of the mean (SEM). This will help increase both the composite score and the construct validity of PsyCap. This will improve our understanding of the contribution of independent elements to overall PsyCap and outcomes in organisational settings. The researcher proposed continued dependence on a PsyCap composite score before conducting an in-depth analysis of the construct through Confirmatory Factor Analysis (CFA), SEM, and Exploratory Factor Analysis (EFA). This is because research on PsyCap may ignore the importance of evaluating an individual's PsyCap profile.

A more complex PCQ analysis is warranted to better comprehend the connections between PsyCap and its sub-elements. It also provides further validation of composite PCQ scores.

The composite PsyCap score has several weaknesses. An example of this is further illustrated. Consider founder A, a startup founder, who scores highly on a scale of 30 out of the possible 36. This score is obtained across all four scales. Founder A obtained an overall composite score of 120 of 144. This can be compared with founder B, another startup founder. On the resilience and self-efficacy scales, this founder scored

34 of the possible 36. Founder B also scored 26 out of 36 on the optimism and hope scale. However, B's overall score was 120 of 144. From the two scenarios, it can be observed that the recorded similar composite scores reflect different PsyCap profiles. PsyCap profiles may have different connections with regard to performance and other outcome-related variables.

This concern has been addressed in studies that predict job performance. Regression analysis results showed no significant difference in self-reported employee performance when a second-order PsyCap factor was entered into the equation. However, reversing the order leads to different results. The independent element was entered after the overall PsyCap, in which an extra variance of 9% was explained (Rego et al., 2010).

Moreover, conducting an individual analysis of the components instead of relying on the composite score is crucial. This technique helps investigate how the individual components of a system relate to the system's overall performance. For example, hope, optimism, resilience, and willpower are remarkable performance indicators (Rego et al., 2010).

The findings from this study enabled suggestions relating to potential neutralisers and processes of organisational evaluation, which may have led to a reduction in the connection between self-efficacy, hope pathways, and performance. Furthermore, focusing only on implementing the composite score would have undermined these research findings along with their implications. This study proposes that analysing the independent components alongside the composite score would develop PsyCap profiling. It is recognised that the components of PsyCap are connected, therefore, individuals may be register similar scores across all four elements; this can be considered conceivable. This is because the elements are adequately unique from each other (Luthans et al., 2007); therefore, individuals may register different results when subjected to all four components.

PysCap profiling can allow scholars to identify the category of workers – in this study, founders of startups - that may possess a specific configuration of PsyCap and begin to comprehend how specific profiles of PsyCap link to the results in various ways. For instance, the founder of a newly formed startup may exhibit high PsyCap hope and

optimism, originating from the morale of beginning a new career. Nevertheless, the same founder may exhibit lower resilience and self-efficacy because of inexperience in the assigned duty and a limited history of overcoming particular challenges related to carrier development. However, founders with experience may demonstrate different results. For instance, they may record higher resilience and self-efficacy in their PsyCap because of their successful experiences in their roles and their history of overcoming career challenges. However, these founders may record lower points in hope and optimism because of the absence of creativity and inspiration from performing the same duties for several years. Therefore, these two founders recorded similar PsyCap scores. However, their PsyCap profiles could comprise different performance bearings and other relevant results, such as job satisfaction and turnover intention. It can also complement PsyCap profiling by integrating a study illustrating a potential neurological element with PsyCap to distinguish people with higher or lower psychological properties (Peterson et al., 2008).

Furthermore, PsyCap profiling could provide a picture of how specific cultures in organisations or practices affect employees' PsyCap. Rego et al. (2010) suggested that elements related to appraisal mechanisms in the workplace possess the ability to countervail PsyCap components. For example, inconsistent performance appraisal may not create the right opportunity for workers to acquire an external scale concerning their accomplishments and strengths. This could have a negative effect on self-efficacy. Luthans et al. (2007) found that according to their study, employees with hope tend to think independently, as they require autonomy to use their agency.

PsyCap hopefulness may be eroded by strict boss commands/employees obeying the organisational context (Rego et al., 2010).

Nonetheless, it is possible to extend the implications of PsyCap profiling to intervention practices involving PsyCap. For instance, if a company is particularly keen on turnover reduction, interventions can be directed towards developing specific components of PsyCap or a combination of several PsyCap elements linked to lower turnover intentions. It is vital to deeply understand the interplay between PsyCap elements to develop PsyCap's utility. It is impossible to achieve this state by relying only on PsyCap composite scores.

Directions for Future Research: Further analysis that which relies on the independent elements of PsyCap scores should be integrated into future research. This can help improve the predictability of PsyCap validity, leading to a deeper understanding of the mechanisms related to the impact of PsyCap and its potential neutralisers.

The above review has shown that this research is significant and has encouraged further study of the independent elements of the PsyCap score by choosing a statistical model for implementation.

For a binary dependent variable with one or more dependent variables, the use of Binary logistic regression is usually acceptable. This is probably the most common regression model quoted in the literature, however, other logistic models deal with unordered or ordered categories when the dependent variable is not binary. When there are two or more unordered dependent variables, Multinomial Logistic Regression (MLR) is used. In a Likert questionnaire with dependent variables that are orderly categorised (ranked), an Ordinal Logistic Regression (OLR) is generally performed.

According to Osborne (2015), when data analysis containing ordered categorical dependent variables is performed, it is desirable to use OLR, although MLR is also acceptable. OLR is more convenient because this regression model generates only a single set of regression coefficients to estimate the relationships between independent and dependent variables. By contrast, MLR generates numerous sets of regression coefficients and related tests. As a result, when the dependent variable is ordered, OLR produces a more parsimonious description of the data than MLR. Consequently, MLR is a suitable alternative to OLR when the proportional odds assumption is broken. [The proportional odds assumption essentially states that the relationship between the independent and dependent variables is constant, irrespective of which groups are being compared on the dependent variable (see Osborne, 2015, 2017).]

The Analysis and Interpretation of a Likert-scale Questionnaire using OLR

The questionnaire used a Likert Scale, as follows:

1 = Strongly Disagree

2 = Disagree

3 = Somewhat Disagree

4 = Somewhat Agree

5 = Agree

6 = Strongly Agree

The initial check as to what type of procedure to use is whether the Likert Scale Data is normally distributed or not. Table 6.35 can be deduced as to which method is suitable.

Table 6. 35: *Decision Making for a Normally Distributed Likert Chart*

Normally Distributed Likert Scale Data (Parametric Method)	**NOT Normally Distributed Likert Scale Data (Non-Parametric Method)**
Linear Regression	Ordinal Regression
Pearson Correlation	Spearman Rank Correlation

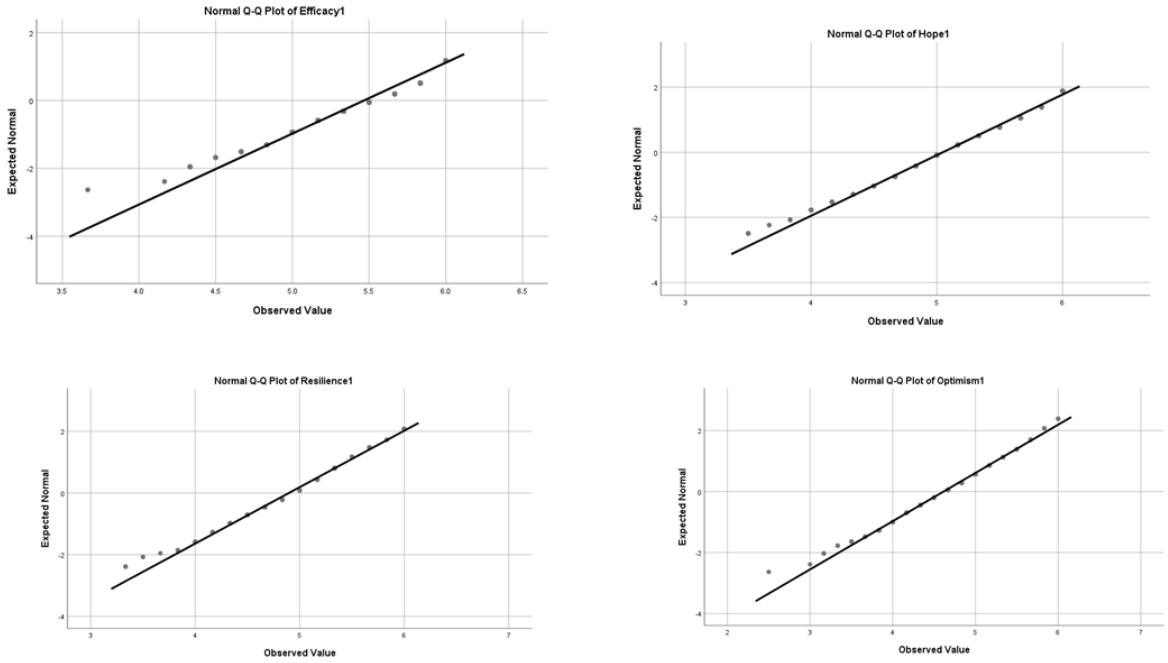
A parametric method is adopted if the dataset is normally distributed: Linear Regression and Pearson's Correlation. If the dataset is not normally distributed, a non-parametric method using Ordinal Regression and Spearman Rank Correlation can be used.

The first stage calculated the mean of the 24 variables, grouped into four sets, Efficacy, Hope, Resilience and Optimism. Questions 1-6 will be Efficacy, questions 7-12 will be Hope, questions 13R-18 will be Resilience and questions 20R, 21,22, 23R, and 24 will be Optimism (the R designates reversed questions). According to the original PsyCap theory, four new variables were checked for normality.

Generally, a graphical presentation can be used to confirm or deny the appearance of a normal distribution (Q-Q plot, histogram, or plot-box) in the data under consideration. While this approach can be helpful in many cases to give an overall picture, it does not afford conclusive formal proof that the data in question is, in fact, a "normal distribution". The interpretation of a graphical presentation is subjective and can be interpreted differently by different researchers. As a result, rigorous statistical tests are usually required to confirm conclusions using graphical approaches. Finally,

graphical and formal statistical tests should be applied to accurately assess the distribution of a variable. Yap and Sim (2011), performed a simulation study, found that the Shapiro-Wilk test has good power properties over a wide range of asymmetric distributions.

Figure 6. 6*: P-P Plots of the four new variables*



The statistical test for normality is presented in Table 6.36:

Table 6. 36*: Tests of Normality*

	Kolmogorov-Smirnov[a]			*Shapiro-Wilk*		
	Statistic	*df*	*Sig.*	*Statistic*	*df*	*Sig.*
Efficacy1	0.149	235	0.000	0.906	235	0.000
Hope1	0.071	235	0.006	0.978	235	0.001
Resilience1	0.111	235	0.000	0.978	235	0.001
Optimism1	0.070	235	0.007	0.986	235	0.025

a. Lilliefors Significance Correction

From the above, all values are less than p<0.05, so they are significant. According to the Shapiro-Wilk test, all variables are NOT normally distributed.

Now that it can be seen that the variables are not normally distributed, further analysis was performed on the Log value of the variables to reconfirm that this assumption is correct (Table 6.37).

Table 6. 37*: Tests of Normality for Log value*

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log10_Efficacy	.146	235	.000	.890	235	.000
Log10_Hope	.092	235	.000	.965	235	.000
Log10_Resilience	.130	235	.000	.959	235	.000
Log10_optimism	.092	235	.000	.963	235	.000

a. Lilliefors Significance Correction

The above results reveal that the Likert scale log data were not normally distributed ($p<0.05$). Both normality tests show that the data are NOT normally distributed; consequently, a non-parametric method can be used, namely **Ordinal Regression** and **Spearman Rank correlation**.

The first regression equation to be calculated is based on the general formula:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$

Y = Efficacy

X1 = Hope

X2 = Resilience

X3 = Optimism

The “Case Processing Summary” (Table 6.38) conveys the proportion of cases falling at each level of the dependent variable (Efficacy1).

Table 6. 38*: Case Processing Summary*

Case Processing Summary

		N	*Marginal Percentage*
Efficacy1	3.67	1	0.4%
	4.17	1	0.4%
	4.33	7	3.0%
	4.50	3	1.3%
	4.67	6	2.6%
	4.83	8	3.4%
	5.00	30	12.8%
	5.17	18	7.7%
	5.33	28	11.9%
	5.50	21	8.9%
	5.67	25	10.6%
	5.83	31	13.2%
	6.00	56	23.8%
Valid		235	100.0%
Missing		0	
Total		235	

Table 6.39 contains the "Model Fitting Information". It includes the -2 Log-Likelihood of an Intercept-only (or null) model and Full Model (all predictors). The chi-square test determines whether the final model fits better than the intercept model. This case shows a significant improvement in the fit between the final and null models [$\chi^2(3)=92.679$ p.001].

Table 6. 39*: Model Fitting Information*

Model Fitting Information

Model	*-2 Log Likelihood*	*Chi-Square*	*df*	*Sig.*
Intercept Only	1006.543			
Final	913.864	92.679	3	0.000

Link function: Logit.

The Deviance and Pearson chi-square test, shown in Table 6.40, "Goodness of Fit", were used to establish whether the data in the model exhibited a good fit. Field (2018) and Petrucci (2009) stipulated that a good data fit of the model is when the test results are non-significant.

Table 6. 40*: Goodness of Fit*

Goodness-of-Fit

	Chi-Square	*df*	*Sig.*
Pearson	2125.994	2577	1.000
Deviance	890.297	2577	1.000

Link function: Logit.

From the above analysis, it can be seen that both the Pearson chi-square test [$\chi^2(2577)=2125.994$, p=1] and deviance test [$\chi^2(2577)=890.297$, p=1] were non-significant. These results indicate an excellent model fit.

Osborne (2015, p.147) discussed the premise that the relationship between the categories is proportional "*across all possible comparisons*", known as Proportional Odds. This was previously mentioned as an assumption of the OLR.

For the assumption of Proportional odds to be satisfied, or in other words, the Parallel lines test to specify non-significance, it can be interpreted to be fulfilled. Statistical significance was taken as an indicator that the assumption was not satisfied.

From Table 6.41, the results show that as (p=0.885), the postulation was satisfied.

Table 6. 41*: Test of Parallel Lines*

Test of Parallel Lines[a]

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	913.864			
General	890.237[b]	23.627[c]	33	.885

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

Table 6. 42: *Parameter Estimates for the dependent variable Efficacy*

Parameter Estimates

							95% Confidence Interval	
		Estimate	Std. Error	Wald	df	Sig.	Lower Bound	Upper Bound
Threshold	[Efficacy1 = 3.67]	7.756	1.726	20.187	1	.000	4.373	11.140
	[Efficacy1 = 4.17]	8.479	1.583	28.692	1	.000	5.377	11.582
	[Efficacy1 = 4.33]	10.106	1.478	46.753	1	.000	7.209	13.003
	[Efficacy1 = 4.50]	10.435	1.475	50.056	1	.000	7.544	13.326
	[Efficacy1 = 4.67]	10.903	1.477	54.533	1	.000	8.010	13.797
	[Efficacy1 = 4.83]	11.359	1.483	58.660	1	.000	8.452	14.266
	[Efficacy1 = 5.00]	12.493	1.514	68.126	1	.000	9.526	15.459
	[Efficacy1 = 5.17]	12.975	1.528	72.090	1	.000	9.980	15.970
	[Efficacy1 = 5.33]	13.631	1.549	77.438	1	.000	10.595	16.667
	[Efficacy1 = 5.50]	14.106	1.564	81.325	1	.000	11.040	17.171
	[Efficacy1 = 5.67]	14.677	1.582	86.025	1	.000	11.575	17.778
	[Efficacy1 = 5.83]	15.480	1.608	92.727	1	.000	12.329	18.630
Location	Hope1	1.503	.266	31.826	1	.000	.981	2.025
	Resilience1	.957	.250	14.666	1	.000	.467	1.446
	Optimism1	.367	.208	3.097	1	.078	-.042	.775

Link function: Logit.

In Table 6.42, "Parameter Estimates", all independent variables in the model are shown together with the regression coefficients and significance tests against the dependent variable, Efficacy. Regression coefficients are the expected change in the log odds of belonging to a higher group/category (controlling for other independent variables) per unit increase in the independent variable.

An optimistic Estimate can be understoodas follows: (a) Every one-unit increase in an independent variable will result in a predicted rise (of a certain degree) in the log odds that the dependent variable will fall at a higher level. A higher score on an independent variable indicated a greater chance of the dependent variable falling at a higher level.

The following is how a negative estimate is explained: (b) Every one-unit increase in an independent variable will result in a predicted decrease (of some amount) in the log odds that the dependent variable will fall at a higher level. If the scores on an independent variable increase, the probability of falling to higher levels on the dependent variable decreases.

Osborne (2015) contends that the Threshold estimates shown in Table 6.42 are intercepts. He continues to explain that they can be interpreted as the “log odds of being in a particular group or lower when scores on the other variable(s) are zero” (p. 147).

1. Hope is a significant positive predictor of efficacy. For every one-unit increase in Hope, there is a predicted increase of 1.503 in the log odds of a founder being in a higher (as opposed to lower) category of Efficacy. This indicates that a founder scoring higher on Hope is likely to indicate greater Efficacy.
2. Resilience is a significant positive predictor of Efficacy. Again, the log odds of Resilience being at a higher level of Efficacy were 0.957 points higher, on average.
3. Optimism was not a significant predictor (p=0.078). On average, the log odds of being in the higher Efficacy category were 0.367.

The above analysis was repeated by interchanging each variable as a dependent variable with the other independent variables. Table 6.43 shows the results of this interchangeable statistical run.

Table 6. 43: *Parameter Estimates*

Dependent Variable	B				Significance Value			
	Efficacy	Hope	Resilience	Optimism	Efficacy	Hope	Resilience	Optimism
Efficacy	-	1.503	0.957	0.367	-	0	0	0.078
Hope	1.560	-	0.925	0.756	0	-	0	0
Resilience	1.062	0.999	-	0.541	0	0	-	0
Optimism	0.538	0.975	0.758	-	0.063	0	0.002	-

One disadvantage of the prior technique using Ordinal Regression is that we cannot obtain Odds Ratios (OR's), which indicate the increasing probability of a case falling at a subsequent higher level on the dependent variable. Additionally, the test findings for the independent variables were based purely on the Wald test. These findings may be less conclusive than those obtained through the likelihood ratio chi-squared test.

To obtain additional evidence, the Generalized linear model option was implemented. Upon running this model, the following are the output data using the same four categorical variables, with Efficacy as the dependent variable and the rest as the independent variables. Table 6.44

Table 6. 44*:* *Goodness of Fit*

Goodness of Fit[a]

	Value	*df*	*Value/df*
Deviance	890.297	2577	0.345
Scaled Deviance	890.297	2577	
Pearson Chi-Square	2125.994	2577	0.825
Scaled Pearson Chi-Square	2125.994	2577	
Log Likelihood[b]	-456.932		
Akaike's Information Criterion (AIC)	943.864		
Finite Sample Corrected AIC (AICC)	946.056		
Bayesian Information Criterion (BIC)	995.758		
Consistent AIC (CAIC)	1010.758		

Dependent Variable: Efficacy1
Model: (Threshold), Hope1, Resilience1, Optimism1
a. The information criteria are in a smaller-is-better format.
b. The full log likelihood function is displayed and used to compute the information criteria.

There are various goodness-of-fit statistics. It is noteworthy that, although the Pearson chi-square and deviance values are presented in this table, no test results are given (as illustrated in the goodness of fit table using OR values). Nevertheless, values and degrees of freedom were provided, testing for model fit using chi-square distribution. Once again, there is excellent goodness of fit.

Table 6.45 shows the Omnibus Test, the Likelihood ratio chi-square test in the OR version. The whole model showed a significant improvement in fit over the null (no predictors) model [$\chi^2(3)=92.679$, $p<0.001$].

Table 6. 45: *Omnibus Test*

Omnibus Test[a]

Likelihood Ratio Chi-Square	*df*	*Sig.*
92.679	3	0.000

Dependent Variable: Efficacy1
Model: (Threshold), Hope1, Resilience1, Optimism1
a. Compares the fitted model against the threshold-only model.

Running the logistic regression through this route will allow one to obtain both Wald tests of the predictors (see test results under Parameter Estimates) and Likelihood

ratio tests (see Tests of Model Effects). For the most part, the p-values from both the tables were consistent.

A closer look at Tables 6.46

Table 6. 46*: Test of Model Effects*

Tests of Model Effects

	Type III		
Source	*Wald Chi-Square*	*df*	*Sig.*
Hope1	31.227	1	0.000
Resilience1	14.352	1	0.000
Optimism1	3.005	1	0.083

Dependent Variable: Efficacy1
Model: (Threshold), Hope1, Resilience1, Optimism1

Parameter Estimates

				95% Wald Confidence Interval		Hypothesis Test				95% Wald Confidence Interval for Exp(B)	
Parameter		B	Std. Error	Lower	Upper	Wald Chi-Square	df	Sig.	Exp(B)	Lower	Upper
Threshold	[Efficacy1=3.67]	7.756	1.7645	4.298	11.215	19.322	1	.000	2336.367	73.549	74217.340
	[Efficacy1=4.17]	8.479	1.6220	5.300	11.658	27.329	1	.000	4814.614	200.407	115667.243
	[Efficacy1=4.33]	10.106	1.5148	7.137	13.075	44.513	1	.000	24497.612	1258.161	476992.317
	[Efficacy1=4.50]	10.435	1.5105	7.475	13.396	47.729	1	.000	34038.764	1763.013	657191.676
	[Efficacy1=4.67]	10.903	1.5071	7.950	13.857	52.344	1	.000	54363.638	2834.659	1042596.344
	[Efficacy1=4.83]	11.359	1.5093	8.401	14.317	56.643	1	.000	85722.872	4450.621	1651098.041
	[Efficacy1=5.00]	12.493	1.5371	9.480	15.505	66.055	1	.000	266357.306	13094.642	5417957.583
	[Efficacy1=5.17]	12.975	1.5502	9.937	16.014	70.058	1	.000	431586.984	20679.385	9007392.028
	[Efficacy1=5.33]	13.631	1.5701	10.554	16.709	75.372	1	.000	831804.006	38329.461	18051334.01
	[Efficacy1=5.50]	14.106	1.5860	10.997	17.214	79.105	1	.000	1336540.965	59706.024	29918953.39
	[Efficacy1=5.67]	14.677	1.6042	11.533	17.821	83.706	1	.000	2365962.886	101985.090	54888223.05
	[Efficacy1=5.83]	15.480	1.6289	12.287	18.672	90.307	1	.000	5280652.661	216848.684	128593321.3
Hope1		1.503	.2689	.976	2.030	31.227	1	.000	4.494	2.653	7.613
Resilience1		.957	.2526	.462	1.452	14.352	1	.000	2.603	1.587	4.271
Optimism1		.367	.2115	-.048	.781	3.005	1	.083	1.443	.953	2.184
(Scale)		1[a]									

Dependent Variable: Efficacy1
Model: (Threshold), Hope1, Resilience1, Optimism1
a. Fixed at the displayed value.

Here, roughly the same information as in the previous table of regression coefficients via OR can be seen. Exp(B), column, and confidence intervals are the essential differences in Table 6.46. The Exp(B) column contains **odds ratios** reflecting the multiplicative increase in the odds of being placed in a higher category for each one-unit increase in the independent variable while the other independent variables remain constant. An odds ratio greater than 1 indicates a higher probability of being in a higher category for the dependent variable when values for the independent variable rise. A ratio of less than 1 suggests a decrease in probability as the independent variables increase.

A ratio of 1 indicated no change in the probability of being in a higher group as the independent variable increased.

Hope is a significant positive predictor of Efficacy. For every one-unit increase on Hope, there is a predicted increase of 1.503 in the log odds of Hope being at a higher level of Efficacy (dependent). This indicates that a founder scoring higher on Hope was more likely to indicate greater Efficacy in practice.

The odds ratio indicates that the odds of being in a higher category of Efficacy increases by a factor of 4.495 for every one-unit increase in Hope.

Optimism was not a significant predictor of the model. [The regression coefficient indicates that for every one-unit increase in Optimism, there is a predicted increase of 0.367 in the log odds of being in a higher level of the dependent variable (controlling for the remaining predictors).]

The odds ratio indicates that the odds of being in a higher category of Efficacy increase by 1.443 for every one-unit increase in Optimism. [Given that the odds ratio is > 1, this indicates an increased probability of being at a higher level on the Efficacy variable as scores increase on Optimism.]

Resilience is a significant positive predictor of Efficacy. The log odds of being in a higher level of Efficacy were 0.957 points higher on average for founders and co-founders. The odds ratio of founders in a higher category for the dependent variable was 2.604 times greater.

This process was performed for all categories, with each dependent variable in the equation, while the others were independent variables.

Table 6.47 shows all the values extracted using Exp(B), the exponent value of the previous log values.

Table 6. 47: *Odds-Ratio for Startups*

Dependent Variable	Exp(B)				Significance Value			
	Efficacy	Hope	Resilience	Optimism	Efficacy	Hope	Resilience	Optimism
Efficacy	-	4.495	2.604	1.443	-	0	0	0.083
Hope	4.759	-	2.522	2.130	0	-	0	0
Resilience	2.892	2.716	-	1.718	0	0	-	0.012
Optimism	1.713	2.651	2.134	-	0.066	0	0.003	-

6.4.4 Control Group

All previous analyses were performed using data collected from the Startup group of participants. To compare these results with the control group of companies, it was essential to conduct a similar statistical program using data collected from the control group.

It was noted in section 6.4.3, that the PsyCap24 Index for startups was almost identical to that of the control group, with the startup's index at 5.01 and the control group at 5.0. These absolute values raise specific questions regarding the similarity between these two indices. In section 6.4.3, under the sub-clause "PsyCap measurement", this whole issue of a general index was commented on and should be looked into in-depth as the index itself does not convey how sure participants differ internally but return similar final indices.

Table 6. 48: *KMO and Bartlett's Test for Control Group*

KMO and Bartlett's Test for Control Group		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.898
Bartlett's Test of Sphericity	Approx. Chi-Square	1422.226
	df	276
	Sig.	0.000

The above sampling adequacy test shows that the data are significant according to Bartlett's $p<0.001$, and the KMO test of 0.898 falls into the "meritorious" range. These results are consistent with the assertion that conducting an EFA and PCA on the data is appropriate.

As it is in this research interest to obtain a similar table for comparison using Log Odds and Odds Ratio, Ordinal Regression and a Generalised Linear Model were used. The data from the control group were also obtained using a Likert questionnaire; thus, using Ordinal logistic regression (OLR) was appropriate.

A significance test will allow the OLR to be applied. The Shapiro-Wilk test was used for data normality. The test showed that all values were $p<0.05$, so they were significant, which implies that the data are NOT normally distributed.

Performing the OLR and GLM, the following data were obtained for the Log Odds and Ratio Odds of the Control group:

Table 6. 49: *Log Odds for Control Group*

Dependent Variable	Exp				Significance Value			
	Efficacy	Hope	Resilience	Optimism	Efficacy	Hope	Resilience	Optimism
Efficacy	-	2.570	1.025	-0.0898	-	0	0.003	0.009
Hope	2.306	-	0.866	1.450	0	-	0.011	0
Resilience	1.049	1.030	-	1.422	0.011	0.015	-	0
Optimism	-0.0864	2.029	1.514	-	0.030	0	0	-

Table 6. 50*:* *Ratio Odds for Control Group*

Dependent Variable	Exp(B)				Significance Value			
	Efficacy	Hope	Resilience	Optimism	Efficacy	Hope	Resilience	Optimism
Efficacy	-	13.07	2.787	0.407	-	0	0.005	0.011
Hope	10.037	-	2.377	4.261	0	-	0.009	0
Resilience	2.854	2.802	-	4.147	0.016	0.015	-	0
Optimism	0.422	7.604	4.544	-	0.029	0	0	-

The above values will be further analysed in Discussion Chapter 7, where a complete analysis of all data will be thoroughly explained.

6.4.5 Complimentary and Robust Analysis

Since the PsyCap Index for Startups and the Control Group in Israel were almost identical, it was decided to run a second Likert questionnaire in a third group designated the “General Public” in Israel. The survey was distributed to a group of doctors, high school teachers, sports clubs, and the general working public. Has the general public had a similar PsyCap Index?

In conjunction with this decision, it was further decided to widen the scope of this research to include Founders and Co-Founders of startups in other countries, including another control group.

For this purpose, founders of startups in Germany, Sweden, and the United Kingdom were targeted with a control group of all Alumni students from the University of

Salford. The results of this decision should effectively illustrate and showcase the differences between entrepreneurs of innovative startups and the general population.

Table 6.51 shows the final results of the collected data sent to the various groups for analysis.

Table 6. 51: *Likert Questionnaire Data Collection*

	Startups				*Control Groups*		
	Israel	*UK*	*Sweden*	*Germany*	*Israel*	*Israel*	*UK*
Total Invitations	8,108	3,879	3,320	3,264	-	-	1,135
Opened	4,283	1,746	1,981	1,917	-	-	306
Unopened	2,947	1,167	1,055	822	-	-	580
Bounced	472	834	223	345	-	-	234
Opted out	406	132	61	180	-	-	15
Clicked through	446	143	130	156	-	-	113
Complete	235	89	99	72	119	71	59
Partial	77	17	8	20	98	24	12
TOTAL Response	312	106	107	92	217	95	71

As presented in the previous section, all new questionnaire data were similarly analysed for sampling and reliability tests. The positive outcomes of these tests are shown in Table 6.52, and demonstrate excellent data reliability and sampling adequacy.

Table 6. 52: *Sampling & Reliability of Collected Data*

	Sampling Adequacy		*Reliability Test*
Startups	*KMO*	*Bartlett's Test (sig)*	*Cronbach Alpha*
Israel	0.816	0.0000	0.821
UK	0.806	0.0000	0.898
Sweden	0.765	0.0000	0.865
Germany	0.628	0.0000	0.802
Control Groups			
Israel Companies	0.898	0.0000	0.905
Israel Public	0.765	0.0000	0.851
UK Salford Alumni	0.752	0.0000	0.835

The culmination of all these tests points to the final results from this data in Table 6.53, showing the differentiation of the Psychological Capital Index among the different groups.

Table 6. 53: *Results as per Psychological Capital Index*

Startups	*Efficacy*	*Hope*	*Resilience*	*Optimism*	*PsyCap Index*
Israel	5.46	5.05	4.89	4.61	5.01
UK	5.48	4.94	5.00	4.78	5.05
Sweden	5.57	4.94	5.01	4.60	5.03
Germany	5.46	4.94	4.92	4.65	4.99
Control Groups					
Israeli Companies	5.47	5.05	4.85	4.62	5.00
Israeli Public	5.22	4.92	4.84	4.51	4.87
Salford Alumni	5.43	4.98	4.70	3.86	4.74
28 Published Studies (2.92 low to 4.83 high) Mean = 4.28					4.56*

*Note: *Median*

Further analysis was performed using the data on age groups and education.

Figure 6. 7: *Age Groups in Percentages per Countries*

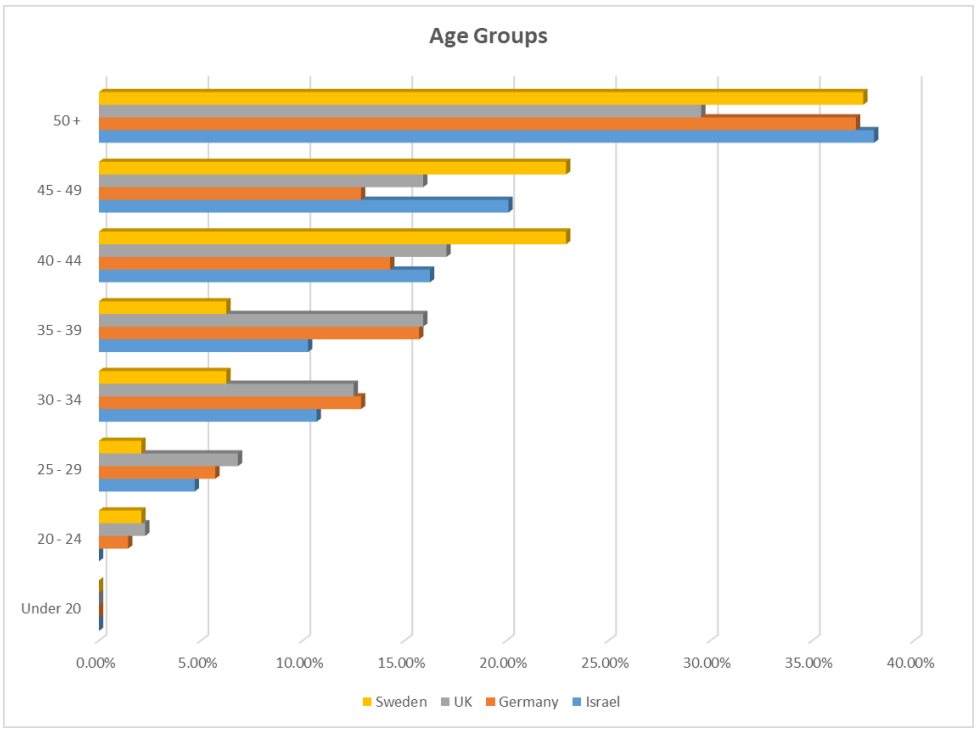


Figure 6. 8: *Degrees of Education*

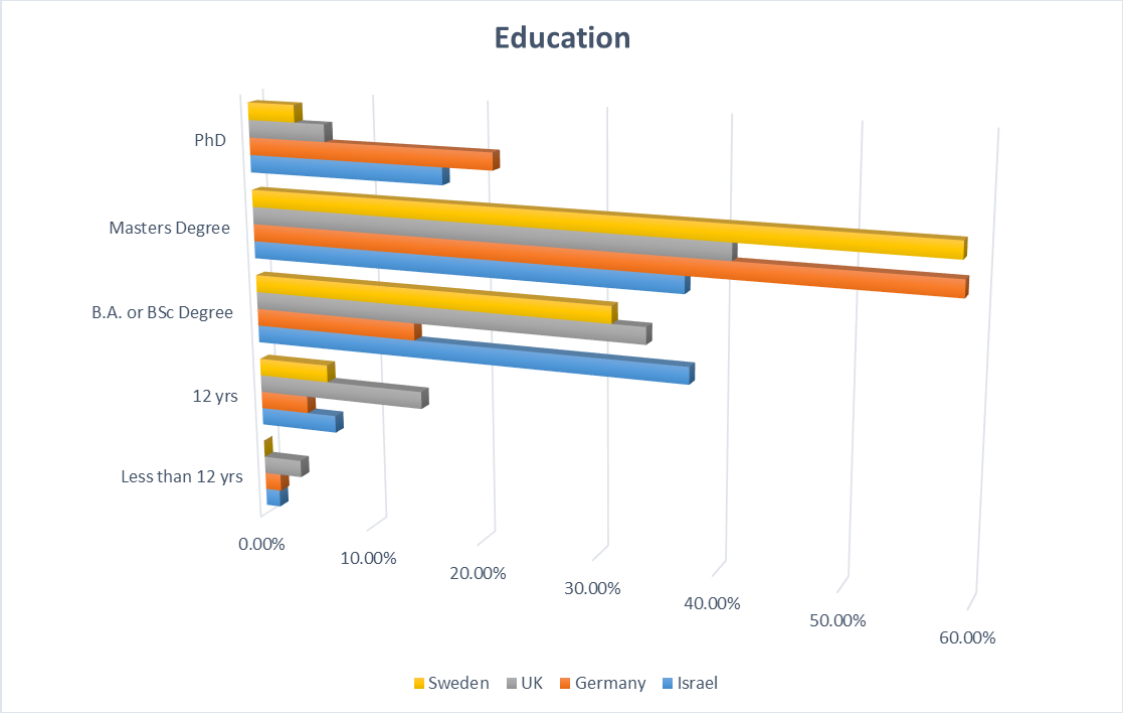


Table 6. 54: *Psychological Capital Index corresponding to Education and Age*

	Highest level of school or the highest Academic degree				
	Less than 12 yrs	*12 yrs*	*B.A. or BSc Degree*	*Master's Degree*	*PhD*
Israel	4.92	5.18	5.02	4.96	5.03
UK	5.22	5.35	4.93	5.04	5.06
Sweden	-	5.14	5.02	5.08	5.08
Germany	4.83	5.46	4.89	4.96	5.20

	Age Group						
	20-24	*25 - 29*	*30 - 34*	*35 - 39*	*40 - 44*	*45 - 49*	*50 +*
Israel	-	4.77	4.86	5.04	4.97	4.99	5.09
UK	4.81	4.79	5.11	4.90	5.11	4.99	5.20
Sweden	5.33	4.96	4.94	4.99	5.07	5.02	5.11
Germany	4.88	4.76	4.90	4.81	5.10	5.08	5.15

Figure 6. 9: *PsyCap Index vs Age Group*

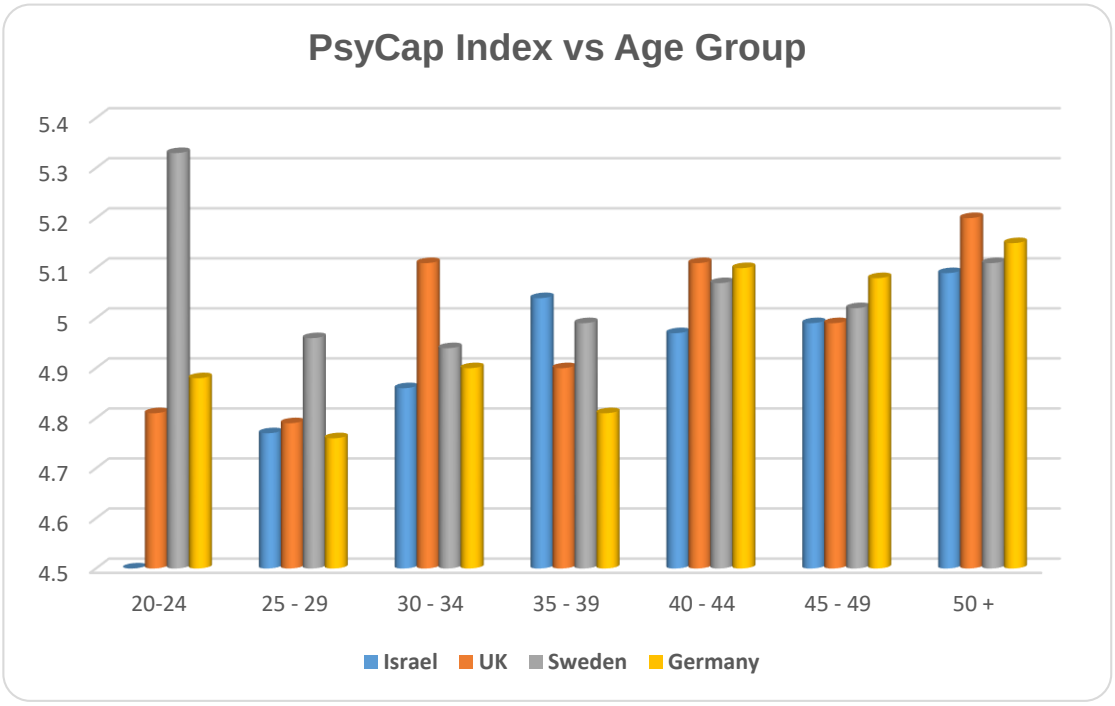
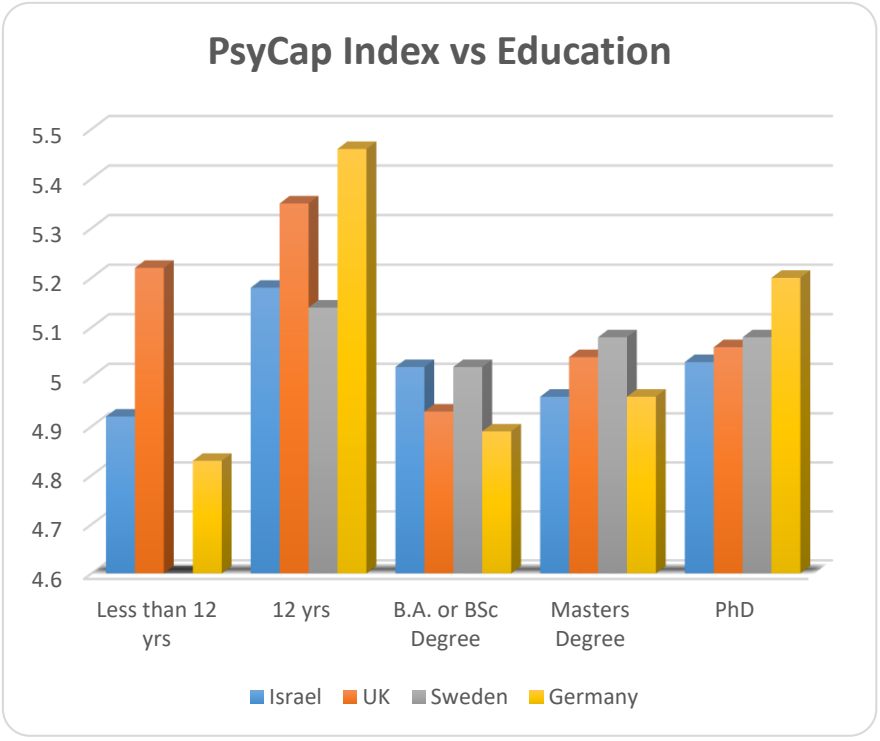
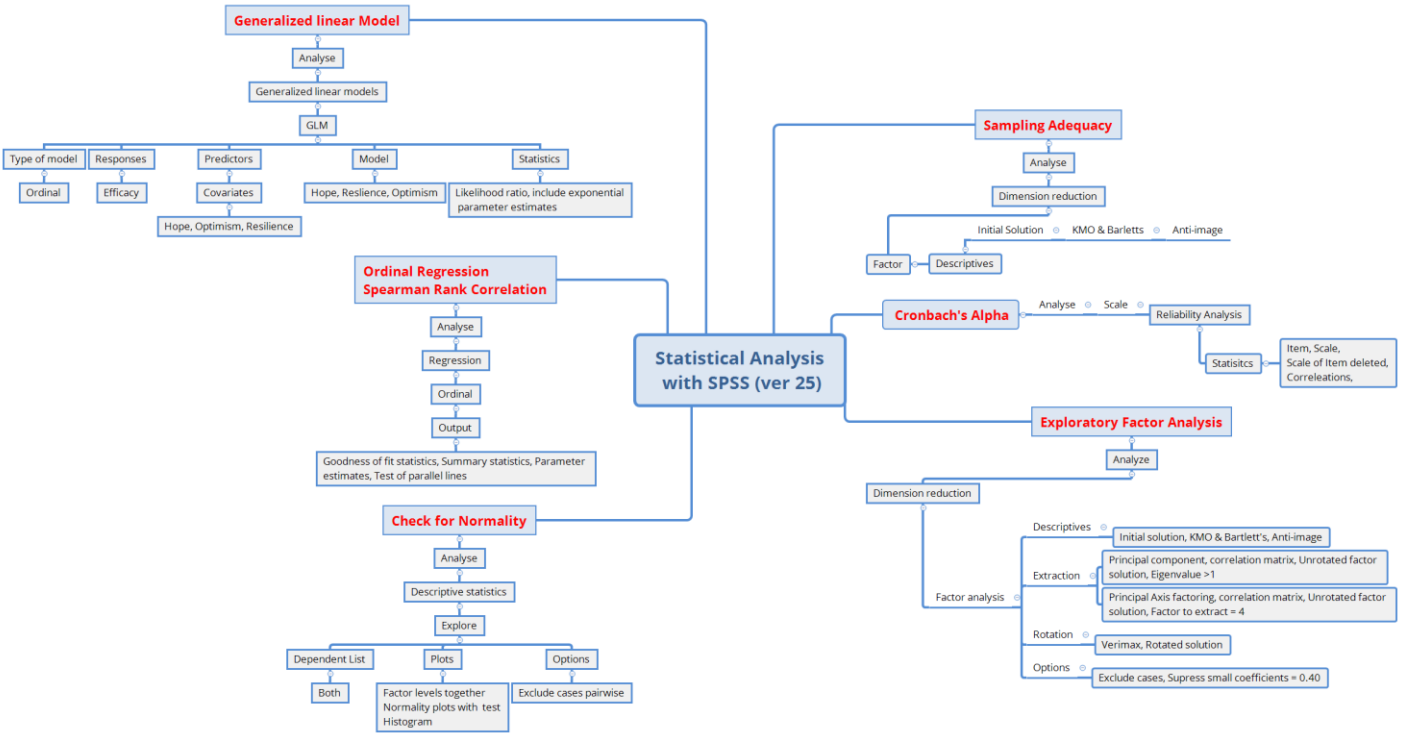


Figure 6. 10*: PsyCap Index vs Education*



6.4.6 Mind Map of the Statistical Methods Applied



The above Mind Map will enable future researchers to repeat the reported statistical analysis shown in this research concerning Startups in Israel.

CHAPTER 7: THE RELATIONSHIP BETWEEN PSYCAP IN STARTUPS AND FDI

The results of this study have showcased Psychological Capital and Foreign Direct Investment, and this chapter will show what influences or causes PsyCap to be high in founders of startups and how startups influence FDI inflow into the country. Both elements have never been investigated, and the findings of this research have demonstrated the inherent connection between hidden variables in founders and co-founders of startups and the long-term causality and influence of startups with FDI.

7.1 Initial Findings concerning Startups

RQ1: What are latent factors that affect entrepreneurs in Israel venturing into startups?

From the data collected using a Likert questionnaire distributed to founders and co-founders of startups in Israel, the initial PsyCap Index was calculated and compared in Table 7.1 with a Control Group of companies and a second control group taken from the general population. These indices were also compared with 28 different studies published worldwide.

Table 7. 1: *PsyCap Index Results*

	Mean		*Std. Deviation*	*Variance*
	Statistic	*Std. Error*	*Statistic*	*Statistic*
Startups in Israel	5.0059	0.02676	0.41028	0.168
Control Group of Comp. in Israel	5.0046	0.05208	0.56810	0.323
General Public in Israel	4.8700	0.06471	0.41436	0.172
28 Research Results	4.2522	0.11764	0.61126	0.374

The above results show, that both the Startups and the Control group of companies in Israel have similar PsyCap indices of 5.01 and 5.00, respectively, compared to the Israeli general public and the other research results; they are relatively much higher. Generally, all results from Israel are markedly higher than those from the other 28 types of research. The spread of the 28 research results ranges from a low of 2.92 to a high of 4.83. This places the Israeli public at the top end of the range compared previous research.

Psychological capital gives people the mental toughness they need to deal with demanding work conditions. The PsyCap Index incorporates four second-order variables (Luthans et al., 2005): self-efficacy, hope, resilience, and optimism. Recent studies have shown that the PsyCap Index correlates with many work settings, including higher enactment and more positive work-related approaches. In a study by Avey et al. (2009), there was a negative correlation between total PsyCap index and stress-related symptoms. Further research by Avey et al. (2011) concluded that job stress is negatively related to PsyCap and adverse behaviour.

For instance, those who trust their abilities feel that they can accomplish everything that they set out. This may assist in alleviating the tension of knowing that one is not equipped to handle a task (Schaubroeck & Merritt, 1997). Individuals who strongly believe in their abilities and are optimistic think they will succeed in virtually any scenario (Hmieleski & Baron, 2009). Again, this may assist in relieving the tension. People who are high in hope can picture various routes that will help them overcome their work-related stress, helping them remain calm despite obstacles (Snyder et al.,1996).

In the final analysis, resilient people have experienced challenging situations in the past, and as a result, they believe they will be able to confront new challenges successfully without feeling powerless and stressed (Tugade et al., 2004). Accordingly, theoretical and empirical studies have shown that emotional capital can serve as an efficient buffer against stress.

The Schneider attraction-selection-attrition (ASA) model explains why organisations are the way they are. The members of an organisation have the same psychological characteristics. Therefore, individuals were drawn to, selected by, and kept in these groups. A fascinating outcome materialised when the ASA was applied to entrepreneurs. Many people are drawn to entrepreneurship for various reasons. Such as the economic factors or the idea of becoming some "hero". It is important to understand the primary reasons for this desirability, as this could be a catalyst for creating a population of entrepreneurs.

Entrepreneurs experience immense stress in their endeavours to create and develop new ventures. There is generally an unpredictable environment in which they operate, usually with high risks and swift and unpredictable changes. The strain and

stress are intense regarding financial limits and constant worry about their employees' responsibilities. Research by Jex and Beehr (1991) and Xie et al. (2008), concluded that entrepreneurs experience very high stress levels. Other studies have shown that performance can be improved if the stress levels are low and impaired in different business situations due to a high level of stress (Gilboa et al., 2008). The conclusion to this aspect of stress is how it can interfere with an entrepreneur's performance regarding a new startup or venture. Ability to handle stress may be a factor in business success. According to Fine et al. (2012), using the ASA theory, people drawn to entrepreneurship generally become entrepreneurs and inevitably remain in this career and tend to cope with stress more proficiently than others.

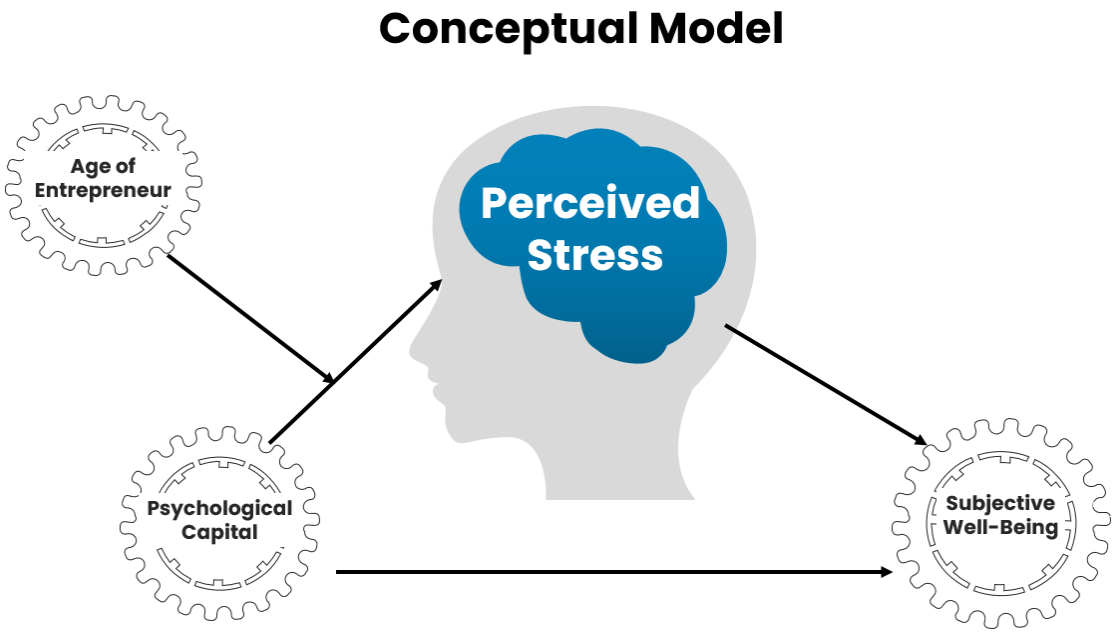
Once the process behind producing an above-average founder population of entrepreneurs is understood, the question that emerges when using ASA theory is: What factors promote founding populations of high-capacity entrepreneurs who can cope with stress well? Self-selective variables and external factors play a part in this influence. First, turning to the environment paradigms, study how venture capitalists and others decide what the next paradigm will be, showing that they are paying attention to the features of the entrepreneurs - their skill sets, experience, knowledge, and mindset, in addition to their "passion," which refers to their strong dedication to the job of the entrepreneur (Chen et al., 2009). Although venture capitalists (VCs) and other sources of startup capital frequently report that they weigh founders' characteristics more heavily than the quality of the startup idea or business concept, venture capitalists and other sources of startup capital report that they heavily weigh startup founders’ characteristics. The higher someone’s ability to deal with stress, the more likely they are to be chosen. VCs look for other traits, including entrepreneurs' ability to cope with stressful situations (Wright et al., 1997).

There is solid confirmation that there are various inherent characteristics embedded in an entrepreneur (optimism, self-efficacy, positive dispositional affect, and others) - (Baron, 2012; Baron et al., 2011; Baron et al., 2012; Hmieleski & Baron, 2008; Rauch & Frese, 2007). Busenitz and Barney (1997) find that entrepreneurs tend to take lower risk factors in certain circumstances. This could serve as a selective factor because risk is often related to stress.

In a detailed study by Baron et al. (2016), the following relations existed with Psychological Capital in founding entrepreneurs:

- "The relationship between psychological capital and stress was *significant and negative*.
- The relationship between stress and subjective well-being is *significantly negative*.
- The relationship between psychological capital and subjective well-being is *significant and positive*.
- The indirect effect of psychological capital on subjective well-being (via perceived stress) is contingent on the age of the entrepreneur, such that the indirect effect increases as the age of the entrepreneur increases."

Figure 7. 1: *Conceptual Stress Model*

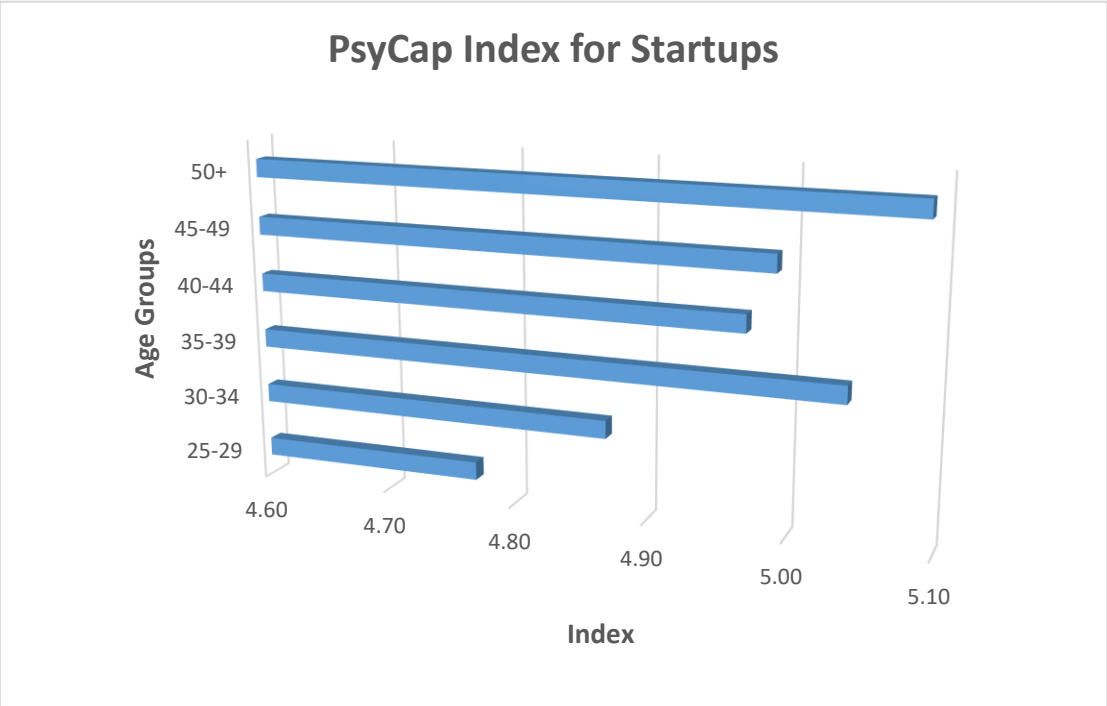


The above study results show that the indirect relationship between entrepreneurs' psychological capital and their level of subjective well-being (via perceived stress) is moderated by age. The relationship is more substantial (i.e. more positive) for older entrepreneurs than younger ones.

The survey results were obtained from a population of 170 business founders instead of this research paper of 235 completed questionnaires. The PsyCap Index obtained was 4.38 compared to 5.01 obtained with the founders of Startups in Israel. The above results also prove that the relationship between psychological capital and stress was significant and positive, meaning that the higher the PsyCap index, the less stress there is to be found in entrepreneurs. This finding also showed a positive relationship

with subjective well-being. Clear differences in age and its influence on stress and subjective well-being are shown in Figure 7.2.

Figure 7. 2*: PsyCap Index for Startups vs Age Group*



As age progresses, the PsyCap Index for the Israeli founders of Startups increases considerably, verifying previous research studies but also enhancing the fact that the PsyCap index for Israel is much higher than any other research, which could point to the possible reasons for such a significant impact of new startups in Israel.

A further indication of the relevance of the above findings was compared with a national stress survey conducted by (Cohen & Janicki-Deverts, 2012) which covered many other occupational groups. The results showed that entrepreneurs reported lower levels of stress than did all other groups.

Applying Schneider's ASA theory to the founders of startups implies that as a group – both environmental and self-selection factors – are above the average tolerance level of managing stress (Schneider, 1987; Schneider et al.; 1995). The outcome was that they reported relatively low stress levels. As Kuhn (2000) explained, based on the ASA theory, these findings are dependable as individuals get older, accrue life experience, enhance their skills and knowledge, and can thus tolerate stress more efficiently than younger people.

The last definition discussed above detailes people's overall contentment with their lives; this phrase is subjective well-being, overall productivity, more income, professional success, job satisfaction, and a broader and richer range of social connections (Pinquart & Sorensen, 2000). It is also closely associated with physical and psychological health, as Lyubomirsky et al. (2005) and Xu and Roberts (2010). Furthermore, this study shows that a person's psychological capital influences their subjective well-being (Diener, 2000).

This may be restated as entrepreneurs' psychological capital positively impacting their overall well-being. Subjective well-being has several advantages. Thus, this results is significant. Moreover, they may help entrepreneurs in various ways. For instance, they may contribute to personal health and vitality, establish strong social networks, and improve productivity.

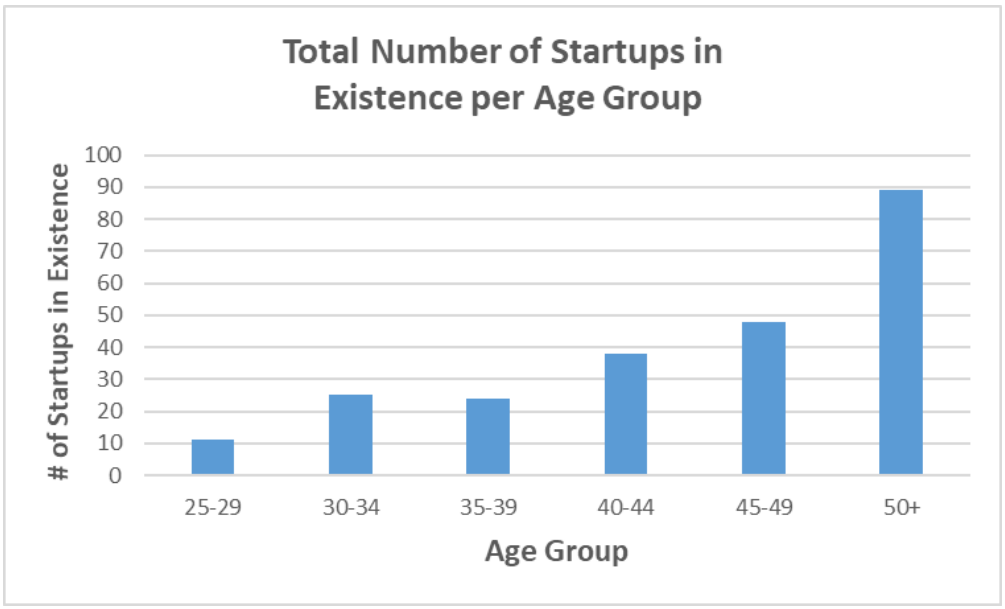
Entrepreneurs should learn to cope with and manage stress effectively. According to Lehrer et al. (2007), there are many ways to acquire these skills. The most valuable assets for entrepreneurs are the latent variables of Psychological Capital: hope, efficacy, resilience and optimism. It has been shown that the higher the PsyCap Index, the more efficient the entrepreneur is in entertaining the various complicated problems of a new venture or startup. The higher the PsyCap index, the higher is the subjective well-being of the entrepreneur, which could expand the definition of “success” for founders of startups to include personal life satisfaction.

- *RQ2: Does age affect these latent factors?*

Previous studies have shown that age affects the PsyCap Index. This research has shown in Figure 7.2 above that as age increases; there is a definite and positive increase in the PsyCap index, which inevitably has a negative impact on stress and a positive impact on subjective well-being.

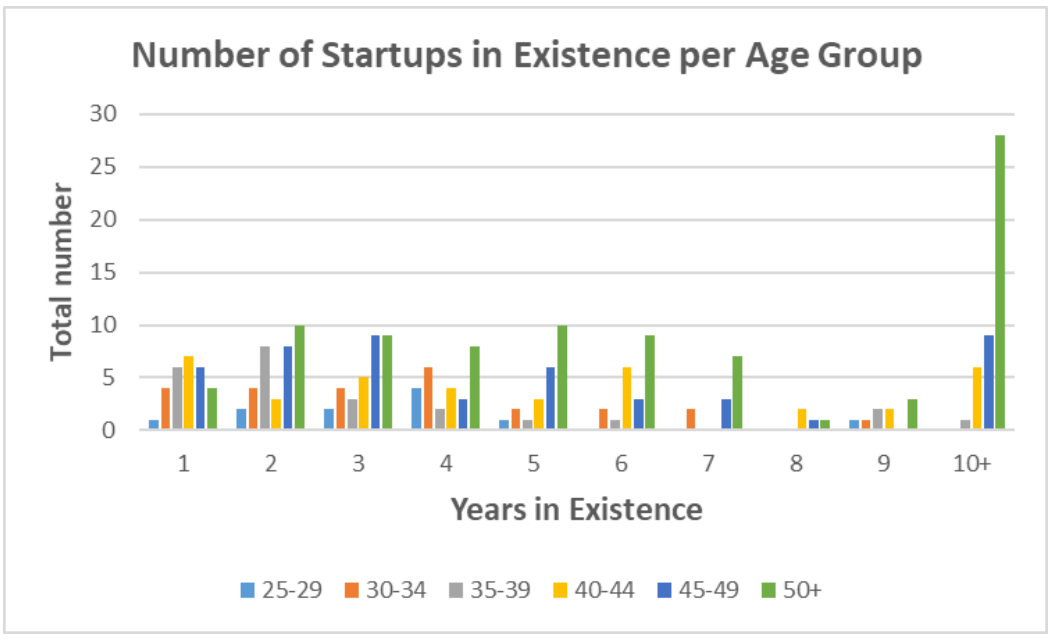
The following two Figures, 7.3, and 7.4, enhance this finding that there is a specific correlation between age and number of years; startups in Israel exist. In Figure 7.3, it shows that the total number of startups in Israel positively correlates with age. As age increases, more startups exist per age group.

Figure 7. 3: *Total Number of Startups in Existence per Age Group*



In Figure 7.4, it shows how the age groups were divided per year of existence. In every year of existence, the higher age groups are dominant.

Figure 7. 4: *Number of Startups in Existence per Age Group*



Breakdown of the PsyCap Index into its components confirms that age positively influences each latent variable. In Table 7.2, the values of the latent variables and PsyCap Index increase as age advances in the Startup group.

Table 7. 2*: Latent variables mean values - Age Group for Startups*

	Age Group					
	25 - 29	*30 - 34*	*35 - 39*	*40 - 44*	*45 - 49*	*50 +*
	Mean	*Mean*	*Mean*	*Mean*	*Mean*	*Mean*
Efficacy	5.29	5.34	5.46	5.39	5.39	5.60
Hope	4.89	4.95	5.15	5.03	5.02	5.09
Resilience	4.76	4.67	4.86	4.93	4.86	4.99
Optimism	4.15	4.51	4.71	4.52	4.70	4.67
PsyCap24	4.77	4.86	5.04	4.97	4.99	5.09

Similar results were obtained for the Control Group (Table 7.3).

Table 7. 3*: Latent variables mean values - Age Group for Control Group*

	Age Group			
	35 - 39	*40 - 44*	*45 - 49*	*50 +*
	Mean	*Mean*	*Mean*	*Mean*
Efficacy	5.56	5.37	5.52	5.47
Hope	5.21	5.12	4.99	5.05
Resilience	4.92	5.02	4.73	4.85
Optimism	4.79	4.43	4.68	4.62
PsyCap24	5.12	4.98	4.98	5.00

- *RQ3: Is there a positive or negative influence between certain latent variables?*

PsyCap comprises four components with a shared theoretical link (hope, efficacy, resilience, and optimism). According to Luthans et al. (2007, p.550), it has been classified as a *"positive appraisal of circumstances and probability of success based on motivated effort and perseverance"*. It has been categorised empirically and conceptually as a second-order core factor (Luthans et al., 2007).

Sweetman et al. (2011), showed that there is a positive relationship between a positive psychological capital and creative performance. This study investigated four components of PsyCap as predictors of creative performance. The overall PsyCap Index predicted creative performance over and above four individual components.

Creativity defined as the suggestion of unique and valuable ideas and solutions to challenges (Sternberg & Lubart,1999). Sezgin and Erdogan (2015) reported that hope strongly influenced self-efficacy. Avey et al. (2008) found that hope increases self-efficacy. The creative domain, in which self-efficacy is part of, initiates from four discrete sources: problems are often solved using tried-and-true techniques or experience and faced with uncertainty, and people rely on their unique abilities, ideas, and experiences (Bandura, 1977, 1986). Hope affects each element of self-efficacy. According to Snyder (2000), individuals with high hopes have more successful experiences because they have more opportunities to try and are more willing to brace themselves for difficulties.

People with abundant hope are motivated to identify feasible paths and attain their objectives (Snyder,2002; Shalley & Gilson, 2004). This increase in hope affects individuals' self-efficacy in coping with creative problems.

Self-efficacy has been coined as believing in oneself to manage one's behaviour and achieve the required results successfully. Previous literature has found a positive relationship between hope and self-efficacy (Sergin & Erdogan, 2015). Other studies have shown that success positively correlates with efficacy (Bandura, 1977, 1993; Mills et al., 2007; Zeldin et al., 2008). It has also been shown by Akhtar et al. (2013) that there is a relationship between efficacy and academic optimism. A further study by Amy et al. (2004) and five other studies have shown that there is also a relationship between Hope and Optimism.

This research used Ordinal Regression after verifying that the data were not normally distributed using a Likert Scale by first performing a Spearman Rank Correlation test. Each of the four PsyCap factors (efficacy, hope, resilience and optimism) was calculated as the dependent variable, while the others were incorporated as dependent variables. This first analysis created regression coefficients interpreted as the predicted change in Log Odds of being in a higher (as opposed to a lower) group or category for the dependent variable (controlling for the remaining independent variables) per unit increase in the independent variable. A further technique was used with the Generalised Linear Model to overcome the specific disadvantages of the primary method to obtain the Odds Ratio (OR) of the four participating components of psychological capital. The Odds Ratio indicates the increasing probability of a case falling at a higher level of the dependent variable. In Table 7.4, each component's PsyCap Index results show that

each component is a dependent variable against the other three. This table also shows the results for Startup, Control, and the General Public.

Table 7. 4: *The Positive Odds Ratio relationship between Latent variables on each Dependent variable*

Dependent Variable		Efficacy	Hope	Resilience	Optimism
Efficacy	Startup	-	**4.495**	2.604	1.443*
	Control Group	-	**13.07**	2.787	0.407
	General Public	-	3.177*	5.169	0.561*
Hope	Startup	**4.759**	-	2.522	2.130
	Control Group	**10.037**	-	2.377	**4.261**
	General Public	2.949	-	3.452	2.154
Resilience	Startup	2.892	2.716	-	1.718
	Control Group	2.854	2.802	-	**4.147**
	General Public	4.697	4.911	-	1.388*
Optimism	Startup	1.713	2.651	2.134	-
	Control Group	0.422	**7.604**	4.544	-
	General Public	0.594	2.544*	2.034	-

- *Statistically non-significant at 0.05*

The odds ratio reflects the multiplicative change in the odds of being in a higher category for the dependent variable for every one-unit increase in the independent variable. An odds ratio greater than 1 indicates a higher probability of being in a higher category for the dependent variable when values for the independent variable rise. A ratio of 1 indicated no change in the probability of being in a higher group as the independent variable increased. A ratio less than 1 suggests a decrease in probability as the independent variables increase.

These results indicate that the latent variables are positively related and have a cause and effect. The effect of Hope on Efficacy was dominant in all three groups. The

startup group's data indicate that for every one-unit increase in hope, the odds of being in a higher category of efficacy increased by a factor of 4.495. In the control group, the same increase in hope resulted in an increase in the efficacy odds of 13.07. In other words, there is a positive relationship between Hope and Efficacy, which ultimately correlates with all previous studies that showed the same positive effect.

A similar result can be obtained from the relationship between Hope and Optimism, Resilience and Optimism. In summary, it can be seen that by using the Odds Ratio, each component of the PsyCap Index has a causal effect on the other, which ratifies all previous studies using various positive psychological methods pertaining to Psychological Capital and its collective results.

7.1.1 Comparison between the Startup and Control Groups

The results of the PsyCap Index for the Startup group showned a 5.01 figure compared to the control group of 5.00. However, the Startups are far above any other group tested in 28 studies, including the Israeli general public. The dilemma put forward here is why the control group has a similar index to entrepreneurs of startups.

In the previous sections, it was shown that there is a positive relationship between an increase in PsyCap and age. Age in both groups was compared to PsyCap (Figure 7.4 and Table 7.5). There was a distinct difference in age at the beginning of each group. The startup group begins with younger founders, while the control group, which comes from the top management of regular operating companies, has an initial starting point of 35-39 years compared to 25-29 years for startups. In addition, PsyCap for the Startup group increased steadily over the years, as age increased. However, the PsyCap for the control group starts at a high level but then peters off slightly as age increases.

Another prominent and relevant factor is the initial remarkably high PsyCap index of 35-39 for the Control Group. Another point of comparison is that the PsyCap index is almost at its highest in the Startup group, but gradually increases, whereas the Control group does not.

Figure 7. 5: *Age group comparison with PsyCap*

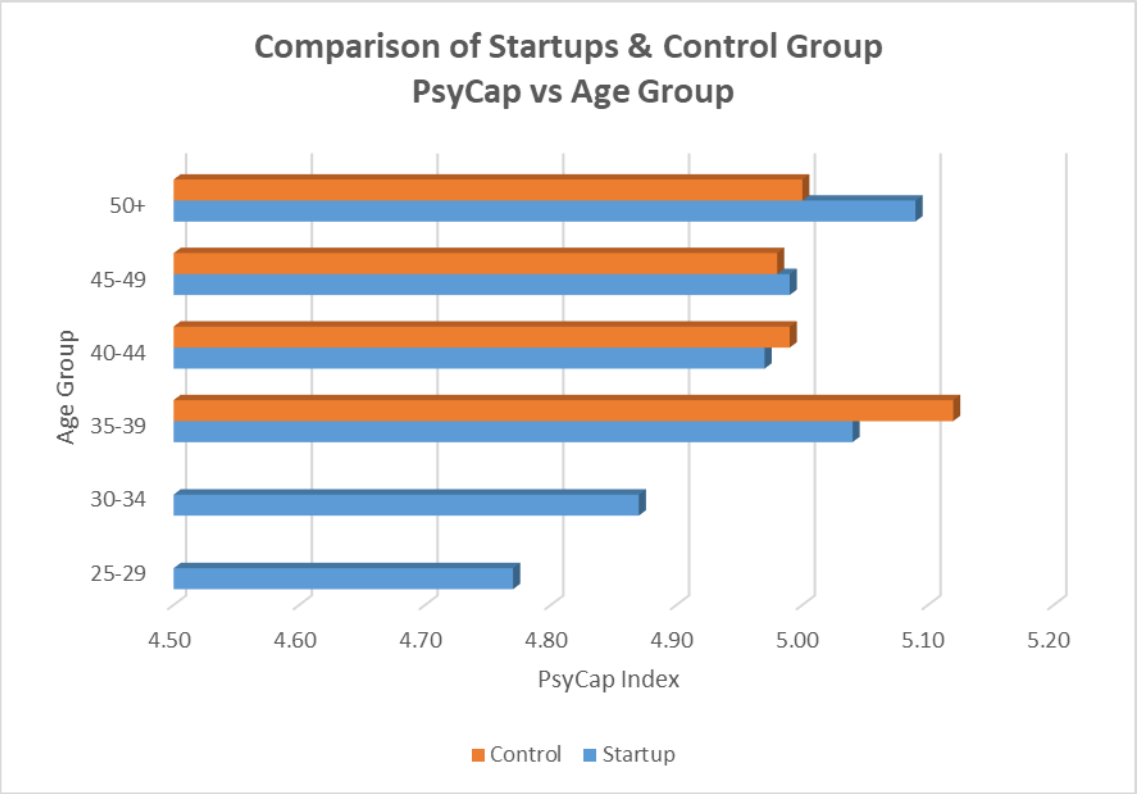


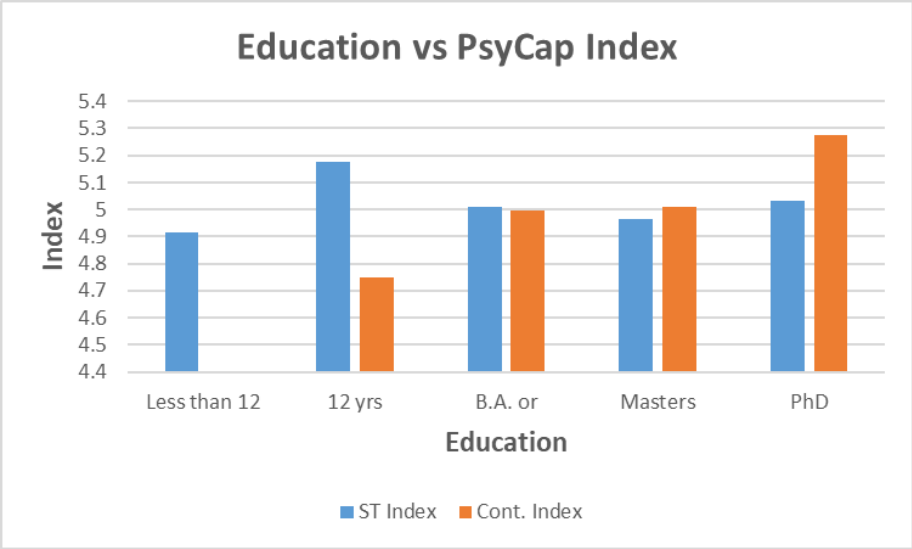
Table 7. 5: *PsyCap Index vs Age Group for Startups & Control Group*

Age Group	*Startups*	*Control Group*
25 – 29	4.7727	-
30 – 34	4.8650	-
35 – 39	5.0434	5.12
40 – 44	4.9704	4.99
45 – 49	4.9922	4.98
50+	5.0866	5.00

A possible explanation is the concept of Socioeconomic Status (SES), defined as an individual or group's social standing or class. This is often measured as a combination of education, income and occupation. Examinations of socioeconomic status often reveal inequities in access to resources, and issues related to privilege, power and control.

Yang et al. (2020) demonstrated a connection between SES and Hope and Self-Efficacy and creativity. These results fit into the PsyCap category, where Hope and Efficacy are components, and confirm previous studies by Sergin and Erdogan (2015). Looking at the aspect of education, Figure 7.6 shows that, on average, the education level of the control group was slightly higher than that of the Startup group when measured against the PsyCap index.

Figure 7. 6: *Education vs PsyCap Index*



The collected data show that senior managerial positions in the control groups started at 35 and above. These people have obtained good higher education, have an occupation in the relevant field, and are in an excellent economic position. This would fit the socioeconomic status of people looking for power and privileges.

In this age group of 35-39, both the Startup and Control groups of individuals reached the highest point on the index chart. This increases in the startup group whereas the control group loses ground. Previous research has shown that this group has a relationship between hope and efficacy.

Reverting to the Attraction-Selection-Attrition (ASA) theory previously discussed, it has recently been suggested, although with caveats, that a separate but similar question be asked: Why do people choose to join and stay in certain professions or occupations? Some ASA theory procedures may be applied to career decisions and the selection of particular organisations or companies. Generally speaking, people begin

choosing a job or employment because they believe that their attributes, abilities, and motivations align with the demands of the profession. Only those who realise that they can perform well in the selected profession or job will apply. Finally, people drop out of the profession if they find that the demands of the field do not match their talents, traits, or interests. Long-term studies have supported the notion that these processes influence career selection and retention (Ployhart et al., 2006).

Here again, a possible explanation is that once this managerial position has been obtained, including financial stability, prestige, and possible power, the will to increase latent variables such as hope, efficacy, resilience and optimism is less acute for further advancement. However, the starting point of the control group at the age of 35 and above has a definite advantage with an initial high PsyCap index, which can explain the final total high score compared with the startup group. It must also be considered that the Israeli public has inherently high PsyCap. These potential managers emerge from this community with extra inherent psychological capital capabilities but no original idea that could push them towards a new startup.

Complimentary and Robust Analysis

Since there could be ambiguity in interpreting the results for the control group “Israeli Companies”, it was decided to run a second Likert questionnaire in a third group designated the “General Public” in Israel. The survey was distributed to a group of doctors, high school teachers, sports clubs, and the general working public. Does the general public have a PsyCap Index similar to Israeli companies and Startups founders?

In conjunction with this decision, it was further decided to widen the scope of this research to include Founders and Co-Founders of startups in other countries, including another control group.

For this purpose, founders of startups in Germany, Sweden, and the United Kingdom were targeted with a control group of Alumni students from the University of Salford.

The outcome of this decision unequivocally shows a distinct difference between the PsyCap Index for founders of startups and all other control groups, enhancing and endorsing the fact that latent factors affect entrepreneurs in Israel and other countries venture into startups. The results are presented in Table 7.7.

Table 7. 6*: Results as per Psychological Capital Index*

Startups	*Efficacy*	*Hope*	*Resilience*	*Optimism*	***PsyCap Index***
Israel	5.46	5.05	4.89	4.61	5.01
UK	5.48	4.94	5.00	4.78	5.05
Sweden	5.57	4.94	5.01	4.60	5.03
Germany	5.46	4.94	4.92	4.65	4.99
Control Groups					
Israeli Companies	5.47	5.05	4.85	4.62	5.00
Israeli Public	5.22	4.92	4.84	4.51	4.87
Salford Alumni	5.43	4.98	4.70	3.86	4.74
28 Published Studies (2.92 low to 4.83 high) Mean = 4.28					4.56*

*Note: *Median*

7.2 Initial Findings concerning Foreign Direct Investment (FDI)

The previous section highlighted the positive effects of Psychological Capital has on Founders and co-founders of startups and their influence on strengthening the Startup ecosystem. This increase in the number of startups has a direct long-term causality effect on FDI, which is discussed further in this section.

- RQ4: Is there independence between FDI and Startups in Israel?

This study evaluated whether startups in Israel have a long- and short-term causality effect on the flow of Foreign Direct Investment into the country. Many theories outlined in the literature review explain how and why FDI influences economic growth in different countries. Hundreds of studies have been published, each relating to a different country or group while using specific dependent variables applicable to each country as perceived by the researcher.

Since its inauguration 70 years ago, Israel has advanced from a developing country to what is now called a "Startup Nation". This connotation has intrigued many, but little has researched the factors stimulating this success. Most studies on FDI have concentrated on macroeconomic effects, highlighting the possible positive implications of FDI inflows on countries' economic flow.

This study takes a different approach to evaluate the influence of FDI. We hypothesise that startups in a country have a positive causality effect on FDI, meaning that the effect of FDI inflow into the country is caused by the number of new innovated startups entering the economy during any financial year. The questions of who is pushing and who is pulling can arise.

Fernandez-Arias and Montiel (1996) studied the Push-and-Pull theory closely (push-and-pull theory. Kurul (2017) also evaluated the non-linear relationship between institutional factors and FDI flows using push and pull variables.

The "pull" theory asserts that improving domestic policy conditions draw FDI inflows to the receiving nations. The lower profits offered by creditor nations play an essential role in the "push" concept. Previous research has shown that government policies often undergo considerable changes just before the inflow phase in countries with significant capital inflows (Montiel, 1995). Global long-lasting variables are more likely to be responsible for influx phenomena than idiosyncratic, short-lived ones are. This finding demostrates the importance of country-specific traits. However, this does not imply that these country-specific variables generate capital inflows, as pull narrative claims.

The data collected have show that international interest rates have declined over time, which can explain, to a certain extent, the increase in the observed degree of FDI inflow. Alternatively, changes in domestic elements or foreign variables other than financial asset returns cannot be excluded from the discussion, and all possibilities should be included.

Empirical studies have shown that *startups in Israel have long-run Granger causality with FDI inflow into the country*. The results also confirm that this is a one-way association, as they show that FDI does not have a causality effect on startups.

Three dependent variables were added to the equation to strengthen the bivariate causality of startups with FDI to verify that there is still a long-run causality effect with FDI. The variables added are inflation, the IMPEX index (openness of the economy), and the Heritage index (economic freedom). With the Independent variable Startup, these three variables incorporate many single variables listed in previous studies. The Impex variable (Import + Export)/GDP incorporates three singular variables, whereas the

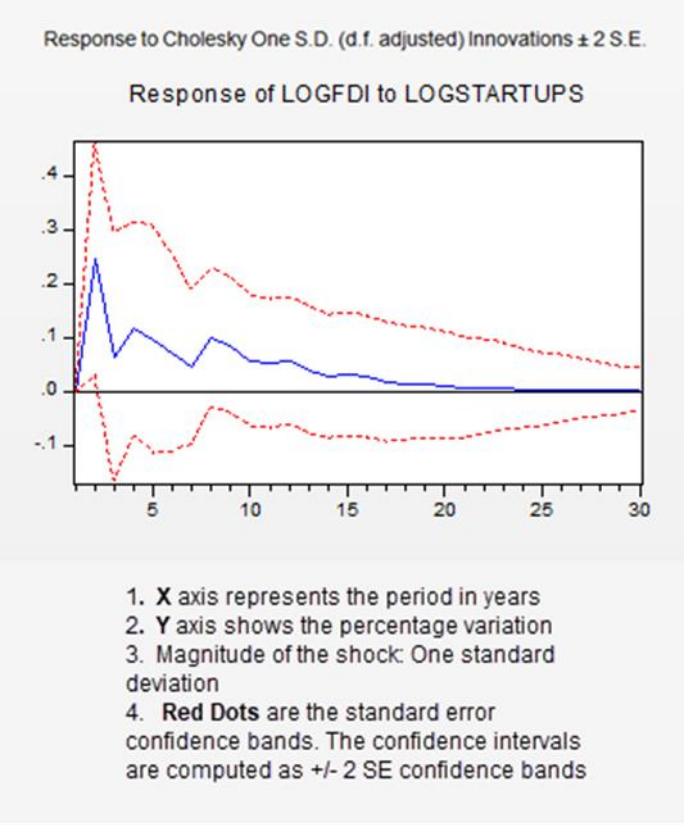
Heritage Index includes twelve different variables. The rationale was to try and incorporate as many variables as shown in several previous research papers, on the one hand, but to be as efficient as possible when implementing a VECM analysis.

This improved multivariate equation using the VECM shows that all four dependent variables in the Israeli economy have long-run causality with FDI. All variables have positive coefficients, except for inflation, which has a negative coefficient. This output demonstrates that Startups, Impex, and Heritage have a positive long-run causality effect on FDI, and that inflation has a negative effect. These results conform to the economic theory. These variables did not affect the original hypothesis that startups in Israel have long-run causality with FDI. These final results were verified using Impulse Response Shock for 30 years under research.

A further sign of the strength of these results was demonstrated by applying a robust analysis (see Appendix A) that includes GDP and GDP per capita as independent variables. For more than 60 years, these two variables have been included in almost all research papers. As explained above, this study has excluded these variables but has chosen three other independent variables, which are sufficient to prove the hypothesis according to the researcher of this study. Further analysis was conducted to strengthen this decision, including GDP or GDP per capita.

This robust study showed that adding these variables to the three different equations did not change the result that startups have a long-run causality effect on FDI. The impulse response shock in Figure 7.7 emphasises that over 30 years, startups have a permanent long-run causality effect in Israel with FDI.

Figure 7. 7: ***Impulse response shock for multivariate equation (1990 – 2019)***



- *RQ5*: Is there interdependence on Startups in other countries?

The effects of this bivariate analysis in the Israeli market apply to seven other countries, except for China. Innovative startups influence the inflow of foreign direct investment into the country, which can help government policies in different countries develop specific programmes towards this objective.

The positive results obtained from the Israeli market posed a possible dilemma if they were obtained in the countries listed in this research. A pooled panel analysis using the ARDL model was chosen for this purpose. From the bivariate analysis of the eight countries, all except China had a long-run causality with FDI. This fact was considered when choosing countries to participate in the panel analysis. The countries chosen were: Australia, Canada, China, Germany, Sweden, Switzerland, the United Kingdom and the United States of America. China was included so that the original eight countries could be evaluated together, excluding Israel, although China in the bivariate analysis was negative.

The results of the panel data show that all four independent variables have a long-run association with FDI, confirming the results obtained from the Israeli market. This outcome strengthens and ratifies the argument that startups play a significant role in developing an economy by influencing the inflow of FDI into the country.

The outcome of these results is shown again in Table 7.8, emphasising the importance of this research in demonstrating that the long-run causality shown in the Israeli market can be applied to other countries, with a statistical significance of 1%. This finding could have an enormous impact on the economic decisions of different countries and an opening for future research (see Table 7.9).

Table 7. 7: *ARDL Model*

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.**
	Long Run Equation			
HERITAGE – Economic Freedom	3.56E+09	4.79E+08	7.438335	0.0000
STARTUPS	28902878	9761298.	2.960967	0.0037
LnINFLATION	-9.04E+09	1.61E+09	-5.625626	0.0000
DIFFLnIMPEX – Openness of the Economy	1.32E+11	1.28E+10	10.29905	0.0000
	Short Run Equation			
COINTEQ01	-0.658695	0.167289	-3.937475	0.0001
D(HERITAGE) – Economic Freedom	2.96E+09	4.64E+09	0.638080	0.5246
D(STARTUPS)	18927287	38717381	0.488858	0.6258
D(LnINFLATION)	-1.56E+09	1.61E+10	-0.096785	0.9231
D(DIFFLnIMPEX) – Openness of the Economy	3.65E+10	6.77E+10	0.539593	0.5904
C	-1.69E+11	4.76E+10	-3.560958	0.0005

Table 7. 8*: Summary of Long Run Causation Effect with FDI using a Pooled Panel Analysis (excluding Israel) – ARDL model*

Country	*Startups*	*Inflation*	*Impex*	*Heritage*
Australia	Yes	Yes	Yes	Yes
Canada	Yes	Yes	Yes	Yes
China	Yes	Yes	Yes	Yes
Germany	Yes	Yes	Yes	Yes
Sweden	Yes	Yes	Yes	Yes
Switzerland	Yes	Yes	Yes	Yes
UK	Yes	Yes	Yes	Yes
USA	Yes	Yes	Yes	Yes

7.2.1 Conclusion

The empirical results of this research, both PsyCap and FDI, show that the initial presumption for Israel can be implemented in eight other countries. These findings have immense implications for future research and government planning.

The study shows that the four latent variables in Psychological Capital are inherent in the founders and cofounders of entrepreneurs who endeavour to form startups. The higher PsyCap Index of these entrepreneurs, as opposed to that of the general public, is a fundamental finding in the startup ecosystem. As the number of startups per annum increases, there was an increase in foreign direct investment inflow into the country also increases. This connection shows that startups have a long-term causality with FDI.

The ramifications of these findings can have a long-term planning effect on the economic development of different countries with the result of improving GDP.

Looking at previous research, Dunning and Lundan (2008) stated that: "*No single mechanism exists to describe how foreign investment flows could be explained, both macro and micro*". This study has shown a connection between macro and micro in that the fundamental microeconomic element, Startup, has a long-term causality effect on macroeconomic FDI. The catalyst on the microeconomic side is the latent inherent PsyCap variables in founders and cofounders of startups, more predominant than in the general public.

Like other theories, the Eclectic paradigm of an Imperfect market looks at FDI from the outside towards the inside. This study examines FDI from the inside to the outside – the microeconomic side towards the macroeconomic side. The Startup as an entity has all the ingredients of the eclectic paradigm: ownership, location, and internalisation. It has an ownership advantage – power and control for the investor, export opportunities, and can produce locally. From this perspective, it is imperative to investigate whether causality exists between Startups and FDI. That is, does microeconomics influence macroeconomics?

This research has shown a long-run causality from Startup to FDI, but not from FDI to Startups, while the psychological capital of startups has shown a positive influence on the increase in startups and the development of the startup ecosystem.

CHAPTER 8: FINAL DISCUSSION AND RECOMMENDATIONS

This research adopted a twin-track approach to the causality between Startups and Foreign Direct Investment flow into the country on the one hand and the underlying latent variables inherent in founders and co-founders of startups who endeavour to form startups.

The current literature has not dealt with either of these critical components when studying macro and microeconomics and their interactions. While researching this subject, it was evident that a rigid solution must be found based on a solid foundation. This foundation was articulated in Chapter 1, section 1.7 as a conceptual framework called '*The Inverted Pyramid and Parallelogram Theory or Paradigm*'.

This framework emphasises Hymer's (1976) theory of an Imperfect market model. This theory postulates that FDI would not have started in the world without market imperfections. The theory of market imperfections identifies imperfections as the inefficient allocation and distribution of resources. Imperfections can be caused by economies of scale, government regulations, trade barriers, tariffs plus factors, and excellent markets that see the uneven distribution and allocation of resources and markets worldwide. Furthermore, overseas direct investment does not involve transferring capital and can be provided in various ways other than direct investment. It involves moving tangible and intangible resources, including business models and human resources.

Companies operating abroad must compete with domestic firms with an advantage in terms of culture, language, legal systems, and consumer preferences. They are also prone to exposure to foreign currency risk. Some forms of "market power" can offset these disadvantages. Some sources of market power include superior technology, brand names, market and management skills, economies of scale and cheaper sources of finance.

Hymer's theory does not provide a complete explanation for FDI because it fails to explain where and when FDI occurs.

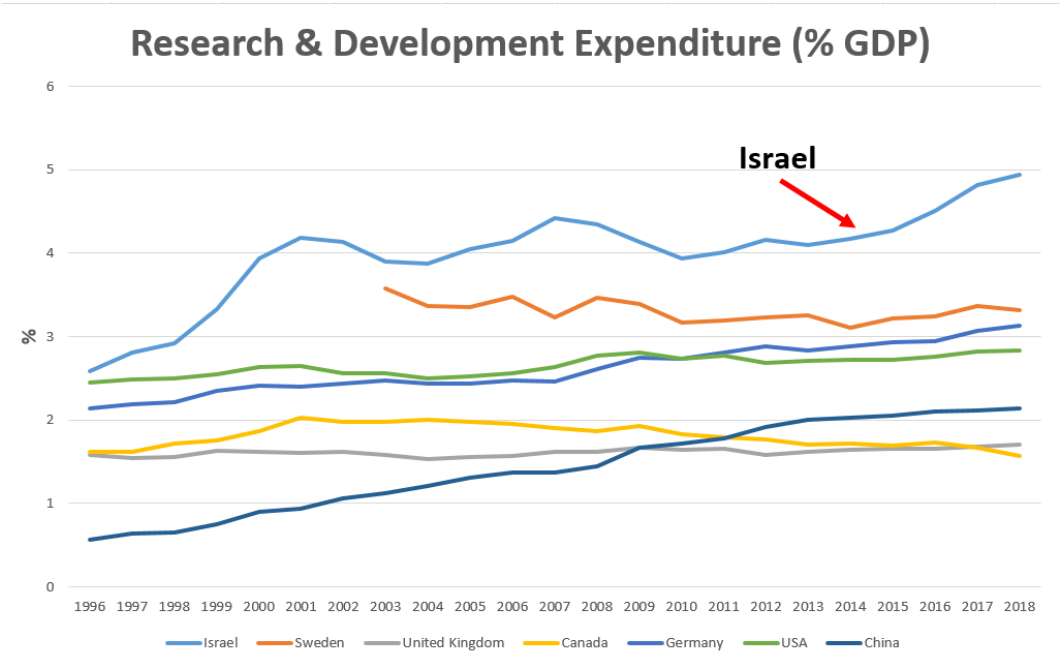
The Inverted Pyramid and Parallelogram Theory or Paradigm explain how psychological capital in startups boosts the startup ecosystem and how startups eventually have a long-term causality effect with FDI.

This research has shown long-run causality from Startups to FDI, but not from FDI to Startups. This research has initially proven long-run causality for the Israeli market while proving that this effect is not solely for Israel but includes eight other countries using a Pooled panel analysis.

This study examines the effect of a country's investment in research and development and how this could influence the startup ecosystem on FDI. The model chosen to validate this evidence was research and development (R&D) expenditure as a percentage of GDP. This also endorses the Imperfect Market theory of government regulations and interventions.

An initial look at these numbers can be seen in Figure 8.1, where it is evident that Israel has invested more in research and development over the past 25 years than any other country as a percentage of GDP.

Figure 8. 1*: R&D % of GDP*



Source: *The World Bank*

Concerning the Israeli economy, this detail could have an enormous effect on innovative startups, and could be a catalyst for new startups, which inherently affects the flow of FDI into the country.

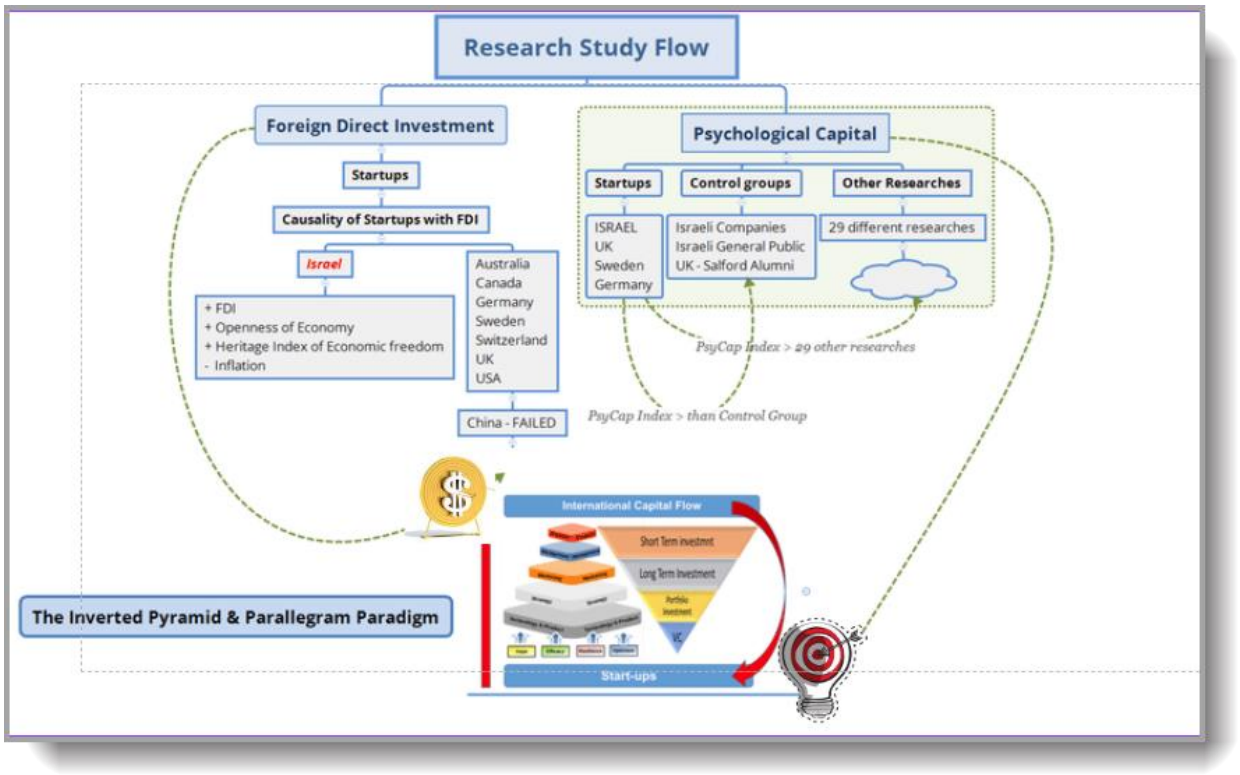
With the evidence that Startups have a long-run causality effect on FDI, it is imperative to investigate whether the WHO is the individual or founder that makes up this community. Do these individuals possess hidden latent variables as opposed to the general public? An answer to this question would provide an overall solution from microeconomic to macroeconomic, showing a direct connection between Founders and Co-founders of Startups → Startups → Foreign Direct Investment. This valuable piece of information could be of immense importance to policymakers in different countries, as, until now, this connection or relationship is unknown.

To resolve this issue, this study examined several alternatives that could explain any underlying latent variables in the community of founders and co-founders of startups. After much research, Psychological Capital (PsyCap) by Luthans was found to be the best. The reasoning behind this decision can be seen in Chapter 2, sections 2.7.2, 2.7.3, and 2.7.4. This study sent a Likert questionnaire to founders and co-founders in Israel, with a separate control group.

The PsyCap Index incorporates four latent variables: Hope, Efficacy, Resilience and Hope. As the research developed and similar to the section on FDI, the study broadened its approach to entail founders and co-founders from countries other than Israel, Germany, Sweden, and the United Kingdom. Additional control groups were added to the original Israeli companies, including the Israeli public, UK Salford Alumni, and 28 published studies. The questionnaire results were statistically evaluated using confirmatory factor analysis (CFA), confirming the results of Luthan's original PsyCap model.

The results of this study showed that the PsyCap Index for all founders and co-founders from all tested countries was substantially higher than that of the control groups. These results confirm the hypothesis of a positive link between the establishment of startups by founders and co-founders and the long-run causality of startups with FDI (Figure 8.2), not only in Israel, but also in other countries, as shown in this study.

Figure 8. 2*: Full Research Study*



8.1 Recommendations

8.1.1 A New Research Approach for FDI

FDI has been researched extensively for many years, and the policies used to promote and attract FDI are just as old as those in these studies. Little new research has been conducted in this area. This study offers a different perspective on foreign direct investment (FDI) by examining micro- and psychological factors such as psychological capital (PsyCap) that can help create an ecosystem for startups that attract FDI. This ecosystem, known as the "*Inverted Pyramid and Parallelogram Theory*" or "*Paradigm*," posits that PsyCap can play a crucial role in making a startup attractive to foreign investors. This research suggests that while Israel is doing well in terms of PsyCap scores, future studies should focus on micro or psychological factors.

This research developed a flourishing ecosystem for FDI by fostering the business environment using PsyCap. Future research should focus on the effect of PsyCap that affects FDI, as depicted in the "*Inverted Pyramid and Parallelogram Theory* or *Paradigm".*

8.1.2 How to Develop Psychological Capital

Numerous studies have found that higher levels of psychological capital (PsyCap) are correlated with higher levels of productivity, job satisfaction, and happiness and lower levels of burnout.

The four components of PsyCap are the following: (self) efficacy, optimism, hope, and resilience. The four abilities listed here do not represent fixed characteristics. Instead, studies have shown that these are epochs of the mind that can be cultivated on purpose.

PsyCap includes the following traits:

- Believing in one's own ability to take on and complete difficult tasks.
- Attributing positive meaning to past, present, and future success.
- Working persistently towards goals and, when necessary, re-directing paths to goals (hope); and
- When confronted with problems and adversity, sustaining and bouncing back and beyond (resilience) to achieve success.

The ability to accomplish complex tasks with ease and success is an example of one's efficacy. Similar to a global positioning system (GPS), efficacy can point in the right direction and banish doubts.

How it provides energy**:** Having confidence in one's abilities is crucial, especially for those in positions of authority or other high-stakes endeavours, because it reduces feelings of insecurity.

The literature promotes three ways of developing Psychological Capital and the effectiveness of PsyCap intervention (PCI) in the workplace: face-to-face, online, and Micro-learning interventions. According to Carter and Youssef-Morgan (2022), Micro-learning and online PCIs offered using mobile apps are just as effective, if not more so, than traditional PCIs are in person. This study contributes to the literature's refutation of anecdotal evidence for face-to-face learning's superiority by demonstrating that, with some minor exceptions, face-to-face, online, and micro-learning PCIs are all equally effective in the context of PsyCap development. PsyCap has not only been found to predict job performance (Martnez et al., 2019) but also academic success, health, and

relationships (Luthans et al., 2013). These findings suggest that companies should adopt strategies that consider the capabilities and preferences of their employees.

Research shows that PsyCap treatment development work (Dello Russo & Stoykova, 2015; Luthans et al., 2008; Luthans et al., 2010; Luthans et al., 2014; Stratman & Youssef-Morgan, 2019). PsyCap may develop in a matter of hours with minimal time or money (Luthans et al., 2006), and when executed with care, these treatments can yield a favourable return on investment (Youssef-Morgan, 2014).

Due to the interdependence of the four positive psychological resources that make up PsyCap, Luthans et al. (2006) created a model for PCIs that seeks to cultivate all four at once rather than separately. Generally, this "shotgun" method of positive psychological intervention is more efficient (Seligman et al., 2005; Sin & Lyubomir- sky, 2009). Practising PCIs for participants to establish overarching and specific objectives is common. Objectives should be quantifiable, internalised, demanding, and portrayed as approach-oriented rather than avoidance-oriented. Participants identified numerous paths to accomplish their objectives, addressed potential hurdles, outlined accessible resources, and mentally rehearsed the route towards goal attainment. These activities bolster hope, self-efficacy, resilience, and optimism.

Studies have shown that online learning can be as successful as the original face-to-face PCI created by Luthans et al. (2006) in helping participants improve their PsyCap (Luthans et al., 2008). As an increasing number of industries and institutions move their operations online, it is becoming increasingly desirable to develop PsyCap online using remote technology-enabled learning methods. Even before the COVID-19 pandemic, this pattern was rising. This tendency is expected to continue over the long term because of the effective implementation and expertise gained from the pandemic. In the "fourth industrial revolution" that has been sped up by COVID-19, but more importantly by an increasingly **V**olatile, **U**ncertain, **C**omplex, and **A**mbiguous (VUCA) environment, Luthans and Broad (2022) suggest that remote development of PsyCap and the use of new technologies is a requirement. Maintaining a positive outlook to combat the negative impacts of isolation and fast-paced changes in mental health is essential. Concurrently, there have never been more opportunities to use technology and spread treatments shown to improve well-being and productivity in various audiences. Although online

course delivery is now routine in many classrooms, the possibilities here go far beyond that.

8.1.3 Strengths and Limitations

As usual, all research has limitations, and this study is not different. The data collection for Psychological Capital was obtained using a Likert questionnaire sent to the founders and cofounders of the startups. The basic instructions for the questionnaire are outlined as follows:

> *"Below are statements that describe how you may think about yourself **right now**. Use the following scale to indicate your level of agreement or disagreement with each statement."*

The answers obtained were based on a subjective perspective on the day of the survey, and had no connection to the original day of the startup. The ages of the founders and cofounders were inconsistent with the date of the startup's inception and the questionnaire's date. Sometimes, this could be several years from the start of the startup to the day of the survey.

It could be argued that this same discrepancy was also observed with the control groups, which could be a positive statistical correction because the results show a definitely higher PsyCap index for the founders and cofounders compared to the control groups.

Another limitation in gathering the number of startups per annum for different countries is the use of different databases. The Israeli collection came from Startup National Central in Israel, and the other countries were extracted from Crunchbase.

Another limitation that was rectified during this research was the control group of Israeli companies. The PsyCap index of this group was similar to that of the founders of the startups. This finding was dubious because there was no initial reason for this result. Further enquiries into this possible discrepancy pointed to the fact that questionnaires sent by Peoples and Computers to all Israeli companies could have included many innovative startups who were also members of this weekly paper. This sparked two actions to correct this possible limitation. A further control group comprised doctors, high school teachers, sports clubs, and the general working public. In addition, a further

decision was made to increase this research to founders of innovative startups in three other countries, the UK, Germany, and Sweden, and to include another control group of Salford Alumni. These decisions proved exceptionally beneficial, as the results showed a definite distinction between the PsyCap Index in founders and co-founders of startups, as opposed to all other groups.

Some notable study strengths include being administered in a natural organizational setting and the random assignment of the participants to the questionnaire, including the ability to reach thousands of participants via electronic mail, as opposed to a small group using personal interviews. The sample sizes were adequate and the groups were approximately equal in size. Another strength is the replicability of the research with remarkable future consistency.

All FDI data were obtained from the same database collection of the World Bank.

8.1.4 Direction for Future Research

Further research on foreign direct investment should consider microfactors in more detail, as this study demonstrates using psychological capital in startups. Further research is needed to investigate the reasons for the high PsyCap Index in entrepreneurs and the general public in Israel and how PsyCap can be increased in other countries, especially in the business sector. Without further research, we are not sure why the rate was so high for the groups in this study; therefore, we could not determine the causal factor.

Further study could be conducted to examine the social makeup of Israeli society, which has relatively high PsyCap values compared to other groups. The lifestyle in Israel over the past 70 years has experienced intense stress, with extreme changes over short periods. This fact could have led people to naturally develop hope, efficacy, resilience, and optimism over time, as observed in this study.

REFERENCES

Abbas, M., & Raja, U. (2011). “Impact of Psychological Capital Innovative Performance and Jobstress.” *15th International Business Research Conference (Ref No. 449), Melbourne, World Business Institute, Australia*.

Adams, S. (2009). Foreign Direct investment, domestic investment, and economic growth in Sub-Saharan Africa. *Journal of Policy Modeling*, *31*(6), 939–949. https://doi.org/10.1016/j.jpolmod.2009.03.003

Adams, V. H., Snyder, C. R., Rand, K. L., King, E. A., Sigman, D. R., & Pulvers, K. M. (2002). Hope in the workplace. *In R. Giacolone & C. Jurkiewicz (Eds.), Workplace Spirituality and Organization Performance (367-377). New York: Sharpe.*

Aharoni, Y. (1966). The foreign investment decision process. *The International Executive*, *8*(4), 13–14. https://doi.org/10.1002/tie.5060080407

Aharoni, Y. (2011). *Inward FDI in Israel and its policy context.*

Aizenman, J., & Noy, I. (2006). FDI and trade—Two-way linkages? *The Quarterly Review of Economics and Finance*, *46*(3), 317–337. https://doi.org/10.1016/j.qref.2006.02.004

Akhtar, S., Ghayas, S., & Adil, A. (2013). Self-efficacy and optimism as predictors of organizational commitment among bank employees. *International Journal of Research Studies in Psychology*, *2*(2), 33–42.

Alavi, M., Visentin, D. C., Thapa, D. K., Hunt, G. E., Watson, R., & Cleary, M. (2020). Exploratory factor analysis and principal component analysis in clinical studies: Which one should you use? *Journal of Advanced Nursing*, *76*(8), 1886–1889. https://doi.org/10.1111/jan.14377

Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2004). FDI and economic growth: the role of local financial markets. *Journal of International Economics*, *64*(1), 89–112. https://doi.org/10.1016/s0022-1996(03)00081-3

Alfaro, L., Kalemli-Ozcan, S., & Volosovych, V. (2008). Why doesn’t capital flow from rich to poor countries? An empirical investigation. *The Review of Economics and Statistics*, *90*(2), 347–368.

Ali, S., & y Guo, W. (2005). Determinants of FDI in China. *Journal of Global Business and Technology*, *1*(2), 21–33.

Aliber, R. Z. (1970). A theory of direct foreign investment. *In C. Kindleberger (Ed.), the International Corporation. Cambridge, MA: MIT Press*.

Amy, L. A., Peterson, C., Tice, T. N., Boiling, T. F., & Koenig, H. G. (2004). Faith-based and secular pathways to hope and optimism subconstructs in middle-aged and older cardiac patients. *Journal of Health Psychology*, *9*(3), 435–450.

Andersson, L. M., & Pearson, C. M. (1999). “Tit for tat? The Spiraling Effect of Incivility in the Workplace.” *Academy of Management Review*, *24*(3), 452–471.

Artige, L., & Nicolini, R. (2010). Market Potential, Productivity and Foreign Direct Investment: Some Evidence from Three Case Studies. *European Planning Studies*, *18*(2), 147–168. https://doi.org/10.1080/09654310903491531

Ashkanasy, N. M., & Daus, C. S. (2005). Rumors of the death of emotional intelligence in organizational behavior are vastly exaggerated. *Journal of Organizational Behavior*, *26*(4), 441–452. https://doi.org/10.1002/job.320

Asiedu, E. (2006). Foreign Direct Investment in Africa: The Role of Natural Resources, Market Size, Government Policy, Institutions and Political Instability. *The World Economy*, *29*(1), 63–77. https://doi.org/10.1111/j.1467-9701.2006.00758.x

Avey, J. B. (2014). “The Left Side of Psychological Capital: New Evidence on the Antecedents of psycap.” *Journal of Leadership & Organizational Studies*, *21*(2), 141–149.

Avey, J. B., Avolio, B. J., & Luthans, F. (2011). Experimentally analyzing the impact of leader positivity on follower positivity and performance. *The Leadership Quarterly*, *22*, 282–294. https://doi.org/doi:10.1016/j. leaqua.2011.02.004

Avey, J. B., Hughes, L. W., Norman, S. M., & Luthans, K. W. (2008). Using positivity, transformational leadership and empowerment to combat employee negativity. *Leadership & Organizational Development Journal*, *29*, 110–126. https://doi.org/doi:10.1108/01437730 810852470

Avey, J. B., Luthans, F., & Jensen, S. M. (2009). Psychological capital: A positive resource for combating employee stress and turnover. *Human Resource Management*, *48*(5), 677–693.

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. https://doi.org/10.1037/a0016998

Avey, J. B., Luthans, F., & Youssef, C. M. (2010). The additive value of positive psychological capital in predicting work attitudes and behaviors. *Journal of Management*, *36*(2), 430–452. https://doi.org/doi:10. 1177/0149206308329961

Avey, J. B., Patera, J. L., & West, B. J. (2006). The Implications of Positive Psychological Capital on Employee Absenteeism. *Journal of Leadership & Organizational Studies*, *13*(2), 42–60. https://doi.org/10.1177/10717919070130020401

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. https://doi.org/doi:10.1002/hrdq.20070

Avey, J. B., Wernsing, T. S., & Luthans, F. (2008a). Can positive employees help positive organization change? *The Journal of Applied Behavioral Science*, *44*(1), 48–70.

Avey, J. B., Wernsing, T. S., & Luthans, F. (2008b). Can Positive Employees Help Positive Organizational Change? Impact of Psychological Capital and Emotions on Relevant Attitudes and Behaviors. *The Journal of Applied Behavioral Science*, *44*(1), 48–70. https://doi.org/10.1177/0021886307311470

Avey, J. B., Wernsing, T. S., & Mhatre, K. H. (2011). "A Longitudinal Analysis of Positive Psychological Constructs and Emotions on Stress, Anxiety and Well-Being." *Journal of Leadership & Organizational Studies*, *18*(2), 216–228.

Babyak, M. A., & Green, S. B. (2010). Confirmatory Factor Analysis: An Introduction for Psychosomatic Medicine Researchers. *Psychosomatic Medicine*, *72*(6), 587–597. https://doi.org/10.1097/psy.0b013e3181de3f8a

Bainerman, J. (2002). The rise and fall of Israel's technology based industries. *P.O.B. 387 Zichron Yaacov, Israel, 30900. (Unpublished).*

Bajpai, N. (2011). *Business research methods*. Pearson Education India.

Balasubramanyam, V. N., Salisu, M., & Sapsford, D. (1996). Foreign Direct Investment and Growth in EP and is Countries. *The Economic Journal*, *106*(434), 92–105. https://doi.org/10.2307/2234933

Bandalos, B. (1996). Confirmatory factor analysis. In J. Stevens (Ed.), *Applied multivariate statistics for the social sciences* (3rd ed., pp. 389–420).

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. https://doi.org/doi: 10.1037/0033-295x.84.2.191

Bandura, A. (1986). The Explanatory and Predictive Scope of Self-Efficacy Theory. *Journal of Social and Clinical Psychology*, *4*(3), 359–373. https://doi.org/10.1521/jscp.1986.4.3.359

Bandura, A. (1993). Perceived Self-Efficacy in Cognitive Development and Functioning. *Educational Psychologist*, *28*(2), 117–148. https://doi.org/10.1207/s15326985ep2802_3

Bandura, A. (2000). Cultivate self-efficacy for personal and organizational effectiveness. *Handbook of Organization Behavior*.

Bandura, A., & Locke, E. A. (2003). Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology*, *88*, 87–99.

Baron, R. A. (2012). *Entrepreneurship: An evidence-based guide*. Cheltenham, UK: Edward Elgar.

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.

Baron, R. A., Hmieleski, K. M., & Henry, R. A. (2012). Entrepreneurs’ dispositional positive affect: The potential benefits—and potential costs—of being “up.” *Journal of Business Venturing*, *27*, 310–324.

Baron, R. A., Tang, J., & Hmieleski, K. M. (2011). The downside of being “up”: Entrepreneurs’ dispositional affect and firm performance. *Strategic Entrepreneurship Journal*, *5*, 101–119.

Barrick, M. R., & Mount, M. K. (1991). The Big-Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, *44*, 1–26.

Barros, P. P., & Cabral, L. M. B. (2001). Government subsidies to foreign direct investment. *CEPR Working Paper, February*.

Basu, P., Chakraborty, C., & Reagle, D. (2003). Liberalization, FDI, and Growth in Developing Countries: A Panel Cointegration Approach. *Economic Inquiry*, *41*(3), 510–516. https://doi.org/10.1093/ei/cbg024

Bell, G., & McNamara, J. (1991). High-tech ventures — The guide for entrepreneurial success. *Reading, MA: Addison-Wesley*.

Bengoa, M., & Sanchez-Robles, B. (2005). Policy shocks as a source of endogenous growth. *Journal of Policy Modeling*, *27*(2), 249–261. https://doi.org/10.1016/j.jpolmod.2004.12.004

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*(2), 238–246. https://doi.org/10.1037/0033-2909.107.2.238

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88*(3), 588–606. https://doi.org/DOI: 10.1037/00332909.88.3.588

Bergheim, K., Nielsen, M. B., Mearns, K., & Eid, J. (2015). “The Relationship between Psychological Capital, Job Satisfaction, and Safety Perceptions in the Maritime Industry.” *Safety Science*, *74*, 27–36.

Berry, M. M. J. (1996). Technical entrepreneurship, strategic awareness and corporate transformation in small high-tech firms. *Technovation*, *16*(9), 487–522. https://doi.org/10.1016/0166-4972(96)00056-9

Bibi, S., Ahmad, S. T., & Rashid, H. (2014). Impact of Trade Openness, FDI, Exchange Rate and Inflation on Economic Growth: A Case Study of Pakistan. *International Journal of Accounting and Financial Reporting*, *1*(1), 236. https://doi.org/10.5296/ijafr.v4i2.6482

Birou, L. M., & Fawcett, S. E. (1994). Supplier involvement in integrated product development: a comparison of US and European practices. *International Journal of Physical Distribution & Logistics Management.*

Black, D. A., & Hoyt, W. H. (1989). Bidding for firms. *American Economic Review*, *79*, 1249–1256.

Blomström, M., Lipsey, R. E., & Zejan, M. (1994). "What Explains Developing Country Growth." *NBER Working Paper No. 4132 (Cambridge, MA: National Bureau of Economic Research)*.

Bollen, K. A., & Long, J. S. (Eds.). (1993). *Testing structural equation models* (Vol. 154). Sage.

Bonanno, G. A. (2005). Clarifying and Extending the Construct of Adult Resilience. *American Psychologist*, *60*(3), 265–267. https://doi.org/10.1037/0003-066x.60.3.265b

Bond, E., & Samuelson, L. (1986). Tax holidays as signals. *American Economic Review*, *76*, 820–826.

Boomsma, A. (1985). Nonconvergence, improper solutions, and starting values in LISREL maximum likelihood estimation. *Psychometrika*, *50*(2), 229–242.

Boomsma, A., & Hoogland, J. J. (2001). The robustness of LISREL modeling revisited. Structural equation models: Present and future. *A Festschrift in Honor of Karl Jöreskog*, *2*(3), 139–168.

Borensztein, E., De Gregorio, J., & Lee, J-W. (1998). How does foreign direct investment affect economic growth? *Journal of International Economics*, *45*(1), 115–135. https://doi.org/10.1016/s0022-1996(97)00033-0

Bougie, R., & Sekaran, U. (2019). *Research methods for business: A skill building approach*. John Wiley & Sons.

Bourdieu, P. (1983). Konomisches Kapital, kulturelles Kapital, soziales Kapital. *In: Kreckel*, *1983*, 183–198.

Bourdieu, P. (1984). Die feinen Unterschiede. Kritik der gesellschaftlichen Urteilskraft. *Frankfurt/Main:Suhrkamp*.

Bourdieu, P. (1986). The Forms of Capital. *In: Richardson (1986)*, 241–258.

Brainard, S. L. (1993a). An empirical assessment of the factor proportions explanation of multinationals sales. *NBER Working Paper 4580. Cambridge, MA: National Bureau of Economic Research*.

Brainard, S. L. (1993b). An empirical assessment of the proximity–concentration tradeoff between multinational sales and trade. *NBER Working Paper 4583. Cambridge, MA: National Bureau of Economic Research*.

Brainard, S. L. (1997). An empirical assessment of the proximity–concentration trade-off between multinational sales and trade. *American Economic Review*, *87*, 520–544.

Brooks, D., Hasan, R., Lee, J.-W., Son, H. H., & Zhuang, J. (2010). Closing Development Gaps: Challenges and Policy Options. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1663440

Brown, T. A. (2015). *Confirmatory Factor Analysis for Applied Research* (Second Edition). New York: The Guilford Press.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Testing Structural Equation Models*, 136–162.

Bryant, F. B., & Cvengros, J. A. (2004). Distinguishing Hope and optimism. *Journal of Social and Clinical Psychology*, *23*, 273–302.

Buckley, P. J., & Casson, M. (1976). *The Future of the Multinational Enterprise*. London: Macmillan.

Busenitz, L. W., & Barney, J. B. (1997). Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making. *Journal of Business Venturing*, *12*, 9–30.

Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). New York: Routledge.

Cabello, J. M., Ruiz, F., & Perez-Gladish, B. (2021). An alternative aggregation process for composite indexes: An application to the Heritage Foundation Economic Freedom Index. *Social Indicators Research*, *153*(2), 443–467.

Caldwell, D. F., & O'Reilly, C. A. (1990). Measuring person-job fit with a profile-comparison process. *Journal of Applied Psychology*, *75*, 648–657.

Calvo, G. A., Leiderman, L., & Reinhart, C. M. (1993). Capital Inflows and Real Exchange Rate Appreciation in Latin America: The Role of External Factors. *Staff Papers - International Monetary Fund*, *40*(1), 108. https://doi.org/10.2307/3867379

Carifio, J., & Rhodes, L. (2002). Construct validities and the empirical relationships between optimism, Hope, self-efficacy, and locus of control. *Work*, *19*, 125–136.

Carkovic, M., & Levine, R. E. (2002). Does Foreign Direct Investment Accelerate Economic Growth? *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.314924

Carter, J. W., & Youssef-Morgan, C. (2022). Psychological capital development effectiveness of face-to-face, online, and Micro-learning interventions. *Education and Information Technologies*, 1-23.

Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical Psychology Review*, *30*(7), 879–889. https://doi.org/10.1016/j.cpr.2010.01.006

Carver, C. S., & Scheier, M. S. (2002). Optimism. In *C. R. Snyder & S. J. Lopez (Eds.), Handbook of positive psychology* (pp. 231–243). Oxford, UK: Oxford University Press.

Cascio, W. F., & Luthans, F. (2014). "Reflections on the Metamorphosis at Robben Island: the Role of Institutional Work and Positive Psychological Capital." *Journal of Management-Inquiry*, *23*(1), 51–67.

Casson, M. (1987). The Firm and the Market: Studies on Multinational Enterprise and the Scope of the Firm. *Oxford: Blackwell, and Cambridge, MA: MIT Press*. https://doi.org/10.2307/2233089

Caves, R. E. (1971). International Corporations: The Industrial Economics of Foreign Investment. *Economica*, *38*(149), 1–27. https://doi.org/10.2307/2551748

Caves, R. E. (1996). *Multinational Enterprise and Economic Analysis* (2nd ed.). Cambridge: Cambridge University Press.

Caza, A., Bagozzi, R. P., Woolley, L., Levy, L., & Barka Caza, B. (2010). "Psychological Capital and Authentic Leadership: Measurement, Gender, and Cultural Extension." *Asia-Pacific Journal of Business Administration*, *2*(1), 53–70.

Chaikin, & Somekh. (1995). Doing business in Israel. *New York: Price Waterhouse World Firm Services.*, *3*.

Chamberlain, K., & Zita, S. (1992). Stability and change in subjective well-being over short periods. *Social Indicators Research*, *20*, 101–117.

Chanalert, A. (2000). The Determinants of U.S. Direct Investment in Thailand: A Survey on Managerial Perspectives. *Multinational Business Review*, *8*(2), 82–88.

Chandler, G. N., & Hanks, S. H. (1994). Market attractiveness resource-based capabilities, venture strategies, and venture performance. *Journal of Business Venturing*, *9*(4), 331–349.

Chandler, G. N., & Hanks, S. H. (1998). An investigation of new venture teams in emerging businesses. *In: P. D. Reynold, W.D. Bygrave & N. Carter, et Al. (Eds), Frontiers of Entrepreneurship Research. Wellesley, MA: Babson College*.

Chatman, J. A. (1989). Improving Interactional Organizational Research: A Model of Person-Organization Fit. *Academy of Management Review*, *14*(3), 333–349. https://doi.org/10.5465/amr.1989.4279063

Chen, X. P., Yao, X., & Kotha, S. (2009). Entrepreneur passion and preparedness in business plan presentations: A persuasion analysis of venture capitalists' funding decisions. *Academy of Management Journal*, *52*, 199–214.

Cheung, F., Tang, C. S., & Tang, S. (2011). Psychological capital as a moderator between emotional labor, burnout, and job satisfaction among school teachers in China. *International Journal of Stress Management*, *18*(4), 348–371. https://doi.org/10.1037/a0025787

Choe, J. I. (2003). Do Foreign Direct Investment and Gross Domestic Investment Promote Economic Growth? *Review of Development Economics*, *7*(1), 44–57. https://doi.org/10.1111/1467-9361.00174

Chowdhury, A., & Mavrotas, G. (2006). FDI and Growth: What Causes What? *The World Economy*, *29*(1), 9–19. https://doi.org/10.1111/j.1467-9701.2006.00755.x

Christensen, C. M. (1997). The innovator's dilemma: When technologies cause great firms to fail. *Boston: Harvard Business School Press*.

Christensen, C. M., & Bower, J. L. (1996). Customer power, strategic investment, and the failure of leading firms. *Strategic Management Journal*, *17*(3), 197–218.

Chuhan, P., Perez-Quiros, G., & Popper, H. (1996). International capital flows: do short-term investment and direct investment differ? *The World Bank*.

Claessens, S., Dooley, M. P., & Warner, A. (1995). Portfolio capital flows: hot or cold? *The World Bank Economic Review*, *9*(1), 153–174.

Clapp-Smith, R., Vogelsang, G. R., & Avey, J. B. (2009). Authentic leadership and positive psychological capital: The mediating role of trust at the group level of analysis. *Journal of Leadership & Organizational Studies*, *15*(3), 227–240.

Cohen, J. (1988). Set Correlation and Contingency Tables. *Applied Psychological Measurement*, *12*(4), 425–434. https://doi.org/10.1177/014662168801200410

Cohen, S., & Janicki-Deverts, D. (2012). Who's stressed? Distributions of psychological stress in the United States in probability samples from 1983, 2006, and 2009. *Journal of Applied Social Psychology*, *42*, 1320–1334.

Cole, K., Daly, A., & Mak, A. (2009). "Good for the Soul: The Relationship between Work, Wellbeing and Psychological Capital." *The Journal of Socio-Economics*, *38*(3), 464–474.

Colombo, J. A., Loncan, T. R., & Caldeira, J. F. (2018). Do foreign portfolio capital flows affect domestic investment? Evidence from Brazil. *International Journal of Finance & Economics*, *24*(2), 855–883. https://doi.org/10.1002/ijfe.1695

Combs, G. M., Milosevic, I., Jeung, W., & Griffith, J. (2011). Ethnic Identity and Job Attribute Preferences. *Journal of Leadership & Organizational Studies*, *19*(1), 5–16. https://doi.org/10.1177/1548051811433359

Conover, W. J., & Iman, R. L. (1981). Rank transformations as a bridge between parametric and nonparametric statistics. *The American Statistician*, *35*(3), 124–129.

Cooper, A. C., Gimeno-Gascon, F. J., & Woo, C. Y. (1994). Initial human and financial capital as predictors of new venture performance. *Journal of Business Venturing*, *9*(5), 371–395.

Cooper, R. G. (1973). Technical entrepreneurship: What do we know? *R&D Management*, *3*(2), 59–64.

Cooper, R. G. (1993). Winning at new products: Accelerating the process from idea to launch. *Reading, MA: Addison-Wesley*, 369–370. https://doi.org/10.1016/0737-6782(94)90105-8

Cooper, R. G. (1994). New Products: The factors that drive success. *International Marketing Review*, *11*(1), 60–76. https://doi.org/10.1108/02651339410057527

Cooper, R. G., & Kleinschmidt, E. J. (1990). New product success factors: A comparison on “kills” versus successes and failures. *R&D Management*, *20*(1), 47–63.

Corcoran, A., & Gillanders, R. (2014). Foreign direct investment and the ease of doing business. *Review of World Economics*, *151*(1), 103–126. https://doi.org/10.1007/s10290-014-0194-5

Costa, V., & Sarmento, R. (2019). *Confirmatory Factor Analysis A Case study*. https://arxiv.org/ftp/arxiv/papers/1905/1905.05598.pdf

Coutu, D. L. (2002). How resilience works. *Harvard Business Review*, *80*(5), 46–55.

Cropanzano, R., & Wright, T. A. (1999). A five-year study of change in the relationship between well-being and job performance. *Consulting Psychology Journal*, *51*, 252–265.

Culbertson, S. S., Fullagar, C. J., & Mills, M. J. (2010). Feeling good and doing great: The relationship between psychological capital and well-being. *Journal of Occupational Health Psychology*, *15*(4), 421–433. https://doi.org/10.1037/a0020720

Cunningham, C. (2000). Technology diaspora: Israeli high-tech industry faces a modern day exodus. *Red Herring, Special Report on Israel*, *82*, 252–257.

Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological Methods*, *1*(1), 16.

Dadush, U., Dasgupta, D., & Ratha, D. (2000). The role of short-term Debt in recent crises. *Finance & Development*, *37*, 54–57.

Dahlquist, J., Davidson, P., & Wilkund, J. (2000). Initial conditions as predictors of new venture performance: A replication and extension of the Cooper et al., study. *Enterprise and Innovation Management Studies*, *1*(1), 1–17.

Daniel, L. G. (1989). Comparisons of exploratory and confirmatory factor analysis. *Paper Presented at the Annual Meeting of the Mid-South Educational Research Association, Little Rock, AR. (ERIC Document Reproduction Service No. ED314447)*.

Davidow, W. H. (1986). Marketing High Technology. *New York: The Free Press.*

Davidson, P., & Klofsten, M. (2003). The business platform: Developing and instrument to gauge and to assist the development of young firms. *Journal of Small Business Management*, *41*(1), 1–26.

Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-methods research: A discussion on its types, challenges, and criticisms. *Journal of Practical Studies in Education*, *2*(2), 25-36.

Dawkins, S., Martin, A., Scott, J., & Sanderson, K. (2013). Building on the positives: A psychometric review and critical analysis of the construct of Psychological Capital. *Journal of Occupational and Organizational Psychology*, *86*(3), 348–370.

Day, G. S. (1999). Creating a market-driven organisation. *Sloan Management Review*, *41*(1), 11–22.

de Mello, L. (1999). Foreign direct investment-led growth: evidence from time series and panel data. *Oxford Economic Papers*, *51*(1), 133–151. https://doi.org/10.1093/oep/51.1.133

de Mello, L. R. (1997). Foreign direct investment in developing countries and growth: A selective survey. *Journal of Development Studies*, *34*(1), 1–34. https://doi.org/10.1080/00220389708422501

Deardorff, A. V. (2001). Fragmentation in simple trade models. *The North American Journal of Economics and Finance*, *12*(2), 121–137. https://doi.org/10.1016/s1062-9408(01)00043-2

Dello Russo, S., & Stoykova, P. (2015). Psychological capital intervention (PCI): A replication and extension. *Human Resource Development Quarterly*, *26*(3), 329-347.

Demerouti, E., van Eeuwijk, E., Sneider, M., & Wild, U. (2011). “Assessing the Effects of a ‘Personal Effectiveness’ Training on Psychological Capital, Assertiveness and Self Awareness Using Self-other Agreement.” *Career Development International*, *16*, 60–81.

DeVellis, R. F. (2003). *Scale development: Theory and applications* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Devereux, M. P., & Griffith, R. (1998). Taxes and the location of production: evidence from a panel of US multinationals. *Journal of Public Economics*, *68*(3), 335–367. https://doi.org/10.1016/s0047-2727(98)00014-0

Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist*, *55*(1), 34–43. https://doi.org/10.1037/0003-066x.55.1.34

Dixit, A. K., & Grossman, G. M. (1982). Trade and Protection With Multistage Production. *The Review of Economic Studies*, *49*(4), 583–594. https://doi.org/10.2307/2297288

Dobbelaere, S., & Kiyota, K. (2018). Labor market imperfections, markups and productivity in multinationals and exporters. *Labour Economics*, *53*, 198–212. https://doi.org/10.1016/j.labeco.2018.05.004

Dunning, J. H. (1977). Trade, location of economic activity and the MNE: a search for an eclectic approach. In *The International Allocation of Economic Activity* (pp. 395–418). London: Holmes and Meier.

Dunning, J. H. (1979). Explaining Changing Patterns of International Production: In Defence of the Eclectic Theory. *Oxford Bulletin of Economics and Statistics*, *41*(4), 269–295. https://doi.org/10.1111/j.1468-0084.1979.mp41004003.x

Dunning, J. H. (1993a). Globalisation: the challenge for national economic regimes. *Esri Twenty Fourth Geary Lecture, 1993*.

Dunning, J. H. (1993b). Multinational Enterprises and the Global Economy. *Reading, MA: Addison-Wesley*.

Dunning, J. H., & Lundan, S. M. (2008). Institutions and the OLI paradigm of the multinational enterprise. *Asia Pacific Journal of Management*, *25*(4), 573–593.

Dziuban, C. D., & Shirkey, E. C. (1974). When is a correlation matrix appropriate for factor analysis? Some decision rules. *Psychological Bulletin*, *31*, 358–361.

Easterby-Smith, M., Lyles, M. A., & Tsang, E. W. (2008). Inter-organizational knowledge transfer: Current themes and future prospects. *Journal of Management Studies*, *45*(4), 677–690.

Eaton, J., & Tamura, A. (1994). Bilateralism and Regionalism in Japanese and U.S. Trade and Direct Foreign Investment Patterns. *Journal of the Japanese and International Economies*, *8*(4), 478–510. https://doi.org/10.1006/jjie.1994.1025

Egan, P. J. W. (2010). The impact of multinational corporations on economic reform in Latin America. *Latin American Politics & Society*, *52*(1), 1–32.

Eisenhardt, K. M., & Brown, S. L. (1998). Time pacing: Competing in markets that won't stand still. *Harvard Business Review*, *76*(2), 59–69.

Ekholm, K. (1998). Proximity advantages, scale economies, and the location of production. In P. Braunerhjelm & K. Ekholm (Eds.), *The Geography of Multinationals*. Dordrecht: Kluwer Academic.

Engle, R. F., & C. W. J. Granger. (1987). Co-Integration and Error Correction: Representation, Estimation, and Testing. *Econometrica*, *55*(2), 251–276. https://doi.org/10.2307/1913236

Engle, R. F., & Yoo, B. S. (1987). Forecasting and testing in co-integrated systems. *Journal of Econometrics*, *35*(1), 143–159. https://doi.org/10.1016/0304-4076(87)90085-6

Ethier, W. J. (1986). The Multinational Firm. *The Quarterly Journal of Economics*, *101*(4), 805–833. https://doi.org/10.2307/1884179

Faeth, I. (2006). Consequences of FDI in Australia-Casual Links Between FDI, Domestic Investment. *Economic Growth and Trade*.

Faeth, I. (2009). Determinants of foreign direct investment–a tale of nine theoretical models. *Journal of Economic Surveys*, *23*(1), 165–196. https://doi.org/10.1111/j.1467-6419.2008.00560.x

Fahed, W. B. (2013). The effect of entrepreneurship on foreign direct investment. In *Proceedings of World Academy of Science, Engineering and Technology* (pp. No.78, 242). World Academy of Science, Engineering and Technology (WASET).

Fan, X., Thompson, B., & Wang, L. (1999). Effects of sample size, estimation methods, and model specification on structural equation modeling fit indexes. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 56–83.

Fedderke, J. W., & Romm, A. T. (2006). Growth impact and determinants of foreign direct investment into South Africa, 1956–2003. *Economic Modelling*, *23*(5), 738–760.

Fernandez-Arias, E. (1996). The new wave of private capital inflows: Push or pull? *Journal of Development Economics*, *48*(2), 389–418. https://doi.org/10.1016/0304-3878(95)00041-0

Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Los Angeles: Sage.

Findlay, R. (1978). Relative Backwardness, Direct Foreign Investment, and the Transfer of Technology: A Simple Dynamic Model. *The Quarterly Journal of Economics*, *92*(1), 1–16. https://doi.org/10.2307/1885996

Fine, S., Meng, H., Feldman, G., & Nevo, B. (2012). Psychological predictors of successful entrepreneurship in China: An empirical study. *International Journal of Management*, *29*, 279–292.

Fischer, S. (1993). The role of macroeconomic factors in growth. *Journal of Monetary Economics*, *32*(3), 485–512. https://doi.org/10.1016/0304-3932(93)90027-d

Fraley, R. C., & Hudson, N. W. (2014). *Review of intensive longitudinal methods: An introduction to diary and experience sampling research*.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, *56*(3), 218–226. https://doi.org/10.1037/0003-066x.56.3.218

Frenkel, A., Reiss, T., Maital, S., Koschatzky, K., & Grupp, H. (1994). Technometric evaluation and technology policy: The case of biodiagnostic kits. *Research Policy*, *23*(3), 281–292.

Furr, M. R., & Bacharach, V. R. (2008). *Psychometrics: An introduction*. Sage.

Gardner, D. M., Johnson, F., Moonkyu, L., & Wilkinson, I. (2000). A contingency approach to marketing high-technology products. *European Journal of Marketing*, *34*(9/10), 1053–1077.

Garmenzy, N. (1974). The study of competence in children at risk for severe psychopathology. In E. J. Anthony & C. Koupernik (Eds.), *The child in his family: Vol. 3. Children at psychiatric risk* (pp. 77–97). New York: Wiley.

GATT Secretariat. (1995). *Trade policy review: Israel. Geneva: General Agreement on Tariffs and Trade*.

George, D., & Mallery, P. (2018). Bivariate correlation. In *IBM SPSS Statistics 25 Step by Step* (pp. 153–162). Routledge.

Gichamo, T. Z. (2012). Determinants of foreign direct investment inflows to Sub-Saharan Africa: a panel data analysis. *DiVA*.

Gilboa, S., Shirom, A., Fried, Y., & Cooper, C. (2008). A meta-analysis of work demand stressors and job performance: Examining main and moderating effects. *Personnel Psychology*, *61*, 227–271.

Goldman, N. (2001). Israeli marketing: A work in progress. *Israeli High-Tech Investor*, *February*, 44–45.

Gomez-Gras, J. M., Mira-Solves, I., & Martinez-Mateo, J. (2010). Determinants of entrepreneurship: an overview. *International Journal of Business Environment*, *3*(1), 1–14.

Gonzalo, J., & Lee, T. (1998). “Pitfalls in testing for long run relationships.” *Journal of Econometrics*, *86*, 129–154.

Gooty, J., Gavin, M., Johnson, P. D., Frazier, M. L., & Snow, D. B. (2009). In the Eyes of the Beholder. *Journal of Leadership & Organizational Studies*, *15*(4), 353–367. https://doi.org/10.1177/1548051809332021

Gorg, H., & Greenaway, D. (2003). Much Ado About Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment? *SSRN Electronic Journal*, *2001/37*. https://doi.org/10.2139/ssrn.475044

Gorman, M., & Sahlman, W. A. (1989). What do venture capitalists do? *Journal of Business Venturing*, *4*(4), 231–248.

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Goupta, A. K., Raj, S. P., & Wilemon, D. (1986). A model for studying R&D-marketing interface in the product innovation process. *Journal of Marketing*, *50*(2), 7–17.

Goupta, A. K., & Sapienza, H. J. (1992). Determinants of venture capital firms' preferences regarding the industry diversity and geographic scope of their investments. *Journal of Business Venturing*, *7*(5), 347–362.

Goupta, A. K., & Wilemon, D. (1990). Improving R&D/marketing relations. *R&D Management*, *20*(4), 277–289.

Grandey, A. A., Tam, A. P., & Brauburger, A. L. (2002). Affective state and traits in the workplace: Diary and survey data from young workers. *Motivation and Emotion*, *26*, 31–55. https://doi.org/doi:10.1023/A:1015142124306

Granger, C. W. J. (1986). "Developments in the Study of Cointegrated Economic Variables." *Oxford Bulletin of Economics and Statistics*, *48*(Aug), 213–227.

Grewal, A., Kataria, H., & Dhawan, I. (2016). Literature search for research planning and identification of research problem. *Indian Journal of Anaesthesia*, *60*(9), 635.

Grubert, H., & Mutti, J. (1991). Taxes, Tariffs and Transfer Pricing in Multinational Corporate Decision Making. *The Review of Economics and Statistics*, *73*(2), 285–293. https://doi.org/10.2307/2109519

Gwynne, R. N. (1979). Oligopolistic reaction. *Area*, 315–319.

Haaland, J. I., & Wooton, I. (1999). International Competition for Multinational Investment. *Scandinavian Journal of Economics*, *101*(4), 631–649. https://doi.org/10.1111/1467-9442.00177

Haaland, J. I., & Wooton, I. (2001a). Multinational Firms: Easy Come, Easy Go? *CEPR Discussion Paper 2600*.

Haaland, J. I., & Wooton, I. (2001b). Multinational investment, industry risk, and policy competition. Discussion Paper 35/2001. *Department of Economics, Norwegian School of Economics and Business Administration*.

Haaparanta, P. (1996). Competition for foreign direct investments. *Journal of Public Economics*, *63*(1), 141–153. https://doi.org/10.1016/0047-2727(95)01567-1

Hackman, J. R. (2009). The perils of positivity. *Journal of Organizational Behavior*, *30*(2), 309–319. https://doi.org/10.1002/job.587

Hansen, H., & Rand, J. (2006). On the Causal Links Between FDI and Growth in Developing Countries. *The World Economy*, *29*(1), 21–41. https://doi.org/10.1111/j.1467-9701.2006.00756.x

Hanson, G. (2001). Should Countries Promote Foreign Direct Investment? *G-24 Discussion Papers 9, United Nations Conference on Trade and Development*.

Harrison, R. L., Reilly, T. M., & Creswell, J. W. (2020). Methodological rigor in mixed methods: An application in management studies. *Journal of Mixed Methods Research*, *14*(4), 473-495.

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit level relationship between employee satisfaction, employee engagement, and business outcomes: A meta- analysis. *Journal of Applied Psychology*, *87*(2), 268–279.

Haufler, A., & Wooton, I. (1999). Country size and tax competition for foreign direct investment. *Journal of Public Economics*, *71*(1), 121–139. https://doi.org/10.1016/s0047-2727(98)00055-3

Heaton, J. (2008). Secondary analysis of qualitative data: An overview. *Historical Social Research/Historische Sozialforschung*, 33–45.

Heckelman, E. F., & Ohlin, B. (1933). *Factor-Endowment and Factor Proportion Theory*.

Heckelman, J. C. (2000). Economic Freedom and Economic Growth: A Short-Run Causal Investigation. *Journal of Applied Economics*, *3*(1), 71–91. https://doi.org/10.1080/15140326.2000.12040546

Heled, E., Somech, A., & Waters, L. (2016). "Psychological Capital as a Team Phenomenon: Mediating the Relationship between Learning Climate and Outcomes at the Individual and Team levels." *The Journal of Positive Psychology*, *11*(3), 303–314.

Hellman, T., & Puri, M. (2001). Venture capital and the professionalization of startup firms: Empirical evidence. *Journal of Finance*, *57*(1), 169–197.

Helpman, E. (1984). A Simple Theory of International Trade with Multinational Corporations. *Journal of Political Economy*, *92*(3), 451–471. https://doi.org/10.1086/261236

Helpman, E. (1985). Multinational Corporations and Trade Structure. *The Review of Economic Studies*, *52*(3), 443–458. https://doi.org/10.2307/2297663

Helpman, E. (2006). Trade, FDI, and the Organization of Firms. *Journal of Economic Literature*, *44*(3), 589–630. https://doi.org/10.1257/jel.44.3.589

Hendrick, C., & Hendrick, S. (1986). A theory and method of love. *Journal of Personality and Social Psychology*, *50*(1), 392–402.

Hennart, J. F. (1982). *A Theory of Multinational Enterprise*. Ann Arbor, MI: University of Michigan Press.

Hennart, J. F. (1991). The transaction cost theory of the multinational enterprise. In C. N. Pitelis & R. Sugden (Eds.), *The Nature of the Transnational Firms* (pp. 81–116). Routledge.

Heron, J. (1996). *Co-operative inquiry: Research into the human condition*. Sage.

Hirschman, A. O. (1958). *The Strategy of Economic Development*. Yale University Press.

Hmieleski, K. M., & Baron, R. A. (2008). When does entrepreneurial self-efficacy enhance versus reduce firm performance? *Strategic Entrepreneurship Journal*, *2*, 57–72.

Hmieleski, K. M., & Baron, R. A. (2009). Entrepreneurs' optimism and new venture performance: A social cognitive perspective. *Academy of Management Journal*, *52*, 473–488.

Hobfall, S. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, *6*, 307–324. https://doi.org/doi:10.1037//1089-2680.6.4.307

Hobson, C. K. (1914). The Export of Capital. *Political Science Quarterly*, *29*(4), 722. https://doi.org/10.2307/2142023

Hoffman, D. L., & Rasche, R. H. (1996). Assessing forecast performance in a cointegrated system. *Journal of Applied Econometrics*, *11*(5), 495–517.

Holtz-Eakin, D., Newey, W., & Rosen, H. S. (1988). Estimating vector autoregressions with panel data. *Econometrica: Journal of the Econometric Society*, 1371-1395.

Hoogland, J. J., & Boomsma, A. (1998). Robustness studies in covariance structure modeling: An overview and a meta-analysis. *Sociological Methods & Research*, *26*(3), 329–367.

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, *6*(1), 53–60. https://doi.org/doi:10.21427/D7CF7R

Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika*, *30*(2), 179–185. https://doi.org/10.1007/bf02289447

Horstmann, I. J., & Markusen, J. R. (1987). Strategic Investments and the Development of Multinationals. *International Economic Review*, *28*(1), 109–121. https://doi.org/10.2307/2526862

Horstmann, I. J., & Markusen, J. R. (1992). Endogenous market structures in international trade (natura facit saltum). *Journal of International Economics*, *32*(1), 109–129. https://doi.org/10.1016/0022-1996(92)90038-L

Hosseini, H. (2005). An economic theory of FDI: A behavioral economics and historical approach. *The Journal of Socio-Economics*, *34*(4), 528–541. https://doi.org/10.1016/j.socec.2005.07.001

Hothersall, S. J. (2019). Epistemology and social work: enhancing the integration of theory, practice and research through philosophical pragmatism. *European Journal of Social Work*, *22*(5), 860-870.

Hu, L. T., & Bentler, P. M. (1995). *Evaluating model fit in Structural equation modeling: Concepts, issues, and applications* (R. H. Hoyle, Ed.; pp. 76–99). Sage.

Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, *3*(4), 424.

Hu, L. T., Bentler, P. M., & Kano, Y. (1992). Can test statistics in covariance structure analysis be trusted? *Psychological Bulletin*, *112*(2), 351.

Hubert, F., & Pain, N. (2002). Fiscal Incentives, European Integration and the Location of Foreign Direct Investment. *The Manchester School*, *70*(3), 336–363. https://doi.org/10.1111/1467-9957.00306

Hughes, L. W. (2008). A correlational study of the relationship between sense of humor and positive psychological capacities. *Economic& Business Journal: Inquiries & Perspective*, *1*(1), 46–55.

Hussain, M. (2005). Inflation and Growth: Estimation of Threshold Point for Pakistan. *Pakistan Business Review*, *7*(3).

Hwang, Y. K., & Lee, C. S. (2015). "Structural Relationship between Authentic Leadership, Organizational Communication, Organizational Effectiveness, and Psychological Capital of Office Workers." *Indian Journal of Science and Technology*, *8*(S7), 292–298.

Hymer, S. (1968). La grande "corporation" multinationale. *Revue Économique*, *19*(6), 949–973. https://doi.org/10.3406/reco.1968.407842

Hymer, S. H. (1960). *The international operations of national firms, a study of direct foreign investment* [Doctoral dissertation].

Hymer, S. H. (1976). *The International Operations of National Firms: A Study of Direct Investment*. MIT Press.

James, L. R., Mulaik, S. A., & Brett, J. M. (1982). Conditions for Confirmatory Analysis and Causal Inference. *Georgia Inst of Tech Atlanta School of Psychology*.

Janiszewski, C., & van Osselaer, S. M. (2022). Abductive theory construction. *Journal of Consumer Psychology*, *32*(1), 175-193.

Jasay, A. E. (1960). The Social Choice Between Home and Overseas Investment. *The Economic Journal*, *70*(277), 105–113. https://doi.org/10.2307/2227485

Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: Antecedents and consequences. *Journal of Marketing*, *57*(3), 53–70.

Jensen, S., & Luthans, F. (2006). "Relationship between Entrepreneurs' Psychological Capital and Their Authentic leadership." *Journal of Managerial Issues*, *13*, 254–273.

Jex, S., & Beehr, T. (1991). Emerging theoretical and methodological issues in the study of work-related stress. *Research in Personnel and Human Resource Management*, *9*, 311–365.

Johnson, G., & Scholes, K. (2001). *Exploring corporate strategy: Text and cases* (6th ed.). Prentice Hall.

Jones, C. (2010). Archival Data: Advantages and Disadvantages for Research in Psychology. *Social and Personality Psychology Compass*, *4*(11), 1008–1017. https://doi.org/10.1111/j.1751-9004.2010.00317.x

Jones, R. W., & Kierzkowski, H. (1990). The role of services in production and international trade: a theoretical framework. In R. W. Jones & A. O. Krueger (Eds.), *The Political Economy of International Trade* (p. Ch.3).

Jones, R. W., & Kierzkowski, H. (2001). A framework for fragmentation. In S. W. Arndt & H. Kierzkowski (Eds.), *Fragmentation – New Production Patterns in the World Economy* (p. Ch.4). Oxford University Press.

Jones, R. W., & Kierzkowski, H. (2005). International fragmentation and the new economic geography. *The North American Journal of Economics and Finance*, *16*(1), 1–10. https://doi.org/10.1016/j.najef.2004.11.005

Jöreskog, K. G. (1969). A general approach to confirmatory maximum likelihood factor analysis. *Psychometrika*, *34*(2), 183–202. https://doi.org/10.1007/bf02289343

Joreskog, K. G., & Sorborn, D. (1989). *LISREL 7: A Guide to the Program and Applications*. SPSS Inc.

Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluation traits – self-esteem, generalized self efficacy, locus of control, and emotional stability – with job-satisfaction and performance: A meta-analysis. *Journal of Applied Psychology*, *86*, 80–92.

Judge, T. A., Van Vianen, A. E. M., & DePater, I. E. (2004). Emotional stability, core-evaluations, and job outcomes. *Human Performance*, *17*, 325–346.

Jung, H. S., & Yoon, H. H. (2015). "The Impact of Employees' Positive Psychological Capital on Job Satisfaction and Organizational Citizenship Behaviors in the Hotel." *International Journal of Contemporary Hospitality Management, 27*(6), 1135–1156.

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, *33*(4), 692–724. https://doi.org/10.2307/256287

Kaiser, H. F., & Rice, J. (1974). Little jiffy mark IV. *Educational and Psychological Measurement, 34*, 111–117.

Kakati, M. (2003). Success criteria in high-tech new ventures. *Technovation*, *23*(5), 447–457. https://doi.org/10.1016/s0166-4972(02)00014-7

Kaplan, A. (1994). *Israel Law and Business Guide*. Kluwer Law and Taxation Publishers.

Kaushik, V., & Walsh, C. A. (2019). Pragmatism as a research paradigm and its implications for social work research. *Social sciences*, *8*(9), 255.

Kelly, L. M., & Cordeiro, M. (2020). Three principles of pragmatism for research on organizational processes. *Methodological innovations*, *13*(2), 2059799120937242.

Kemp, M. C. (1964). *The Pure Theory of International Trade*. Prentice Hall.

Kersting, K. (2003). Turning happiness into economic power. *Monitor on Psychology*, *34*(11), 26.

Khan, M. S., & Senhadji, A. S. (2001). Threshold Effects in the Relationship between Inflation and Growth. *IMF Staff Papers*, *48*(1).

Kieffer, K. M. (1999). An introductory primer on the appropriate use of exploratory and confirmatory factor analysis. *Research in the Schools*, *6*, 75–92.

Kikerkova, I., Naumovska, E., Toshevska-Trpchevska, K., & Makrevska Disoska, E. (2018). Vector Error Correction Model on FDI and their Impact in the Republic of Macedonia. *Zagreb International Review of Economics & Business*, *21*(2), 19–35.

Kim, J. O., & Meuller, C. W. (1978). *Factor analysis: Statistical methods and practical issues*. Sage Publications.

Kindleberger, C. P. (1969). American business abroad. *The International Executive*, *11*(2), 11–12. https://doi.org/10.1002/tie.5060110207

Kindleberger, C. P. (1971). *American Business Abroad: Six Lectures on Foreign Direct Investment.* Yale University Press.

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). US:Guilford Press.

Kline, R. B. (2016). *Principles and Practice of Structural Equation Modeling* (T. D. Little, Ed.; Fourth).

Klofsten, M. (1992). *Tidiga Utvecklingsprocesser i Teknikbaserade Företag* (p. 24) [PhD-Dissertation.].

Kluemper, D. H., Little, L. M., & DeGroot, T. (2009). State or trait: effects of state optimism on job-related outcomes. *Journal of Organizational Behavior*, *30*(2), 209–231. https://doi.org/10.1002/job.591

Knickerbocker, F. T. (1973). Oligopolistic reaction and multinational enterprise. *The International Executive*, *15*(2), 7–9. https://doi.org/10.1002/tie.5060150205

Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: The construct, research propositions, and managerial implications. *Journal of Marketing*, *54*(2), 1–18.

Kolstad, I., & Wiig, A. (2012). What determines Chinese outward FDI? *Journal of World Business*, *47*(1), 26–34. https://doi.org/10.1016/j.jwb.2010.10.017

Kon, F., Cukier, D., Melo, D., Hazzan, O., & Yuklea, H. (2014). A panorama of the israeli software startup ecosystem. *Available at SSRN 2441157*.

Krasikova, D. V., Lester, P. B., & Harms, P. D. (2015). "Effects of Psychological Capital on Mental Health and Substance Abuse." *Journal of Leadership & Organizational Studies*, *22*(3), 280–291.

Kristof, A. L. (1967). Person-organization fit: An integrative review of its conceptualizations, measurement, and implications. *Personnel Psychology*, *49*, 1–49.

Krugman, P. R. (1983). The "new theories" of international trade and the multinational enterprise. In C. P. Kindleberger & D. B. Audretsch (Eds.), *The Multinational Corporation in the 1980s* (p. Ch.3). MIT Press.

Kuhn, D. (2000). Metacognitive Development. *Current Directions in Psychological Science*, *9*(5), 178–181. https://doi.org/10.1111/1467-8721.00088

Kurul, Z. (2017). Nonlinear relationship between institutional factors and FDI flows: Dynamic panel threshold analysis. *International Review of Economics & Finance*, *48*, 148–160.

Lanzo, L., Aziz, S., & Wuensch, K. (2016). "Workaholism and Incivility: Stress and Psychological Capital's Role." *International Journal of Workplace Health Management*, *9*(2).

Larson, M., & Luthans, F. (2006). Potential added value of psychological capital in predicting work attitudes. *Journal of Leadership and Organizational Studies*, *13*, 44–61.

Laschinger, H. K. S., & Fida, R. (2014). "New Nurses Burnout and Workplace Wellbeing: The Influence of Authentic leadership and Psychological Capital." *Burnout Research*, *1*(1), 19–28.

Lehrer, P. M., Woolfolk, R. L., & Sime, E. (2007). *Principles and practice of stress management* (3rd ed.). Guilford.

Leonard-Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal*, *13*(S1), 111–125. https://doi.org/10.1002/smj.4250131009

Lerner, M., & Avrahami, Y. (1999). Global entrepreneurship monitor. *Israel Executive Report. Tel-Aviv: Tel Aviv University*.

LeSage, J. P. (1990). A Comparison of the Forecasting Ability of ECM and VAR Models. *The Review of Economics and Statistics*, 664–671.

Lipsey, E. R. (2001). Foreign direct investors in three financial crises. *NBER Working Paper No. 8084, Cambridge, Massachusetts: National Bureau of Economic Research.*

Lipsey, R. E. (2001). Foreign direct investment and the operations of multinational firms: concepts, history, and data. *Handbook of International Trade*, 287.

Lipsey, R., & Sjöholm, F. (2004). *Host country impacts of inward FDI: Why such different answers?* European Institute of Japanese Studies.

Little, L., Gooty, J., & Nelson, D. (2007). In D. L. Nelson & C. L. Cooper (Eds.), *Positive psychological capital: Has positivity clouded measurement rigour? Accentuating the positives at work* (pp. 191–209). Sage.

Liu, L., Chang, Y., Fu, J., Wang, J., & Wang, L. (2012). "The Mediating Role of Psychological Capital on the Association between Occupational Stress and Depressive Symptoms among Chinese Physicians: A Cross-sectional Study." *BMC Public Health*, *12*, 219–227.

Liu, L., Hu, S., Wang, L., Sui, G., & Ma, L. (2013). "Positive Resources for Combating Depressive Symptoms among Chinese Male Correctional Officers: Perceived Organizational Support and Psychological Capital." *BMC Psychiatry*, *13*(1), 1.

Lonnqvist, A., & Kujansivu, P. (2007). Designing and implementing an intellectual capital management system: applying the Meritum Guidelines in practice. *International Journal of Knowledge Management Studies*, *1*(3-4), 276–291.

Loree, D. W., & Guisinger, S. E. (1995). Policy and Non-Policy Determinants of U.S. Equity Foreign Direct Investment. *Journal of International Business Studies*, *26*(2), 281–299. https://doi.org/10.1057/palgrave.jibs.8490174

Lucas, R. E. (1990). Why doesn't capital flow from rich to poor countries? *The American Economic Review*, *80*(2), 92–96.

Lunn, J. (1980). Determinants of U.S. direct investment in the E.E.C. *European Economic Review*, *13*(1), 93–101. https://doi.org/10.1016/0014-2921(80)90048-3

Luthans, F. (2002a). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior*, *23*(6), 695–706. https://doi.org/10.1002/job.165

Luthans, F. (2002b). Positive organizational behavior: Developing and managing psychological strengths. *Academy of Management Perspectives*, *16*(1), 57–72. https://doi.org/10.5465/ame.2002.6640181

Luthans, F. (2012). Psychological capital: Implications for HRD, retrospective analysis, and future directions. *Human Resource Development Quarterly*, *23*(1), 1–8. https://doi.org/10.1002/hrdq.21119

Luthans, F., Avey, J. B., Avolio, B. J., Norman, S. M., & Combs, G. M. (2006). Psychological capital development: toward a micro-intervention. *Journal of Organizational Behavior*, *27*(3), 387–393. https://doi.org/10.1002/job.373

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. https://doi.org/10.1002/hrdq.20034

Luthans, F., Avey, J. B., Clapp-Smith, R., & Li, W. (2008). More evidence on the value of Chinese workers' psychological capital: A potentially unlimited competitive resource? *The International Journal of Human Resource Management*, *19*(5), 818–827. https://doi.org/10.1080/09585190801991194

Luthans, F., Avey, J. B., & Patera, J. L. (2008). Experimental analysis of a web-based intervention to develop positive psychological capital. *Academy of Management Learning and Education*, *7*, 209–221.

Luthans, F., Avolio, B., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology*, *60*, 541–572.

Luthans, F., Avolio, B., & Li, W. (2005). The psychological capital of Chinese workers: Exploring the relationships with performance. *Management and Organization Review*, *1*, 247–269.

Luthans, F., & Broad, J. D. (2022). Positive psychological capital to help combat the mental health fallout from the pandemic and VUCA environment. *Organizational dynamics*, *51*(2), 100817.

Luthans, B. C., Luthans, K. W., & Avey, J. B. (2014). Building the leaders of tomorrow: The development of academic psychological capital. *Journal of Leadership & Organizational Studies*, *21*(2), 191-199.

Luthans, F., Luthans, K., & Luthans, B. (2004). Positive psychological capital: Going beyond human and social capital. *Business Horizons*, *47*, 45–50.

Luthans, F., Norman, S. M., Avolio, B. J., & Avey, J. B. (2008). The mediating role of psychological capital in the supportive organizational climate-employee performance relationship. *Journal of Organizational Behavior*, *28*, 219–238.

Luthans, F., Vogelsang, G. R., & Lester, P. B. (2006). Developing the psychological capital of resilience. *Human Resource Development Review*, *5*, 25–44.

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.

Luthans, F., Youssef, C. M., & Avolio, B. J. (2007). *Psychological capital: Developing human competitive advantage*. Oxford University Press.

Luthans, F., Youssef, C. M., & Rawski, S. L. (2011). A Tale of Two Paradigms: The Impact of Psychological Capital and Reinforcing Feedback on Problem Solving and Innovation. *Journal of Organizational Behavior Management*, *31*(4), 333–350. https://doi.org/10.1080/01608061.2011.619421

Luthans, F., Youssef, C. M., Sweetman, D. S., & Harms, P. D. (2013). Meeting the leadership challenge of employee well-being through relationship PsyCap and health PsyCap. *Journal of Leadership & Organizational Studies*, *20*(1), 118–133.

Luthans, F., Youssef-Morgan, C. M., & Avolio, B. J. (2015). *Psychological capital and beyond*. Oxford University Press.

Luthans, K. W., & Jensen, S. M. (2005). The Linkage Between Psychological Capital and Commitment to Organizational Mission. *JONA: The Journal of Nursing Administration*, *35*(6), 304–310. https://doi.org/10.1097/00005110-200506000-00007

Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *The Benefits of Frequent Positive Affect: Does Happiness Lead to Success? 131*, 803–855.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods*, *1*(2), 130.

MacDougall, G. D. A. (1960). The benefits and costs of private investment from abroad: a theoretical approach. *Economic Record*, *36*(73), 13–35. https://doi.org/10.1111/j.1475-4932.1960.tb00491.x

MacMillan, I. C., Kulow, D. M., & Khoylian, R. (1989). Venture capitalists' involvement in their investments: Extent and performance. *Journal of Business Venturing*, *4*(1), 27–47.

MacMillan, I. C., Zemann, L., & Subbanarasimha. (1987). Criteria distinguishing successful from unsuccessful ventures in the venture screening process. *Journal of Business Venturing*, *2*(2), 123–137.

Maddi, S. R. (1987). Hardiness training at Illinois Bell Telephone. In P. Opatz (Ed.), *Health promotion evaluation* (pp. 101–115). National Wellness Institute.

Magaletta, P. R., & Oliver, J. M. (1999). The hope construct, will and ways: Their relations with self-efficacy, optimism and well-being. *Journal of Clinical Psychology*, *55*, 539–551.

Mahmood, I., Ehsanullah, M., & Ahmed, H. (2011). Exchange Rate Volatility & Macroeconomic Variables in Pakistan. *Business Management Dynamics*, *I*(2), 11–22.

Mahoney, J. T., & Pandian, J. R. (1992). The resource-based view within the conversation of strategic management. *Strategic Management Journal*, *13*, 363=380.

Markusen, J. R. (1984). Multinationals, multi-plant economies, and the gains from trade. *Journal of International Economics*, *16*(3-4), 205–226. https://doi.org/10.1016/s0022-1996(84)80001-x

Markusen, J. R., & Venables, A. J. (1998). Multinational firms and the new trade theory. *Journal of International Economics*, *46*(2), 183–203. https://doi.org/10.1016/s0022-1996(97)00052-4

Markusen, J. R., & Venables, A. J. (2000). The theory of endowment, intra-industry and multi-national trade. *Journal of International Economics*, *52*(2), 209–234. https://doi.org/10.1016/s0022-1996(99)00055-0

Marsh, H. W., & Hau, H. T. (1999). Confirmatory factor analysis: Strategies for small sample sizes. *Statistical Strategies for Small Sample Research*, *1*, 251–284.

Marsh, H. W., Hau, K. T., Balla, J. R., & Grayson, D. (1998). Is more ever too much? The number of indicators per factor in confirmatory factor analysis. *Multivariate Behavioral Research*, *33*(2), 181–220.

Martínez, I. M., Youssef-Morgan, C. M., Chambel, M. J., & Marques-Pinto, A. (2019). Antecedents of academic performance of university students: Academic engagement and psychological capital resources. *Educational Psychology*, *39*(8), 1047-1067.

Maslow, A. H., & Murphy, G. (1954). *Motivation and Personality* (G. Murphy, Ed.). Harper & Bros.

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, *56*(3), 227–238. https://doi.org/10.1037/0003-066x.56.3.227

Masten, A. S., & Reed, M. G. J. (2002). Resilience in development. In C. R. Snyder & S. Lopez (Eds.), *Handbook of positive psychology* (pp. 74–88). Oxford University Press.

Mathe, K., & Scott-Halsell, S. (2012). "The Effects of Perceived External Prestige on Positive Psychological States in Quick Service Restaurants'. *Journal of Human Resources in Hospitality & Tourism*, *11*(4), 354–372.

Maydeu-Olivares, A., Fairchild, A. J., & Hall, A. G. (2017). Goodness of Fit in Item Factor Analysis: Effect of the Number of Response Alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *24*(4), 495–505. https://doi.org/10.1080/10705511.2017.1289816

McKenny, A. F., Short, J. C., & Payne, G. T. (2013). "Using Computer-aided Text Analysis to Elevate Constructs: an Illustration Using Psychological Capital." *Organizational Research Methods*, *16*(1), 152–184.

McMurray, A. J., Pirola-Merlo, A., Sarros, J. C., & Islam, M. M. (2010). Leadership, climate, psychological capital, commitment, and wellbeing in a non-profit organization. *Leadership & Organization Development Journal*, *31*(5), 436–457. https://doi.org/10.1108/01437731011056452

Mengistu, Berhanu, & Adams, S. (2007). Foreign direct investment, governance and economic development in developing countries. *Journal of Social, Political & Economic Studies*, *32*, 223–249.

Millard, M. (2011). Psychological Net Worth: Finding the Balance between Psychological Capital and Psychological Debt. *Theses, Dissertations, & Student Scholarship: Agricultural Leadership, Education & Communication Department*. http://digitalcommons.unl.edu/aglecdiss/29

Mills, N., Pajares, F., & Heron, C. (2007). SES of college intermediate French students: Relation to achievement and motivation. *Language Learning*, *57*(3), 417–442.

Mintzberg, H. (1994). The Rise and Fall of Strategic Planning. *Harvard Business Review*, *72*(1), 107–114.

Mishra, M., Kim, D., & Lee, D. H. (1996). Factors affecting new product success: Cross-country comparisons. *Journal of Product Innovation Management*, *13*(6), 530–550.

Mohamed, S. E., & Sidiropoulos, M. G. (2010). Another look at the determinants of foreign direct investment in MENA countries: an empirical investigation. *Journal of Economic Development*, *35*(2), 75.

Montiel, P. J. (1995). Financial Policies and Economic Growth: theory, evidence and country specific experience from Sub-Saharan Africa. *African Economic Research Consortium, Nairobi, KE*.

Moon, H. (2015). Foreign direct investment: A global perspective. Singapore. *World Scientific*.

Moore, K., & Lewis, D. (1999). Birth of the multinational: 2000 years of ancient business history, from Ashur to Augustus. *Handelshojskolens Forlag*.

Mubarik, Y. A. (2005). Inflation and Growth: An Estimate of the Threshold Level of Inflation in Pakistan. *SBP-Research Bulletin*, *1*(1), 35–44.

Mudambi, R. (1999). Multinational Investment Attraction: Principal-Agent Considerations. *International Journal of the Economics of Business*, *6*(1), 65–79. https://doi.org/10.1080/13571519984322

Mueller, R. O. (1997). Structural equation modeling: Back to basics. *Structural Equation Modeling: A Multidisciplinary Journal*, *4*(4), 353–369.

Mugableh, M. I. (2021). An Examination Into the Causal Links Among Inward FDI Determinants: Empirical Evidence From Jordan. *International Journal of Financial Research*, *12*(2), 195–201. https://doi.org/10.5430/ijfr.v12n2p195

Mughal, M. M., & y Akram, M. (2011). Does Market Size Affect FDI? The Case of Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, *2*(9), 237–247.

Mulaik, S. A., James, L. R., Van Alstine, J., Bennett, N., Lind, S., & Stilwell, C. D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletin*, *105*(3), 430.

Munn, Z., Tufanaru, C., & Aromataris, E. (2014). *Data extraction and synthesis: The steps following study selection in a systematic review*.

Muthen, L. K., & Muthen, B. O. (2002). How to use a Monte Carlo study to decide on sample size and determine power. *Structural Equation Modeling*, *9*(4), 599–620.

Mwita, K. (2022). Strengths and weaknesses of qualitative research in social science studies. *International Journal of Research in Business and Social Science (2147-4478)*, *11*(6), 618-625.

Myers, N. D., Ahn, S., & Jin, Y. (2011). Sample Size and Power Estimates for a Confirmatory Factor Analytic Model in Exercise and Sport. *Research Quarterly for Exercise and Sport*, *82*(3), 412–423. https://doi.org/10.1080/02701367.2011.10599773

Nair-Reichert, U., & Weinhold, D. (2001). Causality Tests for Cross-Country Panels: a New Look at FDI and Economic Growth in Developing Countries. *Oxford Bulletin of Economics and Statistics*, *63*(2), 153–171. https://doi.org/10.1111/1468-0084.00214

Nayyar, R. (2014). Traditional and modern theories of FDI. *International Journal of Business and Management Innovation*, *3*(6), 23–26.

Nell, K. S. (2000). Is Low Inflation a Precondition for Faster Growth? The Case of South Africa. *Working Paper in Economics. Department of Economics, (Keynes College, University of Kent)*.

Nesheim, J. (1997). *High-tech startup*. Nesheim.

Neumayer, E., & de Soysa, I. (2005). Trade Openness, Foreign Direct Investment and Child Labor. *World Development*, *33*(1), 43–63. https://doi.org/10.1016/j.worlddev.2004.06.014

Newman, A., Ucbasaran, D., Zhu, F., & Hirst, G. (2014). “Psychological Capital: A Review and Synthesis.” *Journal of Organizational Behavior*, *35*(S1), S120–S138.

Ngo, H. Y., Foley, S., Ji, M. S., & Loi, R. (2013). Linking Gender Role Orientation to Subjective Career Success. *Journal of Career Assessment*, *22*(2), 290–303. https://doi.org/10.1177/1069072713493984

Nguyen, T. D., & Nguyen, T. T. M. (2012). “Psychological Capital, Quality of Work Life, and Quality of Life of Marketers: Evidence from Vietnam.” *Journal of Macromarketing*, *32*, 87–95.

Nigah, N., Davis, A. J., & Hurrell, S. A. (2012). “The Impact of Buddying on Psychological Capital and Work Engagement: An Empirical Study of Socialization in the Professional Services Sector.” *Thunderbird International*

Business Review, *54*, 891–905.

Norman, S. M., Avey, J. B., Nimnicht, J. L., & Graber Pigeon, N. (2010). The Interactive Effects of Psychological Capital and Organizational Identity on Employee Organizational Citizenship and Deviance Behaviors. *Journal of Leadership & Organizational Studies*, *17*(4), 380–391. https://doi.org/10.1177/1548051809353764

OECD. (2002). "Foreign Direct Investment for Development: Maximizing Benefits, Minimizing Costs." *OECD Policy Brief (Paris: OECD).*

Osborne, J. W. (2015). Curvilinear effects in logistic regression. *Best Practices in Logistic Regression. London: Sage Publications*, 200-42.

Palmer, M., Larkin, M., De Visser, R., & Fadden, G. (2010). Developing an interpretative phenomenological approach to focus group data. *Qualitative Research in Psychology*, *7*(2), 99–121.

Parker, S. K. (1998). Enhancing role breadth self-efficacy: The roles of job enrichment and other organizational interventions. *Journal of Applied Psychology*, *83*(6), 835–852. https://doi.org/10.1037/0021-9010.83.6.835

Patil, V. H., Singh, S. N., Mishra, S., & Todd Donavan, D. (2008). Efficient theory development and factor retention criteria: Abandon the "eigenvalue greater than one" criterion. *Journal of Business Research*, *61*(2), 162–170. https://doi.org/10.1016/j.jbusres.2007.05.008

Patino, C. M., & Ferreira, J. C. (2018). Inclusion and exclusion criteria in research studies: definitions and why they matter. *Jornal Brasileiro de Pneumologia*, *44*(2), 84.

Pedhazur, E. J., & Schmelkin, L. P. (1991). *Measurement, design, and analysis: An integrated approach*. Lawrence Erlbaum.

Pedreira, L., & Monica, L. D. S. M. (2013). "Workaholism and Psychological Capital: Repercussions on Workplace Spirituality." *International Journal of Developmental and Educational Psychology: INFAD. Revista de Psicologla*, *2*(1), 535–544.

Pennings, E., & Altomonte, C. (2003). *Oligopolistic reaction to foreign investment in discrete choice panel data models*.

Perlmuter, D. (2003). How to maintain competitiveness in high-tech. *Haaretz Newspaper 20-10-2003 (in Hebrew)*.

Peterson, C., & Seligman, M. E. (2004). *Character strengths and virtues*. Oxford University Press.

Peterson, S. J., Balthazard, P. A., Waldman, D. A., & Thatcher, R. W. (2008). Neuroscientific Implications of Psychological Capital: *Organizational Dynamics*, *37*(4), 342–353. https://doi.org/10.1016/j.orgdyn.2008.07.007

Peterson, S. J., & Luthans, F. (2003). The positive impact of development of hopeful leaders. *Leadership and Organization Development Journal, 24*, 26–31.

Peterson, S. J., Luthans, F., Avolio, B. J., Walumbwa, F. O., & Zhang, Z. (2011). Psychological capital and employee performance: A latent growth modelling approach. *Personnel Psychology*, *64*(2), 427–450. https://doi.org/10.1111/j.1744-6570.2011.01215.x

Peterson, S. J., & Zhang, Z. (2011). Examining the relationships between top management team psychological characteristics, transformational leadership, and business unit performance. In M. A. Carpenter (Ed.), *Handbook of top management research* (pp. 127–149). Edward Elgar Publishing.

Petrucci, C. J. (2009). A Primer for Social Worker Researchers on How to Conduct a Multinomial Logistic Regression. *Journal of Social Service Research*, *35*(2), 193–205. https://doi.org/10.1080/01488370802678983

Pinquart, M., & Sorensen, S. (2000). Influences of socioeconomic status, social network, and competence on subjective well-being in later life: A meta-analysis. *Psychology and Aging*, *15*, 187–224.

Pituch, K. A., & Stevens, J. P. (2016). *Applied Multivariate Statistics for the Social Sciences* (6th ed.).

Ployhart, R. E. (2006). Staffing in the 21st century: New challenges and strategic opportunities. *Journal of management*, *32*(6), 868-897

Porter, M. E. (1980). *Competitive strategy: Techniques for analyzing industries and competitors*. The Free Press.

Putman, R. D. (1993a). *Making Democracy Work – Civic Traditions in Modern Italy*. Princeton University Press.

Putman, R. D. (1993b). The Prosperous Community: Social Capital and Public Life. *The American Prospect Online Edition*, *4*(13), 11–18.

Qian, E. E. (2018). A Brief Review of Portfolio Theory. *Portfolio Rebalancing*, 9–28. https://doi.org/10.1201/9781315120676-2

Qu, T., & Green, M. B. (2018). *Chinese foreign direct investment: A subnational perspective on location*. Routledge Revivals.

Quazi, R. (2007). Economic Freedom and Foreign Direct Investment in East Asia. *Journal of the Asia Pacific Economy*, *12*(3), 329–344. https://doi.org/10.1080/13547860701405755

Ramírez, M. (2000). Foreign Direct Investment in Mexico: A Cointegration Analysis. *The Journal of Development Studies*, *37*(1), 138–162. https://doi.org/10.1080/713600062

Ramirez, M. D. (2010). Economic and Institutional Determinants of FDI Flows to Latin America: A Panel Study. *Trinity College Department of Economics, Working Paper 10-03*.

Rauch, A., & Frese, M. (2007). Let's put the person back into entrepreneurship research: A meta-analysis of the relationship between business owners' personality characteristics and business creation and success. *European Journal of Work and Organizational Psychology*, *16*, 353–385.

Rayome, D., & Baker, J. C. (1995). Foreign direct investment: a review and analysis of the literature. *The International Trade Journal*, *9*(1), 3–37. https://doi.org/10.1080/08853909508523818

Razin, A. (2017). *Israel Globalized: High Tech, Productivity and FDI*.

Rego, A., Marques, C., Leal, S., Sousa, F., & Pina e Cunha, M. (2010). Psychological capital and performance of Portuguese civil servants: exploring neutralizers in the context of an appraisal system. *The International Journal of Human Resource Management*, *21*(9), 1531–1552. https://doi.org/10.1080/09585192.2010.488459

Rego, A., Sousa, F., Marques, C., & Cunha, M. P. e. (2012). Authentic leadership promoting employees' psychological capital and creativity. *Journal of Business Research*, *65*(3), 429–437. https://doi.org/10.1016/j.jbusres.2011.10.003

Reynolds, P. (1993). *High performance entrepreneurship: What makes it different?* N.C.

Ries, E. (2011). *The Lean Startup.* Crown Publishing, New York.

Rigdon, E. E. (1996). CFI versus RMSEA: A comparison of two fit indexes for structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, *3*(4), 369–379.

Roberts, E. B. (1968). Entrepreneurship and Technology: A basic study of innovators; how to keep and capitalize on their talents. *Research Management*, *11*(4), 249–266. https://doi.org/10.1080/00345334.1968.11755911

Roberts, E. B. (1978). What do we know about managing R&D. *Research Management*, *21*, 26–30.

Roberts, E. B. (1979). Stimulating Technological Innovation: Organizational Approaches. *Research Management*, *22*(6), 26–30. https://doi.org/10.1080/00345334.1979.11756572

Roberts, S. J., Scherer, L. L., & Bowyer, C. J. (2011). Job Stress and Incivility. *Journal of Leadership & Organizational Studies*, *18*(4), 449–458. https://doi.org/10.1177/1548051811409044

Robson, C. (2011). *Real world research* (p. 79). John Wiley & Sons.

Robson, C., & McCartan, K. (2016). *Real world research. Hoboken*. John Wiley & Sons.

Robson, P. (2002). *The economics of international integration*. Routledge.

Roche, M., Haar, J. M., & Luthans, F. (2014). “The Role of Mindfulness and Psychological Capital on the Well-being of Leaders.” *Journal of Occupational Health Psychology*, *19*(4), 476.

Rolfe, R. J., Ricks, D. A., Pointer, M. M., & McCarthy, M. (1993). Determinants of FDI Incentive Preferences of MNEs. *Journal of International Business Studies*, *24*(2), 335–355. https://doi.org/10.1057/palgrave.jibs.8490235

Root, F. R., & Ahmed, A. A. (1978). The influence of policy instruments on manufacturing Direct Foreign investment in developing countries. *Journal of International Business Studies*, *9*(3), 81–94. https://doi.org/10.1057/palgrave.jibs.8490670

Roper, S. (2000). Innovation Policy in Israel, Ireland and the UK: An Evolutionary Perspective. *Northern Ireland Economic Research Centre.*

Roure, J. B., & Keely, R. H. (1990). Predictors of success in new technology-based ventures. *Journal of Business Venturing*, *5*(4), 201–220.

Roure, J. B., & Maidique, M. A. (1986). Linking pre-funding factors and high-technology venture success: An exploratory study. *Journal of Business Venturing*, *1*, 295–306. 3.

Sadri, G., & Robertson, I. T. (1993). Self-efficacy and work-related behavior: A review and meta-analysis. *Applied Psychology: An International Review*, *42*, 139–153.

Salanova, M., Llorens, S., & Schaufeli, W. B. (2011). “Yes I can, I feel good, and I just do it!” On gains cycles and spirals of efficacy beliefs, affect, and engagement. *Applied Psychology: An International Review*, *60*, 255–285.

Sanyal, K. K., & Jones, R. W. (1982). The theory of trade in middle products. *American Economic Review*, *72*, 16–31.

Sapienza, H. J. (1992). When do venture capitalists add value? *Journal of Business Venturing*, *7*(1), 9–27. https://doi.org/10.1016/0883-9026(92)90032-m

Sapienza, H. J., Manigart, S., & Vermeir, W. (1996). Venture capitalist governance and value added in four countries. *Journal of Business Venturing*, *11*(6), 439–469.

Saunders, M. N. (2011). *Research methods for business students* (5th ed.). Pearson Education India.

Schaubroeck, J., & Merritt, D. E. (1997). Divergent effects of job control on coping with work stressors: The key role of self-efficacy. *Academy of Management Journal, 40*, 738–754.

Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, *4*(3), 219–247. https://doi.org/10.1037/0278-6133.4.3.219

Schermelleh-Engel, K., Moosbrugger, H., & Muller, H. (2003). Evaluating the Fit of Structural Equation Models: Tests of significance and descriptive Goodness-of-Fit measures. *Methods of Psychological Research*, *8*(2), 23–74.

Schmidt, F., & Hunter, J. (2000). Select on intelligence. In E. Locke (Ed.), *The Blackwell handbook of principles of organizational behaviour* (pp. 3–14). Blackwell.

Schneider, B. (1987). The people make the place. *Personnel Psychology*, *40*(3), 437–453. https://doi.org/10.1111/j.1744-6570.1987.tb00609.x

Schneider, B., Goldstein, H. W., & Smith, D. B. (1995). The ASA framework: An update. *Personnel Psychology*, *48*, 747–773.

Schulz, Ss. A., Luthans, K. W., & Messersmith, J. G. (2014). "Psychological Capital: A New Tool for Driver Retention." *International Journal of Physical Distribution & Logistics Management*, *44*(8/9), 621–634.

Schumacker, R. E., & Lomax, R. G. (2016). *A beginner's guide to structural equation modeling* (4th ed.). Routledge.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. john wiley & sons.

Seligman, M. E. P. (1998). *Learned optimism*: Pocket Books.

Seligman, M. E., & Csikszentmihalyi, M. (2000). "Special Issue: Positive Psychology." *American Psychologist*, *55*(1), 5–14.

Seligman, M. E., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: empirical validation of interventions. *American psychologist*, *60*(5), 410.

Sezgin, F., & Erdogan, O. (2015). Academic Optimism, Hope and Zest for Work as Predictors of Teacher Self-efficacy and Perceived Success. *Educational Sciences: Theory & Practice*, *15*, 7–19. https://doi.org/10.12738/estp.2015.1.2338

Shalley, C. E., & Gilson, L. L. (2004). What leaders need to know: A review of social and contextual factors that can foster or hinder creativity. *The Leadership Quarterly*, *15*(1), 33–53. https://doi.org/10.1016/j.leaqua.2003.12.004

Sharma, B., & Abekah, J. (2007). Foreign Direct Investment and Economic Growth of Africa. *Atlantic Economic Journal*, *36*(1), 117–118. https://doi.org/10.1007/s11293-007-9103-9

Sin, N. L., & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of clinical psychology*, *65*(5), 467-487.

Singh, H., & Jun, K. W. (1995). Some new evidence on determinants of foreign direct investment in developing countries. *World Bank Publications.*, *1531*.

Siu, O. L. (2013). Psychological Capital, Work Well-Being, and Work-Life Balance Among Chinese Employees. *Journal of Personnel Psychology*, *12*(4), 170–181. https://doi.org/10.1027/1866-5888/a000092

Slater, S. F., & Narver, J. C. (1995). Market orientation and the learning organisation. *Journal of Marketing*, *59*(3), 63–74.

Smith, B., & Sparkes, A. C. (2020). Qualitative research. *Handbook of sport psychology*, 999-1019.

Snyder, C. R. (Ed.). (2000). *Handbook of Hope: Theory, measures, and applications*. Academic press.

Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry*, *13*(4), 249–275. https://doi.org/10.1207/s15327965pli1304_01

Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., & 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.

Snyder, C. R., Irving, L., & Anderson, J. (1991). Hope and health: Measuring the will and the ways. In C. R. Snyder & D. R. Forsyth (Eds.), *Handbook of social and clinical psychology: The health perspective* (pp. 285–305). Pergamon.

Snyder, C. R., & Lopez, S. (Eds.). (2002). *Handbook of Positive Psychology*. Oxford University Press.

Snyder, C. R., Rand, K. L., & Sigmon, D. R. (2002). Hope theory. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 257–276). Oxford University Press.

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.

Soto, V. G., & Perez, J. F. (2020). Trade openness and macroeconomic determinants of FDI reception in Latin America: a VECM approach. *Equilibrio Económico. Nueva Época. Revista de Economía, Política Y Sociedad*, *16*(49), 61–91.

Souder, W. E. (1977). An exploratory study of the coordinated mechanism between R&D and marketing as an influence on the innovation process. *Final Report to the National Science Foundation, University of Pittsburgh, School of Engineering, Pittsburg, PA.*

Souder, W. E. (1981). Disharmony between R&D and marketing. *Industrial Marketing Management*, *10*(1), 67–73.

Spence, J. T., & Robbins, A. S. (1992). "Workaholism: Definition, Measurement, and Preliminary Results." *Journal of Personality Assessment*, *58*(1), 160–178.

Squalli, J., & Wilson, K. (2011). A new measure of trade openness. *The World Economy*, *34*(10), 1745–1770.

Stajkovic, A., & Luthans, F. (1998a). Self-efficacy and work-related performance: A meta analysis. *Psychological Bulletin*, *124*, 240–261.

Stajkovic, A., & Luthans, F. (1998b). Social cognitive theory and self-efficacy. *Organizational Dynamics*, *26*, 62–74.

Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual Differences*, *42*(5), 893–898. https://doi.org/10.1016/j.paid.2006.09.017

Steinberg, J. (1999). Taking the long view. *Israel High-Tech Investor*, *5*, 18–19.

Steinhardt, M. A., Mamerow, M. M., Brown, S. A., & Jolly, C. A. (2009). A Resilience Intervention in African American Adults With Type 2 Diabetes. *The Diabetes Educator*, *35*(2), 274–284. https://doi.org/10.1177/0145721708329698

Stern, C., Lizarondo, L., Carrier, J., Godfrey, C., Rieger, K., Salmond, S. & Loveday, H. (2021). Methodological guidance for the conduct of mixed methods systematic reviews. *JBI evidence implementation*, *19*(2), 120-129.

Sternberg, R. J., & Lubart, T. I. (1999). The Concept of Creativity: Prospects and Paradigms. *Handbook of Creativity*, 3–15. https://doi.org/10.1017/cbo9780511807916.003

Stevens, J. (1996). *Applied multivariate statistics for the social sciences* (3rd ed.). Lawrence Erlbaum.

Stock, J. H., & Watson, M. W. (2012). *Introduction to econometrics* (Vol. 3). Pearson.

Story, J. S., Youssef, C. M., Luthans, F., Barbuto, J. E., & Bovaird, J. (2013). "Contagion Effect of Global Leaders' Positive Psychological Capital on Followers: Does Distance and Quality of Relationship Matter?" *The International Journal of Human Resource Management*, *24*(13), 2534–2553.

Stratman, J. L., & Youssef-Morgan, C. M. (2019). Can positivity promote safety? Psychological capital development combats cynicism and unsafe behavior. *Safety science*, *116*, 13-25.

Strümpfer, D. J., & Kellerman, A. M. (2005). *Quiet heroism: Resilience and thriving*. A. M. Kellerman & Associates.

Stuart, R., & Abetti, P. A. (1987). Startup venture: Towards the prediction of initial success. *Journal of Business Venturing*, *2*(3), 215–230.

Summers, L. H. (2000). International Financial Crises: Causes, Prevention, and Cures. *American Economic Review*, *90*(2), 1–16. https://doi.org/10.1257/aer.90.2.1

Sweetman, D., Luthans, F., Avey, J. B., & Luthans, B. C. (2011). Relationship between positive psychological capital and creative performance. *Canadian Journal of Administrative Sciences*, *28*, 4–13.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). HarperCollins.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Pearson.

Teece, D. J. (1981). The multinational enterprise: market failure and market power consideration. *Sloan Management Review*, *22*, 3–17.

Teece, D. J. (1985). Multinational enterprise, internal governance, and industrial organisation. *American Economic Review*, *75*, 233–238.

The Business Professor. (2021). *International Product Cycle - Explained*. The Business Professor, LLC. https://thebusinessprofessor.com/knowledge-base/international-product-cycle-definition/.

Thomas, R. L. (1993). *Introductory econometrics* (2nd ed.). Longman Publishing.

Thompson, B. (1992). A partial test distribution for cosines among factors across samples. In B. Thompson (Ed.), *Advances in social science methodology* (pp. 81–97). JAI.

Thompson, B. (2004). *Exploratory and confirmatory factor analysis*. American Psychological Association.

Timmermans, S., & Tavory, I. (2012). Theory construction in qualitative research: From grounded theory to abductive analysis. *Sociological Theory*, *30*(3), 167–186.

Toda, H. Y., & Yamamoto, T. (1995). Statistical inference in vector autoregressions with possibly integrated processes. *Journal of Econometrics*, *66*(1-2), 225–250. https://doi.org/10.1016/0304-4076(94)01616-8

Tolentino, P. E. (2017). Technological innovation and emerging economy multinationals: the product cycle model revisited. *International Journal of Technology Management*, *74*(1/2/3/4), 122. https://doi.org/10.1504/ijtm.2017.10004285

Tugade, M. M., Fredrickson, B. L., & Barrett, L. F. (2004). Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of Personality*, *72*, 1161–1190.

United Nations Center on Trade and Development. (1993). *Explaining and forecasting regional flows of foreign direct investment*.

Vernon, R. (1966). International Investment and International Trade in the Product Cycle. *The Quarterly Journal of Economics*, *80*(2), 190–207. https://doi.org/10.2307/1880689

Von Hippel, E. A. (1978). Users as innovators. *Technology Review*, *80*, 30–39.

Vyas, & Giri. (2019). Imperfect market theories and inflow of foreign direct investment. *Retrieved from Https://Www.projectguru.in/Imperfect-Market-Theories-Investment/.*

Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the resiliency scale. *Journal of Nursing Management*, *1*(2), 165–178.

Walumbwa, F. O., Mayer, D. M., Wang, P., Wang, H., Workman, K., & Christensen, A. L. (2011). Linking ethical leadership to employee performance: The roles of leader–member exchange, self-efficacy, and organizational identification. *Organizational Behavior and Human Decision Processes*, *115*(2), 204–213.

Walumbwa, F. O., Peterson, S. J., Avolio, B. J., & Hartnell, C. A. (2010). An investigation of the relationships among leader and follower psychological capital, service climate, and job performance. *Personnel Psychology*, *63*(4), 937–963. https://doi.org/10.1111/j.1744-6570.2010.01193.x

Wang, M. (2009). Manufacturing FDI and economic growth: evidence from Asian economies. *Applied Economics*, *41*(8), 991–1002. https://doi.org/10.1080/00036840601019059

Wang, Y., Liu, L., Wang, J., & Wang, L. (2012). "Work-family Conflict and Burnout among Chinese Doctors: the Mediating Role of Psychological Capital." *Journal of Occupational-Health*, *54*(3), 232–240.

Wassell, C. S. J., & Saunders, P. J. (2008). Time Series Evidence on Social Security And Private Saving. *The Issue Revisited. Central Washington University*, *Retrieved August 3, 2010,from http:// www.cwu.edu/~cb/econ/papers/Soc%20Sec%20Final%20Draft.pdf*.

Weisskopf, T. E. (1972a). An Econometric Test of Alternative Constraints on the Growth of Underdeveloped Countries. *The Review of Economics and Statistics*, *54*(1), 67–78. https://doi.org/10.2307/1927496

Weisskopf, T. E. (1972b). The impact of foreign capital inflow on domestic savings in underdeveloped countries. *Journal of International Economics*, *2*(1), 25–38. https://doi.org/10.1016/0022-1996(72)90043-8

Werner, E. E., & Smith, R. S. (1982). *Vulnerable but invincible: A study of resilience in children*. McGraw-Hill.

Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High risk children from birth to adulthood*. Cornell University Press.

West, S. G., Finch, J. F., & Curran, P. J. (1995). *Structural equation models with nonnormal variables: Problems and remedies.*

Whittaker, T. A. (2016). *"Structural equation modeling". Applied Multivariate Statistics for the Social Sciences* (6th ed., pp. 639–746). Routledge.

Winarno, S., Usman, M., & Kurniasari, D. (2021). Application of Vector Error Correction Model (VECM) and Impulse Response Function for Daily Stock Prices. In *Journal of Physics: Conference Series*, 1751(1), p. 012016.

Wind, Y. (1981). Marketing and other business functions. In J. N. Sheth (Ed.), *Research in marketing (Vol V)*. JAI Press.

Wind, Y. (1982). *Product policy: Concepts, methods and strategy*. Addison-Wesley.

Winkel, D. E., Wyland, R. L., Shaffer, M. A., & Clason, P. (2010). A new perspective on psychological resources: Unanticipated consequences of impulsivity and emotional intelligence. *Journal of Occupational and Organizational Psychology*, *84*(1), 78–94. https://doi.org/10.1348/2044-8325.002001

Witkowska, J. (2009). Foreign Direct Investment in the New European Union Member States and Developing Countries of Asia under Conditions of the Global Financial and Economic Crisis: Comparative Aspects. *Comparative Economic Research*, *12*(4), 133–153. https://doi.org/10.2478/v10103-009-0026-3

Wong, K. Y. (1994). In *International trade in goods and factor mobility* (p. Ch 3). MIT Press.

Woolley, L., Caza, A., & Levy, L. (2011). Authentic leadership and follower development: Psychological capital, positive work climate and gender. *Journal of Leadership & Organizational Studies*, *18*(4), 438–448.

Wright, M., Robbie, K., & Ennew, C. (1997). Venture capitalists and serial entrepreneurs. *Journal of Business Venturing*, *12*, 227–249.

Xie, J. L., Schaubroeck, J., & Lam, S. S. K. (2008). Theories of job stress and the role of traditional values: A longitudinal study in China. *Journal of Applied Psychology*, *93*, 831–848.

Xu, J., & Roberts, R. E. (2010). The power of positive emotions: It's a matter of life or death—Subjective well-being and longevity over 28 years in a general population. *Health Psychology*, *29*, 9–19.

Yang, Y., Xu, X., Liu, W., & Pang, W. (2020). Hope and creative self-efficacy as sequential mediators in the relationship between family socioeconomic status and creativity. *Frontiers in Psychology*, *11*, 438.

Yap, B. W., & Sim, C. H. (2011). Comparisons of various types of normality tests. *Journal of Statistical Computation and Simulation*, *81*(12), 2141–2155.

Yin, R. K. (2017). *Case study research and applications: Design and methods*. Sage publications.

Young, H. C. (1973). *Product development setting, information exchange and marketing-R&D coupling* [Ph.D. dissertation].

Youssef-Morgan, C. M. (2014). Advancing OB research: An illustration using psychological capital. *Journal of leadership & organizational studies*, *21*(2), 130-140.

Youssef, C. M., & Luthans, F. (2007). Positive organizational behavior in the workplace: The impact of Hope, optimism, and resilience. *Journal of Management*, *33*, 774–800.

Youssef, C. M., & Luthans, F. (2011). "Psychological Capital: Meaning, Findings and Future Directions." In K. S. Cameron & G. M. Spreitzer (Eds.), *The Oxford Handbook of Positive Organizational Scholarship*. Oxford University Press.

Youssef, C. M., & Luthans, F. (2012). Positive global leadership. *Journal of World Business*, *47*, 539–547.

Zacharakis, A. L., & Shepherd, D. A. (2001). The nature of information and overconfidence on venture capitalists' decision making. *Journal of Business Venturing*, *16*(4), 311–332.

Zeldin, A. L., Britner, S. L., & Pajares, F. (2008). A comparative study of the self-efficacy beliefs of successful men and women in mathematics, science, and technology careers. *Journal of Research in Science Teaching*, *45*(9), 1036–1058.

Zhang, K. (2001). "Does Foreign Direct Investment Promote Economic Growth? Evidence from East Asia and Latin America." *Contemporary Economic Policy*, *19*(2), 175–185. https://doi.org/10.1111/j.1465-7287.2001.tb00059.x

Zhang, K. H., & Markusen, J. R. (1999). Vertical multinationals and host-country characteristics. *Journal of Development Economics*, *59*(2), 233–252. https://doi.org/10.1016/s0304-3878(99)00011-5

Zhao, H., & Zhu, G. (2000). Location factors and country-of-origin differences: An empirical analysis of FDI in china. *Multinational Business Review*, *8*(1), 60–73.

Zhu, L., & Jeon, B. N. (2007). International R&D spillovers: Trade, FDI, and information technology as spillover channels. *Review of International Economics*, *15*(5), 955–976.

Zou, H., Chen, X., Lam, L. W. R., & Liu, X. (2016). "Psychological Capital and Conflict Management in the Entrepreneur-venture Capitalist Relationship in China: The Entrepreneur Perspective." *International Small Business Journal*, *34*(4), 446–467.

APPENDIX A

A Robust Analysis to further confirm the FDI model

The above analysis chose to use four variables for this study: inflation, Openness of the Economy (IMPEX Index): (Export+Import/GDP), Economic Freedom (Heritage Index), and startups. Most studies on FDI over the past 60 years have included GDP (Gross Domestic Product) and or GDP per capita as a variable. To validate that, even with the inclusion of these new variables, the startup variable is still positively cointegrated in the long run without lags. A bivariate equation also shows that startups have causality in the long run with FDI.

Some believe that market size, economic stability, and degree of free-trade policy contribute to the attractiveness of foreign direct investment. Therefore, it is worthwhile to examining the impact of macroeconomic conditions on FDI. It is critical to understand whether factors such as GDP, inflation, and trade openness affect foreign investment.

The size of a country's market appears to substantially impact the amount of foreign direct investment (FDI). Gross Domestic Product (GDP), or GDP per capita, is referred to in all studies, although the term is used differently in each (Ali & Guo, 2005; Artige & Nicolini, 2010; Asiedu, 2006; Kolstad & Wiig, 2012; Ramirez, 2010; Mughal & Akram, 2011).

The following three models chosen were selected:

[A]. ***DiffLnFDI = f [DiffLnGDPperCapita]***

[B]. ***FDI/GDP = f [LnStartups, Lag2Inflation, DiffGDPperCapita]***

[C]. ***LnFDI = f [LnFDI/GDP, LnStartups, Lag2Inflation, Lag2Impex]***

Where:

DiffLnFDI = The first difference in the log value of FDI

DiffLnGDPperCapita = The first difference of the log value of GDP per capita

Ln(FDI/GDP) = Ln(FDI divided by GDP)

DiffGDPperCapita = The first difference in GDP per Capita

LnFDI = Log value of Foreign Direct Investment

LnStartups = Log value of the number of Innovative Startups

Lag2Inflation = The percentage Inflation rate per annum (lagged 2 years)

Lag2Impex = The Impex Index – X+I/GDP (lagged 2 years)

***Table A 1*:** Estimated VECM Models

Variable	Variant A	Variant B	Variant C
Dependent Variable	DIFFLnFDI	FDI/GDP	LnFDI
CointEquation (φ)	-1.533149 (0.0001) *	-1.541786 (0.0039)*	-7.442510 (0.0000)*

Note: * P-value 1% significant

The results of the VECM equations shown in Table A1 confirm that all coefficients (φ) of the error correction term are negative. This corresponds to the fact that all three variants have a long-run causality with the dependent variable.

Variant A:

DiffLnFDI = f [DiffLnGDPperCapita]

ECT = 1.000000DiffLnFDI(-1) – DiffLnGDPperCapita(-1) – 0.150216

DiffLnFDI = -1.533149ECT + DiffLnGDPperCapita(-1) + 0.150216

The above equation shows that GDP per Capita has a positive causality effect on FDI.

Variant B:

FDI/GDP = f [LnStartups, Lag2Inflation, DiffGDPperCapita]

ECT = 1.000000LnFDI/GDP(-1) – 4.57E-09LnStartups(-1) + 1.23E-09LagInflation(-1) – 2.34E-12DiffGDPperCapita – 1.07E-08

FDI/GDP = -1.541786ECT + 4.57E-09LnStartups(-1) - 1.23E-09LagInflation(-1) + 2.34E-12DiffGDPperCapita + 1.07E-08

The results of variant B show that Startups and GDP per Capita have positive long-run causality with FDI/GDP, while Inflation has a negative causality effect which is in line with known economic theory.

Variant C:

LnFDI = f [Ln(FDI/GDP), LnStartups, Lag2Inflation, Lag2Impex]

ECT = 1.000000LnFDI(-1) -0.794250LnFDIGDP - 0.271350Lnstartup(-1)
+0.025231Lag2Inflation(-1) – 0.011624Lag2Impex(-1) – 21.21220

LnFDI = -7.442510ECT + 0.794250LnFDI/GDP + 0.271350Lnstartup(-1) -
0.025231Lag2Inflation(-1) + 0.011624Lag2Impex(-1) + 21.21220

From the variant C equation, it is observed that FDI/GDP, Startup, and Impex Index all have a positive long-run causality effect on FDI, whereas inflation has a long-run negative causality effect.

The Wald test was used to evaluate any short-run causality variables, as shown in Table A2. As shown in Table A2, all variables in all three variants show that the p-values for the Chi-square returned values are greater than the 5% level for statistical significance; therefore, the null hypothesis cannot be rejected at this instant. This means that there is no evidence of short-run causality from these independent variables to FDI.

***Table A 2*:** Wald Test for coefficients to be removed (p-values > 0.05)

Restriction	*Test*	*Variant A*	*Variant B*	*Variant C*
C3=C4=0	Chi-Squared	0.7296	-	-
C4=C5=C6=C8=C9=C10=0	Chi-Squared	-	0.1751	-
C4=C5=C8=C9=0	Chi-Squared	-	-	0.2912

Table A3 confirms the Null Hypothesis (p-value < 0.05), therefore, these variables have short-run causality with the dependent variable.

***Table A 3*:** Wald Test for coefficients that are Short-run applicable

Restriction	*Test*	*Variant A*	*Variant B*	*Variant C*
None	Chi-Squared	-	-	-
C7=0	Chi-Squared	-	0.0079	-
C6=C7=C10=C11=0	Chi-Squared	-	-	0.0000

Short-run causality variables

Variant B:

Lag2Inflation (-2)

Variant C:

LnStartups (-1), LnStartups (-2), Lag2Inflation (-1), Lag2Inflation (-2)

Conclusions

This study did not include GDP or GDP per capita as independent variables, similar to most previous research. The reason for this exclusion is fully articulated in Section 4.4.2

The purpose of examining a robust analysis that included GDP and GDP per capita was to assess whether this inclusion could change the outcome of the original findings. From the results obtained above, including these new long-standing variables did not change the causality effect of startup, inflation, or Impex on FDI. Startup and inflation also proved to have short-term causality with FDI. The Heritage variable could not be included because of restrictions in the equations for the collected data.

APPENDIX B

Empirical Studies of FDI for over 50 Years

Authors	Country(s)	Period	Methodology	Variables
Krainer (1967)	United Kingdom USA	1952-1962 1950-1963		Country portfolio, FDI, Index of capacity utilization, Ratio of British to American long term bond yields
Scapalander(1967)	USA, Europe	1951-1964	Multiple regression	FDI in USA and FDI in Western Europe
Griffin (1968)	Columbia	1950-1963	Cross section analysis	Domestic savings, GDP, Net inflow of foreign capital
Scapalander and Mauer (1969)	USA, ECC	1952-1966	OLS	USA FDI in EEC countries, GDP of EEC, tariff discrimination, Exports from EEC, exports of USA
Griffin (1970)	32 countries	1962-1968	Cross section data	Gross domestic savings, GDP, Foreign savings.
Erbe (1970)	Germany	1955-1969	Multiple regression	Net flow of private capital, trade balance, German and European interest rates
Branson and Hill (1971)	6 OECD countries	1960-1969	Multiple regression	Net capital inflow, interest rates. Income velocity of money, trade balance
Weisskopf (1972a)	44 countries	1953-1966	Pooled OLS	Domestic savings, GDP, Net capital inflow, Total exports
Weisskopf (1972b)	44 countries	1953-1966	Multiple regression	Total investment, GDP, Net inflow of foreign capital, total exports
Pesmazoglou (1972)	43 countries	1957-1968	Multiple regression	Growth rate of real GDP, gross fixed capital, gross domestic savings, balance of payments
Kwack (1972)	4 countries	1960-1967	OLS	FDI profit, tax rates, level of output, services of labor input, prices of output, prices of capital goods, prices of labor services, interest rate, expected rate of price changes, stock of fixed and current assets, net worth and liabilities.
Kim (1973)	Korea	1957-1966	OLS	Gross domestic capital, private and government formation, increase in stock

Christian and Pagoulatoes (1973)	60 countries	1962-1963	Cross section data	GDP, Gross fixed capital formation, time and demand deposits, net inflow of funds
Healey (1973)	8 countries	1950-1969	Multiple regression	GDP growth rate, export and trade liberalization
Kouri and Porter (1974)	4 countries	1960-1970	OLS	Total inflow of private capital, foreign income, exchange rate, domestic assets, domestic stock of wealth, account balance
Stoneman(1975)	Developing countries	1945-1970	Multiple regression	Annual rate of economic growth, Gross domestic investment, net FDI, FDI stock
Kouri (1975)	Germany	1960-1970	OLS	Net capital inflow, domestic stock of wealth, interest rate, exchange rate, foreign income, domestic assets, current account balance
Feldstein (1983)	17 countries	1960-1979	OLS	Net FDI, GDP, domestic savings.
Blomstrom and Persson (1983)	Mexico	1970	OLS	Total assets, Herfindahl index, average gross production, average effective work day, number of employees employed in foreign companies, average effective work day, ratio of white to blue collar employees.
Rothgeb (1984)	62 countries	1967-1978	Multiple regression	FDI stock in construction, FDI, real gross fixed capital formation, total population, per capita GDP and FDI stock in mining industry
Santiago (1987)	Puerto Rico	1979	Stepwise regression	FDI, Firm size, Capital intensity of production, market concentration, average profits, fuel costs, profits and productivity compared to USA
Rothgeb (1988)	Africa and Latin America	1967-1978	Multiple regression	GDP growth rate, FDI stock
Smits (1988)	30 countries	1978	OLS	Value of exports or imports, GDP, total population, FDI stock

Kharas and Levinsohn (1988)	26 Least developed countries	1961-1981	2SLS – Two stages least square regression	Consumption, income, FDI
Culem (1988)	6 European countries	1969-1982	OLS and GLS	FDI, annual rate of GDP, tariff barriers, labor cost, nominal interest rate differential.
Savvides (1990)	47 LDC countries	1980-1986	OLS and two stage limited dependent variable method	Commercial inflows, reschedule capital and exogenous variables affecting creditworthiness
Tsai (1991)	Taiwan	1958-1985	OLS	FDI, Economic reforms regarding FDI, period FDI reached peak
Drake and Caves(1992)	Japan and USA	1975-1986	OLS	FDI, R&D spending, Japanese share of USA imports, trade restrictions, advertising intensity, exchange rate, retained profits of Japanese enterprises.
Ketkar (1993)	India	1950-1985	2SLS	Real domestic demand, real investment, funding costs, bank deposits, real foreign capital inflow, return on capital, credit allocations
Pastor and Hilt (1993)	7 Latin American countries	1973-1986	OLS	FDI, expected growth rate, change in credit to private sector, development of public sector investment, inflation rate, expected debt burden, actual debt service, per capita GDP, IMF programs.
Fatechi and Safizadeh (1994)	15 LDC countries	1950-1982	Multiple regression	FDI in manufacturing, mining and petroleum industries, GDP, Total population.
Metwally and Tamaschke (1974)	3 North American countries	1975-1992	OLS and 2SLS	Debt service, debt stock, capital inflow, rate of growth GNP, interest rate on foreign debt, exports, ratio of total credits to total debt, domestic savings, difference between domestic and international interest rate.

Wei (1995)	China	1987-1990	FE model – Fixed effects	FDI, GDP, total population, literacy ratio
Meller et al (1996)	Chile	191-1989	OLS	Growth rate of real GDP, rate of GDP growth by Hicks, Capital stock effectively utilized,
Fung et al (2003)	China	1990-2000	GLS	GDP, average wage, literacy ratio, infrastructures, special economic zones, coastal cities, distance between trading countries.
Alfero et al (2004)	71 countries	1975-1995	OLS	Economic growth, FDI, financial systems, education level, population, institutional quality, black market premium, inflation, government consumption.
Farrel et al (2004)	Japan	1984-1998	Pooled regression	FDI, market size, Exports imports, labor costs, exchange rate, interest rate, antidumping measures.
Bevan and Estrin (2004)	11 European transition countries	1994-2000	RE- Random effects	FDI, size, distance, trade openness, labor costs, interest rate, legal and political conditions, prospect of EU membership
Bevan et al (2004)	12 transition counties	1994-1998	Cross-section analysis	FDI, size, distance, trade openness, labor costs, Russia dummy variable
Durham (2005)	83 countries	1979-1998	OLS	Economic growth, FDI, equity foreign portfolio investment, economic institutional development, corruption, property rights
Li and Liu (2005)	84 countries	1970-1999	3SLS	GDP, inflation, literacy ratio, gross domestic investment, FDI, black market premium, interest rates, political instability, trade volume, telephone lines per capita
Agosin and Machado (2005)	12 countries	1971-2000	GMM – Generalized method of moments	Private investment, FDI, GDP
Schneider (2005)	47 countries	1970-1990	OLS and FE(fixed effects)	Human capital stock, GDP, FDI, infrastructure, R&D, IPR index, physical capital stock, imports

Alsan et al (2006)	74 countries	1980-2000	OLS and RESET – Ramsey Regression Equation Specification Error Test	FDI, population, GDP, income, trade barriers, literacy ratio, health status
Azman Saini et al (2010)	91 countries	1975-2005	PTR (Panel threshold regression)	GDP, Income, population, FDI, human capital, Govt. expenditure, financial markets.
Hubler and Keller (2010)	60 countries	1975-2004	OLS	FDI, imports, ODA, income, gross fixed capital formation, industrial primary output, primary energy supply
Ali et al (2011)	70 countries	1981-2005	OLS, GMM and Panel analysis	IPR, economic growth, FDI, political determinants of institutions, cultural determinants
Doytch and Uctum (2011)	60 countries	1990-2004	GMM, FE and pooled OLS	GDP, manufacturing and services value added, FDI in manufacturing, service, financial and non-financial services, Net FDI
Tiwari and Murascu (2011)	23 Asian countries	1986-2008	Pooled OLS	GDP, gross fixed capital formation, labor force, FDI, exports.
Anwar and Cooray (2012)	6 South Asian countries	1970-2009	OLS, GMM and FE	GDP, stock of capital, human capital, level of economic development, FDI, exports, civil rights, political rights, Govt. expenditure.
Fillat and Woerz (2011)	35 countries	1987-2002	Panel data analysis, GMM and OLS	FDI, exports, domestic investment, employment, growth rate
Jadhav (2012)	Brazil, Russia, India, China, South Africa	2000-2009	Panel data analysis	Market size, institutional and political factors, political risk, natural resource availability
Morrissey and Udomkerdmonkol (2012)	46 countries	1996-2009	GMM	Private & public investment, FDI, GDP, governance indicators
Gohou and Soumare (2012)	Africa's Regional Economic Communities	1990-2007	2SLS	Poverty rates, FDI, Human Development Index, GDP, financial and political conditions.
Tintin (2013)	6 European countries	1996-2009	OLS and FE	FDI, GDP, distance, trade openness, EE membership
Masron and Nor (2013)	8 ASEAN countries	2002-2010	Panel data analysis	GDP, institutional quality, educational expenditure, trade openness, wage rate.
Kashcheeva (2013)	103 countries	1970-2009	OLS, GMM and FE	Stage of development, FDI, IPR, human capital, Govt.

				expenditure, trade openness, inflation market distortion,
Kaur et al (2013)	Brazil, Russia, India, China	1991-2010	Panel data, FE and RE	FDI, liquid liabilities of banking sector, credit by banking sector, return on equity of banks, bank cost and income, stock market capitalization and turnover ratio.
Ezcurra and Guez-Pose (2013)	47 countries	1990-2007	OLS	Region inequalities, trade openness, FDI stock, portfolio investment, income payments to foreign nationals, trade and tax restrictions.
Lessmann (2013)	55 countries	1980-2009	OLS amd LIML (Limited Information Maximum Likelihood)	Regional inequalities, GDP, FDI
Fereidouni (2013)	31 countries	2000-2008	GMM and FE	CO2 emissions, FDI by sector, GDP, urban population
Feeny et al (2014)	Pacific Island countries	1971-2010	OLS and GMM	GDP, FDI, literacy ratio, inflation, imports, exports, domestic investment, trade openness.
Imai et al (2014)	24 countries	1980-2009	Panel data	GDP, remittances, inflation, civil wars, natural sources, investment, financial development, capital account openness.
Goswami and Haider	146 countries	1984-2009	Factor analysis and Panel data	Market size, GDP, trade openness, available infrastructure.
Sevoum et al (2014)	25 SSA countries	1977-2009	Panel data	Trade openness, FDI,
Thangavelu and Narioko (2014)	39 countries	2000-2009	FE	GDP, literacy ratio, FTA, distance, common borders, language
Kinithia and Murshed (2014)	Kenya and Malaysia	1960-2009	VAR and VECM (Vector Error Correction Model)	Market size, trade openness, financial stability, inflation, FDI, institutional development, cost factors.
Doytch et al (2014)	100 countries	1990-2009	GMM	Income, population, corruption, FDI, child labor

Source: Own summary from selected empirical literature