

A PARTIAL LEAST SQUARE MODELLING FOR ANALYSIS THE IMPACT OF WELFARE TO ENTREPRENEURSHIP CLIMATE IN OECD COUNTRIES

Ufuk BİNGÖL*

Abstract

Socio-economic issues in countries all over the world affect the entrepreneurship ecosystem. The impact of socio-economic issues and developments on individuals' lives conceptualizes welfare. In this sense, the relationship between the welfare of the countries and the entrepreneurial climate is the object of interest. This study aims to investigate the impact of socio-economic welfare on entrepreneurial climate in OECD countries with the PLS-SEM method by using OECD's Better Life Index and World Bank Ease of Doing Business Index for 2020. This study contributes to previous literature by reversing the analysis of the relationships between entrepreneurship and well-being. The model established with the assumption that all sub-indicators of the better life index positively impact the ease of doing business, only correlated with income, employment, and education indicators. However, there is only a positive and significant relationship between the education variable of better life and ease of doing business at $p < .001$ level among these correlations. According to results, the duration in education, education level of the working-age population, and the increase in the PISA averages of the countries increase the ease of doing business in terms of entrepreneurship climate.

Keywords: Better Life Index, Ease of Doing Business, PLS-SEM, Entrepreneurship, Ease of Doing Business

* Asst. Prof., Bandırma Onyedi Eylül University, Manyas Vocational School E-mail: ubingol@bandirma.edu.tr ORCID: 0000-0003-1834-842X

OECD Ülkelerinde Refahın Girişimciliğe Etkisinin Analizi için En Küçük Kısmi Kareler Yöntemi Modellemesi

Öz

Tüm dünyada ülkelerin sosyo-ekonomik özellikleri onların girişimcilik iklimlerini etkilemektedir. Sosyo-ekonomik sorun ve gelişmelerin bireylerin üzerindeki etkisi ise refahı kavramsallaştırmaktadır. Bu nedenle ülkelerin refah düzeyleri ile girişimcilik arasındaki ilişki araştırma konusudur. Bu çalışma, OECD ülkelerinde sosyo-ekonomik yönleriyle refahın girişimcilik iklimi üzerindeki etkisini 2020 yılı OECD Daha İyi Yaşam Endeksi ve Dünya Bankası İş Yapma Kolaylığı Endeksi verileri ve Kısmi En Küçük Kareler - Yapısal Eşitlik Modeli yöntemi ile incelemeyi amaçlamaktadır. Bu çalışma önceki literature, girişimcilik ve refaha olan etkisinin tersi boyutunu incelemek suretiyle katkı sağlamaktadır. Daha İyi Yaşam Endeksinin tüm alt başlıkları ile girişimcilik iklimini etkilemesi üzerine kurulan modelde yalnızca, gelir, eğitim ve istihdam başlıkları ile iş yapma kolaylığı Endeksi arasında korelasyon tespit edilmiştir. Fakat bu korelasyonda, $p < ,001$ düzeyinde yalnızca eğitim değişkeni ile pozitif ve anlamlı ilişki bulunmuştur. Çalışma sonuçlarına göre eğitimde geçen süre, çalışma çağındaki nüfusun eğitim seviyesi ve ülkelerin PISA ortalamalarının yükselmesi, iş yapma kolaylığı açısından girişimciliği iklimini olumlu etkilemektedir.

Anahtar Kelimeler: Daha İyi Yaşam Endeksi, İş Yapma Kolaylığı Endeksi, Yapısal Eşitlik Modeli, Girişimcilik

1. Introduction

The entrepreneurship ecosystem has a very fragile structure in terms of countries' macroeconomic indicators. Providing attractive opportunities and supports primarily for the activities of foreign investors plays a vital role in the economic growth of developing countries (Iyigun, 1998). In addition to foreign investors, the ability of internal entrepreneurs and institutions to easily and quickly continue their Professional-commercial activities affects the entrepreneurship climate of the countries. One of the results of sustainable economic development is the increase in social welfare (Islam & Clarke, 2002). The impact of society's welfare levels on

entrepreneurial climate is controversial. Carree et al. (2002) state that the effect of economic development on entrepreneurship varies periodically depending on the course of the global economy.

On the other hand, besides economic development, the combination of various sub-indicators forms the welfare level of the societies (Gilbert & Terrell, 2012). In addition to the issues of Education, Health, Housing, Social Work and Employment, which are defined as the big five of social policy (Spicker, 2015), the environment, social communication, happiness level, etc. topics are also determinants of welfare (Özdemir, 2017). Erdoğan and Genç (2019) state by associating the concept of welfare with working life that social partners also have a psychologically and financially regulated role in welfare. Therefore, maintenance of work-life balance is one of the key elements of welfare.

International organizations have been conducting various researches related to other parameters that try to fully reflect the welfare status of the society as well as monetary criteria to represent the relationship between economic growth and welfare since the 1990s. In this sense, the welfare levels of the countries are measured with macroeconomic indicators since the 1960s by considering the socio-economic factors (Stanton, 2007). Today, The OECD has been published annually Better Life Index for multidimensional measurement of welfare level.

Various international organizations also examine the availability of the entrepreneurship climate of the countries. In this context, the "Ease of Doing Business" reports published regularly by the World Bank include data on how freely the entrepreneurs or investors acting for entrepreneurial procedures in which country. Based on the report, the possibilities and abilities of the countries for commercial activities for entrepreneurship and investment are statisticalized with various parameters, and EDB scores are calculated annually.

The purpose of this study, which investigates the relationship between welfare and entrepreneurship climate, is to examine the impact of current socio-economic welfare levels of OECD countries on entrepreneurial climate. This study consists of six sections. Following the Introduction section, the second section examines the theoretical framework of the Better Life Index (BLI) and Ease of Doing Business Index (EDBI). The third section briefly presents a literature review towards BLI and EDB. The fourth section maintains the methodology of the study, and the fifth section remarks on the research findings and results. The study ended with comments and conclusions.

2. Theoretical Framework

2.1. Better Life Index as a Measurement Tool for Welfare

From the middle of the 20th century to the 1990s, a widespread view of the measurement of welfare with monetary indicators prevailed. Per capita income and GDP are the leading indicators. International organizations have created alternative welfare measurement methods since the 1990s on the perception of the increase in per capita cannot fully reflect welfare. OECD The Commission on the Measurement of Economic Performance and Social Progress started a project started in 2008, to create an alternative to the lacking aspects in measuring welfare of Human Development reports launched by the United Nations Development Program in 1990 (OECD, 2011; Decanq, 2017). OECD first published BLI with a data set of 11 welfare topics and 24 indicators for 34 member states in 2011. Subsequently, Non-OECD member countries, Brazil and Russia, were included in 2012. Although there are various changes in measurements since the first release, BLI has 24 indicators under 11 topics, measured with different units (dollars, years, etc.). All values have to get normalized in order to aggregate values and make values comparable expressed in different unities. The normalization formula, for converting original values of each indicator into a number between 0 and 10 is

as follows (Mizobuchi, 2013):

$$\frac{\text{Value to convert} - \text{minimum value}}{\text{maximum value} - \text{minimum value}} \times 10$$

After calculation of the values of each indicator, they aggregated to the topic, which consists of one to four indicators. Then all indicators in the related topic are averaged with equal weight.

$$\frac{\sum \text{Indicator's value}}{n}$$

According to OECD (2019) Current 11 topics and 24 indicators are:

→ HOUSING

- Dwellings without basic facilities (Percentage): The percentage of the population living in a dwelling without indoor flushing toilets for the sole use of their households.
- Housing expenditure (Percentage): Ratio to housing costs on households gross adjusted disposable income for the latest available year.
- Rooms per person (Ratio): Number of rooms (excluding kitchenette, scullery/utility room, bathroom, toilet, garage, consulting rooms, office, shop) in a dwelling divided by the number of persons living in the dwelling.

→ INCOME

- Household net adjusted disposable income (\$): Average amount of money that a household earns per year after taxes for the latest available year.
- Household net wealth (\$): Average total value of a household's financial assets (savings, stocks) minus their liabilities (loans) for the latest available year.

→ JOBS

- Labour market insecurity (Percentage): Expected loss of earnings when an individual becomes unemployed for the latest available year.
- Long-term unemployment rate: Percentage of people aged 15 to 64, who are not working but have been actively seeking a job for over a year for the latest available year.
- Employment rate: Percentage of people aged 15-64, currently in a paid job for the latest available year.
- Personal earnings: Average annual earnings per full-time employee, latest available year.

→ COMMUNITY

- Quality of support network: Percentage of people who believe they can rely on their friends in case of need.

→ EDUCATION

- Educational attainment: Percentage of people, aged 25-64, have at least an upper-secondary (high-school) degree for the latest available year.
- Student skills: Average performance of students, according to PISA (Programme for International Student Assessment).
- Years in education: Average duration of formal education in which a five-year-old child can expect to enroll during his/her life until the age of 39.

→ ENVIRONMENT

- Air pollution: Average concentration of particulate matter (PM2.5) in the air for the latest available year.
- Water quality: Percentage of people reporting to be satisfied with the quality of local water.

→ CIVIC ENGAGEMENT

- Stakeholder engagement for developing regulations: Level of formal stakeholder engagement built in the development of primary laws and subordinate regulations for the latest available year.

- Voter turnout: Percentage of registered voters who voted during recent elections for the latest available year.

→ HEALTH

- Life expectancy: Average number of years a person can expect to live for the latest available year.

- Self-reported health: Percentage of people reporting their health to be "good or very good" for the latest available year.

→ LIFE SATISFACTION: Average self-evaluation of life satisfaction, on a scale from 0-10

→ SAFETY

- Feeling safe walking alone at night : Percentage of people who report feeling safe walking alone at night.

- Homicide rate Average: number of reported homicides per 100.000 people for the latest available year.

→ WORK-LIFE BALANCE

- Employees working very long hours: Percentage of employees working fifty hours or more a week on average for the latest available year.

- Time devoted to leisure and personal care: Average number of hours per day spent on leisure and personal care, including sleeping and eating.

There are still various criticisms for BLI, which is developed for using in the measurement of welfare. One of the critics is indicators. According to Kasparian and Rolland (2012), some topics should be

enriched by the addition of complementary indicators for aggregation of an absolute score. Another issue is sustainability concerns. According to Mizobuchi (2016), despite the BLI's multifunctional coverage of topics, it still fails to take sustainability into consideration.

2.2. Ease of Doing Business as an indicator for Entrepreneurship Climate

EDBI aims to create an annual comparative report infrastructure for entrepreneurs with its indicators, such as ease of establishing a company that will affect the investment environment of countries, tax policies, employment, licensing process, protection of investors, resolution of the bankruptcy. To this end, the World Bank published the first report in 2004 to include five criteria and the data of 133 countries in 2003 to measure the ease of doing business in the countries. As of 2020, 190 countries are examined with 11 topic and 41 indicators under the titles of starting a business, dealing with construction permits, getting electricity, registration of property, getting credit, protection of minority shareholder rights, paying taxes, trading across borders, enforcing of the contract and resolving the insolvency of the company. Eighteen thousand local experts, private sector representatives, government officials, and other professionals contributed to the questionnaires related to indicators for 2020 EDBI through data collection points in 190 countries (Worldbank, 2020). Following the scoring of the determined topics in the range of 0-100, EDBI score and ranking of the countries emerge by calculation of arithmetic averages.

A summarize of EDBI topics are (Worldbank, 2020);

The World Bank calculates EDBI with a gender equity perspective in five steps. Under "Opening a Business" as the first step, *Starting a business* topic, measures the time and costs an entrepreneur spends on all the transactions that he/she must complete to start a business in a sample country. *The employing workers* topic evaluates the flexibility of regulation of employment in terms of hiring, working

hours, and redundancy rules and costs.

Under "Getting a location" step, *Dealing with construction permits*, measures the processes to be followed for the construction of a simple commercial warehouse in sample country's metropolitan city and the days and costs spent for these processes. *Getting electricity topic* is the procedure that a local entrepreneur must complete in order to get electricity and is a topic to calculate the elapsed time and cost. *Registering property* measures all the time and costs required by a company to acquire another company and/or pass the property on its own, as well as the quality of the land administration. Under "Accessing Finance" as the third step, *Getting Credit* topic, assesses the strength of entrepreneurs' ability to borrow and lend, credit knowledge and their legal rights in debtor/creditor situations. *Protecting minority investors* topic evaluates the protection power of the minority shareholder in case the enterprise large capital partners can use the company to their advantage. In the fourth step, titled "Dealing day to day operations," has three topics. *Paying Taxes* topic measures the time required for the taxes that SMEs must pay, tax deduction rates, and administrative and financial burdens for the SME of paid taxes. *Trading across borders* topic measures the duration and costs of the shipment process of all these products and services and situations of official documents required by the public authority to export or import the goods or services produced by the entrepreneur. *Contracting with the government* topic presents the process, time, and cost of awarding a public contract for road resurfacing to a domestically owned medium-sized limited liability company. There are two topics under the final step titled "Operating in a Secure Business Environment". *Enforcing Contract* topic measures the effectiveness of the judicial system in the solution of a commercial case in local courts in terms of duration, attorney, court and enforcement costs, and the use of best practices to improve quality and efficiency. *Resolving Insolvency* topic, it measures the

return period (if possible) and liquidation period of internal assets of the bankrupt enterprises, their results.

EDBI has been developed to measure the efficiency of regulatory processes and the quality of business legislation, with entrepreneurs' tendency to prefer less bureaucracy. For instance, it measures the existence of a fast, simple, and affordable process for the transfer of ownership and the existence of systems that prove the accuracy of the public's knowledge of such transfers. However, the index partially considers the positive or negative effects of bureaucratic regulations. It is also possible that an issue that will increase some EDBI topic scores may not be in the interests of countries or entrepreneurs. For this reason, although there are evaluations under the "Employing worker" in the index, and "Contracting with the government" topics are not taken into consideration in the country rankings. For example, the lower restriction in working hours and the easier dismissal of workers, while moving countries to better EDBI rankings, negatively affect the outlook of countries, especially in labor statistics. The main goal of EDBI is to prevent excessive bureaucracy for private sector investments, to ensure the transition to the registered economy and to use the entrepreneurship key for macroeconomic growth.

3. Literature Review

There are a large number of studies in the literature that examine BLI and EDBI with various factors separately. Also, there is much literature examining the relationship between the concept of welfare and entrepreneurship, regardless of these indexes. In this context, the focus of the literature is the impact of entrepreneurial climate on the welfare level in the countries (Carree et al., 2002; Islam & Clarke, 2002; Tamvada, 2010; Vial et al., 2011; Naude et al., 2014; Castaño et al., 2015; Schubert, 2015; Grafland, 2019; Wiklund et al., 2019). There are fewer studies in the literature on examining the impact of countries' welfare levels on entrepreneurship. In this context;

Pennings (1982) examined the impact of well-being on entrepreneurship in 70 metropolitan cities in the U.S.A.. According to the results, while the environmental and political quality of life adversely affects entrepreneurship, economic, health, and educational quality affects positively.

Begley et al. (2005) studied the political and economic welfare factor on entrepreneurial desire and feasibility in thirteen Anglo-Saxon, East, and South Asian countries. According to an empirical regression model results, they found that the perceived market opportunities, skilled labor, and supportive government regulation (negatively) affect entrepreneurial feasibility and desire.

Henrekson and Roine (2007) have examined the welfare regulations affecting entrepreneurship in Sweden, which has the world's most mature welfare regulations within the concept of the welfare state, with mixed methods. According to the results of the study, Some strict regulations have negative impacts on the entrepreneurial climate. For instance, taxation of entrepreneurial income, and higher tax rates on labor, the high-level minimum standard of living guaranteed by the government, and few entrepreneurial tax regulations discourage entrepreneurship.

Gürbüz (2009) analyzed the relationship between welfare and entrepreneurship theoretically under Pareto's welfare analysis concept. In the study, the contradiction emerged between the economic prosperity that occurred as a result of the development of entrepreneurship and the negative impact on entrepreneurship as a result of the social welfare practices of the public.

Neergard and Thrane (2011) research the nordic welfare model, whether it has a negative or positive impact on women entrepreneurship for Denmark. According to results, even though Scandinavian countries encourage the gender-blind welfare systems,

regulations for maternity leave and funds, child care, income allowance, and issues are still the most problematic areas. In addition to Neergard and Thrane, Ahl and Tillmar (2015) mentioned tax deductions for household services to increase women entrepreneurs created more businesses but emerged precarious employment, especially for disadvantageous women.

Audretsch and Belitski (2015) explored subjective Well-Being – Entrepreneurship relationships across 74 big cities in Europe with a newly created index title as "City Ecosystem Index (CEI)" and Regional Entrepreneurship Ecosystem Index (REDI). According to the results, the well-being of the city affects the regional entrepreneurship of the cities in terms of job opportunities, housing prices, environmental conditions, quality of public goods and administrative services, satisfaction with healthcare and safety, social cohesion, trust, and culture positively.

Retsikas (2017), examined the relationship between Islamic welfare and entrepreneurship implemented under Indonesian government policy. According to the results of the study, the expected effects of efforts to eradicate poverty in the country with pious entrepreneurship through currently free education, healthcare, and micro-finance supports through DKI (Indonesian Fund for Justice) have not yet been revealed.

Ribes-Giner et al. (2019) examined the welfare indicators affecting women's entrepreneurship in OECD countries with the Fuzzy set qualitative comparative analysis. According to the results of the study, access to higher education levels together with sustainable high household income, and an excellent work-life balance despite the possibility of unemployment causes high female entrepreneurship.

An overall evaluation from the literature, Each researcher, found relations between predefined topics (Culture of the society,

Employment, Education, Income, Environment, Life-Satisfaction) of well-being and entrepreneurial climate. Therefore it has been decided to add the BLI with its all topics and their sub-indicators as exogenous variables.

4. Methodology

4.1. Data Collection

In this study, the better life index and ease of doing business data of 37 countries that are members of OECD were analyzed. The data sources are OECD and World Bank databases. (OECD, 2020; Worldbank, 2020). In this context, 2020's BLI data and World Bank EDBI data have been downloaded from relevant databases and prepared for analysis. No erroneous or missing data were found in the content. There are various opinions about the appropriate sample size in the Partial Least Square-structural equation model (PLS-SEM). Chin & Newsted (1999) suggests that the sample size should be between 30 and 100. The sample size of the study consists of 37 countries. Since this number is within the recommended sample size limit, the study has a sufficient sample size.

4.2. Research Method

SmartPLS SEM software is used to analyze the data collected within the scope of the research (Ringle et al., 2015). This software is a SEM analysis software used in small sample groups and the analysis of non-normal distributed data (Kwong & Wong, 2013; Dülgeroğlu & Başol, 2017; Yasım, 2019). The main reasons for choosing PLS-SEM in studies are that it is useful for small samples, complex models, and hierarchical models and focuses on prediction and exploratory research (Ringle et al., 2012). In addition to using the partial least squares method, SmartPLS; simultaneously evaluates the reliability and validity of the variables used in the measurement of all variables,

as well as the strength, degree, and significance level of the relationship between the variables in the specified model. SEM is used in the analysis of macroeconomic data as well (Başol, 2018; Leal-Rodríguez & Sanchís-Pedregosa, 2019; Şahinoğlu & Yakut, 2019). In the study, Descriptive analysis of the research data performed first. Subsequently, confirmatory factor analyzes (CFA) related to the sub-dimensions included in the research were performed, and reliability analyzes performed.

4.3. Descriptive Statistics

Collected data has been scrutinized in terms of its descriptive statistics, correlations, and normality. In this case, Table 1 shows the information regarding the missing, mean, median, minimum, maximum, standard deviation, kurtosis, and skewness values. The Shapiro-Wilk test of normality applies the hypothesis test regarding the normal distribution of the dependent and independent variables through SPSS statistic software.

Table 1. Descriptive Summary Statistics

Variables	Mean	Median	Min	Max	Std. Dev.	Excess Kurtosis	Skewness
HOUSING							
• Dwellings without basic facilities	3,551	,7	0	25,500	6,205	5,733	2,443
• Housing expenditure	20,811	21	15	26	2,448	-,016	-,048
• Rooms per person	1,653	1,65	1	2,6	,408	-,522	,275
INCOME							
• Household net adjusted disposable income (HNADI)	28.137,189	29.333	16.275	45.284	6169,55	,411	,265
• Household net wealth (HNW)	274.574,581	246.166,5	70.160	769.053	142481,205	3,409	1,608
NEGATIVE EMPLOYMENT INDICATORS							
• Labour market	6,595	4,8	,7	29,8	5,539	8,964	2,762

*A Partial Least Square Modelling for Analysis the Impact of Welfare to
Entrepreneurship Climate in OECD Countries*

insecurity (LMI)							
• Long-term unemployment rate (LTUR)	2,474	1,77	,05	15,65	2,763	13,451	3,248
POSITIVE EMPLOYMENT INDICATORS							
• Employment rate (ER)	69,324	70	52	86	6,866	,843	-399
• Personal earnings (PE)	39,874,027	40.863	15.314	63.062	12567,903	-,0841	,046
COMMUNITY							
Quality of support network	90,216	91	78	98	4,400	,881	-,935
EDUCATION							
• Educational attainment (EA)	78,351	82	38	94	14,325	1,753	- 1,541
• Student skills (SS)	489,297	496	410	529	28,3434	1,544	- 1,309
• Years in education (YE)	17,616	17,7	14,1	21	1,392	,493	-,217
ENVIRONMENT							
• Air pollution	13,135	14	3	28	5,715	-,274	,297
• Water quality	83,784	84	65	99	9,286	-,802	-,358
CIVIC ENGAGEMENT							
• Stakeholder engagement for developing regulations	2,159	2,2	1,2	3,2	,577	-1,067	,029
• Voter turnout	69,27	69	47	91	12,422	-,993	,038
HEALTH							
• Life expectancy	80,519	81,5	74,7	84,1	2,593	-,249	-933
• Self-reported health	67,527	69,5	33	88	13,522	,408	-,749
LIFE SATISFACTION	6,608	6,7	5,4	7,6	,696	-1,302	-,172
SAFETY							
• Feeling safe walking alone at night	70,419	72,3	41,8	90,1	11,806	-,082	-566
• Homicide rate	2,357	,8	,2	24,5	4,756	15,082	3,845

Table 1. Continues

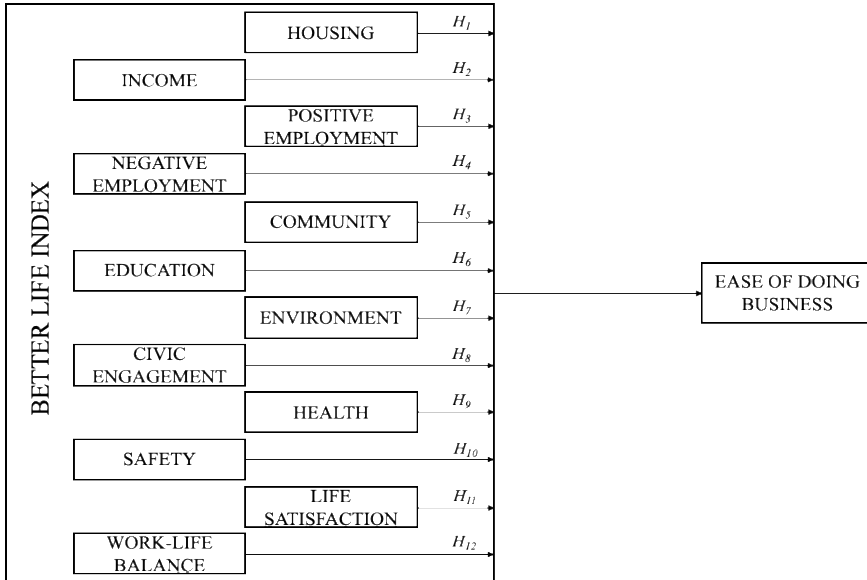
WORK-LIFE BALANCE							
• Employees working very long hours	7,737	4,750	,37	3264	7,617	3,476	1,918
• Time devoted to leisure and personal care	15,009	14,9	13,8 3	16,47	,523	1,757	1,017
EASE OF DOING BUSINESS							
	77,927	77,9	68,4	86,8	4,31	-,226	-,173

Based on the normality test that the data is not normally distributed, SMARTPLS software is preferred for the analysis of PLS-SEM. As shown in Table 1, the sub-dimensions were defined as sub-variables, while the main variables were defined as latent variables in the SmartPLS program. Thus, PLS-SEM consists of 24 sub-variables and 12 latent variables. In this study, dependent variable is ease of doing business index; independent variables are determined as; housing, income, positive employment indicators, negative employment indicators, health, education, work-life balance, civic engagement, life satisfaction community, environment, and safety. According to the distinction made by Başol (2018), the employment indicators variable is divided into two variables as positive and negative employment indicators. The distinction that Başol has previously made is also used in this study, for the possibility of the positive or negative perception regarding the quality of the employment may have different effects on the entrepreneurship climate in the countries.

4.4. Research Hypotheses

Figure 1 shows the theoretical research model of the study containing its hypotheses.

Figure 1. Proposed model for hypotheses tests



According to the research model, twelve hypotheses are suggested;

H₁ : Housing as a topic of BLI positively affects ease of doing business in OECD Countries.

H₂ : Income as a topic of BLI positively affects ease of doing business in OECD Countries.

H₃ : Positive Employment Indicator as a topic of BLI positively affects ease of doing business in OECD Countries.

H₄ : Negative Employment Indicator as a topic of BLI negatively affects ease of doing business in OECD Countries.

H₅ : Community as a topic of BLI positively affects ease of doing business in OECD Countries.

H₆ : Education as a topic of BLI positively affects ease of doing business in OECD Countries.

H₇ : Environment as a topic of BLI positively affects ease of doing

business in OECD Countries

H₈: Civic Engagement as a topic of BLI positively affects ease of doing business in OECD Countries

H₉: Health as a topic of BLI positively affects ease of doing business in OECD Countries.

H₁₀: Safety as a topic of BLI positively affects ease of doing business in OECD Countries.

H₁₁: Life Satisfaction as a topic of BLI positively affects ease of doing business in OECD Countries.

H₁₂: Work-Life as a topic of BLI positively affects ease of doing business in OECD Countries.

5. Empirical Findings

During the analysis, the defined measurement model tested the validity and reliability of the study. Then in the structural model, higher-order factors are assessed, then hypotheses are tested, and lastly, R² values, which show how much the independent variables in the model explained the variance of the dependent variable, are checked. The bootstrapping technique (5,000 resamples) is used to calculate the T statistics, which measures the significance corresponding to this model's coefficients with 37 OECD Countries' data.

In the analysis, the topics' of Better Life Index whose "factor loadings" are below 0,70 were removed from the measurement model one by one due to their meaninglessness, and the analysis repeated. All Factor Loadings exceed 0,7 after all measurement model re-predicted. Afterward, the factor loadings of the scale items are examined as the relationships were significant. Table 2 shows the variables removed from the model.

**Table 2. Variables & Sub Indicators Extracted from
Measurement Model**

Latent Variables	Sub Indicator
Housing	Dwellings without basic facilities
	Housing expenditure
	Rooms per person
Community	Quality of support network
Environment	Air pollution
	Water quality
Civic Engagement	Stakeholder engagement for developing regulations
	Voter turnout
Health	Life expectancy
	Self-reported health
Life Satisfaction	Life Satisfaction
Safety	Feeling safe walking alone at night
	Homicide rate
Work-Life Balance	Employees working very long hours
	Time devoted to leisure and personal care

In order to enable convergent validity, items with low factor loadings were excluded from the study. Table 3 shows that all the constructs had a composite reliability value of > 0.70 (Bagozzi & Yi, 1988).

Table 3. Measurement Model Statistics

Variables	Sub Indicator	Outer Loadings	Outer Weights	VIF	Composite Reliability	Cronbach's Alpha
Education	EA	,787	,369	1,734	,839	,709
	SS	,896	,485	1,990		
	YE	,703	,393	1,232		
Income	HNADI	,897	,581	1,513	,883	,736
	HNW	,881	,543	1,513		
Negative Employment Indicators	LTUR	,979	,582	2,824	,971	,942
	LMI	,964	,447	2,758		
Positive Employment Indicators	PE	,701	,357	1,221	,812	,701
	ER	,946	,794	1,221		

According to Table 3, all variables that had factor loadings higher than 0.5 (Hulland, 1999) or 0,7 (Bagozzi & Yi, 1988) and the T values indicated that all loadings are significant at 0.01.

In order for the proposed model to be valid, Bagozzi & Yi (1988) state

that the AVE values required in the SEM should be higher than 0.50. Besides, Fornell and Larcker (1981) stated that the square roots of the AVE values should be higher than the correlation values in the relevant columns. Table 4 shows that the square root of AVE for each variable is higher than its correlation with other variables.

Table 4. Construct correlations and the squared roots of AVE

Variables	AVE	Fornell-Larcker Criterion				
		(1)	(2)	(3)	(4)	(5)
(1) Ease of Doing Business (EDB)	1,000	1,000*				
(2) Education	,637	,613	,798*			
(3) Income	,791	,134	-,003	,889*		
(4) Negative Employment Indicators	,944	-,416	-,161	-,329	,972*	
(5) Positive Employment Indicators	,689	,531	,543	,412	-,606	,830*

In addition to Construct correlation and squared roots of AVE, Table 5 shows heterotrait-monotrait (HTMT) correlations for all latent variables to prove discriminant validity. Accordingly, the heterotrait-monotrait ratio (HTMT) of the correlations is below the threshold of 0.9 (Henseler, Ringle, & Sarstedt, 2015).

Table 5. Heterotrait-Monotrait Ratio (HTMT)

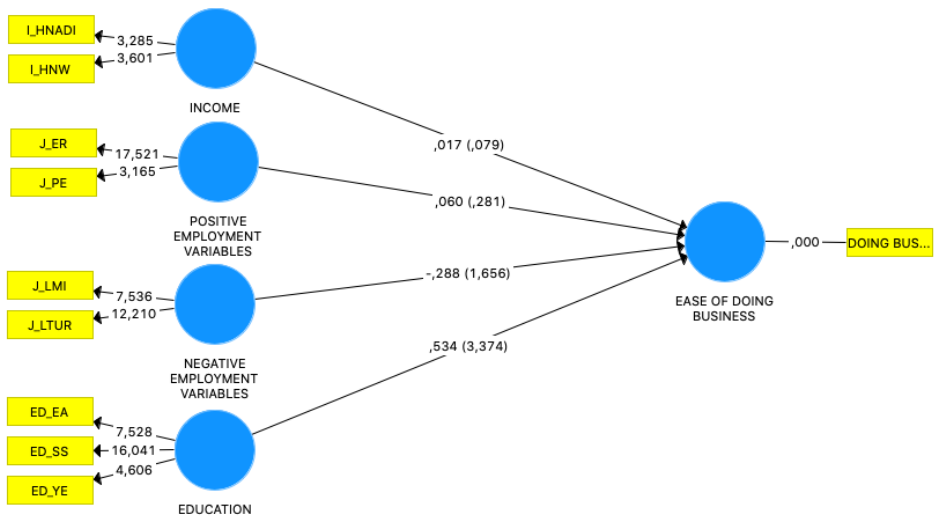
Variables	(1)	(2)	(3)	(4)
(1) EDB	-			
(2) Education	,724	-		
(3) Income	,156	,139	-	
(4) Negative Employment Indicators	,421	,316	,387	-
(5) Positive Employment Indicators	,618	,769	,816	,730

After all these analyzes, reliability, convergent validity, and discriminant validity of the measurement model are satisfactory for the structural model. SmartPLS software examines the path significance and path coefficient values in the structural model in the next phase. In the analysis of the structural model, the number of bootstrapping is 5,000 (Hair et al., 2017; Henseler et al., 2009).

In the SmartPLS software, whether the paths in the structural model predicted are significant or not is evaluated by observing the T-

Statistics. If the T-Statistic for the related path is higher than 1.96, the path in the model is significant otherwise is non-significant. Figure 2 shows the path coefficients and T-Statistics in the predicted structural model.

Figure 5. Path coefficients and T-Statistics of Structural Model



According to Figure 2; Only one path between exogenous variable with its sub-indicators and the endogenous variable is significant. When examined respectively, Only the Education topic of Better Life Index and its indicators affects Ease of Doing business, which is the endogenous variable, positively and significant (T:3,374, r: 0,534).

The path coefficients in the model vary between -1 and +1 in SmartPLS. When the path coefficient approaches 1, the positive significance of the relationship between the variables increases; When it approaches 0, the significance of the relationship between variables decreases. When the path coefficients are negative, the inverse relationship between variables; When the path coefficients are positive, there is a relationship in similar direction between the variables. Figure 2 shows the path coefficients and R2 for the

predicted model. Henseler et. al. (2009) proposed a rule of thumb for acceptable R2 with 0.75, 0.50, and 0.25 described as substantial, moderate and weak respectively. Accordingly, Better Life Index with its few variables moderately-weak affects ease of doing business. For all hypotheses, the only path coefficient is significant at the 0.001 level, and rest of all hypotheses of the research are not supported (Table 6).

Table 6. Direct Effects and Hypotheses Tests Results

Hypothesis	Proposed Hypothesis Relation	Path Coefficients	T Statistics	Supported ?
H ₁	Housing → EDB	Removed From The Structural Model		
H ₂	Income → EDB	0,017	,078	NO
H ₃	PEI → EDB	,060	,273	NO
H ₄	NEI → EDB	-,288	1,653	NO
H ₅	Communication → EDB	Removed From The Structural Model		
H ₆	Education → EDB	0,534	3,339	YES
H ₇	Environment → EDB	Removed From The Structural Model		
H ₈	Civic Engagement → EDB	Removed From The Structural Model		
H ₉	Health → EDB	Removed From The Structural Model		
H ₁₀	Safety → EDB	Removed From The Structural Model		
H ₁₁	Life Satisfaction → EDB	Removed From The Structural Model		
H ₁₂	Work-Life Balance → EDB	Removed From The Structural Model		

5. Conclusion

Entrepreneurship climate of the countries is shaped according to their socio-economic structure. This study examines the effect of well-being via socio-economic structures of countries on entrepreneurial climate. According to results there are no relationship between housing, communication, environment, civic engagement, healthy, safety, life satisfaction and work-life balance topics of BLI and EDBI. As being apart partially from literature, only the education, employment and income topics of BLI are connected but only education topic has significant positive relationship with EDBI Score. Except from environment and health topics of BLI and in spite of having moderate connection with education topic and weak connection with employment and income topics, this study confirmed the fact entrepreneurial climate requires absolute socio-economic structures for being developed. And the basic functions for

a strong socio-economic structure, all countries needs to maintain qualified educational, financial and employment opportunities for increasing entrepreneurial capacity (Nikolaev, 2014).

It is essential to identify the determinants of BLI, which has become one of the most emerging indicator used in measuring socio-economic well-being levels of countries. There are currently very few studies empirically testing the factors of well-being impact entrepreneurial capacity of countries. Generally, literature argues the impact of entrepreneurship on welfare. Therefore, this empirical presentation of the interaction of welfare-entrepreneurship with BLI-EDBI PLS-SEM analysis will contribute to the literature. These findings ensure that policymakers especially has lower BLI values should take into account to increase the quality of educational, employment and financial background of society in order to be more developed and raise entrepreneurship capacity of citizens. In this study, the only parameter for measuring entrepreneurship is the ease of doing business and sample countries are the OECD members. In this regard, comparative researches may be applied with low developed, developing and developed countries in terms of the better life indicators emerged as non-meaningful relationship with ease of doing business index. Beside these limitations, these results are only related with 2019-2020 term. Thus, It is suggested for the future researches to study on multimodel econometric analysis for key-factor predictions by expanding the literature and the data coming from past.

References

- Abreu, Maria et al. "Well-Being Effects of Self-Employment: A Spatial Inquiry." *Journal of Business Venturing*. 34(4), (2019), 589-607. <https://doi.org/10.1016/j.jbusvent.2018.11.001>

- Ahl, Helene, & Tillmar, Malin. "Swedish welfare state retrenchment and the call for women's entrepreneurship to fill the void." In 4th European Conference on Politics and Gender Proceedings. (2015), 11-13.
- Audretsch, David B - Belitski, Maksim. "Is Happiness Conducive to Entrepreneurship? Exploring Subjective Well-Being – Entrepreneurship Relationship across Major European Cities." *Henley Centre for Entrepreneurship*. (2015), 11-13.
- Bagozzi, Richard P. - Yi, Youjae. "On the Evaluation of Structural Equation Models." *Journal of the Academy of Marketing Science*. 16(1), (1988),74-94. <https://doi.org/10.1007/BF02723327>
- Barclay, D., Thompson, R., dan Higgins, C. "The Partial Least Squares (PLS) Approach to Causal Modeling: Personal Computer Adoption and Use an Illustration." *Technology Studies*, 2, (1995), 285-309.
- Begley, Thomas M. et al. "Politico-Economic Factors Associated with Interest in Starting a Business: A Multi-Country Study." *Entrepreneurship: Theory and Practice*, 29(1), (2005), 35-55. <https://doi.org/10.1111/j.1540-6520.2005.00068.x>
- Başol, Oğuz. "OECD Ülkelerinde Yaşam Tatmini Üzerine Bir Değerlendirme." *İŞGÜÇ The Journal of Industrial Relations and Human Resources* 20(3), (2018), 67-86. <https://doi.org/10.4026/isguc.466684>
- Carree, Martin et al. "Economic Development and Business Ownership: An Analysis Using Data of 23 OECD Countries in the Period 1976-1996." *Small Business Economics* 19, (2002), 271-290. <https://doi.org/10.1023/A:1019604426387>
- Castaño, María Soledad et al. "The Effect of Social, Cultural, and Economic Factors on Entrepreneurship." *Journal of Business Research* 68(7), (2015), 1496-1500. <https://doi.org/10.1016/j.jbusres.2015.01.040>

- Chin, Wynne W. "The Partial Least Squares Approach for Structural Equation Modeling." *Modern Methods for Business Research*, (1998), 295-336.
- Chin, Wynne W., & Newsted, Peter R. "Structural equation modeling analysis with small samples using partial least squares". in R. H. Hoyle, ed. *Statistical strategies for small sample research* (1999) 307-341. Thousand Oaks, CA: Sage Publications
- Decancq, Koen. "Measuring Multidimensional Inequality in the OECD Member Countries with a Distribution-Sensitive Better Life Index." *Social Indicators Research* 131, (2017), 1057-1086. <https://doi.org/10.1007/s11205-016-1289-2>
- Dülgeroğlu, İsmail, & Başol, Oğuz. "İş Stresi ve Çalışma Yaşamı Kalitesi Algısının Yansımaları: Satış Temsilcileri Üzerine Bir Araştırma." *Business and Economics Research Journal* 8(2), (2017), 293-304. <https://doi.org/10.20409/berj.2017.51>
- Erdoğan, Ekrem, & Genç, Kemal G. "Avrupa Birliği Ülkelerinde Geçici/Gündelik Çalışma". in Metin, Onur, ed. *Çalışma Ekonomisi ve Endüstri İlişkileri Seçme Yazılar-III* (2019). Sakarya Yayınevi, Sakarya.
- Fornell, Claes - Larcker, David F. "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error." *Journal of Marketing Research* 18(1), (1981), 39-50. <https://doi.org/10.2307/3151312>
- Gilbert, Neil, & Terrell, Paul. "*Dimensions of social welfare policy*". (2012). Boston: Pearson Allyn and Bacon.
- Graafland, Johan. "When Does Economic Freedom Promote Well Being? On the Moderating Role of Long-Term Orientation." *Social Indicators Research* (2019). <https://doi.org/10.1007/s11205-019-02230-9>

Gürbüz, Ali K. "Analitik Yaklaşımın Teori Üretme Kapasitesi: Girişimcilik Ve Refah Teorisi Örneği", *C.Ü. İktisadi ve İdari Bilimler Dergisi*, 10(2), (2009), 113-125.

Hair, Joseph F., et al. "A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)". (2017). Sage Publications, TO: U.S.A.

Henrekson, Magnus, & Roine, Jesper. "Promoting Entrepreneurship in the Welfare State," Chapters, in: David B. Audretsch & Isabel Grilo & A. Roy Thurik (ed.), *Handbook of Research on Entrepreneurship Policy*, 5, (2007), 64-93.

Henseler, Jörg et al. "The Use of Partial Least Squares Path Modeling in International Marketing." *Advances in International Marketing* 20, (2009), 277-320. [https://doi.org/10.1108/S1474-7979\(2009\)0000020014](https://doi.org/10.1108/S1474-7979(2009)0000020014)

Henseler, Jörg et al. "A New Criterion for Assessing Discriminant Validity in Variance-Based Structural Equation Modeling." *Journal of the Academy of Marketing Science* 43(1), (2015), 115-135. <https://doi.org/10.1007/s11747-014-0403-8>

Islam, Sardar M.N. - Clarke, Matthew. "The Relationship between Economic Development and Social Welfare: A New Adjusted GDP Measure of Welfare." *Social Indicators Research* 57,(2002) 201-229. <https://doi.org/10.1023/A:1014481414637>

Iyigun, Murat F.- Owen, Ann L. "Risk, Entrepreneurship, and Human-Capital Accumulation." *American Economic Review* 88, (1998), 454-457. <https://doi.org/10.17016/feds.1997.37>

Kasparian, Jérôme- Rolland, Antoine. "OECD's 'Better Life Index': Can Any Country Be Well Ranked?" *Journal of Applied Statistics* 39:10, (2012), 2223-2230. <https://doi.org/10.1080/02664763.2012.706265>

Kwong, Kay, & Wong, Ken. "Partial Least Squares Structural Equation Modeling (PLS-SEM) Techniques Using SmartPLS." *Marketing Bulletin* 28/05, 2013, 1-32.

- Leal-Rodríguez, Antonio L.- Sanchís-Pedregosa, Carlos. "Could the Ease of Doing Business Be Considered a Predictor of Countries' Socio-Economic Wealth? An Empirical Analysis Using Pls-Sem." *Journal of International Studies* 12(4), (2019), 229-243. <https://doi.org/10.14254/2071-8330.2019/12-4/15>
- Mizobuchi, Hideyuki. "Measuring World Better Life Frontier: A Composite Indicator for OECD Better Life Index." *Social Indicators Research* 118, (2013), 987-1007. <https://doi.org/10.1007/s11205-013-0457-x>
- Mizobuchi, Hideyuki. "Incorporating Sustainability Concerns in the Better Life Index: Application of Corrected Convex Non-Parametric Least Squares Method." *Social Indicators Research* 131, (2016), 947-971. <https://doi.org/10.1007/s11205-016-1282-9>
- Mizobuchi, Hideyuki. "Measuring Socio-Economic Factors and Sensitivity of Happiness." *Journal of Happiness Studies* 18, (2017), 463-504. <https://doi.org/10.1007/s10902-016-9733-1>
- Naudé, Wim et al. "'Surfeiting, the Appetite May Sicken': Entrepreneurship and Happiness." *Small Business Economics* 42(3), (2014), 523-540. <https://doi.org/10.1007/s11187-013-9492-x>
- Neergaard, Helle- Thrane, Claus. "The Nordic Welfare Model: Barrier or Facilitator of Women's Entrepreneurship in Denmark?" *International Journal of Gender and Entrepreneurship* 3(2), (2011), 88-104. <https://doi.org/10.1108/175662611111140189>
- Nikolaev, Boris. "Economic Freedom and Quality of Life: Evidence from the OECD's Your Better Life Index." *Journal of Private Enterprise* 29, Issue Fall, (2014), 61-96.
- OECD. "'Environmental Quality' in OECD: How's Life? Measuring Well-Being." *OECD Publishing*, (2011).

- OECD “Better Life Index’, OECD Social and Welfare Statistics”.
OECD Publishing (2020). <https://doi.org/10.1787/data-00823-en>
- Özdemir, Mustafa Ç. “Bütüncül Sosyal Politika Modeli.” *Türk Dünyası Araştırmaları Dergisi*, 117-230, (2017), 27-44.
- Pennings, Johannes M. “The Urban Quality of Life and Entrepreneurship.” *Academy of Management Journal* 25(1), (1982) 63-79. <https://doi.org/10.5465/256024>
- Retsikas, Konstantinos. “The Gift of Future Time: Islamic Welfare and Entrepreneurship in 21st Century Indonesia.” *South East Asia Research* 25:3, (2017), 284-300. <https://doi.org/10.1177/0967828X17719761>
- Ribes-Giner, G. et al. “Wellbeing Indicators Affecting Female Entrepreneurship in OECD Countries.” *Quality and Quantity* 53, (2019), 915–933. <https://doi.org/10.1007/s11135-018-0796-4>
- Ringle, Christian M et al. “Editor’s Comments: A Critical Look at the Use of PLS-SEM.” *MIS Quarterly* (2012), iii-xiv.
- Ringle, Christian M. et al. “*SmartPLS 3. Bönningstedt: SmartPLS*.” Retrieved from <http://Www.Smartpls.Com>.” (2015).
- Schubert, Christian. “What Do We Mean When We Say That Innovation and Entrepreneurship (Policy) Increase ‘Welfare’?” *Journal of Economic Issues* 49:1, (2015), 1-22. <https://doi.org/10.1080/00213624.2015.1013859>
- Spicker, Paul. “*Social Policy Themes and Approaches*” 3rd ed, Bristol: The Policy Press. (2015).
- Stanton, Elizabeth A. “Human Development Index: A History.” *Political Economy Research Institute Working Paper Series* 127, (2007).

Şahinoğlu, Tüter, K., & Yakut, Şahin. G. “Yapısal Eşitlik Modeli ile Özgürlüklerin Ekonomik Performansa Etkisi Üzerine Bir İnceleme”. *Ekoist: Journal of Econometrics and Statistics*, (30) , (2019). 1-20.

Tamvada, Jagannadha Pawan. “Entrepreneurship and Welfare.” *Small Business Economics* 34(1), (2010), 65-79. <https://doi.org/10.1007/s11187-009-9195-5>

Vial, Virginie. “Does Entrepreneurship Improve Economic Well-Being?” *Frontiers of Entrepreneurship Research* 31(4),(2011) 1-5.

Wiklund, Johan et al. “Entrepreneurship and Well-Being: Past, Present, and Future.” *Journal of Business Venturing*. <https://doi.org/10.1016/j.jbusvent.2019.01.002>

World Bank. “*Doing Business 2020: Comparing Business Regulation in 190 Economies. Doing Business 2020: Comparing Business Regulation in 190 Economies*”, (2020). <https://doi.org/10.1596/978-1-4648-1440-2>

Yasım, Yavuz K. “Niceliksel İş Yükü ve Güvenlik İkliminin İş-Aile Çatışmasına Etkilerinin SMARTPLS ile Analizi: Tekstil Sektörü Örneği”. *Yönetim ve Ekonomi Araştırmaları Dergisi*, 17 (4), (2019). 128-144

