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Uluslararası Ekonomi, İşletme ve Politika Dergisi
International Journal of Economics, Business and Politics
2022, 6 (2), 216-235

Araştırma Makalesi / Research Article

IMPACT OF SOCIAL CAPITAL ON ECONOMIC GROWTH: A META-ANALYSIS

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Abstract

The aim of this study is to synthesize the studies on the effect of social capital on economic and financial growth with the method of meta-analysis. Social capital has an impact on economic development by influencing individuals, businesses, banks and the way they do business, and thus trade. In this study, the studies carried out in the years 2007-2021 are discussed. In order to be able to interpret the quantitative findings of the studies that have dealt with this subject together, studies made on academic databases were scanned, and the findings consisting of 36 studies meeting the determined criteria and having a total of 3458 observations were synthesized through the meta-analysis method. Research findings of 36 different studies including sample size, standard error, and effect values were analyzed with the help of CMA (Comprehensive Meta-Analysis) program. As a result of the meta-analysis, the effect size was found to be moderate (Fisher Z=0.380). According to the results of the meta-analysis, the H_1 was accepted and it was revealed that the social capital level of the countries affected the economic growth at a moderate level. Considering the lack of consensus in the studies in the literature and the difficulty of measuring social capital, it is thought that this general finding is very valuable in terms of the literature and will make an important contribution.

Key words: *Social Capital, Business, Economic Growth, Finance, Meta-Analysis*

SOSYAL SERMAYENİN EKONOMİK BÜYÜME ÜZERİNDEKİ ETKİSİ: BİR META-ANALİZ

Öz

Bu çalışmanın amacı, sosyal sermayenin ekonomik ve finansal büyümeye etkisi üzerine yapılan çalışmaları meta-analiz yöntemiyle sentezlemektir. Sosyal sermaye bireyleri, işletmeleri, bankaları ve bu sayılanların iş yapma biçimlerini dolayısıyla ticareti etkileyerek ekonomik gelişmeye etkide bulunmaktadır. Sosyal sermaye düzeyi bireylerin ticaret yapma, kredi kullanma, borcunu geri ödeme, kurallara uyma, sözünü tutma gibi birçok değişkeni etkilemektedir. Bu konuyu ele alan çalışmaların nicel bulgularını bir arada yorumlayabilmek için akademik veri tabanlarında 2007-2021 yılları arasında yapılan çalışmalar taranmıştır. Belirlenen kriterlere uygun olan toplam 3458 gözleme sahip 36 çalışmadan oluşan bulgular meta-analiz yöntemi ile sentezlenmiştir. Örneklem büyüklüğü, standart hata ve etki değerlerini içeren 36 farklı çalışmanın araştırma bulguları CMA (Comprehensive Meta-Analysis) programı yardımıyla analiz edilmiştir. Meta-analiz sonucunda etki büyüklüğü orta düzeyde bulunmuştur (Fisher Z=0.380). Meta-analiz sonuçlarına göre H_1 kabul edilmiş ve ülkelerin sosyal sermaye düzeylerinin ekonomik büyümeyi orta düzeyde etkilediği ortaya çıkmıştır. Sosyal sermayeyi ölçmek için bu genel bulgunun literatür açısından oldukça değerli olduğu ve önemli katkı sağlayacağı düşünülmektedir.

Anahtar Kelimeler: *Sosyal Sermaye, İşletme, Ekonomik Büyüme, Finans, Meta-Analiz*

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Geliş Tarihi / Received: 17.06.2022 *Kabul Tarihi / Accepted: 26.09.2022*

1. Introduction

In the pre-industrial and industrial economy periods, when capital was mentioned, material assets such as land, labor and capital (money) specified by classical economists has came to mind (Smith, 1776; Mill, 1885). In the information economy period, the concept of capital has begun to include intangible factors as well as tangible assets. The concepts of intellectual capital, human capital and cultural capital began to be the subject of research with a different evaluation method in the information economy period (Lin, 2001). Social capital, which is shown among the informal institutional factors, is the last of the concepts used in the period of knowledge economy (Jin et al., 2019). Social capital has prepared the environment for a large number of studies on the subject, in order to clarify the last missing and unexplained areas and by making itself mentioned a lot (Putnam, 1993: 167).

The level of social capital of countries reflects level of cooperation, networks, norms and trust in those societies. It is expected that opportunistic behaviors will be lower in societies with a high level of social capital (Jha and Chen 2015; Hasan et al., 2017). In addition, it is expected that social capital, which reduces opportunistic actions, will prepare an environment for higher economic performance and functioning (Bjornskov, 2003; Hasan et al., 2017). There is evidence that market actors living in countries with high social capital can provide more flexible and cheaper financing from both public and private credit institutions (Jha and Chen, 2015). In addition, there are results that a high level of social capital reduces the risk level of the economy and improves financial stability by providing an environment that will lead to higher ethics, justice, trust, and less corruption (Statman, 2007). In addition, social capital, which reduces opportunistic behavior tendencies, can be expected to allow banks to have slower credit growth, and thus lower credit risk exposure (Jin et al., 2019). Considering all these, it can be expected that the social capital level of the countries will affect economic growth.

Studies on social capital continue to grow. There are various studies on the economic effects of social capital. These studies related to economic growth (Fukuyama, 1995; Knack & Keefer, 1997), higher education (Coleman, 1988), and higher financial development (Grootaert, 1999; Guiso, et al., 2004), credit growth and credit risk (Pilatin & Ayaydın, 2022), agriculture (Bayramoğlu & Bozdemir, 2020), innovation (Akçomak & Müller-Zick; 2013; Akar & Ay; 2018), lower crime and murder rates (Rosenfeld et al., 2001), lower suicide rates (Helliwell, 2007), better public health opportunities (Kawachi et al., 2004; Gönç Şavran, 2018) and higher value creation and productivity (Nahapiet and Ghoshal, 1997; Markowska-Przybyła, 2020). In addition, some scientists have also mentioned possible negative effects of social capital (Fukuyama, 1995; Portes, 1998). As it can be understood from here, the social capital literature is very wide. It covers a wide range of fields, from sociology to economics, organization, management, political science, planning and development, and health sciences.

In this study, studies containing quantitative research findings on the social capital levels and economic growth of countries were examined using meta-

analysis method. While explaining relationship between the social capital levels of countries and their economic growth, it was aimed to make a general assessment about effect of social capital. For this purpose, social capital and its measurement were mentioned, then studies dealing with the level of social capital and economic growth were evaluated theoretically, literature review was made, and finally meta-analysis and application results were given. In the study, an effect size was calculated by considering the studies on the effect of the social capital levels of the countries on their economic growth as a whole through the meta-analysis. In this way, it is aimed to make an important contribution to the literature.

2. Social Capital and Its Measurement

Putnam's (1993) work on Italy's regional reform has had a major impact on the social capital literature. In his work, he demonstrated the relationship between social capital in terms of citizen participation and trust in political institutions and the success of regional reforms, as well as the links between measures of social capital and the economic development of Italian regions. After Putnam, the relationships between various measures of social capital and economic growth and development were addressed in different studies. In these studies, different definitions of social capital were used.

Bourdieu (1986), Putnam (1993) and Coleman (1988), who are among the most important writers in the field of social capital, consider social capital as a resource for economic welfare, democracy at the nation-state level, and collective action resulting from the acquisition of human capital in the form of education (Winter, 2000: 6). Considering the definitions of social capital, Bourdieu (1986), Putnam (1993) and Coleman (1988) have an understanding that supports and includes their views. In order for social capital to emerge, more than one person must come together, communicate and interact with each other. Unless people and human groups come together, factors that increase the welfare and peace of the society in general, such as trust, social assistance, norms, crime rates, lying, obeying the rules, opportunistic behaviors, voting, being a member of associations and foundations, cannot emerge. Therefore, the social capital level of countries, regions and cities can be determined through these variables that reveal social capital.

While the most common definition of social capital, which has different definitions, is made with the concepts of norms, networks, trust and communication, the most common use on its effect on economic growth is made by using concepts such as trust, social norms and social networks. In the literature, trust is the most used indicator to represent social capital.

Different variables are often used for social capital or economic growth. For example, most researchers use the generalized trust question, "*Generally speaking, would you say that most people can be trusted or that you should be very careful when dealing with people?*" While using the percentage of respondents who answered yes or can be trusted to the question (Inglehart et al., 2014) as an indicator of social capital, some use an index calculated over different variables such as membership, cooperation, participation rate in elections, productivity, trust and social relations network with benefits, as a social capital variable (Hasan

et al., 2017; Jin et al., 2019). While some researchers argue that these variables best represent the level of social capital, others consider trust as a measure that emerges as a result of social capital, showing the level of social capital but not forming social capital itself. Therefore, while some researchers work with few indicators/measures, others use more variables (Sabatini, 2008). Many studies rely on a single dataset (WVS) rather than using complementary and alternative data from different variables or datasets.

In recent years, studies on social capital in the literature have increased exponentially. This rise in different research fields and practice proves that the concept of social capital has been accepted to a great extent and therefore the studies in this field have increased (Adam and Roncevic, 2003: 165). It is because the concept of social capital covers a wide range of areas and thus social capital contributes to different applications due to the possibility of being associated with social assets or phenomena in practice (Grootaert and Bastelaer, 2002: 4).

While the results of the studies on the effect of social capital on economic growth are similar to a point, the results in some other aspects may be different and even contradictory and inconsistent. This makes the hypothesis that social capital has a positive effect on economic growth questionable. This reason actually constitutes the main motivation for this study.

3. Literature

Studies on economic growth in the literature were mostly done by considering traditional factors of production. However, after a point, new variables had to be taken into account in order to explain the areas that could not be explained by these variables and needed to be clarified. At this stage, concepts such as human capital, physical capital, economic capital, intellectual capital and finally social capital began to be used a lot. All these new variables contributed to a clearer understanding of the factors affecting economic growth and to reach different results. Especially after the 1990s, the concept of social capital began to be used more and more in studies and the importance of the matter began to increase. Since those years, the number of studies, results and evaluations on the need to use the concept of social capital, among other variables, has increased (Westlund & Adam, 2010; 894).

According to the studies, there is evidence that high social capital, which is represented by social norms, social networks, social participation and political and social indicators besides trust, has a positive effect on economic growth (Putnam et al. 1993; Knack and Keefer, 1997; Kormendi and Meguire, 1985; Whiteley, 2000). In this context, countries and regions with higher levels of social capital are expected to have higher GDP per capita and faster economic growth.

Social capital, which is in the category of intangible assets, has a significant impact on the economic development of countries as well as investors and businesses. The relationship between social capital and especially economic growth has been a topic discussed in many studies in recent years. There is a growing consensus on the view of most researchers in the literature that social capital is an important component that affects economic performance (Akar & Ay;

2018). As mentioned above, there are many supporting studies in this direction. Economies with higher economic performance are generally seen in countries with denser social networks that contain more concentrated institutions and organizations. There is a growing belief that social capital contributes to the economic growth of communities. For this reason, there are studies and thoughts that a higher level of economic performance emerges in countries with higher social capital (Li et al., 2015: 135). For this reason, there are many studies in the literature to examine the direction and effect of the relationship between social capital and economic growth (Forte et al., 2015; Li et al., 2015; Kızılkaya, 2017).

In some studies, albeit in smaller numbers, no relationship was found or a negative relationship was found. Neira et al. (2009) concluded that social capital alone cannot accelerate economic growth and development, although they concluded that it was very important for growth in 14 developed OECD countries. In their studies, Roth (2009) and Neira et al. (2010) did not find a positive relationship between social capital and economic growth in 35 selected countries and in 15 EU countries, respectively. Similarly, Algan and Cahuc (2010), Kızılkaya (2017), Öksüzler (2006), and Bjornskov (2012) could not reach a conclusion that social capital has a significant effect on economic growth. In the study of Helliwell (1996) on Asian countries covering the years 1987-1994, in the studies of Casey and Christ (2005) and Raiser et al. (2002), and in the study of Hall and Ahmad (2013) on 69 developing countries, a positive relationship was not found between social capital and economic growth, but on the contrary, it was found that there was a negative relationship.

When all these studies are evaluated, it is seen that in some of the studies that deal with the effect of social capital on economic growth, the variables of trust and generalized trust are used as an indicator of social capital, and in some, an index obtained from the components representing the social capital variable is used. In most of the studies, it is understood that social capital has a positive effect on economic growth.

Table 1 shows selected studies that take trust as an indicator of social capital and show its effect on economic growth.

Table 1: Studies on the Effect of Social Capital (Trust) on Economic Growth

	Author	Country	Period	Type of Analysis	Effect
1	Akar and Ay (2018).	52	1990-2014	Pooled OLS	+
2	Akın (2013).	16	1995-2008	OLS	+
3	Algan and Cahuc (2010).	24	1935-2000	OLS	No
4	Baliamonue (2005).	39	1975-2000	Cross-Sectional	+
5	Berggren vd. (2008).	63	1970-2000	OLS	+
6	Beugelsdijk and T. Schaik (2005).	54	1950–1998	Pooled OLS	-
7	Bjornskov (2012).	73	1970-2000	Pooled OLS	+
8	Dearmon and Grier (2009).	51	1981-2004	Unbalanced OLS	+
9	Dinçer and Uslaner (2010).	43	1990-2000	OLS	+
10	Dinda (2008).	63	1980-1996	OLS	+
11	Feki and Chtouro (2014) .	45	1990-2004	GMM	+
12	Khalifa (2016).	47	2010-2014	OLS	+
13	Knack and Keefer (1997).	29	1990-1991	OLS	+
14	Koç and Ata (2012).	28	2006-2008	OLS	+
15	Neira vd. (2009).	14	1980–2000	Pooled OLS	-

16	Neira vd. (2010).	15	2002-2008	Pooled OLS	No
17	Öksüzler (2006).	25	1990-1999	Logit Model	No
18	Pelle at al. (2009).	61	1995-2005	OLS-2SLS	+
19	Roth (2009).	35	1980-2004	Cross-Sectional	No
20	Roth, (2006).	41	1990- 2004	Pooled OLS	+
21	Raiser, et al, (2002).	19	1989–1998	OLS	-
22	Yapraklı, (2005).	28	1990-2000	OLS	+
23	Zak and Kanck (2001).	39	1970-1992	OLS	+

Source: Created by the author

Table 2 shows selected studies that take the sc index with overall confidence as an indicator of social capital and show its effect on economic growth.

As can be seen in Table 1 and 2, 36 studies conducted between 1997 and 2021 in accordance with the criteria were included in the meta-analysis. In 25 of these studies, social capital positively affected economic growth. While 4 of them found a negative effect, the remaining 7 found no effect.

Table 2: Studies on the Effect of SC Index and Generalized Trust on Economic Growth

	Author	Country	Period	Type of Analysis	Effect
1	Ahmad and Hall (2017)	27	1984-2008	Pooled OLS	No
2	Akçomak and Weel (2009)	14	1990-2002	OLS	+
3	Baliamoune-Lutz (2011).	29	1970–1992	GMM	+
4	Forte vd. (2015).	85	1995–2008	SAR Model	+
5	Hall and Ahmad (2013)	69	1984- 2008	Pooled OLS	No
6	Helliwell (1996).	17	1987-1994	OLS	-
7	Karagül and Akçay (2002).	36	1980-1995	OLS	+
8	Kızılkaya (2017)	32	2006-2014	DOLS Estimation	No
9	Majeed (2019).	34	1988-2012	Pooled OLS	+
10	Muringani vd. (2021).	21	2002-2016	Pooled OLS	+
11	Perez vd. (2006)	23	1970-2001	GMM	+
12	Vergil and Bahtiyar (2017).	28	1980-2014	Pooled OLS	+
13	Whiteley (2000).	34	1970-1992	Pooled OLS	+

Source: Created by the author

4. Methods

4.1. Meta-Analysis

Numerous studies have been conducted on the effect of social capital, especially on economic growth. Putnam's (1993) regional study in Italy has had a significant impact on the social capital literature. In this study, Putnam also found links between social capital and measures of regional differentiation and the economic development of Italian regions. Following Putnam's work, numerous studies examined the links between various measures of social capital and various measures of economic growth and development. While the results of the studies were parallel to each other to some extent, different results were obtained in some important aspects, and contradictory and inconsistent results were obtained in some studies. Therefore, the need to question the hypothesis whether social capital has a positive effect on economic performance arises. For this, meta-analysis method will be used.

The meta-analysis method allows a new analysis by taking into account the effects and results of all these analyses by using the results of the studies in the literature dealing with the relevant subject. An effect size capable of reflecting the results of all independent studies included in the meta-analysis is calculated, and

this effect size indicates the overall effect level of the studies. In addition, meta-analysis aims to examine the results of the study from different perspectives, to reveal new relationships and effects, and to bring different perspectives to future studies (Deliktaş et al. 2016: 1906). In this context, meta-analysis was preferred as a method. For this reason, meta-analysis method was applied by using Comprehensive Meta-Analysis Version 3.0 program in the study.

Accordingly, the main hypotheses in the research model in terms of showing the effect of social capital on economic growth are as follows:

H₀: *Countries' social capital level does not affect economic growth*

H₁: *Countries' social capital level affects economic growth*

Some tests were carried out in order to show the validity of the effect level, which shows the validity of the hypotheses, and the impartiality of the study. First of all, homogeneity analysis was carried out in order to ensure the accuracy of the effect level of the research and to select the appropriate mode. Since fixed effects and random effects model results are different and random effects are used more in social sciences, the results are reported according to random effects (Duval and Tweedie, 2000: 459). Classical Safe N (Classic Fail-Safe N) test was used to determine whether the values indicating the effect size were biased (Rosenthal, 1979). Duval and Tweedie's (2000) method was used, which showed whether a new study should be added to eliminate publication bias. Finally, it was done with a "trim and fill" (Trim and Fill) test, in which the extension bias was determined by the constant term (B_0). In this way, the reliability of the research was ensured, and the existence of publication bias and the accuracy of the effect size values were confirmed. In this way, the reliability of the research was ensured, and the existence of publication bias and the accuracy of the effect size values were confirmed.

4.2. Framework of Data Set Creation and Meta-Analysis

Meta-analysis consists of the stages of determining the exact framework related to the research topic, revealing which publications will be included in the research, clearly specifying the time interval, selecting the appropriate articles from the obtained articles, classifying them and coding them. In addition to making analyzes and determining the degree of impact of the studies, it is also necessary to report whether the study is biased or unbiased.

Due to these features, the meta-synthesis, which is revealed by a long-term literature study, offers a unique contribution to the literature. Meta-analysis, which is a qualitative research method, is the product of a systematic synthesis study based on the results of the determined variables in order to interpret both quantitative and qualitative research results together. Synthesis made in a systematic and holistic manner (Au, 2007) allows for the emergence of new questions, methods and perspectives for further research and researchers, and allows it to be used as an important resource for practitioners and policy makers (Çalık and Sözbilir, 2014).

Selecting the studies that meet the criteria determined before the analysis and removing the studies that are not suitable and do not meet the conditions is a time-consuming and problematic process. For this reason, it is very important to draw the framework clearly at the stage of meta-analysis. Therefore, five different criteria were determined in this study. These criteria are shown in Table 3.

Table 3: Study Criteria Included in the Study

	Criteria Types	**Criteria Limits**
1	Scanned Concept	Social capital and economic growth
2	Time Range	1997-2021
3	Study Inclusion Criteria	Studies in which sample size, correlation, standard deviation, and direction of effect were specified
4	Types of Study	National and international published articles
5	Databases	Web of Science, Jstor, Emerald, ScienceDirect, Springer, Ulakbim, Google Scholar and EBSCO
6	Impact Level and Direction	Impact of social capital on economic growth

The 6 criteria determined for the analysis to be performed are as shown in Table 4. Related articles were searched in these databases in terms of relevant keywords and subject headings in Turkish and English. In this context, 113 selected studies were examined. Then, 36 studies that met the criteria shown in Table 3 and shown in Table 1 and 2 were included in the study.

5. Findings

In this section, the results of the studies were analyzed using the meta-analysis method. First of all, it is necessary to test whether the values obtained from the effect sizes of the studies selected for use in the meta-analysis include the effect size information of all studies (Card, 2012: 185). For this, homogeneity analysis should be done (Bakioğlu and Özcan, 2016: 161).

The calculated Q statistic shows whether the effect size of the studies is homogeneous (heterogeneity) by using the probability value for heterogeneity and the I^2 statistic. The homogeneity test results are shown in Table 4. Accordingly, when looking at the chi-square table, the value reached in the 0.05 confidence interval with 35 degrees of freedom (df=35, $x^2(0.05)$ =43.77) is greater than the Q value (Q=35) obtained as a result of the test. Therefore, the studies included in the analysis according to the Q statistics show a heterogeneous distribution. Therefore, the studies included in the analysis according to the Q statistics show a heterogeneous distribution.

Table 4: Homogeneity Test Results

Heterogeneity	Q value	df(Q)	P- value	I^2
	195.925	35	0.000	81.626

Note: *p-value <0.05 indicates that the studies are heterogeneous.

Another variable showing homogeneity results is the I^2 index. The I^2 index is expressed as a percentage. The fact that this index is close to 100 indicates that the studies are heterogeneous. An I^2 index greater than 75% is an indicator of high heterogeneity (Huedo-Medina et al., 2006). As seen in Table 4, the I^2 index is 81.626%. This value proves a high degree of heterogeneity. In addition, the probability value of 0.000 supports the previous two heterogeneity results.

The general findings and effect sizes of the studies included in the analysis are shown in Table 5. There are two models commonly used in meta-analysis. These are fixed effects model and random effects model (Deliktaş et al. 2016: 1916). While the fixed effects model basically assumes that the studies included in the meta-analysis research have exactly the same effect size value, the random effects model assumes that the effect sizes are different (Bakioğlu and Özcan, 2016: 165). Probability values indicate the significance of both models. However, since the effect sizes of the studies were different, the random effect results were taken as the basis.

Table 5: Overall Effect Size

Model	Studies	Point Est.	Std. Error	Variance	Lower-Upper Limit	Z-Value	Prob.
Fixed E.	36	0.306	0.027	0.001	0.254-0.358	7.767	0.000
Rassal E.	36	0.380	0.064	0.004	0.356-0.495	2.836	0.005

Note: * p-value <0.05 indicates that the models are significant

As seen in Table 5, the overall effect size was calculated as 0.380 within the limits of 0.356 - 0.495 in the random effects model (under the fixed-effect model, the overall effect size was calculated as 0.306 within the limits of 0.254 - 0.358). The effect size is weak in the range of < 0 +/− 0.1)/, low in the range of 0 +/− 0.3, moderate in the range of < 0 +/− 0.5, strong in the range of < 0 +/ − 0.8, very strong in the range of ≥ +/− 0.8 (Cohen, Manion and Marrison, 2007: 521). According to this, it is understood that the effect size is moderate with 0.38 according to the random effects model. From this point of view, the H_1 hypothesis that social capital positively affects economic growth has been accepted.

Table 6: Overall Effect Sizes of Studies Included in the Meta-Analysis

	Studies	Fisher's Z	Std. Error
1	Ahmad and Hall (2017)	0.001	0.134
2	Akar and Ay (2018)	0.013	0.143
3	Akçomak and Weel (2009)	0.036	0.302
4	Akın (2013)	0.049	0.277
5	Algan and Cahuc (2010)	0.536	0.152
6	Baliamonue (2005)	0.436	0.167
7	Baliamoune-Lutz (2011)	0.770	0.110
8	Berggren vd. (2008)	0.062	0.129
9	Beugelsdijk, T. van Schaik (2005)	0.011	0.140
10	Bjornskov (2012)	0.831	0.120
11	Dearmon and Grier (2009)	0.200	0.144
12	Dinçer and Uslaner (2010)	0.054	0.158
13	Dinda (2008)	0.056	0.129
14	Feki and Chtouro (2014)	0.001	0.154
15	Forte et. Al. (2015)	0.021	0.110
16	Hall and Ahmad (2013)	0,001	0.134
17	Helliwell (1996)	-0.050	0.267
18	Karagül and Akçay (2002)	0.775	0.174
19	Khalifa (2016)	0.372	0.151
20	Kızılkaya (2017)	0.024	0.186
21	Knack and Keefer (1997)	0.076	0.196
22	Koç and Ata (2012).	0.002	0.200
23	Majeed (2019)	0.827	0.180
24	Muringani and Rodriguez-Pose (2021)	0.060	0.236
25	Neira, Portela and Vieira (2010)	0.001	0.289
26	Neira, Va´zquez and Portela (2009)	0.020	0.302
27	Öksüzler (2006)	0.154	0.213
28	Pelle at al. (2009)	0.807	0.131
29	Perez vd. (2006)	0.059	0.224
30	Roth (2006)	-0.782	0.136
31	Roth (2009)	0.050	0.177
32	Vergil, Bahtiyar (2017)	0.045	0.196
33	Raiser, at al, (2002)	-0.234	0.250
34	Whiteley (2000)	0.725	0.180
35	Yapraklı (2005)	0.225	0.200
36	Zak and Knack (2001)	0.062	0.167
Fixed Effect		0.306*	0.027
Random Effect		0.380*	0.064

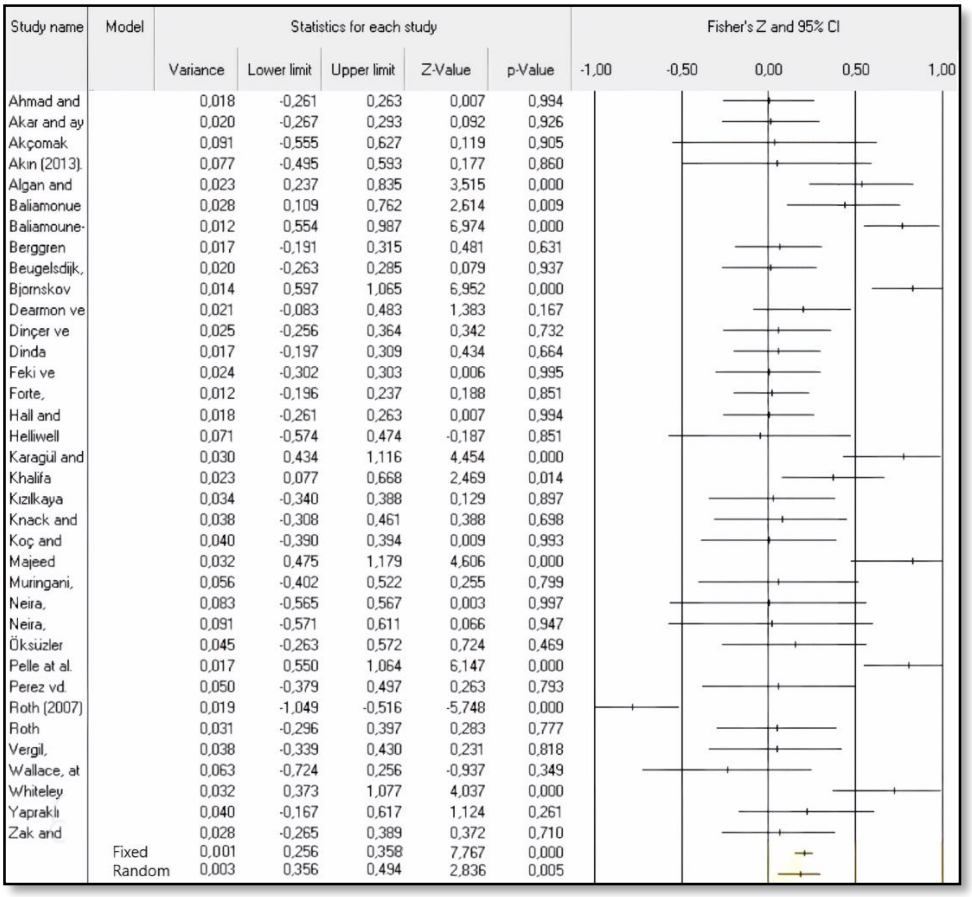
Note: *, Indicates Fisher Z effect size

The overall effect size of each study used in the meta-analysis is different. The Fisher-Z transform is used to see the effect sizes of each study in studies dealing with the relationships between variables (Bond and Richardson 2004: 291). The overall effect sizes of the studies included in the analysis are shown in Table 6. According to the Fisher-Z transform, the highest individual effect with 0.831 belongs to the study by Bjornskov (2012), while the lowest effect size, which is 0.001, belongs to the studies conducted by Ahmad and Hall (2017), Feki and Chtouro (2014), Hall and Ahmad (2013), Neira, Portela and Vieira (2010).

As a result of the insufficient number of studies used in meta-analysis, the 95% confidence interval values of the studies can be very wide. This situation causes false findings to emerge (Kılıçkap, 2018: 629). The effect size and other meta-analysis forest plot of 36 studies selected for meta-analysis and meeting the criteria are shown in Table 7. In the table, the results obtained as a result of the

analysis are transferred to the image. The forest plot shows the lower and upper limits and confidence intervals of each analyzed study, as well as the lower upper limits and total confidence intervals of all studies included in the analysis (Lewis and Clarke, 2001).

Table 7: Lower Upper Limits and Forest Chart



Study name	Model	Statistics for each study					Fisher's Z and 95% CI
		Variance	Lower limit	Upper limit	Z-Value	p-Value	-1,00 -0,50 0,00 0,50 1,00
Ahmad and		0,018	-0,261	0,263	0,007	0,994	
Akar and ay		0,020	-0,267	0,293	0,092	0,926	
Akçomak		0,091	-0,555	0,627	0,119	0,905	
Akın (2013).		0,077	-0,495	0,593	0,177	0,860	
Algan and		0,023	0,237	0,835	3,515	0,000	
Baliamonue		0,028	0,109	0,762	2,614	0,009	
Baliamoune-		0,012	0,554	0,987	6,974	0,000	
Berggren		0,017	-0,191	0,315	0,481	0,631	
Beugelsdijk,		0,020	-0,263	0,285	0,079	0,937	
Bjornskov		0,014	0,597	1,065	6,952	0,000	
Dearmon ve		0,021	-0,083	0,483	1,383	0,167	
Dinçer ve		0,025	-0,256	0,364	0,342	0,732	
Dinda		0,017	-0,197	0,309	0,434	0,664	
Feki ve		0,024	-0,302	0,303	0,006	0,995	
Forte,		0,012	-0,196	0,237	0,188	0,851	
Hall and		0,018	-0,261	0,263	0,007	0,994	
Helliwell		0,071	-0,574	0,474	-0,187	0,851	
Karagül and		0,030	0,434	1,116	4,454	0,000	
Khalifa		0,023	0,077	0,668	2,469	0,014	
Kızılkaya		0,034	-0,340	0,388	0,129	0,897	
Knack and		0,038	-0,308	0,461	0,388	0,698	
Koç and		0,040	-0,390	0,394	0,009	0,993	
Majeed		0,032	0,475	1,179	4,606	0,000	
Muringani,		0,056	-0,402	0,522	0,255	0,799	
Neira,		0,083	-0,565	0,567	0,003	0,997	
Neira,		0,091	-0,571	0,611	0,066	0,947	
Öksüzler		0,045	-0,263	0,572	0,724	0,469	
Pelle at al.		0,017	0,550	1,064	6,147	0,000	
Perez vd.		0,050	-0,379	0,497	0,263	0,793	
Roth (2007)		0,019	-1,049	-0,516	-5,748	0,000	
Roth		0,031	-0,296	0,397	0,283	0,777	
Vergil,		0,038	-0,339	0,430	0,231	0,818	
Wallace, at		0,063	-0,724	0,256	-0,937	0,349	
Whiteley		0,032	0,373	1,077	4,037	0,000	
Yapraklı		0,040	-0,167	0,617	1,124	0,261	
Zak and		0,028	-0,265	0,389	0,372	0,710	
	Fixed	0,001	0,256	0,358	7,767	0,000	
	Random	0,003	0,356	0,494	2,836	0,005	

Considering the confidence interval values, it is understood that they are mostly between -0.5 and +0.5. These confidence interval values obtained as a result of the analysis report that the result does not show a wide distribution that does not lead to false outputs. After determining the overall effect level of the study and the effect levels of each study separately, the bias of the study should be checked.

6. Publication Bias

In order for the effect size values revealed in the meta-analysis to be considered reliable, publication bias should be checked. He states that in the case of publication bias in the analysis, the studies included in the analysis do not have the ability to represent all the studies covering the relevant subject, so a stronger effect may occur when the studies that are not taken into account are considered (Card, 2012, 258). There are some tests done to see if there is a publication bias. The most widely used and reliable ones are "*Classical Safe N*

Analysis" (Fail-Safe N), "*Trim&fill Method*", "*Regression Intercept Test*", respectively. The mentioned tests were used in this study.

The Classic Fail-Safe N test is used to determine whether the values showing the effect size are biased (Rosenthal, 1979). Classic Fail-Safe N values are shown in Table 8. Accordingly, the Classical Fail-Safe N value determined in this study is 424. This result states that in order for the probability value to be higher than 0.05, 424 non-significant studies should be found and added to the analysis (Rosenthal, 1979; Şen & Yıldırım, 2020, 270). It shows that the probability value will be higher than the alpha value with 424 non-significant studies to be included in this analysis. In addition, the value obtained according to the 5n+10 formula (Fragkos et al., 2014) (5n+10=190) is smaller than the classical safe value N. This result also supports the classical safe N test, which shows that there is no publication bias.

Table 8: Classic Fail-Safe N Analysis

Z-value	6.915
P- value	0.000
Alfa	0.050
Z-value for alpha	1.959
Number of Observed Studies	36
Number of missing studies that would bring p-value to > alpha	424

In Table 9, it is understood that the corrected work values did not change with the observed work in the "crop and fill" method suggested by Duval and Tweedie (2000). Even if there is an addition, this addition has no effect on the overall estimate but helps correction for variance (Duval and Tweedie, 2000). As can be seen from the table, there is no study added or removed due to publication bias.

Table 9: Duval and Tweedie's Crop and Fill Statistic Results

		Fixed Effects		Random Effects		
	Clipped Working	**Point Size**	**Lower - Upper Limit**	**Point Size**	**Lower - Upper Limit**	**Q value**
Observed	-	0.306	0.254-0.358	0.380	0.356-0.495	195.924
Adjusted	-	0.306	0.254-0.358	0.380	0.356-0.495	195.924

Another reliable test to control whether there is publication bias is the regression cutoff test applied by Egger et al., (1997). Here, i. A linear regression model E(zi) is proposed, showing the regression of the study standard deviation (z_i) versus the precision of the study (preci). This method is stronger than the correlation approach, and the publication bias of the method is shown by the constant term (B_0) (Sterne and Egger, 2005; Şen and Yıldırım, 2020, 273). The Egger Test of this study is shown in Table 10.

Table 10. Egger's Regression Cutoff Test

Intercept	-1.485
Standart Error	1.498
95% lower limit (2-tailed)	-4.527
95% upper limit (2- tailed)	1.556
t-value	0.991
df	35
P-value (1- tailed)	0.164
P-value (2- tailed)	0.328

According to the regression cutoff test, the values showing one-tailed or two-tailed probabilities are less than 0.05, indicating publication bias (Jin et al., 2014). As a result of the test, one-tailed probability value is 0.16 and two-tailed probability value is 0.33. Hence, Egger et al. (1997) suggested that there is no publication bias in the analysis, but it also confirms other publication bias tests.

7. Conclusion

Although the effect direction is seen as positive in most of the studies in the literature, the results can show significant changes in terms of the method and the countries covered. Therefore, it may not be correct to generalize based on individual empirical studies investigating the effect of social capital on economic growth. However, a judgment can be made by considering more studies. For this reason, the meta-analysis method was used. This method allows a new analysis that covers all these analyses independently of the results in the existing analyses, but by making use of the data sets of these analyses. The effect size obtained through the meta-analysis represents an overall effect, reflecting all of these studies.

This article is made by bringing together studies on social capital and economic growth, which deal with various countries. Social capital has an impact on economic development by influencing individuals, businesses, banks and the way they do business, and thus trade. The level of social capital affects many variables such as doing business, using credit, repaying debt, obeying rules, keeping promises. It summarizes 24 years of empirical research conducted in the period of 1997-2021. With this study, it is aimed to make a general inference about the effect of social capital level and economic growth at the country level. In the literature, there are many studies examining the effect of social capital on economic growth. Meta-analysis method has been used in order to summarize and organize all these studies and to reveal the total effect sizes and whether social capital has an effect on economic growth. For these purposes, all studies on this subject were searched in Web of Science, Jstor, Emerald, ScienceDirect, Springer, Ulakbim, Google Scholar and Ebsco databases, starting from 1997. 36 studies consisting of 3,458 observations, which are country-based out of 113 studies and data to be used in meta-analysis, were included in the analysis. Thesis studies were not included in the research because they did not go through the referee process in order to give more objective results. Analyses were performed by loading into the Comprehensive Meta Analysis (CMA) 2.0 program. It is because the meta-analysis method allows a new analysis that takes into account the effects and results of all these analyses by using the results of the studies in the literature, but independently of them. The effect size obtained through the meta-analysis

shows a general effect level that has the capacity to reflect all of the studies discussed. Therefore, meta-analysis is called “research of studies” (Sen & Yıldırım, 2020: 4).

As a result, 36 studies examining the effect of social capital on economic growth and meeting the criteria were examined. In this context, in line with the studies in the literature, it was aimed to test the hypotheses of *"H_0: Countries' social capital level does not affect economic growth*" and *"H_1: Countries' social capital level affects economic growth"*. Accordingly, in the random effects model, the overall effect size was calculated as 0.380 within the limits of 0.356 - 0.495.

In summary, the H_1 hypothesis, which states that social capital affects the economic growth performance of countries, was accepted. It has been understood that this effect is positive. According to the random effects model, in the studies conducted on the basis of countries in the literature, it has been understood that social capital has a positive effect on economic growth and the effect size is moderate with 0.38.

There are difficulties associated with measuring the concept of social capital. An index value was used in studies other than the generalized confidence question. It should not be forgotten that the social capital index has a general validity problem due to the differences in the components of the social capital index used, as well as the political, cultural and religious structures of the countries. For this reason, when the sufficient number of studies using the same index value in future studies is reached, a different study can be done on this social capital index data.

The conflicting results of some studies on various country groups may also be due in part to inadequate measurements of the main components of social capital and to differences in culture, income, and understanding between countries. Creating a better index value representing social capital for different countries may be seen as an important problem for researchers in the future. Considering the lack of consensus in the studies in the literature, it can be said that this general finding is very valuable in terms of the literature and will make an important contribution. This moderate effect of social capital on the economic growth of countries is thought to be an important finding that should be evaluated in terms of policy makers, administrators, educators, and researchers. At this point, it is very important for countries to develop various policies and activities in order to increase their social capital levels.

Statement of Support and Appreciation: No external support has been received during the conduct of this study.

Researchers' Contribution Rate Statement: The research was conducted by a single author.

Conflict of Interest Statement: I don’t have any conflict of interest declaration as the author of the study.

Research and Publication Ethics Statement: All the rules stated in the “Higher Education Institutions Scientific Research and Publication Ethics Directive” were strictly considered at every stage of this research. None of the actions specified under the heading "Actions Against Scientific Research and Publication Ethics" of the directive has not been carried out. During the writing process of this study, the citations were made in accordance with the ethical rules and a bibliography was created. The study was subjected to plagiarism control.

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