DOES ESG PERFORMANCE IMPACT FINANCIAL PERFORMANCE? EVIDENCE FROM THE UTILITIES SECTOR[*]

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ABSTRACT

The aim of this study is to provide evidence for the impact of environmental, social and corporate governance (ESG) performances of companies operating in the utilities sector on their financial performance. The study used data from 325 companies in the utilities sector worldwide which have been listed in ASSET4 between 2010 and 2019. Refinitiv's Thomson Reuters ASSET4, EIKON, and Datastream databases have been used to obtain data on ESG performance and financial performance variables used in the study. According to the regression results, ESG performance has no impact on financial performance.

Keywords: ESG performance, financial performance, utilities sector

Jel Classification: G30, G32, M41, Q51, Q56

ESG PERFORMANSI FİNANSAL PERFORMANSA ETKİ EDEBİLİR Mİ? ELEKTRİK SU, GAZ VE ATIK SEKTÖRÜ ÜZERİNE BİR ARAŞTIRMA

ÖZ

Bu çalışmanın amacı elektrik, su, gaz ve atık sektöründe faaliyet gösteren şirketlerin çevresel, sosyal ve kurumsal yönetim (Environmental, Social, Governance-ESG) performanslarının finansal

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performanslarına etkisine yönelik kanıtlar sunmaktır. Bu amaçla çalışmada, elektrik, su, gaz ve atık sektöründe (Utilities) dünya genelinde ASSET4'te yer alan 325 şirketin 2010-2019 yıllarını kapsayan verileri kullanılmıştır. Çalışma kapsamında kullanılan ESG performansı ve finansal performans değişkenlerine ait veriler Refinitiv'in Thomson Reuters ASSET4, EIKON ve Datastream veri tabanından elde edilmiştir. Gerçekleştirilen regresyon analizleri sonucunda şirketlerin ESG performanslarının finansal performansları üzerinde etkili olmadığı tespit edilmiştir.

Anahtar Kelimeler: ESG performansı, finansal performans, elektrik, su, gaz ve atık sektörü

Jel Sınıflandırması: G30, G32, M41, Q51, Q56

GENİŞLETİLMİŞ ÖZET

AMAÇ VE GÜDÜ

Bu çalışmanın amacı, elektrik, su, gaz ve atık sektöründe faaliyet gösteren şirketlerin ESG performanslarının finansal performanslarına etkisine yönelik kanıtlar sunmaktır. Literatürde ESG performansı ve finansal performans arasındaki ilişkiyi inceleyen birçok çalışma bulunmaktadır (Friede vd., 2015). Bu çalışmalardan bazıları belirli bir ülke ve/veya topluluğu kapsarken (Humphrey vd., 2010; J. Kim vd., 2013; Lima Crisóstomo vd., 2011; Nekhili vd., 2019; Nelling & Webb, 2009; Uadiale & Fagbemi, 2012; Wang & Sarkis, 2017); bir kısmı da belirli bir sektörü kapsamaktadır (Abdi vd., 2021; Almeyda & Darmansya, 2019; C. Mallin vd., 2014; Rhou vd., 2016; Uyar vd., 2020; Wu & Shen, 2013; A. S. Yang & Baasandorj, 2017; Yekini & Ho, 2014; Zhao vd., 2018). Günümüzde elektrik, su, gaz ve atık sektörüne faaliyet gösteren şirketlerin, paydaşların finansal olmayan konulara olan taleplerinin arttığı da düşünüldüğünde, paydaşların hassasiyetle inceledikleri şirketlerden olduğu söylenebilir. Dahası elektrik, su, gaz ve atık sektörü 2020'de 6.342 milyar dolar büyüklüğe ulaşmıştır (Business Wire, 2021). Ayrıca sektör dünya çapında sosyal, ekonomik ve politik olarak büyük bir etkiye sahiptir. Sektör doğası gereği, küresel topluma ve çevreye doğrudan etki etmekte ve diğer sektörlerle yakın ilişki içerisinde bulunmaktadır. Literatürde bu sektörde ESG performansının finansal performansa etkisine yönelik bir çalışmaya da rastlanmamıştır. Tüm bu nedenler konuyla ilgili elektrik, su, gaz ve atık sektöründe araştırma yapmayı daha da ilgi çekici kılmaktadır.

YÖNTEM

Çalışmanın hipotezleri ve değişkenleri yapılan literatür incelemesi sonucunda belirlenmiştir. Bu kapsamda çalışmada bağımlı değişken olarak finansal performans kullanılmıştır. Finansal performansı ölçmek için piyasa temelli performans ölçütü olarak Tobin's Q ve muhasebe temelli performans ölçütü olarak aktif kârlılık oranı (ROA) kullanılmıştır. Bağımsız değişken olarak ise ayrı ayrı ESG performansı (ESG) ve alt boyutları kullanılmıştır. Alt boyutlar çevresel boyut (ENV), sosyal boyut (SOC) ve kurumsal yönetim (GOV) boyutu olmak üzere üç boyuttan oluşmaktadır. Şirket büyüklüğü (toplam

varlıklar - LnA), kaldıraç oranı (LEV) ve şirket yaşı (Lnage) ve ROA (sadece TOBINQ'nun bağımlı değişken olduğu modellerde) ise modelin kontrol değişkenleridir. Araştırmanın temel modeli aşağıda sunulmuştur:

$$Finansal\ Performans\ (TOBINQ\ ve\ ROA)\ it = \alpha + \beta_1\ ESG\ Skorları\ (ESG, ENV, SOC, GOV)it + \beta_2\ ROA\ it + \beta_3\ LnA\ it + \beta_4\ Lnage\ it + \beta_5\ LEV\ it + \varepsilon$$

Finansal Performans= Ayrı ayrı *TOBINQ* ve *ROA*'yı temsil etmektedir. *ESG Skorları* = Ayrı ayrı *ESG*, *ENV, SOC* ve *GOV* skorlarını temsil etmektedir. Bunlar ayrı ayrı modellerde gösterilmemiş olup tek bir temel modelde sunulmuştur. Dolayısıyla araştırmanın 8 farklı modeli mevcuttur.

Çalışma kapsamında kullanılan ESG performansı ve finansal performans değişkenlerine ait veriler Refinitiv'in Thomson Reuters ASSET4, EIKON ve Datastream veri tabanından elde edilmiştir. Çalışmada elektrik, su, gaz ve atık sektöründe (Utilities) dünya genelinde ASSET4'te yer alan 325 şirket yer almaktadır. Bu şirketlere ait veriler 2010-2019 yıllarını kapsamaktadır.

BULGULAR VE TARTIŞMA

Regresyon analizi sonuçlarının verildiği tabloda 1, 2, 3 ve 4 numaralı sütunda yer alan sonuçlar *TOBINQ* ile kurulan modeller, 5, 6, 7 ve 8 numaraları sütunda yer alan sonuçlar ise *ROA* ile kurulan modellerin sabit etkiler regresyon modeliyle yapılan analizlerin sonuçlarını göstermektedir. Tüm analizlerde F istatistik değerleri anlamlı bulunmuştur. 1, 2, 3 ve 4 numaralı sütunlarda yer alan sonuçlara göre *ESG, ENV, SOC* ve *GOV* performansının *TOBINQ* üzerinde istatistiksel olarak anlamlı bir etkisinin olmadığı, kontrol değişkenlerinden *ROA*'nın *TOBINQ* üzerinde istatistiksel olarak anlamlı ve pozitif yönlü bir etkisinin olduğu, *LnA* ve *Lnage*'in *TOBINQ* üzerinde negatif yönlü ve istatistiksel olarak anlamlı bir etkisinin olduğu, *LEV*'in ise istatistiksel olarak anlamlı bir etkisinin olmadığı tespit edilmiştir. Tablo 2'de 5, 6, 7 ve 8 numaraları sütunlarda yer alan sonuçlarda ise benzer şekilde *ESG, ENV, SOC* ve *GOV* performansının *ROA* üzerinde istatistiksel olarak anlamlı bir etkisinin olmadığı tespit edilmiştir. Ayrıca kontrol değişkenlerinden *LnA* ve *Lnage*'in *ROA* üzerinde anlamlı bir etkisinin olmadığı, *LEV*'in ise bu modellerde istatistiksel olarak anlamlı ve negatif yönlü bir etkisinin olduğu belirlenmiştir.

SONUÇ VE ÖNERİLER

Bu çalışmada dünya genelinde elektrik, su, gaz ve atık sektöründe faaliyet gösteren şirketlerin ESG performanslarının finansal performanslarına etkisinin olup olmadığı panel veri analiziyle detaylı bir şekilde incelenmiştir. ESG ve çevresel, sosyal ve kurumsal yönetim alt boyutları dikkate alınarak finansal performans (*TOBINQ* ve *ROA*) üzerindeki etkilerinin test edilmesi sonucunda istatistiksel olarak anlamlı bir etki tespit edilememiştir. Diğer bir ifadeyle, belirlenen sektör ve gözlem döneminde yapılan regresyon analizleri sonucunda şirketlerin ESG performanslarının finansal performansları

üzerinde etkili olmadığı ortaya konulmuştur. ESG performansı ve finansal performans arasındaki ilişkiye yönelik iki yaklaşım bulunmaktadır. Bunlardan birincisi ESG faaliyetlerinin şirketlerin ek maliyetlere maruz kalmasına neden olduğu ve böylece şirketlerin finansal performansını azalttığıdır. İkincisi ise ESG'nin piyasada rekabet avantajı sağlaması ve böylece şirketlerin performansını artırmasıdır (Lee, Seo ve Sharma, 2013). Bu kapsamda literatürde yer alan sınırlı sayıda çalışmayla hangi yaklaşımın daha geçerli olduğuna yönelik bir genelleme yapmak mümkün değildir. Bu çalışmanın üç temel sınırı bulunmaktadır. Birincisi sadece elektrik, su, gaz ve atık sektörünün incelenmesidir. İkincisi dönem olarak sadece 2010-2019 yılları arasını kapsamasıdır. Üçüncüsü ise ülke düzeyinde bir seçim yapılamamış olmasıdır. Bu nedenle elde edilen sonuçlar sadece dünya genelinde bu sektörde ve belirlenen yıllar için geçerlidir. Diğer sektörler ve farklı yıllar için yapılacak analizlerde sonuçlar değişkenlik gösterebilir. Gelecekte ülke düzeyindeki faktörleri de dikkate alarak aynı sektör için veya farklı sektörler düzeyinde benzer çalışmaların yapılması literatüre katkı sağlayacaktır.

1. INTRODUCTION

Environmentally conscious stakeholders' objections and growing awareness about environmental (i.e., global warming) and social (i.e., human rights) issues have compelled companies to take environmentally and socially responsible actions over the last two decades. The utilities sector has grown significantly and has become one of the major causes of greenhouse gas (GHG) emissions, which are held responsible for global warming. Thus, concerns about the sector's environmental and social impacts have increased in recent years. As global demand increase, the negative effects of the utilities sector will become the most concerning issue in the coming years.

Efficient, clean, and cheap utilities services draw an important role in the sustainable growth of the global economy. Utilities companies are supposed to contribute to the sustainability of environment by increasing efficiency, investing in renewable energy, improving air quality, reducing carbon emissions, dealing with climate change, and caring for biodiversity. They are also supposed to contribute to society by providing healthy workplaces and specialized services to disabled, chronically ill, disadvantaged communities, and elderly customers.

The utilities sector is becoming increasingly important due to its visibility and perilous nature. Therefore, there is a growing interest in investigating ESG (Environmental, Social, and Governance) issues in such sectors. ESG is defined as "an approach in which companies integrate governance, social, and environmental issues into their business operations and interactions with their stakeholders" (Commission of the European Communities, 2001, p. 6). Nowadays, also the success of companies operating in utilities sector is measured by their non-financial performance (ESG performance) as well as their financial performance. For this reason, stakeholders' demand for non-financial information and

financial information provided by companies increases. To meet the information needs of their stakeholders, firms now publish both financial and non-financial (ESG) information (Şeker & Şengür, 2021, p. 191). Furthermore, companies can establish strong relationships with key stakeholders, reduce potential risks, gain a competitive advantage, improve their operations and financial performance, and increase brand values by prioritizing ESG issues (Dey et al., 2011; He et al., 2017; Govindan et al., 2021). Moreover, in these matters, irresponsible and inadequate corporate practices are likely to damage the company's reputation, cause loss of customers and financially harm companies (Lo & Sheu, 2007; Govindan et al., 2018, 2021). Therefore, it is increasingly important for governance bodies to address long-term environmental, social and governance risks and integrate them into their corporate strategy and business models.

The aim of this study is to provide evidence for the effect of ESG performance on financial performance of companies operating in the utilities sector. There are many studies in the literature examining the relationship between ESG performance and financial performance (Friede et al., 2015). While some of these studies cover a specific country and/or community (Humphrey et al., 2010; J. Kim et al., 2013; Lima Crisóstomo et al., 2011; Nekhili et al., 2019; Nelling & Webb, 2009; Uadiale & Fagbemi, 2012; Wang & Sarkis, 2017; Yang et al., 2010); some of them cover a specific sector (Abdi et al., 2021; Almeyda & Darmansya, 2019; Mallin et al., 2014; Rhou et al., 2016; Uyar et al., 2020; Wu & Shen, 2013; Yang & Baasandorj, 2017; Yekini & Ho, 2014; Zhao et al., 2018).

In this study, there are four reasons for conducting research on the utilities sector. First, in many countries, the utilities sector has a great influence on the social, economic, and political environments. Second, because of its nature, the sector directly affects the global society and environment and is in close relationship with other sectors. Third, the utilities sector has reached a size of $6.342 billion in 2020 worldwide (Business Wire, 2021). Fourth, there is no research in the literature on the effect of ESG performance on financial performance in this sector. All of these factors make research in the utilities sector even more intriguing.

The paper is structured as follows. The second section is a review of the literature. The third section provides the theoretical framework as well as the hypotheses that is being tested. The fourth section goes over the methodology including sample, variables and empirical model. The findings are presented in the fifth section. The results are discussed in the final section.

2. LITERATURE REVIEW

Table 1 summarizes the sample, method, and results information from studies that examined the relationship between companies' ESG activities and their financial performance.

Table 1. Studies in the Literature

Authors	Sample	Method	Results
McWilliams & Siegel, (2000)	524 companies between 1991-1996	Linear regression analysis	There is no significant relationship between ESG activities and financial performance.
Fauzi, (2009)	3,000 companies listed on the New York Stock Exchange between 2004-2006	Linear regression analysis	There is no significant relationship between ESG and financial performance indicators.
Nelling & Webb, (2009)	600 US companies between 1993-2000	Panel data analysis	There is no significant relationship between ESG activities and financial performance.
Aras et al., (2010)	Companies listed in BIST-100 between 2005-2007	Linear regression analysis	There is no significant relationship between ESG and financial performance indicators.
Humphrey et al., (2010)	249 companies operating in the UK between 2002-2007	Multiple linear regression analysis	There is no significant relationship between ESG activities and financial performance.
Yang et al., (2010)	150 companies listed on the Taiwan Stock Exchange between 2005-2007	Linear regression analysis	A positive and significant relationship is found between ESG and financial performance indicators.
Lima Crisóstomo et al., (2011)	78 companies listed on the Brazilian Stock Exchange between 2001-2006	Cross-sectional regression analysis	A negative and significant relationship is found between ESG and financial performance indicators.
Purnomo & Widianingsih, (2012)	50 companies listed on the Indonesian Stock Exchange between 2006-2010	Linear regression analysis	A positive and significant relationship is found between environmental performance and financial performance indicators.
Sun, (2012)	A total of 11,432 observations between 1999 and 2009	Panel data analysis	A positive and significant relationship is found between ESG activities and financial performance.
Uadiale & Fagbemi, (2012)	40 companies listed on the Nigerian Stock Exchange in 2007 with a CSR report	Linear regression analysis	A positive and significant relationship is found between ESG and financial performance indicators.
Balatbat et al., (2013)	300 companies listed on the Australian Stock Exchange between 2008-2010	Multiple linear regression analysis	No significant relationship is found between ESG activities and financial performance.
Kim et al., (2013)	100 companies listed on the South Korean Stock Exchange in 2011	Linear regression analysis	A significant relationship is found between ESG activities and financial performance.
Siew et al., (2013)	44 construction companies listed on the Australian Stock Exchange between 2008 - 2010	Correlation analysis	A weak relationship is found between ESG performance and financial performance.
Wu & Shen, (2013)	162 banks operating in 22 different countries between 2003-2009	Panel data analysis	A positive and significant relationship is found between ESG and financial performance indicators.
Cavaco & Crifo, (2014)	300 companies operating in 15 different countries between 2002-2007	Panel data analysis	A positive relationship is found between social activities and financial performance,

			and a negative relationship with environmental activities.
Mallin et al., (2014)	90 participation banks operating in 13 different countries between 2010-2011	Cross-sectional regression analysis	A positive and significant relationship is found between ESG and financial performance indicators.
Yekini & Ho, (2014)	20 financial institutions listed on the Vietnam Stock Exchange between 2010-2012	Multiple linear regression analysis	A significant relationship is found between debt level and ESG. However, it is determined that there is no significant relationship between ESG and company size.
Lin et al., (2015)	Companies listed in the S&P 500 from 1998-2008	Panel data analysis	It is determined that ESG activities can increase financial performance. However, according to the empirical results, the direct impact of ESG on financial performance differs by sector.
Rhou et al., (2016)	53 restaurants operating between 1992-2012	Panel data analysis	There is no significant relationship between ESG activities and financial performance.
Velte, (2017)	Companies listed on the Frankfurt Stock Exchange (DAX30, TecDAX, MDAX) between 2010-2014	Panel data analysis	It is found that ESG performance has a positive effect on ROA, but has no effect on Tobin's Q.
Wang & Sarkis, (2017)	500 green companies operating in the USA between 2009-2013	Panel data analysis	A significant relationship is found between ESG activities and financial performance.
Yang & Baasandorj, (2017)	16 airline companies operating in various countries between 2006-2015	Panel data analysis	It is determined that ESG activities have a positive effect on financial performance.
Fatemi et al., (2018)	403 companies operating in the USA between 2006-2011	Panel data analysis	It is determined that ESG activities have a positive effect on financial performance.
Kim et al., (2018)	113 US companies operating in the software industry between 2000-2005	Panel data analysis	It is determined that ESG activities have a positive effect on financial performance.
Landi & Sciarelli, (2018)	40 companies listed on the Italian Stock Exchange between 2007-2015	Panel data analysis	There is no significant relationship between ESG and financial performance.
Zhao et al., (2018)	20 companies operating in the energy sector in China between 2007-2016	Panel data analysis	A positive and significant relationship is found between ESG performance and financial performance.
Almeyda & Darmansya, (2019)	Real estate companies operating in G7 countries between 2014-2018	Panel data analysis	A significant and positive relationship is determined between ESG activities and ROA and ROC. No relationship is found with share price and P/E.
Cho et al., (2019)	191 companies listed in the KEJI (South Korea) Index in 2015	Multiple linear regression analysis	It is determined that there is a partial and positive correlation between ESG performance and profitability and firm value.
Franzén, (2019)	Companies in the S&P 500 between 2002-2017	Panel data analysis	A negative relationship is found between ESG scores and stock returns.

Kim et al., (2019)	5040 US companies operating between 2006-2016	Panel data analysis	A positive and significant relationship is found between ESG and financial performance indicators.
Nekhili et al., (2019)	Companies listed in SBF 120 (France) from 2007 to 2017	Panel data analysis	No significant relationship is found between ESG activities and financial performance.
Shakil et al., (2019)	93 companies operating in various countries between 2015-2018	Panel data analysis	A significant relationship is found between environmental and social activities and financial performance. Also, no significant relationship was found between governance activities and financial performance.
Sinthupundaja et al., (2019)	54 service sector companies listed on the Thailand Stock Exchange in 2015	fsQCA analysis	A positive and significant relationship is found between ESG activities and financial performance.
Xie et al., (2019)	6,631 companies operating in 74 countries and 11 different sectors in 2015	Linear regression analysis	A positive and significant relationship is found between ESG activities and financial performance.
Shahbaz et al., (2020)	Companies operating in the energy sector between 2011-2018	Panel data analysis	No significant relationship is found between ESG activities and financial performance.
Uyar et al., (2020)	Tourism companies operating in various countries between 2011-2018	Panel data analysis	No significant relationship is found between ESG activities and financial performance.
Wu et al., (2020)	341 companies listed on the Shanghai Stock Exchange between 2013-2018	Panel data analysis	A positive and significant relationship is found between ESG activities and financial performance.
Abdi et al., (2021)	38 airline companies operating in various countries between 2009-2019	Panel data analysis	A significant relationship is found between ESG activities and financial performance.
Ahmad et al., (2021)	351 companies operating in the UK between 2002-2018	Panel data analysis	A significant relationship is found between ESG activities and financial performance.
Chouaibi et al., (2021)	115 UK and 90 German companies operating between 2005-2019	Panel data analysis	A positive and significant relationship is found between ESG activities and financial performance.
Mohammad & Wasiuzzaman, (2021)	661 companies traded on the Malaysia Stock Exchange between 2012-2017	Panel data analysis	A positive and significant relationship is found between ESG activities and financial performance.
Saygili et al., (2021)	Companies listed in BIST Corporate Governance Index between 2007-2017	Panel data analysis	A negative relationship is found between environmental activities and financial performance. On the other hand, a positive relationship is determined between governance activities and financial performance.

As shown in Table 1, the majority of studies in the literature have positive and significant results. However, rather than making generalized statements, the literature's findings can be classified into three

categories: no significant relationship, negative and significant relationship, and positive and significant relationship.

McWilliams & Siegel (2000), Fauzi (2009), Aras et al. (2010) analyzed the relationship between ESG (CSR) performance and financial performance using a linear regression method. They found no significant relationship between ESG and financial performance indicators.

Humphrey et al. (2010) and Balatbat et al. (2013) analyzed the relationship between ESG activities and financial performance using multiple linear regression method. They found no significant relationship between ESG and financial performance in their studies.

Nelling & Webb (2009), Rhou et al. (2016), Landi & Sciarelli (2018), Nekhili et al. (2019), Shahbaz et al. (2020) and Uyar et al. (2020) investigated the relationship between financial performance and ESG scores using panel data analysis. According to the results, there is no significant relationship between ESG activities and financial performance.

Lima Crisóstomo et al. (2011) applied cross-sectional regression analysis in their study. They found a negative and significant relationship between ESG and financial performance indicators. Franzén (2019) analyzed the relationship between ESG activities and financial performance. He found a negative and significant relationship between variables result of panel data analysis.

Yang et al., (2010), Uadiale & Fagbemi, (2012), Kim et al., (2013), Xie et al., (2019) used the linear regression analysis method. The results indicated that there was a positive and significant relationship between ESG activities and financial performance.

Wu & Shen, (2013), Wang & Sarkis, (2017), Yang & Baasandorj, (2017), Fatemi et al., (2018), Kim et al., (2018), Zhao et al., (2018), Kim et al., (2019), Wu et al., (2020), Abdi et al., (2021), Ahmad et al., (2021), Chouaibi et al., (2021), Mohammad & Wasiuzzaman, (2021) employed panel data analysis. They found a significant and positive relationship between ESG and financial performance in their studies.

3. THEORETICAL FRAMEWORK AND HYPOTHESES

Agent theory, stakeholder theory, and legitimacy theory are three widely accepted approaches to explaining the relationship between corporate governance, sustainability performance, and financial performance (Shaukat et al., 2016; Hussain et al., 2018; Crifo et al., 2019; Naciti, 2019; Govindan et al., 2021).

Agency theory implies important problems in the relationship between principals and agents, since their objects diverge (Jensen & Meckling, 1976; Fama & Jensen, 1983). According to the theory, managers may maximize their own interests over organizational interests in some cases because they

have more information about the company than the owners and cannot be constantly controlled. Agency theory claims that companies prevent investors and to diminish agency conflicts using control mechanisms, such as the corporate governance systems (Jensen & Meckling, 1976). This theory proposes that governance bodies (i.e., the board of directors) should supervise and monitor the managers' decisions (Hussain et al., 2018). Therefore, effective corporate governance would have a significant impact on firm financial performance by improving board monitoring (Carter et al., 2003) and reducing agency conflicts (Erhardt et al., 2003). According to agency theory, ESG activities also create a proxy problem between managers and shareholders in that ESG includes not only satisfying the needs and expectations of shareholders but also the social and environmental concerns of all stakeholders (Givel, 2007). Therefore, ESG spending is not in the interests of shareholders as it represents a direct outflow of funds that will reduce profits (Peng & Isa, 2020).

Another theory considered in the study is stakeholder theory. Stakeholder theory has an approach that encourages designing an efficient management mechanism in companies and considering the benefits and preferences of stakeholders (Donaldson & Preston, 1995). In order to respond to the needs of the stakeholders and maximize their benefits, a corporate governance mechanism that operates effectively and accurately is required (Luoma & Goodstein, 1999). According to this approach, not only governance activities but also social and environmental actions affect financial performance as well. Stakeholder theory assumes that the better companies manage their relationships with their stakeholders, the more financially successful they will be (Freeman, 1994). Thus, stakeholder theory argues that the true success of a company lies in satisfying all of its stakeholders, not just its shareholders. For example, satisfied employees will be more motivated at work; the loyalty of satisfied customers to the company will increase; satisfied suppliers will provide discounts and such situations will increase the company's reputation and lead to better financial performance (Peng & Isa, 2020). Jo & Harjoto, (2012) and Ghoul et al., (2017) concluded that ESG activities positively affect company performance and are effective in maintaining profitability, as ESG activities can deal with conflicts between managers and stakeholders.

Like stakeholder theory, legitimacy theory also claims that ESG activities provide benefits for companies' financial performance (Suchman, 1995; Tilling, 2004; Zheng et al., 2015). According to the theory of legitimacy, companies must be legitimate in order to maintain their business, ensure continuity and sustainability, and protect the organization from external or internal threats. This theory implies that companies with high legitimacy provide easier access to resources that benefit the organization. In addition, legitimacy promotes employee performance, which ultimately improves financial performance (Goll & Rasheed, 2004; Sembiring, 2006; Rettab et al., 2009; Cheung et al., 2010; Mishra & Suar, 2010; Wang & Qıan, 2011; Jo & Harjoto, 2012; Şeker & Şengür, 2021).

There is no definite consensus on the relationship between ESG activities and financial performance in the literature. These conflicting findings of ESG activities and financial performance actually stem from the complexity of the relationship (Jamali & Mirshak, 2007; Hutchins & Sutherland, 2008; Valiente et al., 2012). Industry, country or region, legal regulations, sensitivity of stakeholders to relevant issues, etc. factors have a potential to affect this relationship directly or indirectly.

When evaluating the public sector, studies in the literature, and basic theories, it is expected that an increase in ESG performance will have a positive impact on financial performance. In this context, the study's hypotheses on ESG performance and financial performance are presented below:

H_1: There is a positive relationship between ESG performance and financial performance.

H_{1a}: There is a positive relationship between environmental performance and financial performance.

H_{1b}: There is a positive relationship between social performance and financial performance.

H_{1c}: There is a positive relationship between governance performance and financial performance.

4. METHODOLOGY

Refinitiv's Thomson Reuters ASSET4, EIKON, and Datastream databases have been used to collect data on ESG performance and financial performance variables. ASSET4 includes 325 global companies in the utilities sector. Data from 2010 to 2019 have been used for these companies. The some variables within this study have missing data for all years. In this case, there are two options. The first is to prefer a balanced panel data model, and for this, companies with missing data should be excluded from the data set. The second is the unbalanced panel data model. The unbalanced panel data model has been used in this study. Since there is randomness in the missing observations in the data set in the unbalanced panel, the estimation methods and tests developed for the balanced panel data can be developed in the unbalanced panel (Tatoğlu, 2018: 17).

4.1. Variables and Model

The variables of the study have been determined by examining the hypotheses to be tested as well as the relevant literature. Financial performance indicators have been used as the dependent variable. Tobin's Q has been determined as a market-based performance measure and return on assets (ROA) as an accounting-based performance measure as financial performance indicators. ESG performance and its sub-dimensions have been examined as independent variables. The three sub-dimensions are the environmental dimension (ENV), the social dimension (SOC), and corporate governance (GOV). Company size (total assets - LnA), leverage ratio (LEV) and company age (Lnage) and ROA (only in

models where TOBINQ is the dependent variable) are the control variables of the model. The variables, the type of variables and their theoretical foundations are presented in Table 2.

Table 2. Variables

Variable	Definitions	Type	Theoretical Foundations
TOBINQ	**Tobin's Q:** TOBIN Q (X(WC08001) + X(WC03351)) / (X(WC03501) + X(WC03351)),6) Market-based performance	Dependent	Cavaco & Crifo, 2014; Velte, 2017; Wang & Sarkis, 2017; Yang & Baasandorj, 2017; Fatemi et al., 2018; Franzén, 2019; Kim et al., 2019; Nekhili et al., 2019; Shahbaz et al., 2020; Abdi et al., 2021; Chouaibi et al., 2021; Mohammad & Wasiuzzaman, 2021; Uyar et al., 2021
ROA	**Return on Assets**: net income (after taxes) to total assets Accounting-based performance	Dependent	Nelling & Webb, 2009; Sun, 2012; Cavaco & Crifo, 2014; Velte, 2017; Wang & Sarkis, 2017; Yang & Baasandorj, 2017; Fatemi et al., 2018; Kim et al., 2018; Almeyda & Darmansya, 2019; Franzén, 2019; Kim et al., 2019; Shakil et al., 2019; Wu et al., 2020; Shahbaz et al., 2020; Abdi et al., 2021; Uyar et al., 2021
ESG	**ESG Performance:** the total ESG score of the company.	Independent	Nelling & Webb, 2009; Sun, 2012; Cavaco & Crifo, 2014; Velte, 2017; Wang & Sarkis, 2017; Yang & Baasandorj, 2017; Fatemi et al., 2018; Kim et al., 2018; Almeyda & Darmansya, 2019; Franzén, 2019; Kim et al., 2019; Nekhili et al., 2019; Shakil et al., 2019; Wu et al., 2020; Shahbaz et al., 2020; Abdi et al., 2021; Ahmad et al., 2021; Chouaibi et al., 2021; Mohammad & Wasiuzzaman, 2021; Uyar et al., 2021
ENV	**Environmental Pillar:** the company's environmental score.	Independent	
SOC	**Social Pillar:** the company's social score.	Independent	
GOV	**Governance Pillar:** the company's governance score.	Independent	
LnA	**Company Size:** natural logarithm of total assets.	Control	Nelling & Webb, 2009; Sun, 2012; Velte, 2017; Wang & Sarkis, 2017; Yang & Baasandorj, 2017; Fatemi et al., 2018; Kim et al., 2018; Franzén, 2019; Kim et al., 2019; Nekhili et al., 2019; Shakil et al., 2019; Shahbaz et al., 2020; Abdi et al., 2021; Ahmad et al., 2021; Chouaibi et al., 2021; Mohammad & Wasiuzzaman, 2021; Uyar et al., 2021
LEV	**Leverage Ratio**: the ratio of total liabilities to total assets.	Control	Nelling & Webb, 2009; Sun, 2012; Cavaco & Crifo, 2014; Velte, 2017; Wang & Sarkis, 2017; Yang & Baasandorj, 2017; Fatemi et al., 2018, Kim et al., 2018; Franzén, 2019; Kim et al., 2019; Nekhili et al., 2019; Shakil et al., 2019; Wu et al., 2020; Shahbaz et al., 2020; Abdi et al., 2021; Ahmad et al., 2021; Chouaibi et al., 2021; Uyar et al., 2021
Lnage	**Age of the company:** The date the company was listed on the stock exchange was subtracted from the relevant year, and then its natural logarithm was taken by adding one.	Control	Yang & Baasandorj, 2017; Kim et al., 2018; Abdi et al., 2021

The study's aim is to determine the impact of ESG performance on the financial performance of companies in the utilities sector. The following models have been prepared for this purpose:

$$\textit{Financial Performance (TOBINQ and ROA)}_{it} = \alpha + \beta_1 \textit{ ESG Scores (ESG, ENV, SOC, GOV)it} + \beta_2 ROA\ it + \beta_3 LnA\ it + \beta_4 Lnage\ it + \beta_5 LEV\ it + \varepsilon$$

Financial performance represents *TOBINQ* and *ROA* separately. ESG scores describe individual *ESG*, *ENV*, *SOC* and *GOV* scores. These are not shown in individual models, but are given in one basic model. Therefore, there are 8 different models in this study.

5. FINDINGS

This section includes the results of descriptive statistics, correlation analysis, and regression analysis of the models.

5.1. Descriptive Statistics

Table 3 shows the descriptive statistics of the variables used in the study.

Table 3. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ESG	2169	46.66	20.31	2.47	92.50
ENV	2169	44.35	27.03	0	97.13
SOC	2169	44.52	23.24	0.48	96.22
GOV	2169	53.11	21.99	1.23	98.49
TOBINQ	2889	1.31	0.57	0.48	5.52
ROA	3025	4.47	5.38	-31.60	28.63
LnA	3072	15.60	1.70	6.70	19.73
Lnage	2950	2.82	0.84	0	3.85
LEV	3069	36.60	17.26	0	90.80

As seen in Table 3, the mean of the *ESG* score is 46.66, the standard deviation is 20.31, and the scores vary between 2.47 and 92.50. *ENV* score's mean is 44.35 with 27.03 standard deviation, *SOC* score's mean is 44.52 with 23.24 standard deviation, and *GOV* score's mean is 53.11 with 21.99 standard deviation. The scores of these three dimensions range from 0 to 98.49. *TOBINQ* variable's mean is 1.31, its standard deviation is 0.57, the lowest value is 0.48, and the highest value is 5.52. The mean of the *ROA* variable is 4.47 with 5.38 standard deviations and the lowest value is -31.60 and the highest value is 28.63. Total assets, whose natural logarithm is calculated, have a mean value of 15.60 with a standard deviation of 1.70. The company age variable, whose natural logarithm is calculated, has a standard deviation of 0.84 and a mean of 2.82. Subsequently, the *LEV* variable has a mean of 36.60, a standard deviation of 17.26, a minimum of 0 and a maximum of 90.80.

5.2. Correlation Analysis

Table 4 contains information about the Pearson correlation coefficients and their significance levels:

Table 4. Correlation Table

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) *TOBINQ*	1.00								
(2) *ROA*	0.13***	1.00							
(3) *ESG*	-0.13***	-0.06***	1.00						
(4) *ENV*	-0.19***	-0.12***	0.91***	1.00					
(5) *SOC*	-0.06***	0.02	0.89***	0.74***	1.00				
(6) *GOV*	-0.02	-0.01	0.59***	0.31***	0.37***	1.00			
(7) *LnA*	-0.44***	0.01	0.50***	0.53***	0.40***	0.23***	1.00		
(8) *Lnage*	-0.07***	-0.08***	0.21***	0.23***	0.09***	0.18***	0.24***	1.00	
(9) *LEV*	-0.06***	-0.15***	-0.03	0.04*	-0.06***	-0.07***	0.18***	0.02	1.00

**** p<0.01, ** p<0.05, * p<0.1*

As seen in Table 4, the relationship between *TOBINQ* and *ESG* score and its sub-dimensions is negative and weak (r=-0.13 with *ESG score*, r=-0.19 with *ENV score*, r=-0.06 with *SOC score*, r=-0.02 with *GOV score*).

Considering the relationship between *ROA* and *ESG* score and its sub-dimensions, there is a negative and weak relationship (r=-0.13 with *ESG score*, r=-0.19 with *ENV score*, r=-0.06 with *SOC score*, r=-0.02 with *GOV score*).

There is a very high level of correlation between ESG score and its sub-dimensions *ENV* (r=0.91) and SOC (r=0.89), and a moderate statistically significant and positive correlation with the *GOV* (r=0.59) dimension. There is a statistically significant and positive correlation between *ENV* and *SOC* score (r=0.74), low level (r=0.31) between *ENV* and *GOV* score, and weak (r=0.37) correlation between *SOC* and *GOV* score.

There is a very weak correlation between *TOBINQ* and *ROA* (r=0.13) and a moderate correlation between *LnA* (r=0.07). When the correlation coefficients for the *ROA* variable with other variables are checked out, it is understood that there are very weak relationships. When the coefficients of the other variables are examined, it can be stated that there is no coefficient indicating high relationship, thus, there is no multicollinearity issue.

5.3. Empirical Results

For estimator selection, the F test, Likelihood Ratio (LR), Lagrange Multiplier (LM), and Hausman tests have been used. As a result, the fixed effects estimator has been found to be valid. A robust standard error estimator has been used to account for heteroscedasticity, autocorrelation, and inter-unit correlation. When the sample size is large, robust standard errors can be used without problem (Wooldridge, 2002). The variance inflation factor (VIF) values have been checked for the multicollinearity problem. And it has been discovered that the values ranged between 1 and 2. When VIF is less than 10, there is no multicollinearity between the variables (Orhunbilge, 2002). Furthermore, to avoid the effect of extreme values, the values outside the range of 1% to 99.9% of the data were revised (winsorised means) based on the mean of the central tendency. As a result, the effect of the extreme values on the test results has been avoided.

Table 5 shows the results of the regression analyzes of 8 models established within the study.

Among the regression results in Table 5, the models built with *TOBINQ* are shown in columns 1, 2, 3, and 4, while the models built with *ROA* are shown in columns 5, 6, 7, and 8. The fixed effects regression model has been used for all analyses. In all analyses, F statistical values are significant.

The results in columns 1, 2, 3, and 4 show that *ESG*, *ENV*, *SOC*, and *GOV* performance have no statistically significant impact on *TOBINQ*. *TOBINQ* is statistically significant and positively impacted

by *ROA*. *LnA* and *Lnage* also have a negative and statistically significant impact. Furthermore, *LEV* has no statistically significant impact on *TOBINQ*.

Similarly, the results in columns 5, 6, 7, and 8 illustrate that *ESG*, *ENV*, *SOC*, and *GOV* performance have no statistically significant impact on *ROA*. The control variables lnA and lnage do not have a significant impact on *ROA*. *LEV*, on the other hand, has a statistically significant and negative impact on these models.

Table 5. Regression Analysis Results

	(1) TOBINQ	(2) TOBINQ	(3) TOBINQ	(4) TOBINQ	(5) ROA	(6) ROA	(7) ROA	(8) ROA
ESG	-0.002				0.017			
	(0.001)				(0.014)			
ENV		-0.001				0.008		
		(0.001)				(0.009)		
SOC			-0.001				0.012	
			(0.001)				(0.011)	
GOV				0.001				0.009
				(0.001)				(0.009)
ROA	0.012**	0.012**	0.012**	0.012**				
	(0.005)	(0.005)	(0.005)	(0.005)				
LnA	-0.208***	-0.208***	-0.21***	-0.217***	-0.663	-0.613	-0.643	-0.588
	(0.054)	(0.054)	(0.055)	(0.056)	(0.424)	(0.42)	(0.413)	(0.419)
Lnage	-0.130**	-0.132**	-0.132**	-0.138**	-0.282	-0.227	-0.262	-0.243
	(0.064)	(0.064)	(0.064)	(0.064)	(0.647)	(0.633)	(0.639)	(0.641)
LEV	-0.002	-0.002	-0.002	-0.002	-0.133***	-0.133***	-0.133***	-0.132***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.026)	(0.026)	(0.026)	(0.026)
_cons	5.031***	5.025***	5.044***	5.147***	20.946***	20.434***	20.812***	19.861***
	(0.907)	(0.903)	(0.918)	(0.924)	(7.407)	(7.39)	(7.316)	(7.286)
Observations	2094	2094	2094	2094	2124	2124	2124	2124
R-squared	0.117	0.118	0.116	0.114	0.078	0.077	0.078	0.078
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

6. DISCUSSION AND CONCLUSION

The purpose of this study is two-fold: first, setting up an ESG model and check its influence on the financial performance and second, analyzing the individual influences of environmental, social and governance performance on the financial performance of the utilities companies. In this study, data from the Refinitiv's Thomson Reuters ASSET4, EIKON and Datastream datasets have been resorted to investigate the proposed impacts and relationships. The study's findings reveal the proposed impact of ESG on financial performance. According to the findings of the analysis, ESG and its sub-dimensions of Environmental, Social, and Corporate Governance have no statistically significant impact on financial performance (TOBINQ and ROA). In other words, the regression analyses performed in the determined sector and observation period revealed that the ESG performances of the companies have no impact on their financial performance.

There are two perspectives to the relationship between ESG performance and financial performance. First, ESG activities cause companies to incur additional costs and thus reduce the financial performance of companies. The second is that ESG provides a competitive advantage in the market and thus increases the performance of companies. In this context, it is not possible to generalize about which approach is more valid with the limited number of studies in the literature. In addition, there are different results in the literature. For example, Yang et al., (2010), Uadiale & Fagbemi, (2012), Kim et al., (2013), Wu & Shen, (2013), Wang & Sarkis, (2017), Yang & Baasandorj, (2017), Fatemi et al., (2018), Kim et al., (2018), Zhao et al., (2018), Kim et al., (2019), Xie et al., (2019), Wu et al., (2020), Abdi et al., (2021), Ahmad et al., (2021), Chouaibi et al., (2021), Mohammad & Wasiuzzaman, (2021) obtained positive and significant results in their studies. Notwithstanding, Lima Crisóstomo et al. (2011) and Franzén (2019) got negative and significant results in their studies. McWilliams & Siegel (2000), Fauzi (2009), Nelling & Webb (2009), Aras et al. (2010) Humphrey et al. (2010), Balatbat et al. (2013), Rhou et al. (2016), Landi & Sciarelli (2018), Nekhili et al. (2019), Shahbaz et al. (2020) and Uyar et al. (2020), on the other hand, could not have significant results in their studies. The findings of these studies are consistent with the findings of this study. The findings of this study support the hypothesis that ESG has no significant impact on financial performance indicators.

The findings should be interpreted in light of three fundamental limitations. Only utilities companies have been investigated in this study. Furthermore, the sample covers the years 2010 to 2019. Therefore, the results may not be generalizable to other sectors or may not be valid before the period 2010. The legitimacy of the results could be confirmed in other ESG sensitive sectors. For future studies, it is recommended to carry out similar studies for the same sector or at the level of different sectors, taking into account country-based factors.

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AUTHORS' DECLARATION

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