

University Social Responsibility and Educational Performance: Evidence from South Korea

Nara Park*; Jungsook Kim**; Sun Hwa Son***; Young Ho Eom****

Abstract

In this article, we examine the relationship between university social responsibility (USR) and educational performance. For decades, universities as social organizations actively respond to environmental changes and adopt affirmative action programs that embody equality and diversity. In fact, a series of education policy reform has normatively shaped the relationships between states and universities that progressively incorporate social responsibility (i.e., affirmative action) in addition to research, teaching, and management. Moreover, we argue that USR has an increasingly positive influence on the educational performance of universities, by employing FGLS (feasible generalized least squares) regression on panel data for Korean universities (2008-2015). The findings suggest why universities and policymakers should further expand USR.

Keywords: *university social responsibility; educational performance; higher education; affirmative action programs; social organizations*

*E-mail: npark@jejunu.ac.kr

Ph.D. earned from: University of Chicago

Current position: Assistant Professor, Jeju National University

**E-mail: jskim@krila.re.kr

Ph.D. earned from: Yonsei University

Current position: Associate Research Fellow, Korea Research Institute for Local Administration

***E-mail: sswaha115@gmail.com

Ph.D. earned from: Yonsei University

Current position: Yonsei University Institute of Public Affairs

****E-mail: samkuri05@naver.com

Ph.D. earned from: Yonsei University

Current position: Yonsei University Institute of Public Affairs

Received : August 27, 2020, Revised : November 09, 2020, Accepted : November 23, 2020

대학의 사회적 책임성과 교육적 성과: 한국 대학 패널 데이터(2008-2015) 분석

박나라, 김정숙, 손선화, 엄영호

국문요약

본 논문은 대학의 사회적 책임성과 교육적 성과 간의 관계에 대해 고찰한다. 지난 수십년 간, 대학들은 사회적 조직으로서 환경 변화에 적극적으로 대처하기 위해, 형평성과 다양성을 제고하기 위한 각종 차별 철폐 프로그램들을 도입해왔다. 여기에는 정부의 변화된 교육 정책이 대학들에게 연구, 교육, 행정 등의 전통적인 역할에서 벗어나 차별 철폐 프로그램과 같은 사회적 의무를 다하도록 규범적 압력을 가한 것이 큰 영향을 미쳤다. 이에 더하여, 본 논문은 한국 대학 패널 데이터(2008-2015)에 대한 추정일반화최소제곱(FGLS: feasible generalized least squares) 회귀 분석을 통해 대학의 사회적 책임성이 대학의 교육적 성과에도 긍정적인 영향을 미치는 경향이 점차 증가하고 있음을 발견하였다. 이러한 결과는 대학의 사회적 책임성 증대 현상을 바라보는 새로운 시각을 제공하는 데서 더 나아가 향후 대학 교육 정책의 거시적인 방향성을 제시하는 데 도움이 될 것이다.

주제어: 대학의 사회적 책임성; 교육적 성과; 고등교육; 차별 철폐 프로그램; 사회적 조직

I. Introduction

So many sing out of tune and need a little help from their friends, but this may not suffice. Everyone should, thus, leave their ivory tower, now and then, and roll up their sleeves to help the sheeple to break the mold, those who have been doomed to remain unconstructed and unfit to experience revivifying awareness and gratifying conditions.

(Description on the painting “Bread and Satellite” (1997) by the painter Erik Pevernagie)

Universities are often depicted as ivory towers full of academics keeping themselves aloof from mundanity. Albeit to varying degrees, the term has widely been used to criticize universities in terms of their lack of fulfilling any responsibilities to society. The origins of these responsibilities can be found in various contexts including institutional and cultural ones. Public universities are publicly financed largely with tax revenue, which should pressure them to be accountable to society. Separately, private universities have also been expected to have social responsibility because of societal perceptions that academics are privileged to be able to seek intellectual pursuit without the manual labor that was considered essential to physically sustaining societies, especially in pre-modern times. In fact, there are numerous cases worldwide in which higher education institutions have strived to contribute to societies whether formally or informally. However, the myth of ivory towers has not been shattered until very recently.

While the aforementioned institutional and cultural conditions have continued to shape their social responsibility activities, universities have dramatically changed during the past few decades. International trends show that many universities have begun to actively implement many important efforts to eliminate the ivory towers from their campuses. In addition to education and research programs, not only public but many private universities have started to actively seek benevolent relationships with societies. For instance, some university students, faculty, and staff participate in school outreach programs to engage local communities; industry-education corporations are established within universities to share knowledge and facilities with the industry sector; under- and post-graduate curricula include courses exploring various linkages to society such as the value of performing community service, strategies for revitalizing local communities, and tactics for initiating social innovation; some schools provide academic credit for community service; applicants who can be classified as “underrepresented minorities”¹ are accepted through affirmative action programs in line with the government’s policy seeking social inclusion. Some view these activities as being meaningful in that they reflect substantial changes in the behavior of contemporary universities around the world, which may eventually lead to the collapse of the ivory towers. Meanwhile, others claim that these efforts are not directly helpful in universities’ achieving their primary goals (e.g., education and research); rather, they argue

¹ The Higher Education Act of the United States (Sec. 1067k) defines the term “minority” as an American Indian, Alaskan Native, Black (not of Hispanic origin), Hispanic (including persons of Mexican, Puerto Rican, Cuban, and Central or South American origin), Pacific Islander, or other ethnic group underrepresented in science and engineering (<https://www.govinfo.gov/content/pkg/USCODE-2011-title20/html/USCODE-2011-title20-chap28-subchapIII-partE-subpart3-sec1067k.htm>, last accessed February 16, 2019). It should be noted, however, that the meaning of “underrepresented” may vary by academic discipline (e.g., women are underrepresented in many STEM fields), and some schools attempt to consider defining “minority” and/or “underrepresented” based on the current demographics in particular departments.

that these activities may hamper the attainment of those goals by preventing universities from efficiently using their capacity and resources.

In the present study, we argue that universities are no longer ivory towers, or they need not be, following an array of arguments made by numerous commentators and scholars without much empirical evidence. Instead, we concur with the idea that universities are arguably one of the most important social organizations (Abdul Razak et al. 2017). We contend that there is much room for university social responsibility (USR) to be developed in the same way as its counterpart in the private sector, corporate social responsibility (CSR).

Ultimately, with a rigorous analysis on the data offered by the Korean government, we here investigate how (quasi-) public organizations respond to multifaceted environmental changes including the double burden of being expected to be beneficial to society (e.g., outreach programs, community services) while they also attempt to attain their primary goals (e.g., research, education). The double burden would be lessened if not lifted when an organization knows that achieving one goal helps it achieve the other.

II. Universities as Social Organizations

Universities are essentially social organizations striving to increase the likelihood of their survival by actively responding to changes in their surrounding environments as well as demands from society at large; in so doing, they increase external interconnectedness with the surrounding environments. Traditionally, universities were perceived to have two primary responsibilities, namely, research and education, and their environments consisted of students, parents, and other universities (Kerr 1955, 141-163). Universities today, however, have a more complex set of environmental elements such as advanced education policies, government agencies, education NGOs, and international rankings to name a few. With the increased environmental complexity, universities now need to more actively establish close relationships with their surrounding environments by developing and sharing knowledge that will benefit regional communities (Chatterton and Goddard 2000) as well as society in general (European Commission, 2009). Differently put, social engagement (e.g., Winter et al. 2006), or social responsibility (e.g., Shek and Hollister 2017), has become an important task of contemporary universities.

In accordance with these changes, social responsibility as expected of universities has been developed as distinguished from that of private companies. Previously, many researchers defined USR as merely CSR for schools rather than distinguishing the two (Esfijani et al. 2013; also see Muijen 2004; Nejati et al. 2011; Bokhari 2017). According to one of the most commonly quoted sources, CSR is defined as a “concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis” (Commission of the European Communities 2001, 6). Although in both USR and CSR, organizations are viewed as social actors, but the contexts underlying those concepts (i.e., higher education and business, respectively) differ considerably in important aspects such as organizational goals (i.e., teaching, research, and community engagement for universities, and profit maximization, cost deduction for companies) and stakeholders (i.e., students, faculty, and administrative employees for universities, and CEOs, employees, customers, investors, shareholders, etc. for companies).

In fact, a growing volume of research has developed the theoretical concept of USR to explore social responsibility in vastly different settings from the contexts in the corporate

world (Reiser 2008; Tetřevová and Sabolova 2010; Vasilescu et al. 2010; Wigmore-Álvarez and Ruiz-Lozano 2012; Esfijani et al. 2013; Giuffré and Ratto 2014; Chen et al. 2015; Vázquez et al. 2015). There are two essential elements commonly found in the definitions from previous studies: First, a primary goal of USR is to satisfy the needs, demands, and expectations of stakeholders and eventually to adapt to changing environments; second, USR pushes universities to incorporate social engagement into their main education and research functions, and this third mission has been increasingly emphasized.²

At the same time that universities are demanded to continue fulfilling their traditional mission of research and teaching, their social demands increase continuously, especially in advanced democracies. In many cases, universities voluntarily exert efforts to fulfil these two fundamental roles, but it is also true that external demands continue to urge universities to improve their research and educational performance. For example, in Korea, research performance of faculty members is regularly evaluated by the Ministry of Education, and the evaluation results are used to differentially allocate government subsidies. Universities are also evaluated in terms of their performance in educating students, using indicators most commonly including enrollment rates of incoming studies, dropout rates of registered students, and employment rates of graduates. Universities' performance is measured by not only governments but also private agencies that provide stakeholders (e.g., prospective students, donors) with college ranks on a regular basis. Whether governmental or nongovernmental, these increasing evaluations pressure universities to fully perform their duties.

In sum, the current environment confronting universities demands that they be both competent and socially engaging; in addition to their two traditional roles, universities need to care about their social impacts. A large body of the literature views that universities incorporate environmental factors into their main functions in order to fulfill their social responsibility (Garde et al. 2013; Larrán Jorge et al. 2016; Ralph and Stubbs 2014). The incorporation can occur in different major functions respectively (Larrán Jorge and Andrades Peña 2017) or concurrently in multiple areas (Esfijani et al. 2013). The latter, whereby "a university integrates all of its functions and activities with the society needs" (Esfijani et al. 2013, 278) has been more prevalent, because this integration can be a useful strategy not only for increasing social engagement but for developing university capacity (Kantola and Kettunen 2012).

III. Government and Universities: Affirmative Action

As social organizations, universities adapt to environmental changes while constrained by the environment. Governments develop and implement various policies that shape social responsibility of universities, and these policies on higher education shape arguably the largest part of universities' behaviors. While having universities compete for government subsidies or meeting enrollment quotas, government financial support for universities is considered a long-term investment in the accumulation of human capital toward nationwide

² Some researchers have argued that universities have another function in addition to the aforementioned three (e.g., Garde et al. 2013; Larrán Jorge et al. 2016): management, meaning "implementation of practices of good governance and accountability" (Larrán Jorge and Andrades Peña 2017, 304). Nonetheless, a majority of the literature has contended that management is subservient among major tasks of universities, and we follow that thinking by referring to external engagement as the third mission of universities.

socioeconomic development (Geuna 1998). The basic rationale underlying government policies can be stated as follows: Because universities get involved in producing public goods (e.g., human capital, economic development) with the support of public money, they are required to pursue social responsibility by contributing to maintaining social values such as diversity and equality (Bulut 2018).

That is why many governments push universities to establish affirmative action in the admission system. Affirmative action has been a fundamental principle in admitting and educating students in many countries around the world, although the nature of affirmative action policies vary across countries and regimes. Affirmative action related to demographic features (e.g., gender, race, socioeconomic status) in higher education admissions has now spread across the world regions (Moses and Jenkins 2017). In the United States, it began in the early 1960s, but today, across Africa and the Asia-Pacific region, it is not difficult to find affirmative action policies at higher education institutions. It is perceived that universities need to incorporate affirmative action to fulfill social responsibility.

The concept of affirmative action has first emerged in the United States in the early 1960s when President John F. Kennedy signed Executive Order 10925 “to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin.” That said, affirmative action has been heavily debated for its constitutional legitimacy for decades, for eroding the idea of a meritocracy which may result in reverse discrimination, “unfairly rewards or penalizes prospective students based on their race” as the George W. Bush administration argued, which is echoed by the Trump administration. Nonetheless, it is worth noting that many universities still have accepted affirmative action, despite the government mandates. In 2003, the US Supreme Court made a decision (*Grutter v. Bollinger*, 539 US 244 – Supreme Court 2003) in favor of the University of Michigan’s affirmative action policy, acknowledging that it has “served the compelling state interest of diversity” through the higher education system (Cornell University Law School, n.d.).³

This decision has greatly influenced universities, whether public or private, to maintain their affirmative action policy. Private schools, by nature, do not have legal, financial constraints to adopt affirmative action. This may be puzzling because they are privately funded and accountable to their private donors. From a social organization perspective, however, this seems to be sensible for two reasons. First, essential values of affirmative action (e.g., diversity, inclusion, equality, anti-racism, human rights) have informally provided rules to judge their normality, and affirmative action has spread as desirable for bringing social legitimacy to universities. Second, there is a possibility that universities can imitate other schools having affirmative action programs, even though they are not directly coerced by law. That is, normative and mimetic pressures may have influenced universities, as social organizations, to adopt affirmative action.

In some countries, the increase of affirmative action has been fueled by government regulations and incentives, rating universities on viewing affirmative action as part of performance. The Korean government, for example, determines government subsidies and enrollment quotas for each university partly based on proportions of students admitted through affirmative action programs. This tendency is largely influenced by the new public management (NPM) that has prevailed in public bureaucracies and in academia in recent decades (Geuna and Martin 2003; for a counterargument, see Bozeman and Sarewitz 2011).

³ “Highlights of the Supreme Court’s 2002-2003 Term” (<https://www.law.cornell.edu/supct/03highlts.html#2>, last accessed April 29, 2019).
University Social Responsibility and Educational Performance: Evidence from South Korea 10

Affected by the NPM paradigm, university systems have gone through a series of reforms. The paradigm has emphasized that output can be efficiently increased in a competitive environment, and universities, public and private alike, have been under these influences, creating higher receptiveness to output, competition, and evaluation (Auranen and Nieminen 2010).

In sum, governments can constitute critical environmental stimuli and constraints on the behaviors of universities besides normative and mimetic pressures. As social organizations, universities actively incorporate societal concerns while conforming to national education policy. As displayed by affirmative action practices, universities can discharge their social responsibilities by embracing policies that embody current issues and societies' existing value systems. In the case of affirmative action, universities tend to integrate their main functions, education and research, with social responsibility, and this integration has been strengthened with the recent NPM-inspired reforms where compliance with affirmative action is viewed as a component of universities' performance evaluations and subsequent funding.

IV. Affirmative Action and Higher Education System in Korea

Korean universities are a good example of social organizations' successfully adapting to changes in the environment such as education policy and increasing social expectations. After the colonial rule and the war in the first half of the 20th century, the Korean government was eager to efficiently achieve rapid economic development through "developmentalism" (Woo 1991; Evans 1995). The bureaucratic state under the Park Chung-hee administration had a high level of autonomy in guiding society and controlling the market, and the legacies of the developmental state lasted at least through the two subsequent military regimes (Amsden 1992; Chibber 2014). The higher education system was also largely influenced by national education policy from the centralized decision-making state: Government intervention was the most efficient and effective way to provide high-quality human resources for economic growth, which would be undersupplied otherwise (McGinn et al. 1980; Lee and Brinton 1996; Shin 2012). It should be noted that it is widely known that the Korean government had a strong intention to control college students, who often served as spearheads of democratic movements to overthrow the government. The state deeply intervened in nearly every aspect of universities' operations ranging from entrant selection methods to student quotas, campus locations, and board of directors decision-making rights (Kim and Lee 2006; Jung and Gil 2019).

After the democratization in the late 1980s, Korean universities came to enjoy liberalization and wield the same autonomy as other institutions in society. Although national and public universities are still under heavy regulations, many universities can now determine their own enrollment sizes (albeit with limits), pursue academic freedom in education and research, and nominate their presidents and deans without government permission. This tendency has only accelerated in the face of the globalization in the mid-1990s and afterwards. Having international universities as direct competitors, the organizational environments and stakeholders of Korean universities have greatly changed. Universities are now concerned about their rankings by international agencies and work hard to attract students and investors from abroad, and these changes have led to relaxation in universities' relationships with the government.

Despite the recent changes, the developmentalist orientation still seems to be strong in higher education in Korea. For instance, while universities are allowed to decide the sizes of their individual departments, the government still determines the maximum number of students in each university; most branch campuses allegedly established in the military regime to separate students from democratic movements still exist; admissions policies are greatly influenced by national policy because the government links resource allocation to university compliance. For instance, affirmative action has been compulsory and used as an important criterion for receiving government funding.

The state-universities relationship found in Korea can also be found in higher education systems elsewhere, but the Korean statist polity and the unique features of the higher education sector that helps explain the particular contours of their development (Kim 2018). Although it has weakened, Korean universities are still under the strong influence of government demands to be both competent and socially engaging.

V. Hypotheses

As aforementioned, we argue that universities are social organizations but that although they are social, they are essentially organizational actors that are committed to achieving their goals. Traditionally, universities are perceived as central institutions for generating knowledge and transmitting it to general society. Like other organizations, universities strive to achieve their objectives and improve output by measuring and evaluating their own performance through various means.

Previous researchers have developed various indicators to measure diverse aspects of university performance: numbers of registered students (Tomkins and Green 1988; Ahn et al. 1990; Park 1997; Ahn 1998; Abbott and Doucouliagos 2003); retention rates (Rah 2004); numbers of graduates or graduation rates (Sinuany-Stern et al. 1994; Athanassopoul and Shale 1997; Zheng and Stewart 2002); numbers of employed graduates or employment rates (Park 1997; Ahn 1998; Kim et al. 2000; Rah 2004); external research funding (Tomkins and Green 1988; Ahn et al. 1990; Park 1997; Ahn 1998; Zheng and Stewart 2002; Rah 2004; Shin 2005); numbers of research articles and/or monographs published by faculty (Tomkins and Green 1988; Sinuany-Stern et al. 1994; Choi et al. 1997; Ahn 1998; Kim et al. 2000; Zheng and Stewart 2002; Rah 2004; Shin 2005); numbers of citations of faculty publications (Zheng and Stewart 2002; Shin 2005); and numbers of courses measured by class time hours or academic credits (Ahn et al. 1990; Sinuany-Stern et al. 1994).

In the literature, there are multiple ways to conceptualize and categorize the aforementioned performance indicators. For instance, most conventionally, performance can be categorized according to main functions of universities, which are traditionally education and research but which have recently expanded to include management and social impacts. Performance can also be categorized according to the nature of output in terms of its relevance with the external environment. For instance, Higgins (1989) argues that performance indicators can be divided into three categories: internal (e.g., graduation rates, attraction of research funds), external (e.g., acceptability of graduates in employment, staff publications), and operating (e.g., unit costs, student-staff ratios, staff workloads). Performance can also be classified according to units or level of university organizations (e.g., college, graduate school, lifelong education institutes, online degree programs). As each unit or level has different goals and consists of different individual criteria, performance is

evaluated differently. For example, education might be stressed at the college level, whereas research is emphasized at graduate school.

For this article, we examined undergraduate university performance with a focus on educational performance. Teaching as a way of transmitting knowledge to general society has received much scholarly attention, and it is assessed based on characteristics such as enrollment, retention, and employment rates. It is worth noting that we examined determinants of educational performance in relation with other functions of universities. The relationship between education and research, two primary objects of universities, has been heavily studied using indicators such as numbers of tenure-track faculty members (Tomkins and Green 1988; Athanassopoulou and Shale 1997; Choi et al. 1998; Park 1997; Ahn 1998; Abbott and Doucouliagos 2003; Shin 2005); student-faculty ratios (Zheng and Stewart 2002; Rah 2004), and capacity and costs of libraries (Kwak 1993; Athanassopoulou and Shale 1997; Kim et al. 2000; Zheng and Stewart 2002; Shin 2005).

Another line of previous research has focused on universities' management, operation, and administration in investigating determinants of their educational performance. The below indicators are claimed to have significant relationships with education, whether positive or negative: numbers of employees (Tomkins and Green 1988; Park 1997; Ahn 1998; Kim et al. 2000; Abbott and Doucouliagos 2003; Shin 2005); personnel expenses (Tomkins and Green 1988; Sinuany-Stern et al. 1994; Park 1997; Ahn 1998; Kim et al. 2000; Abbott and Doucouliagos 2003; Rah 2004; Shin 2005); education expenses (Athanassopoulou and Shale 1997; Park 1997; Shin 2005); operating expenses (Park 1997; Ahn 1998; Kim et al. 2000; Abbott and Doucouliagos 2003); and capital assets (Abbott and Doucouliagos 2003).

Although our understanding of university performance is sophisticated, we noted that educational performance needs to be further explored in light of another major function of universities: social responsibility. Drawing on Koualti(2019, 898), we defined USR as “one of the strategic dimension of a university targeting the well-being and involvement of all stakeholders in encouragement and management of holistic view of economic, social, environmental and academic knowledgeability as well as acting as a hub between corporates and local and global environmental needs of the society by creating shared value activities and projects with the objective of achieving high sustainability.” Empirical analyses on social responsibility have recently increased (Ahmad 2012; Esfijani et al. 2012; Vázquez et al. 2014; 2016; Sánchez-Hernández and Mainardes 2016), but there is much room for data on its effects on university performance. To fill the lacunae in the literature, we aimed with the present study to empirically analyze the relationship between USR and university performance. Higgins (1989) would view this study as addressing university performance primarily from two dimensions: internal (education) and external (social responsibility). The number of students admitted via affirmative action programs can be a useful proxy to examine USR from an educational perspective.

Because it is difficult to find studies on the relationship between organizational performance and social responsibility, we drew on a plethora of CSR research in the private sector. A large body of the literature claims that social responsibility has a positive effect on organizational performance (Cochran and Wood, 1984; McGuire et al. 1988; Posnikoff 1997; Orlitzky et al. 2003; Mackey et al. 2007), but negative impacts (Wright and Ferris 1997) and mixed outcomes (Barnett and Salomon 2006) are also reported; others even argue that there is no significant relationship between organizational performance and social responsibility (McWilliams et al. 1999; McWilliams and Siegel 2000). Because these studies revolve

around CSR in the private sector, we did not have sufficient grounds to build hypotheses. Nonetheless, we argue that it would be beneficial for universities, as social organizations, to be held responsible to society.

H1: Universities that display social responsibility through affirmative action are likely to show higher performance in education.

H1-A: *The higher proportions of incoming students admitted via affirmative action, the higher enrollment rates of incoming students.*

H1-B: *The higher proportions of incoming students admitted via affirmative action, the lower dropout rates of registered students.*

H1-A: *The higher proportions of incoming students admitted via affirmative action, the higher employment rates of graduates.*

Additionally, we argue that a positive relationship between USR and educational performance will increase over time. This is because social demands for USR increase as in the case of CSR, and the Korean government has been promoting USR using both incentives and regulations for decades. Responding to these changes, universities are more frequently exposed to social environmental elements, which has increased their acceptance of USR. Because in Korea the government determines school funding based in part on USR as an aspect of university performance, universities have become incentivized to increase both USR and performance, which should contribute to increasing the positive relationships between the two. We thus hypothesized:

H2: The positive relationship between USR and university performance is likely to increase over time.

VI. Research Design

Data and Measurement

This article sheds light on the recent efforts of universities to strengthen their social responsibility, and we show that socially responsible universities produce better education and research performance, traditional roles assumed by higher education institutions. As the subject of research, we took Korean universities and show how they vary in terms of their acceptance of social responsibility. Because we mostly drew on Korean cases, we were able to examine the thesis from a non-Western context. Due to the relatively short modern history of Korea, major universities that we see today in Korea also have shorter histories⁴ than their counterparts in other advanced industrial countries, meaning that they may have had less time to build mature relationships with society in general, or to cultivate high degrees of social responsibility. Korea offers a good testing ground for examining how universities have become socially responsible even when they did not have sufficient opportunities to do so.

We constructed a data set with balanced panel data consisting of all Korean

⁴ Despite many debates on the establishment year of universities (largely due to schools' self-claims that they are the oldest in Korea), modern universities in Korea appear to have begun to emerge in the 1890s (Ahn 2007).

universities (main campus only) between 2008 and 2015 using data publicly disclosed by *Daehakjeongbo Alimi* (“Higher Education in Korea”⁵), which was established by the Korean Council for University Education, a government agency that evaluates university performance on a regular, nationwide basis to produce official, and thus more reliable and consistent, statistics than those from other evaluations. For some information that was unavailable from *Daehakjeongbo Alimi* (e.g., university age), we combined multiple online sources (e.g., university website, portal site). We also included universities that merged or were abolished during the eight-year study period, and after we excluded missing data, we had 181 universities in the data set. There is a one-year lag between the dependent variable and independent variables, and Table 1 displays how we measured the variables.

Table 1. Variable Measurement

	Variable	Measurement
DV	Enrollment Rates (%)	(The number of enrolled students/Government-mandated quota) × 100
	Dropout Rates (%)	(The number of dropouts/The number of registered students) × 100
	Employment Rates (%)	(The number of enrolled students/The number of employed graduates) × 100
IV	Affirmative Action Programs (%)	(The number of students admitted through affirmative action programs/The total number of newly admitted students) × 100
CV	Research Funds (logged)	The amount of research funds/The number of research projects
	Government Subsidy (logged)	The amount of government subsidies/The number of government subsidy programs
	Educational Expenses (per student)	The amount of the university’s education expenses/The number of incumbent students
	Tenure-track Faculty (per student)	The number of tenure-track faculty members/The number of incumbent students
	Scholarship (per student)	Scholarships awarded per student
	University Age	(The current year – the establishment year) + 1
	University Type	1 if national/private universities and 0 otherwise.
Metropolitan	1 if located in the metropolitan area (Seoul and Kyunggi Province), and 0 otherwise.	

Outcome Variable

We consider that a fundamental role of universities is to provide students with appropriate education. To do so, universities need to secure certain numbers of students so that they can

⁵ “Higher Education in Korea” (<http://www.academyinfo.go.kr/index.do>, last accessed March 24, 2019).

run on a stable basis, to prevent incumbent students from quitting, and to help them find work after graduation. In that regard, we used three dependent variables to measure universities' educational performance: enrollment, dropout, and employment rates. First, we measured enrollment rates as proportions of total numbers of incumbent students. Because aging in Korean society is accelerated, which significantly affects the demographic structure, there are fewer available students than there were in the past. Therefore, many universities face a crisis in maintaining an adequate pool of students to sustain school operations; without sufficient students, for instance, universities' financial bases are weakened, and they must offer fewer courses (Kim 2008; Lee 2008; Yang et al. 2015). Second, we measured dropout rates as proportions of dropouts to total numbers of incumbent students. Third, we measured employment rates as proportions of employed graduates to total numbers of graduates excluding graduates who attended postsecondary school or joined the military, foreigners, contract workers, and those who are not eligible for employment (e.g., due to mental or physical illness).

Explanatory Variables

We measured social responsibility as promoting affirmative action-based student admissions. Because government financial aid comprises a considerable part of university funding, we took into account the amounts of government research funds and subsidies that universities received for general purposes. We also included factors that affect university performance such as education expenses (per student), tenure-track faculty (per student), and scholarship awarded (per students), as well as university age and type (i.e., national/public vs. private) (Tomkins and Green 1988; Athanassopoulos and Shale 1997).

We controlled for the locations of universities because those located in the metropolitan areas (i.e., Seoul and Gyeonggi province) differ from those in non-metropolitan areas. In what is termed the "in-Seoul" phenomenon, students highly prefer metropolitan universities, and in fact, many prestigious universities are located "in or near Seoul," except for a few exceptions such as KAIST and POSTECH. We presumed that this is the case in other countries as well: Japanese universities in the Tokyo metropolitan region have advantages over even other big cities in Kansai (the Western part of Japan including Osaka and Kyoto) in recruiting students, albeit at a lesser degree than Korea.

Methods

When cross-sectional data are used, heteroscedasticity is likely to occur, which may lead to bias in standard errors. Heteroscedasticity per se does not result in biased parameter estimates, but it violates a core assumption of ordinary least squares (OLS) regression (i.e., OLS estimates should have the smallest variance among all other unbiased estimators). Simply put, statistical estimation can be "inefficient" when heteroscedasticity is present (Allison 1999, 120-133).⁶ White (1980)'s general test for heteroscedasticity can be used for such cases in order to check whether errors in the regression model display constant variance or homoscedasticity.⁷

⁶ In addition, biased standard errors can cause bias in test statistics and confidence intervals, which may seriously distort parameter estimates especially when methods other than OLS regression (e.g., Logit or Probit regression) are used (Greene 2012).

⁷ Breusch-Pagan test can be a good alternative but only if one is certain that heteroscedasticity exists in a linear form (Breusch and Pagan 1979), whereas White's test is designed to detect heteroscedasticity whether linear or nonlinear.

To perform White's test, we chose the test statistic developed by Cameron and Trivedi (1990) in Stata, which distributed chi-squared under the null hypothesis of homoscedasticity against the alternative hypothesis of unrestricted heteroscedasticity (see Greene 2012 for more detail). Table 2 displays the results for the rejected null hypothesis, which implies heteroscedasticity in our data.

Table 2. Cameron & Trivedi's Decomposition of IM-Test

Source	chi2	df	p
Heteroskedasticity	385.39	52	0.0000
Skewness	86.32	9	0.0000
Kurtosis	5.98	1	0.0145
Total	477.69	62	0.0000

Hence, we employed cross-sectional time series FGLS (feasible generalized least squares) regression instead of OLS. We first estimated the model ($performance = \beta_0 + \beta_1(social\ responsibility) + \epsilon$) using OLS regression, which yields residuals that can create a consistent estimator of the error covariance matrix. Using the consistent estimator, we implemented FGLS on the panel data.

VII. Results

Descriptive Statistics

Table 3 presents descriptive statistics of the variables we analyzed in the present study. Albeit to varying degrees, the dependent variables were moderately dispersed; of the three measures, dropout rates displayed the lowest standard deviation. For most universities during the eight-year study period (2008-2015), fewer than 10% of incoming students were admitted via affirmative action programs, but affirmative action programs appeared more evident in some schools; For taking Shilla University in 2008 as an instance, 100% of its incoming students were admitted through affirmative action.⁸ Because of the high standard deviation, we used logged values for research funds and government subsidies to normalize their distribution for regression analysis. In addition, we checked that there was no significant multicollinearity among the independent variables; Table 4 presents the correlations among them.

⁸ We did not exclude this university because its other variables did not seem like outliers.
17 Vol.63 No.4 Studies in Humanities and Social Sciences.

Table 3. Descriptive Statistics

	Variable	N	Mean	Std. Dev.	Min.	Max.
DV	Enrollment Rates (%)	1,429	99.02	20.67	0	181
	Dropout Rates (%)	1,423	5.01	2.89	0	25
	Employment Rates (%)	1,406	57.98	18.73	0	100
IV	Affirmative Action Programs (%)	1,425	6.55	3.97	0	100
CV	Research Funds (logged)	1,346	43,425.36 (10.11)	140,242.20 (1.17)	0	5,000,000 (15.43)
	Government Subsidy (logged)	1,234	149,978.80 (11.60)	151,506.40 (0.81)	1,615 (7.39)	2,026,592 (14.52)
	Educational Expenses (per student)	1,411	11,499.05	8,249.24	0	90,087
	Tenure-track Faculty (per student)	1,429	46.25	41.58	0	750
	Scholarship (per student)	1,423	2,223.09	1,345.64	0	15,228
	University Age	1,421	45.5	28.31	1	131
	University Type Metropolitan	1,429	0.17	0.38	0	1
		1,429	0.32	0.47	0	1

Table 4. Correlation among Variables

	Enrollment Rates	Dropout Rates	Employment Rates	Affirmative Action Programs	Research Funds	Government Subsidy	Educ. Expenses	Tenure-track Faculty	Scholarship	Age	Type	Metropolitan
Enrollment Rate	1											
Dropout Rate	-0.5387*	1										
Employment Rate	0.7045*	-0.3318*	1									
Affirmative Action Programs	0.3131*	-0.1364*	0.3130*	1								
Research Funds	0.0306	-0.0743*	0.0199	-0.0012	1							
Government Subsidy	0.1498*	-0.1264*	0.0972*	-0.0091	0.0497*	1						
Educ. Expenses	0.0131	-0.2988*	-0.1084*	-0.1915*	0.1110*	0.1495*	1					
Tenure-track Faculty	-0.2097*	0.0243	-0.1944*	-0.0289	-0.0069	-0.1972*	0.0728*	1				
Scholarship	-0.1665*	-0.0563*	-0.1022*	-0.1660*	0.0596*	-0.0626*	0.4661*	0.2399*	1			
Age	0.4385*	-0.3908*	0.2241*	0.2148*	0.0310	-0.0436	-0.0029	-0.0054	-0.1236*	1		
Type	0.1508*	-0.2688*	0.1290*	-0.0270	0.0503*	0.0860*	0.0821*	-0.0411	0.0022	0.1986*	1	
Metropolitan	0.3280*	-0.2218*	0.1743*	0.1593*	-0.0216	0.0127	-0.0456*	-0.0433	-0.0854*	-0.3331*	-0.0399	1

* p < 0.05

Results

Table 5 presents the relationships between social responsibility and university performance employing cross-sectional time series FGLS regression. We measured university performance with three dependent variables during two time periods (period 1: 2008-2011; period 2: 2012-2015) for each school. We selected the year 2012 in part because it divides the entire study period (2008 to 2015) exactly into half, but there were also substantive reasons. The entrance examination system was modified in 2012 to prevent repeaters from having advantage over first-time examinees by changing the range of possible questions and by increasing rolling admissions. Moreover, large-scale government funded programs such as Brain Korea 21 Phase 2 and LINC (Leaders in Industry-university Cooperation) were launched in 2012. These changes in university systems are likely to have affected the main variables (e.g., enrollment, dropout, and employment rates) as well as independent variables related to student admission and education.

Table 5. FLGS Regression Results

Variable	Enrollment Rates			Dropout Rates			Employment Rates		
	2008-2011	2012-2015	2008-2015	2008-2011	2012-2015	2008-2015	2008-2011	2012-2015	2008-2015
Affirmative Action Programs(%)	0.211 (0.114)	0.995*** (0.244)	0.407*** (0.108)	-0.004 (0.017)	-0.142*** (0.035)	-0.035* (0.016)	0.110* (0.043)	0.645*** (0.167)	0.236*** (0.057)
Research Funds (logged)	0.984 (0.591)	-0.599 (0.713)	0.544 (0.464)	-0.022 (0.086)	-0.314** (0.104)	-0.138* (0.066)	0.239 (0.223)	-0.276 (0.489)	-0.218 (0.245)
Government Subsidy (logged)	2.564*** (0.655)	3.514*** (1.078)	2.760*** (0.574)	-0.442*** (0.095)	-0.436** (0.157)	0.474*** (0.082)	1.669*** (0.247)	2.100** (0.740)	1.724*** (0.303)
Educ. Expenses (per student)	0.001*** (0.000)	0.0004*** (0.0001)	0.0003*** (0.0001)	-0.0001*** (0.000)	-0.0001*** (0.0001)	-0.0001*** (0.000)	0.0001 (0.000)	0.0001 (0.000)	-0.0001 (0.000)
Tenure-track Faculty (%)	0.314*** (0.069)	-0.164*** (0.019)	-0.098*** (0.015)	-0.029** (0.001)	0.006* (0.003)	0.002 (0.002)	0.135*** (0.026)	-0.059*** (0.013)	-0.033*** (0.008)
Scholarship (per student)	-0.003*** (0.001)	-0.001 (0.001)	-0.002*** (0.0004)	-0.000 (0.000)	-0.000** (0.0001)	-0.0001 (0.0001)	-0.0002 (0.0001)	0.001 (0.001)	-0.0001 (0.0002)
University Age	0.201*** (0.019)	0.091*** (0.026)	0.175*** (0.016)	-0.024*** (0.003)	-0.020*** (0.004)	-0.023*** (0.002)	0.013 (0.007)	0.034** (0.018)	0.029*** (0.008)
University Type	3.322** (1.305)	-2.791 (1.802)	-0.041 (1.075)	-1.210*** (0.190)	-1.115*** (0.262)	-1.061*** (0.153)	1.071* (0.492)	0.577 (1.241)	0.495 (0.567)
Metropolitan	6.345** (1.072)	7.5454*** (1.459)	6.829*** (0.897)	-0.817*** (0.155)	-0.918*** (0.212)	-0.864*** (0.128)	0.868* (0.404)	1.137 (1.002)	0.989* (0.473)
Constant	39.040*** (9.104)	49.994*** (11.460)	56.156*** (6.971)	13.863*** (1.318)	17.267*** (1.664)	14.537*** (0.991)	69.965* (3.433)	65.614*** (7.872)	73.730*** (3.674)
Log likelihood	-2,860.807	-1,937.412	-4,842.567	-1,469.353	-1,015.144	-2,504.869	-2,159.535	-1,753.811	-4,071.978
Number of Obs.	719	478	1,197	718	478	1,196	719	477	1,196

*** p < 0.001, ** p < 0.01, * p < 0.05

Standard errors in parentheses.

The results show empirical support for our hypothesis that the relationship between social responsibility and university performance is positive. University social responsibility reflected as affirmative action programs had a positive influence on university performance measured with the three variables enrollment, dropout, and employment rates. First, universities with a high level of student admittance through affirmative action are more likely to fill the student quotas. Student enrollment is critical for stable operations, and knowing that social responsibility will help in recruiting students, universities advertise their social commitment by including phrases like “engaged university” (e.g., the University of Bristol, the UK⁹; Yonsei University, Korea ¹⁰). Some agencies provide prospective college students with information on universities including assessments of how seriously a university takes its obligations to society.¹¹ Next, the higher the social responsibility, the lower the dropout rates. We proposed, without evidence, that affirmative action programs would increase not only diversity but also competence of students when a large body of the literature suggests mismatches between the skills of affirmative action entrants and the skills required to successfully complete prestigious schools. Put differently, affirmative action in college admission undermines education by allowing academically unprepared students into highly competitive schools, which results in lower performance and higher dropouts (Thernstrom and Thernstrom 1999; Sowell 2004). The results of the present study follow the line of arguments from another body of research, that diversity helps students engage in their academic communities and feel a sense of belonging, which may eventually decrease dropouts (Bowen and Bok 1998; Alon and Tienda 2005). Lastly, social responsibility also had a positive relationship with employment rates; students from diverse school populations are more likely to find employment after graduation because job-related skills can be enhanced by engaging with diverse students from different backgrounds (Hutardo 2001).

Interestingly, we found period effects for all three dependent variables: For the affirmative action program variable, the coefficients were larger and the degree of statistical significance was greater in the second period, 2012-2015. The results imply that social responsibility has become more important in recent years. For universities that aim at increasing performance, it is becoming increasingly important to increase the number of students admitted via affirmative action programs.

Moreover, financial variables have a significant effect on university performance. To begin with, government subsidies for general purposes to increase university performance. This is in part because of universities’ limited financial resources, which increases their dependence on support from the government; many if not most schools would have difficulty fulfilling functions or even operating without government support. However, government research funds present mixed outcomes. Advanced research invigorated by government-funded projects prevents students from quitting, but it

⁹ University of Bristol. “The Engaged University” (<https://www.bristol.ac.uk/media-library/sites/public-engagement/documents/Engaged%20University%20Strategy.pdf>, last accessed April 12, 2019).

¹⁰ Edu-Donga. “Yonsei University-Elsevier, The 5th Asia Pacific Research Intelligence Conference Held on June 20-21.” June 18, 2018. (http://edu.donga.com/?p=article&ps=view&at_no=20180618162245652006, last accessed April 12, 2019).

¹¹Top Universities. “Rating Universities on Social Responsibility: QS Stars.” July 31, 2014. (<https://www.topuniversities.com/qs-stars/qs-stars/rating-universities-engagement-qs-stars>, last accessed April 12, 2019).

appears to decrease dropout rates only, which attests to the limited effects of earmarked budgets. Lastly, education expenditures have significant effects on university performance. Although universities that invest in research and education do not report higher employment rates, the investments may be helpful for attracting and retaining students. The size of any such effects, however, does not seem to be large, and organizational characteristics of universities may be more important. Other control variables generally had expected relationships with university performance. As anticipated by previous research, older, national/public universities located in metropolitan areas are likely to have higher performance.

VIII. Discussion and Conclusions

This research shows that social responsibility is distinguished from traditional roles of universities (i.e., education and research) but has a positive relationship with their educational performance. A basic assumption behind the claim is that universities operate as open systems that are influenced by and adapt to social pressures. Because universities are classified as being in the (quasi-) public sector, they are demanded to pursue public values such as equal opportunity. That may be why we observe many private schools adopting affirmative action admissions policy even without (strong) government regulations. We can infer this tendency would be greater in countries like South Korea where universities are subject to government regulations (e.g., affirmative action acts) that urge or mandate them to pursue social responsibility, since they would be under a double pressure of social demands and government mandates.

Compared with CSR in private companies (Barnett and Salomon 2006; Mackey et al. 2007; Orlitzky et al. 2003), social responsibility among universities has received little scholarly attention (Nejati et al. 2011). Because universities are now under greater pressure to fulfill their social responsibilities, empirical tests are necessary to test the relationships between USR and performance. For this purpose, we constructed a panel data set consisting of 181 universities in Korea and measured university performance based on three variables: enrollment, dropout, and employment rates. The results of FGLS regression showed empirical support for the claim with period effects: Universities that pursued social responsibility performed better than other schools did, and this tendency is becoming greater. In sum, the results of the present study show that USR, meant to be beneficial for society in general, is actually beneficial for themselves. When universities come out of their *ivory towers* to reach out to society, they can be more successful in achieving their primary goals.

Despite its merits, this study has a few limitations. First, we did not establish a clear causal relationship between social responsibility and university performance. Authors of previous studies on CSR suggest that activities to pursue social responsibility (e.g., launching volunteering programs, developing environmental protection tools, improving employee welfare) incur costs (Barnett and Salomon 2006), so in affirming any causality between social responsibility and school performance, it is necessary to show that benefits from social responsibility (e.g., improved reputation, increased performance) outweigh accompanying costs. Moreover, we narrowly measured USR as the proportions of students admitted through affirmative action programs. However, social responsibility can be broadly defined and measured in many different ways such as through promoting human rights in society at large, improving

the welfare of contract employees, or protecting the natural environment.

References

- Abbott, M., and C. Doucouliagos. 2003. "The Efficiency of Australian Universities: A Data Envelopment Analysis." *Economics of Education Review* 22 (1): 89-97.
- Abdul Razak, D., C. D. Wan, and M. Sirat. 2017. "Juxtaposing Economic Progress with Sustainability in Mind: Issues and Way Forward for Universities." In *Higher Education in the World 6: Towards a Socially Responsible University: Balancing the Global with the Local*, Barcelona: Global University Network for Innovation (GUNI).
- Ahmad, J. 2012. "Can a University Act as a Corporate Social Responsibility (CSR) Driver? An Analysis." *Social Responsibility Journal* 8 (1): 77-86.
- Ahn, J. 2007. "The Oldest University in Korea?: Tracking the History of Korean Universities." (Written in Korean). *The Yonsei Chunchu*, May 12, 2007, <http://chunchu.yonsei.ac.kr/news/articleView.html?idxno=10733>, last accessed February 14, 2019.
- Ahn, T. 1998. "Determinants of Efficiency Behavior of Korean Universities." *Accounting Studies* 23 (2): 183-215. (Written in Korean)
- Ahn, T., V. Arnold, A. Chanes, and W. W. Cooper. 1990. "DEA and Ratio Efficiency Analysis for Public Institutions of Higher Learning in Texas." *Research in Governmental and Nonprofit Accounting* 5 (2): 165-185.
- Allison, P. D. 1999. *Multiple Regression: A Primer*. Newbury Park, CA: Pine Forge Press.
- Alon, S., and M. Tienda. 2005. "Assessing the "Mismatch" Hypothesis: Differentials in College Graduation Rates by Institutional Selectivity." *Sociology of Education* 78 (4): 294-315.
- Amsden, A. H. 1992. *Asia's Next Giant: South Korea and Late Industrialization*. New York: Oxford University Press.
- Athanassopoulos, A. D., and E. Shale. 1997. "Assessing the Comparative Efficiency of Higher Education." *Education Economics* 5 (2): 117-134.
- Auranen, O., and M. Nieminen. 2010. "University Research Funding and Publication Performance: An International Comparison." *Research Policy* 39 (6): 822-834.
- Barnett, M. L., and R. M. Salomon. 2006. "Beyond Dichotomy: The Curvilinear Relationship Between Social Responsibility and Financial Performance." *Strategic Management Journal* 27 (11): 1101-1122.
- Bokhari, A. A. H. 2017. "Universities Social Responsibility (USR) and Sustainable Development: A Conceptual Framework." *SSRG International Journal of Economics and Management Studies (SSRG-IJEMS)* 4 (12): 8-16.
- Bowen, W. G., and D. C. Bok. 1998. *The Shape of The River: Long-Term Consequences of Considering Race in College and University Admissions*. Princeton, NJ: Princeton University Press.
- Bozeman, B., and D. Sarewitz. 2011. "Public Value Mapping and Science Policy Evaluation." *Minerva: A Review of Science, Learning and Policy* 49 (1): 1-23.

- Breusch, T. S., and A. R. Pagan. 1979. "A Simple Test for Heteroskedasticity and Random Coefficient Variation." *Econometrica* 47 (5): 1287–1294.
- Bulut, H. 2018. "Government Intervention in Higher Education: A Theoretical Approach." *Online Journal of Quality in Higher Education* 5 (3): 42-48.
- Cameron, A. C., and P. K. Trivedi. 1990. "Regression-based Tests for Overdispersion in the Poisson Model." *Journal of Econometrics* 46 (3): 347-364.
- Chatterton, P., and J. Goddard. 2000. "The Response of Higher Education Institutions to Regional Needs." *European Journal of Education* 35 (4): 475-496.
- Chen, S. H., J. Nasongkhla, and J. A. Donaldson. 2015. "University Social Responsibility (USR): Identifying an Ethical Foundation within Higher Education Institutions." *Turkish Online Journal of Educational Technology-TOJET* 14 (4): 165-172.
- Chibber, V. 2014. "The Developmental State in Retrospect and Prospect: Lessons From India and South Korea." In *The End of the Developmental State?*, edited by M. Williams, 30–54. New York: Routledge.
- Choi, T., S. Kim, and H. Kim. 1998. "Efficiency of DEA Methods for Evaluating Efficiency of Nonprofit Organizations: Evaluating the Efficiency of Universities' Research." *Inha University Business Research Institutes Journal of Management* 6 (1): 37-55. (Written in Korean)
- Cochran, P. L., and R. A. Wood. 1984. "Corporate Social Responsibility and Financial Performance." *Academy of Management Journal* 27 (1): 42-56.
- Commission of the European Communities. 2001. *Promoting a European Framework for Corporate Social Responsibility*. Brussels: Green Paper.
- Esfijani, A., F. Hussain, and E. Chang. 2012. "An Approach to University Social Responsibility Ontology Development through Text Analyses." In *2012 5th International Conference on Human System Interactions* (pp. 1-7).
- Esfijani, A., F. Hussain, and E. Chang. 2013. "University Social Responsibility Ontology." *International Journal of Engineering Intelligent Systems* 21 (4): 271-281.
- European Commission. 2009. "Needs and Constraints Analysis of the Three Dimensions of Third Mission Activities." In *European Indicators and Running Methodology for University Third Mission*. Brussels: European Commission.
- Evans, P. B. 1995. *Embedded Autonomy: States and Industrial Transformation*. Princeton, NJ: Princeton University Press.
- Garde, R., M. P. Rodríguez, and A. M. Lopez. 2013. "Online Disclosure of University Social Responsibility: A Comparative Study of Public and Private US Universities." *Environmental Education Research* 19 (6): 709–746.
- Geuna, A. 1998. "The Internationalisation of European Universities: A Return to Medieval Roots." *Minerva: A Review of Science, Learning and Policy* 36 (3): 253-270.
- Geuna, A., and B. R. Martin. 2003. "University Research Evaluation and Funding: An International Comparison." *Minerva: A Review of Science, Learning and Policy* 41 (4): 277-304.
- University Social Responsibility and Educational Performance: Evidence from South Korea* 26

- Giuffré, L., and S. E. Ratto. 2014. "A New Paradigm in Higher Education: University Social Responsibility (USR)." *Journal of Education & Human Development* 3 (1): 231-238.
- Greene, W. H. 2012. *Econometric Analysis*. Upper Saddle River, NJ: Prentice Hall.
- Higgins, J. C. 1989. "Performance Measurement in Universities." *European Journal of Operational Research* 38 (3): 358-368.
- Hurtado, S. 2001. "Linking Diversity and Educational Purpose: How Diversity Affects the Classroom Environment and Student Development." <http://eric.ed.gov/?id=ED456199>, last accessed April 13, 2019.
- Jung, H., and J. Gil. 2019. "Does College Education Make People Politically Liberal?: Evidence From a Natural Experiment in South Korea." *Social Science Research* 81: 209-220.
- Kantola, M., and J. Kettunen, 2012. "Integration of Education with Research and Development and the Export of Higher Education." *On the Horizon* 20 (1): 7-16.
- Kerr, C. 1955. *The Uses of the University*. Cambridge, MA: Harvard University Press.
- Kim, H. 2018. "A Critical Analysis of the Higher Education Policies in Korea: From the State to the Market." *Journal of Humanities and Social Sciences* 21 9 (6): 673-683.
- Kim, I., D. Lee, and K. Song. 2000. *Measuring the Effects of Financial Support for Universities*. Seoul: Ministry of Education & Human Resources Development. (Written in Korean)
- Kim, S. S. 2008. "An Exploratory Study on Withdrawal and Transfer of Korean College Students: The Influence of College-Choice Reason and Satisfaction Afterwards." *Journal of Korean Education* 35 (1): 227-249.
- Kim, S., and J. Lee. 2006. "Changing Facets of Korean Higher Education: Market Competition and the Role of the State." *Higher Education* 52 (3): 557-587.
- Kouatli, I. 2019. "The Contemporary Definition of University Social Responsibility with Quantifiable Sustainability." *Social Responsibility Journal* 15 (7): 888-909.
- Kwak, Y. 1993. "Trends in the Efficiency of Korean University Libraries: A DEA Analysis Approach." *Chungnam National University Management and Economic Research Institute Journal of Management* 9 (1): 509-532. (Written in Korean)
- Larrán Jorge, M., and F. J. Andrades Peña. 2017. "Analysing the Literature on University Social Responsibility: A Review of Selected Higher Education Journals." *Higher Education Quarterly* 71 (4): 302-319.
- Larrán Jorge, M., J. H. Madueño, Y. Calzado, and J. Andrades. 2016. "A Proposal for Measuring Sustainability in Universities: A Case Study of Spain." *International Journal of Sustainability in Higher Education* 17 (5): 671-697.
- Lee, S. Y. 2008. "Study on the Factor Affecting the College Students' Re-Enrollment Intention." *The Journal of Educational Administration* 26 (3): 227-299.
- Lee, S., and M. C. Brinton. 1996. "Elite Education and Social Capital: The Case of South Korea." *Sociology of Education* 69 (3): 177-192.
- Mackey, A., T. B. Mackey, and J. B. Barney. 2007. "Corporate Social Responsibility and

- Firm Performance: Investor Preferences and Corporate Strategies.” *Academy of Management Review* 32 (3): 817-835.
- McGinn, N. F., D. R. Snodgrass, Y. B. Kim, S. B. Kim, and Q. Y. Kim. 1980. “Education and Development in Korea Studies in the Modernization of the Republic of Korea 1945-1975.” *Harvard East Asian Monographs* 90.
- McGuire, J. B., A. Sundgren, and T. Schneeweis. 1988. “Corporate Social Responsibility and Firm Financial Performance.” *Academy of Management Journal* 31 (4): 854-872.
- McWilliams, A., and D. Siegel. 2000. “Corporate Social Responsibility and Financial Performance: Correlation or Misspecification?” *Strategic Management Journal* 21 (5): 603-609.
- McWilliams, A., D. Siegel, and S. H. Teoh. 1999. “Issues in the Use of the Event Study Methodology: A Critical Analysis of Corporate Social Responsibility Studies.” *Organizational Research Methods* 2 (4): 340-365.
- Moses, M. S., and L. D. Jenkins. 2017. “Affirmative Action Around the World.” <http://theconversation.com/affirmative-action-around-the-world-82190>, last accessed April 8, 2019.
- Muijen, H. S. C. A. 2004. “Corporate Social Responsibility Starts at University.” *Journal of Business Ethics* 53 (1-2): 235-246.
- Nejati, M., A. Shafaei, Y. Salamzadeh, and M. Daraei. 2011. “Corporate Social Responsibility and Universities: A Study of Top 10 World Universities’ Websites.” *African Journal of Business Management* 5 (2): 440-447.
- Orlitzky, M., F. L. Schmidt, and S. L. Rynes. 2003. “Corporate Social and Financial Performance: A Meta-Analysis.” *Organization Studies* 24 (3): 403-441.
- Park, T. 1997. “Measurement and Determinants of Efficiency of Universities.” Ph.D. Dissertation, Changwon University.
- Posnikoff, J. F. 1997. “Disinvestment from South Africa: They Did Well by Doing Good.” *Contemporary Economic Policy* 15 (1): 76-86.
- Rah, M. 2004. “Evaluating Efficiency of Public University Finance in Korea.” *Education Finance & Economics Studies* 13 (2): 235-259. (Written in Korean)
- Ralph, M., and W. Stubbs. 2014. “Integrating Environmental Sustainability into Universities.” *Higher Education* 67 (1): 71-90.
- Reiser, J. 2008. “University Social Responsibility Definition.” http://www.usralliance.org/resources/Aurilla_Presentation_Session6.pdf, last accessed April 19, 2019.
- Sánchez-Hernández, M. I., and E. W. Mainardes. 2016. “University Social Responsibility: A Student Base Analysis in Brazil.” *International Review on Public and Nonprofit Marketing* 13 (2): 151-169.
- Shek, D. T., and R. M. Hollister. 2017. *University Social Responsibility and Quality of Life*. Singapore: Springer Nature.
- Shin, H. 2005. “Comparing Measurement of Performance Evaluation of Universities.” *University Social Responsibility and Educational Performance: Evidence from South Korea* 28

- Proceedings of Korean Association For Public Administration Conference* (pp. 51-72). (Written in Korean)
- Shin, J. C. 2012. "Higher Education Development in Korea: Western University Ideas, Confucian Tradition, and Economic Development." *Higher Education* 64 (1): 59-72.
- Sinuany-Stern, Z., A. Mehrez, and A. Barboy. 1994. "Academic Departments Efficiency via DEA." *Computers & Operations Research* 21 (5): 543-556.
- Sowell, T. 2004. *Affirmative Action around the World: An Empirical Study*. New Haven, CT: Yale University Press.
- Tetřevová, L. I. B. Ě. N. A., and V. Sabolova. 2010. "University Stakeholder Management and University Social Responsibility." *WSEAS Transactions on Advances in Engineering Education* 7 (7): 224-233.
- Thernstrom, S., and A. M. Thernstrom. 1999. *America in Black and White: One Nation Indivisible*. New York: Simon & Schuster.
- Tomkins, C., and R. Green. 1988. "An Experiment in the Use of Data Envelopment Analysis for Evaluating the Efficiency of UK University Departments of Accounting." *Financial Accountability & Management* 4 (2): 147-164.
- Vasilescu, R., C. Barna, M. Epure, and C. Baicu. 2010. "Developing University Social Responsibility: A Model for the Challenges of the New Civil Society." *Procedia-Social and Behavioral Sciences* 2 (2): 4177-4182.
- Vázquez, J. L., C. L. Aza, and A. Lanero. 2014. "Are Students Aware of University Social Responsibility? Some Insights from a Survey in a Spanish University." *International Review on Public and Nonprofit Marketing* 11 (3): 195-208.
- Vázquez, J. L., C. L. Aza, and A. Lanero. 2015. "Students' Experiences of University Social Responsibility and Perceptions of Satisfaction and Quality of Service." *Ekonomski Vjesnik: Review of Contemporary Entrepreneurship, Business, and Economic Issues* 28 (S): 25-39.
- Vázquez, J. L., C. L. Aza, and A. Lanero. 2016. "University Social Responsibility as Antecedent of Students' Satisfaction." *International Review on Public and Nonprofit Marketing* 13 (2): 137-149.
- White, H. 1980. "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity." *Econometrica* 48 (4): 817-838.
- Wigmore-Álvarez, A., and M. Ruiz-Lozano. 2012. "University Social Responsibility (USR) in the Global Context: An Overview of Literature." *Business and Professional Ethics Journal* 31 (3/4): 475-498.
- Winter, A., J. Wiseman, and B. Muirhead. 2006. "University-Community Engagement in Australia: Practice, Policy and Public Good." *Education, Citizenship and Social Justice* 1 (3): 211-230.
- Woo, J. 1991. *Race to the Swift State and Finance in Korean Industrialization*. New York: Columbia University Press.
- Wright, P., and S. P. Ferris. 1997. "Agency Conflict and Corporate Strategy: The Effect of Divestment on Corporate Value." *Strategic Management Journal* 18 (1): 77-83.

- Yang, H., J. Choi, J. Han, and J. Jeong. 2015. "Influence of Tuition and Scholarship on the Stop-Out Rate: An Empirical Analysis Using Panel Regression Model." *Journal of the Korean Data & Information Science Society* 26 (3): 631-638. (Written in Korean)
- Zheng, H. Y., and A. C. Stewart. 2002. "Assessing the Performance of Public Research Universities Using NSF/NCES Data and Data Envelopment Analysis Technique." *Association for Institutional Research Professional File* 83: 1-21.