

In Institutions We Trust? Trust in Government and the Allocation of Entrepreneurial Intentions

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Abstract

Whether entrepreneurship generates economic growth depends on the mix of productive and unproductive entrepreneurship in the economy. The incentive structure embedded in each society affects whether talented people become entrepreneurs and potentially, the extent to which they engage in more productive forms of entrepreneurship. We examine how trust in institutions, in particular, trust in the government, affects the entrepreneurial intentions of potentially productive entrepreneurs. We utilize the unique event surrounding the impeachment of South Korea's previous president. The event improved people's trust in the government since it was ultimately the people's protests and demands that led to the impeachment of the president for influence peddling and extracting personal rents from businesses. By surveying the same individuals before and after the impeachment ruling, we identify people's changes in trust in the government and various institutions. We find that increased trust in the government increases one's intent to start a business within five years. Moreover, we show that the relationship between trust in the government and entrepreneurial intention is significantly stronger for engineering majors from top universities.

Keywords: entrepreneurship, institutions, trust in government, allocation of talent, impeachment

JEL Codes:

1. Introduction

Entrepreneurship's contribution to economic growth depends on who becomes entrepreneurs. The institutional environment has been theorized (and empirical evidence is mounting) to influence both the rate of entrepreneurship and type of entrepreneur in society (Tolbert, David and Sine, 2011; Dobbins and Dowd, 1997). Though it is difficult to predict who will become high-growth entrepreneurs, a society where talented, higher human capital people pursue entrepreneurship instead of non-productive activities is more likely to grow (Eesley 2016; Murphy, Shleifer, and Vishny 1991). Most of the prior literature focuses on regulatory and financial capital-based barriers to entry (Klapper, Amit, and Guillén 2010; Klapper, Laeven, and Rajan 2006). Yet, lowering entry barriers has been shown to lead to greater exit as well as entry rates as less talented individuals tend to respond to this margin and also have a higher likelihood of entrepreneurial failure. Baumol (1991), using historical evidence, and Murphy et al. (1991), with a theoretical model, argue that institutions affect the degree to which talented people pursue productive entrepreneurship. Recent work (Eesley 2016) shows that lowering barriers to growth through industrial policy or reducing barriers to failure (Eberhart, Eesley, Eisenhardt, 2017) can increase the likelihood of higher human capital individuals starting firms. Despite the importance of high-growth entrepreneurship for economic growth, the empirical literature that examines how institutions affect the allocation of talent to entrepreneurship within societies is surprisingly sparse. Recent work suggests that alongside regulatory policies, cognitive and normative institutions also may have an important impact on entrepreneurial activity and on the type of entrepreneurship (Eesley, Eberhart, Cheng, Skousen, 2018; Hiatt, Sine & Tolbert 2009; Sine and David 2003).

This paper uses a unique political event, the impeachment of South Korea's previous president, to examine how people's trust in government affects the entrepreneurial intent of potentially productive entrepreneurs. The level of trust in government is one example of how non-regulatory institutions, including normative and cognitive pillars of the institutional environment together with regulatory policies affect organizations. In this case, whether it is taken-for-granted that government is a beneficial, trusted actor in the economy may influence the type of individuals who become entrepreneurs. High levels of corruption and rent-seeking in the government may deter talented people from taking risks and investing in potentially productive entrepreneurial activities. Corruption and rent-seeking may reduce the expected returns from

entrepreneurship and increase uncertainty. Increased trust in government could therefore increase the entrepreneurial intent of potentially productive entrepreneurs, especially, those that engage in high-risk and high-investment entrepreneurship.

Park Geun-Hye was the first female president of South Korea and many were hopeful that her clean image would propel South Korea politics to finally move beyond its past legacy of corruption. However, a major corruption scandal that involved Park's close friend erupted and the people took to the streets demanding her to step down. Ultimately, Park was impeached in a unanimous ruling by the Constitutional Court. We surveyed people's trust in government and entrepreneurial intent before the impeachment ruling, and conducted another survey asking the same people how their trust in government and entrepreneurial intent changed after the impeachment ruling.

We find that the impeachment ruling increased people's trust in government, and increased trust in government is associated with an increase in entrepreneurial intent. Moreover, the relationship between trust in government and entrepreneurial intent is significantly stronger for individuals with Science, Technology, Engineering, and Math (STEM) degrees from top universities. This paper empirically confirms, we believe for the first time, that trust in government affects the entrepreneurial intent of potentially productive entrepreneurs.

Our findings contribute to several strands of the literature. First, we respond to prior calls for further research using multi-level analysis into the interplay between micro and macro-level trust such as at the individual, organizational and institutional levels (Bachmann, Gillespie, and Priem, 2015). Our results also respond to calls in prior literature for more empirical work on how institutional trust repair has differential impacts on various stakeholder groups (Pirson & Malholtra, 2011) as well as on how the effects play out over time, which has received little direct examination (Möllering, 2013; Nooteboom, 1996). Our findings also contribute to the strand of literature that examine how institutional trust and connection between the government and large businesses interact and evolve to affect firms. In particular, Siegel (2007) and Jeong and Siegel (2018) examine the case with South Korea's conglomerates, but in this paper our focus is on entrepreneurial intention. Whereas previous research at the intersection of institutions and entrepreneurship has focused on how certain types of institutional change, which lower barriers to economic activity may lead to more (and higher quality) entrepreneurship (Eesley 2016; Eberhardt, Eesley and Eisenhardt, 2017), our contribution here is to theorize on the relatively

under-explored impact of trust in institutions on entrepreneurial activity. Unlike prior work, which focused on the trust repair process and factors enhancing the recovery of trust, we look at the economic consequences of trust repair in institutional trust and show that it particularly increases the entrepreneurial behavior of high human capital individuals.

The paper proceeds as follows. In the next section we conceptually discuss why trust in government could affect the allocation of talent to entrepreneurship. Section 3 presents the context surrounding impeachment. Section 4 discusses the survey and data. Section 5 presents the empirical results and Section 6 concludes.

2. Theoretical considerations

Prior theoretical work on trust has largely focused on individual level, interpersonal trust, whereas less scholarship has explored macro-level, impersonal trust (Bachmann and Inkpen 2011; Rousseau, Sitkin, Burt, and Camerer 1998). At the organizational or institutional level, previous work has explored the process and consequences of trust repair (Bachmann, Gillespie, and Priem, 2015). Our focus is on the parts of this broader literature on trust that emphasize institutional-based trust as denoting trust in institutions. This work refers to cases where institutions, for examples the law, are the object of trust (Fukuyama 1995). Societal trust or political trust are other terms that have been used to refer to this idea where trust is impersonal, rather than being generated in the context of interpersonal relations between specific individuals (typically the domain of psychology literature). Analogous to a personal guarantor in the case of trust at the interpersonal level, institutions can foster the establishment of shared explicit and tacit knowledge and understandings between a trustor and trustee. An individual or collective actor in this circumstance may find it appropriate to trust another individual, organization or institution because the institutional arrangement acts like a personal third party guarantor, reducing risk and increasing the likelihood of making a leap of faith and investing trust in relationships. However, before institutions may generate this type of trust, individuals must have trust in the system, in the rule of law, or in institutions themselves. Institutions must be an object of trust to fulfill this role, not only a source as has been pointed out by work with a political science orientation (Cook 2001; Fukuyama 1995). As prior scholars have noted, to “unravel the subtleties”, future empirical research is needed viewing impersonal, institutional-based trust as a distinct form from interaction-based trust (Bachmann and Inkpen 2011; Zucker 1986).

Trust is critical when dealing with risk and interdependence (Rousseau et al., 1998; Stewart, 2004), which are central elements of entrepreneurship. The choice of entrepreneurship as opposed to wage employment has previously been shown to depend, on part on the quality of the institutional environment (Eesley, 2016; Lerner and Schoar 2010). Institutions influence the quality of entrepreneurship (Guzmán and Stern, 2018) and the level of contract enforcement as well as the enforcement of the rule of law may influence the amount of corruption or risk of appropriation (Stuart and Wang 2016; Shleifer and Vishny 2002). Indeed, previous work has argued that institutions are key in explaining differences in economic growth across countries (Acemoglu, Johnson, Robinson 2002).

An individual's contribution to economic growth can be greater through entrepreneurship than through employment, because a firm's growth potential is less constrained than that of an employee. How much an employee can accomplish is constrained by time. On the other hand, an entrepreneur can employ technology, capital and labor to produce more with the same amount of time (Schumpeter 1942). Of course, not entrepreneurship is more productive than employment. There is ample evidence showing that entrepreneurs earn less than the average employee (Hamilton 2000), and that many entrepreneurs have little intention to grow their businesses (Schoar 2010). Furthermore, most individuals prefer employment over entrepreneurship, since entrepreneurship involves higher risk and lower security (Hall and Woodward 2010). Hence, whether talented people engage in productive entrepreneurial activities would affect whether entrepreneurship contributes to economic growth (Lee 2018).

Then, what would incentivize talent to pursue productive entrepreneurship? Many factors could affect the distribution of talent to entrepreneurship. Baumol (1991) and Murphy et al. (1991) both note that talented individuals seek to obtain the maximum gains from either entrepreneurship or rent-seeking activities. As Murphy et al. (1991) theoretically shows, this is the case when there is increasing returns to skill, and diminishing returns to both time and scale (size of the firm).

Talented individuals seek to obtain the maximum gains from either entrepreneurship or rent-seeking activity. The quality of institutions can affect expected returns and thus affect whether one engages in rent seeking activity versus entrepreneurship. Governments that unduly extract business profits, or societies politicians extort for personal gains would dis-incentivize talent to pursue entrepreneurship, but rather engage in rent-seeking activities.

Hypothesis 1: Increased trust in government will be associated with an increase in entrepreneurial intentions.

STEM majors generally earn considerably more than other college majors and the STEM major premium has been increasing over time (Arcidiacono 2004; Melguizo and Wolniak 2012; Kinsler and Pavan 2015; Gemici and Wiswall 2014). STEM majors, due to their higher opportunity costs and educational background in science and technology are more likely to undertake more R&D intensive, higher risk, yet higher reward forms of entrepreneurship. A survey of US-born tech entrepreneurs in the US finds that nearly half of the founders have a terminal degree in STEM (Wadhwa et al. 2008). There is ample evidence supporting the higher rewards associated with technology entrepreneurship both anecdotally and in empirical research. The cluster of tech startups and venture capital firms in Silicon Valley attest to the high-risk high-pay off nature of tech entrepreneurship and STEM entrepreneurs and tech entrepreneurship. Guzman and Stern (2016) find that firms associated with specific high-technology sector (biotechnology, e-commerce, IT, medical devices and semi-conductor) are significantly more likely to grow in the US. These types of ventures depend to a greater extent on trust in government due to their greater reliance on external financing, contracts and intellectual property protection. Due to their higher opportunity costs, they also have relatively more to lose in the event of a firm failure.

Hypothesis 2: Increased trust in government will be associated with a stronger increase in entrepreneurial intentions among individuals in STEM majors relative to non-STEM majors.

The tier of the university the student attends is associated with the quality of the human capital generated. A large body of literature in economics and education has studied the returns to college quality and most of the research find that the quality of college positively affects individual wages (Black and Smith 2006, Long 2010). Top university graduates and STEM majors seem to perform better in terms of entrepreneurial outcomes as well. Wadhwa et al. (2008) that graduates from top-universities are overrepresented among US-born tech entrepreneurs relative to the general population. Start-ups by US born founders with Ivy League degrees earned higher revenue and employed more as well (Wadhwa et al. 2008). Moreover, 47% of these founders were STEM majors. Individuals with STEM majors from higher tier universities will have higher opportunity costs and also will be more likely to undertake more

R&D intensive, high potential growth, but higher risk types of entrepreneurial ventures. Such individuals will be relatively more sensitive to the impact of trust in government as they will be more likely to rely more heavily on external financing, contracts and intellectual property protection. Due to their better career prospects, they will also be more sensitive to the impacts of loss of reputation if their venture should fail.

Hypothesis 3: Increased trust in government will be associated with a stronger increase in entrepreneurial intentions among STEM majors in top universities relative to those in lower tier universities.

3. The Context

3.1 The impeachment of the President

Park Geun-hye became South Korea's first female president in February 2013. One of Park's appeals was her image as a clean leader. Almost all previous South Korean presidents or their direct family members had been involved in some form of bribery or influence peddling and were jailed. Park was never married; both of her parents were assassinated decades ago; and, other than an estranged brother, she had no close family. However, her governing style turned out to be quite reclusive, and she tended to hire and consult with only a small number of people (Doucette 2017; Kim, H. 2017). Her presidency experienced a major crisis when more than 300 people, mostly young students, died while the nation helplessly watched the ferry sink live on TV in April 2014. Park made her first appearance after seven hours of the sinking, and people wondered how she could have let such disaster unfold in front of everyone's eyes (Fermin-Robbins 2018). Her popularity declined substantially.

In September 2016, news broke about the influence of Choi Soon-sil, Park's long-time friend, who had no official governmental position, over Park. Several news media reported that Choi had access to confidential government documents and information. Evidence that Choi edited and provided feedback on presidential addresses emerged. Continued news investigation found that Choi established several foundations through which she yielded political and financial influence. Taking advantage of her close ties with Park, Choi requested donations from major conglomerates to fund foundation activities. Choi's foundations used those funds to buy horses and fund her daughter's equestrian activities. Park was accused of being involved in this process,

as she met with many of the conglomerate owners around the same time. Furthermore, it was revealed that Choi used her influence not only to send her daughter to a prestigious women's university, but also to reprimand a professor who gave her daughter low grades due to poor attendance and performance. Many people were shocked and infuriated that someone with no official government position could hold so much political and financial influence. In late October 2016, Park publicly acknowledged her close ties with Choi, and her approval ratings fell to an all-time low of 5 percent (Harris 2017; Fendos 2017).

The public eventually took to the streets, and on October 29, 2016, the first candlelight protest demanding Park's resignation was held in downtown Seoul. The candlelight protests became a weekly event and grew larger by the week, with crowd estimates ranging from 0.5 to 1.5 million in the late November protests (Campbell 2018). Park eventually offered to resign as president on November 12, 2016, and to let the National Assembly decide when she should step down to ensure an orderly transfer of power (Choi 2016). However, many considered Park's offer of resignation as an easy way out to avoid impeachment. Thus, the candlelight protests continued to grow into December of 2016, when the opposition party submitted the "President impeachment proposal" to the National Assembly for violations of the constitution and the law. Six days later, the National Assembly voted 234 to 56 to impeach President Park, and she was immediately suspended from her executive powers. The Constitutional Court then had six months to decide on a ruling. The Court's ruling was televised live on all major TV and cable stations and was streamed live on media websites. The Court first announced that Park's actions violated the constitution and the law and that the benefits of dismissing her were overwhelming. It then ruled for Park's impeachment with a unanimous 8-0 vote. As many of the Constitutional Court Justices held conservative and right-of-center views, the unanimity of the vote came as a surprise.

3.2 Impeachment and the incentives to pursue entrepreneurship

How might have the impeachment rulings affected people's incentive to pursue entrepreneurship, especially talented individuals? To South Koreans, the scandal surrounding Park and Choi was a flashback of corruption at the highest political office. Almost all previous South Korean presidents or their direct family members had been involved in some form of bribery or influence peddling and were jailed. In previous cases it was the conservative (liberal)

administration that succeed the previous liberal (conservative) administration that prosecuted and imprisoned the presidents. It was political revenge that took corruption down, and as such the cycle of corruption and revenge continued as trust in institutions diminished.

However, the impeachment of Park exemplified how the people's demand could directly punish and take down corrupt leaders, and hence could have ultimately increased people's trust in government. Moreover, the impeachment was a punishment for rent-seeking activities and installed beliefs that outright rent-seeking and extortion would no longer be accepted in future governments. This would increase trust in the government and would the expected returns for entrepreneurs. Moreover, as Baumol (1991) and Murphy et al. (1991), point out, if the returns to rent-seeking goes down, talented people would move away from those activities, and move towards to more productive entrepreneurship.

4. Data and key variables

4.1. The pre and post impeachment surveys

We conducted two online surveys in South Korea. The first survey was conducted between March 1 and March 7, 2017, shortly before the constitutional court's ruling on March 10, 2017. The post-impeachment survey was conducted between April 3 and April 7, 2017. The survey firm we used maintains a pool of panelists, and we randomly sampled 2,000 individuals across four age groups (20s, 30s, 40s, and 50s) and additionally sampled 1,000 college students. We oversample college students to better examine the entrepreneurial intent of people entering the job market. After excluding respondents who did not complete either survey or completed in a time too short to be reliable, we end up with a panel of 2,749 respondents. The Appendix provides more detail on the survey implementation. Table 1 presents the summary statistics. We discuss the key variables below. A growing literature use online survey companies such as Amazon Mechanical Turk and SurveyMonkey to recruit survey panelists. Though the respondents from these types of online surveys are not necessarily representative of the population, they do provide a sample that can target a specific subset of the population based on the research question, which in our case was to examine entrepreneurial intent of those soon to enter the labor market and those currently active in the workforce. In Appendix Table 1 we compare some basic characteristics of our sample relative to the South Korea's Economic Activity Population Census. Males comprise slightly over half of our sample at 50.21%. This is

slightly lower than the 57.5% of the economic census. Individuals with at least a college degree are more represented in our sample than the general population, and in terms of geography respondents in Seoul are over represented, but the rest of the respondents are similarly distributed across the other regions with the census data.

4.2. Change in trust in the government and institutions

In both surveys, we ask people to rate their trust in government and various institutions in a 1 to 7 scale, where 1 indicates “do not trust at all” and 7 indicates “fully trust.” Figure 1 presents the distribution of people’s trust in government from both surveys. The distributions are both skewed to the right, indicating that people are generally distrustful of the government. However, trust in government increases post-impeachment as the distribution shifts to the right. The mean change in people’s trust in government is positive at about 0.33 and is statistically significant. Figure 2 presents the average and standard deviation of people’s change in trust in government, and various other institutions. People’s trust increased in almost all institutions with the largest increase in the courts followed by the government. Trust in politicians and prosecutors increased significantly as well. Institutions that were directly involved in the impeachment process gained more trust. There were no significant change in trust for civil servants and significant but small positive changes for the media, law enforcement, and conglomerates.

4.3. Entrepreneurial intent

We measure entrepreneurial intent by asking each respondent the likelihood that he or she would start a business in 5 years. I ask them to choose a response from 0 to 100 percent in 10 percent increments. The average was 31.34% in the pre-impeachment survey. The mean difference between the post and pre impeachment survey is -0.27 % point and is not significantly different from zero. At an aggregate level, the impeachment seemed to have had no effect on changing people’s entrepreneurial intents. However, as we show later there is substantial heterogeneity in the change in entrepreneurial intent based on one’s change in trust in government.

4.4. Education, college and major

We collect detailed information on the respondent's education level. We first ask the education level across 7 categories: less than high school, graduated high school, attend a 2 year college, graduated a 2 year college, attend a 4 year college, graduated a 4 year college, and graduate school or above. If one selects college or above, we ask the name of the institution and major. We then create dummy variables that indicate whether one attended or was attending a top 7, top 10, and top 30 university using university rankings based on the Times Higher Education Rankings averages over three years (2015 to 2017). Appendix Table 2 presents the rankings. 9% of the respondents graduated from or was attending a top 7 university, and 30% a top 30 university. We also categorize the major. We examine all the major listed in the survey and categorize the majors into 7 categories: Engineering/Science (STEM), Business, Law, Medicine, Education, Arts/Sports, and Humanities and Social Sciences. Humanities and Social Sciences majors comprise 39% of the sample followed by Engineering and Science majors at 31%, Business majors at 15%, Arts/Sports at 6%, Medicine at 5%, Education at 3% and Law at 1%.

4.5. Other controls variables

Other control variables are as follows. Respondent region was selected across the 12 provinces or province level cities. Respondents selected their own or household (if still a student) income level across 9 income bins. Employment status was defined as employed, self-employed, unemployed looking for work, or unemployed not looking for work. We ask where one lies along the liberal-conservative political spectrum, where 1 is "Very liberal" and 7 is "Very conservative." Individual risk preference was based on the answer to a question that asks where the respondent's life views lie along a scale from 1 to 10, where 1 is "I tend to avoid risk and choose the most safe options" and 10 is "I appreciate risk and challenges."

5. Results

5.1. Trust in government and entrepreneurial intent

Before examining the relationship between trust in government and entrepreneurial intent, we first examine whether our measurement of individual change in trust in government was indeed induced by the impeachment ruling. This is quite likely given the short time horizon between the pre and post impeachment surveys and that impeachment was the only major event between the

two surveys. Nonetheless, we empirically examine this in Table 2. We test whether the individual level change in trust in the government is consistent with one's belief that impeachment changed overall trust in society. In the post-impeachment survey we ask the degree to which each respondent believes that impeachment improved overall trust in the society in 1 to 7 scale. Table 2 column (3), which includes the full set of control variables, indicates that this measure and the individual change in trust in government is very strongly correlated, and the is robust to additionally controlling for one's preference for impeachment in the pre-impeachment survey (column (4)), and one's initial trust in the government (column (5)).

Table 3 presents the relationship between change in trust in various institutions and entrepreneurial intent. Column (1) presents the simple bivariate relation and indicates that a 1% point increase in trust in government is related to about a 2% point increase in entrepreneurial intent within 5 years. In column (2) and onwards, we control for a rich set of individual characteristics using fixed effects for political beliefs, gender, birth year, education level, region, income level, and employment status. Column (3) additionally includes the initial, i.e., the pre-impeachment probability of starting a business within 5 years. Column (4) additionally controls for the respondent's risk preference. Even with all these controls trust in government is significantly and positively related to entrepreneurial intent ($\beta=1.642$, $s.e.=0.416$).

Is the significant relationship between entrepreneurial intent and trust in government due to more general trust in institutions or specifically to that of government? In column (5) we include changes in trust in politicians, civil servants, and the courts. Recall that trust in the courts increased the most as the judiciary was in charge of adjudicating the impeachment ruling. Trusts across these institutions are correlated and hence it would be expected that the coefficient estimate on trust in government would decrease in magnitude. Indeed the estimate decreases to 0.931 but is nonetheless marginally significant with a standard error of 0.53. However, none of the estimates on trust in the other institutions are significant. In column (6) we additionally include trusts in the prosecutor and the police, and in column (7) trusts in the media and conglomerates. The estimate on trust in government is very stable across these specifications and none of the other estimates are significant. Table 3 indicates that trust in government is strongly related to people's intention to become entrepreneurs and empirically supports our first hypothesis.

5.2. Trust in government and the entrepreneurial intent of talent

We next examine how the relationship between trust in government and entrepreneurial intent varies by major and university in Table 4. In column (1) we examine whether the relationship differs for STEM majors. The change in entrepreneurial intent on average is lower for STEM majors.. However, as the interaction term indicates there is no significant difference between trust in government and entrepreneurial intent for STEM majors. In columns (2) to (4) we examine whether the relationship differs for top university students. There is no significant difference in the change in entrepreneurial intent between those who attend(ed) a top university or not. None of the interaction terms are statistically significant as well, which indicates that the relationship between trust in government and entrepreneurial intent is also not different between individuals from a top university or not.

However, the specification in column (1) does not differentiate between STEM majors from top universities and non-top universities and the specifications in columns (2) to (3) do not differentiate between top university students of STEM majors and non-STEM majors. However, the perceived costs of entrepreneurship could differ for STEM majors from top universities. For instance, STEM majors from top universities are considerably more likely to be hired in leading technology firms or conglomerate of South Korea, and hence the opportunity cost for entrepreneurship is likely higher for them.

To better get at such differential effects we next examine whether the relationship between trust in government and entrepreneurial intent is different for STEM majors from top universities or put differently, for top universities students with STEM majors). This effect is captured by the estimate on the triple interaction term, the STEM major dummy*the top 7 university dummy*change in trust in government, in column (5). The coefficient estimate is large and significant at 7.127 with a standard error of 3.182. The estimate implies that a 1% increase in trust in government results in 7.127% point higher entrepreneurial intent for STEM majors in top universities relative to other majors in those universities. The estimate also implies that a 1% increase in trust in government results in 7.127% point higher entrepreneurial intent for STEM majors in top 7 universities relative to STEM majors in non-top 7 universities. The estimate on the triple interaction term decreases in magnitude as we expand the number of top universities but remains significant at the 10 percent level. The results in Table 5 indicates that

the positive effect trust in government has on entrepreneurial intent is centered around STEM majors in top universities, and empirically supports Hypotheses 2 and 3.

5.3. Sensitivity of results based on major

Next, we examine whether the relationship in Table 4 is unique for STEM majors. Table 5 presents the results from Table 4 column (5) but for the different majors. Similar to Table 4, we are primarily interested in the coefficient estimate on the triple interaction term. The coefficient estimates on the triple interaction terms for business, law, and medicine majors are not significant. However, the estimate for humanities and social sciences majors is negative and significant. The estimate is also negative for arts and sports majors though marginally significant at the 10% level. Since each estimate is relative to all the other majors in the top 7 universities, the negative estimate could be driven by the positive estimate for STEM majors. The estimate is positive for education majors and marginally significant at the 10% level. Moreover, the cell sizes for education majors and arts and sports majors are already small and interacting those majors with the top 7 university dummy return a very small set of observations. Overall, Table 4 and 5 together indicate that STEM majors from top universities are the ones who exhibit a significant positive differential relationship between trust in government and entrepreneurial intent.

5.4. Robustness checks

Finally, we present additional results and robustness checks. We first examine whether our core findings are more pronounced for the young. In particular, we separately examine those in their 20s, that is those who are not yet in the labor market or early in their careers. This population may be more likely to consider entrepreneurship, relative to the older people who have built careers and established families and find entrepreneurship more risky. This could especially be the case in societies like South Korea where labor market mobility for mid-career workers are relatively low. Table 6 column (1) presents the results. Indeed the estimate on the triple interaction term is large and statistically significant at 10.87 with a standard error of 4.56. This is considerably larger in magnitude than what we found in the full sample result of Table 4 column (5). Moreover, when we examine the rest of the sample (column (2)), that is, 30 years old or older, we do not find any significant effect.

One concern may be that the corruption scandal between Park and the large businesses in Korea created an environment that rendered people to lose interest in working at large businesses. In other words, the results of our findings could be driven by people's decline in preference for working in large businesses rather than the increase in trust in government. To examine this we examine how people's job preferences for large companies changed. We asked what people's most preferred job would be in both surveys. In columns (3) and (4), we examine how the share of people who indicated that large business are their most preferred job changed pre and post impeachment. The triple interaction terms are not statistically significant and if any the estimates are positive. On the other hand, if we examine how the share of people who indicated that civil servants or teachers were their most preferred job changed between the two surveys (columns (5) and (6)), we find that the triple interaction terms are negative and statistically significant for the younger respondents. This indicates that there is a negative relationship between trust in government and preference for civil servant and teacher jobs among STEM majors in top universities. Hence, our core results are unlikely to be driven by potentially productive entrepreneurs becoming uninterested in large businesses but rather them becoming less interested in South Korea's most coveted and safe jobs - civil servants and teachers.

6. Discussion and Conclusion

Recent surveys suggest that society's trust in business, government and public institutions are at historic lows (Edelman 2014). Numerous significant events have unsettled individuals' trust in society's institutions and organizations. Even before the 2008 financial crisis, the failure of credit rating agencies, and the bailout of failing banks, over time trust has been further eroded by further failures among regulators and governments, including scandals around Enron, AIG, LIBOR, Fannie Mae and Freddie Mac, FAA and the Boeing 737, the U.S. Veteran's administration, among a multitude of other, more recent examples. Prior work shows that a loss of trust is troubling for organizations since trust supports effective stakeholder relationships, transactions and market participation, as well as organizational development and effectiveness (e.g., Dirks & Ferrin, 2001; Dyer & Chu, 2003; Fukuyama, 1995). However, does this loss of trust have implications for new organizations and in particular for the key driver of dynamism in the economy – entrepreneurship?

Whether entrepreneurship generates economic growth depends on the mix of productive and unproductive entrepreneurship in the economy. The incentive structure embedded in each society affects whether talented people become entrepreneurs and whether they engage in productive or unproductive, i.e., rent-seeking, entrepreneurship. We examine how trust in institutions, in particular, trust in the government, affects the entrepreneurial intentions of potentially productive entrepreneurs. We utilize the unique event surrounding the impeachment of South Korea's previous president. The event improved people's trust in the government since it was ultimately the people's protests and demands that led to the impeachment of the president for influence peddling and extracting personal rents from businesses. By surveying the same individuals before and after the impeachment ruling, we identify people's changes in trust in the government and various institutions. We find that increased trust increases one's intent to start a business within five years. Moreover, we show that the relationship between trust in the government and entrepreneurial intention is significantly stronger for engineering majors from top universities.

Contributions to Institutional Theory

Institutions play an important part in determining economic activity and growth in society (Murphy, Shleifer and Vishny 1991; Acemoglu, Johnson and Robinson 2002; Russo, M.V. 2001). Previous research at the intersection of institutions and entrepreneurship has demonstrated the role that institutional change plays in shaping not only the rate (Klapper, Amit and Guillen 2010; Klapper, Laeven and Rajan 2006; Kerr and Nanda. 2009), but also the quality of entrepreneurship in the economy (Eesley, Eberhart, Cheng, Skousen, 2018; Hiatt, Sine & Tolbert 2009; Sine and David 2003). Institutional theorists have helped our understanding of the micro-level processes of institutional change (Colyvas 2007; Colyvas and Powell 2006; Colyvas & Maroulis 2015). Subsequently, recent work shows that certain institutional changes have been shown to shift the type of entrepreneurship towards more innovative ventures (Huang, Geng, & Wang 2017; Kenney and Patton. 2009). Prior literature has shown that sufficiently lowering institutional barriers to growth (Eesley 2016) and barriers to failure (Eberhart, Eesley, Eisenhardt, 2017) can increase the likelihood of higher human capital individuals starting firms. Understanding what factors encourage such individuals to found firms may result in more productive forms of entrepreneurship (Baumol 1990) and potentially higher rates of economic

growth (Murphy, Shleifer, and Vishny 1991). Yet, thus far, to our knowledge, the role of trust in institutions has largely been ignored in this line of scholarship.

While prior work has conceptualized institutional trust, as a macro-level analogy to individual level, interpersonal trust (Bachmann and Inkpen 2011; Bachmann, Gillespie and Priem 2015; Shapiro 1987), relatively little empirical work has been done to test the consequences of changes in institutional trust for organizations. We know from prior, foundational work that the levels of trust in government are not uniform and are subject to changes over time and across settings, yet trust is vital for economic exchange and the functioning of organization (Zucker, 1986; 1987). Since trust is particularly important when risk and interdependence are considered (Rousseau et al., 1998; Stewart, 2004), we contribute to this literature by theorizing why changes in institutional trust have implications for entrepreneurial behaviors (and for individuals with different types of human capital). Further, we argue and show that these effects are not merely effects of regulatory institutions themselves (contract enforcement, judicial institutions, etc.). In demonstrating these impacts of institutional trust, we also respond to a recent call in the literature for more work on how informal institutions influence entrepreneurial behavior and the interactions with formal, regulatory institutions (Eesley, Eberhart, Cheng, Skousen, 2018).

Entrepreneurship literature, on the other hand, has recently begun to focus more on how entrepreneurs with awareness of their changing environments can strategically make use of aspects of the institutional environment such as intermediaries to gain access to resources (Armanios, & Eesley, Li & Eisenhardt 2017; Dutt et al. 2016; Marquis and Raynard. 2015). Particularly when institutions are under-developed or changing, such strategies appear vital (Mair, Marti, & Ventresca. 2012; McDermott, Corredoira, & Kruse. 2009; Spicer, McDermott, Kogut 2000; Washington, & Ventresca 2004). This work has built on a longer tradition of influential theory and empirical work on how the social environment, including certification and social influence affects entrepreneurship (Kacperczyk 2013; Lanahan and Armanios. 2018; Lee Hiatt & Lounsbury 2017; Lerner & Malmendier 2013). However, others have focus on the impact of human capital development, yet abstracting away from the broader institutional environment (Lazear 2004). Nonetheless, increasingly, entrepreneurship research has been showing that many of the effects of education and human capital are not uniform across the population but depend on the institutional and cultural background of the individual and the

interaction with the current environment in complex ways (Lee and Eesley 2018). Thus, while these literatures have historically developed separately, there is a need to bring them more closely together and consider more fully the relationship between institutional environments and individual characteristics in shaping behaviors. Particularly when many, if not most of the formal regulatory initiatives to spur entrepreneurship are seen to have largely been unsuccessful (Lerner 2009), there is a strong need to explore alternatives, especially those rooted in insights about informal, non-regulatory institutional effects.

Institutions are commonly perceived as slow changing. However, this is not necessarily so as recent world events attest to. Political scandals or corruption can easily undermine the trust people have in their government. Bold corrective actions to fight corruption can increase people's trust in government as well. If such major political events that alter people's trust in government can affect the mix of productive entrepreneurship, such events could have subsequent implication for economic growth as well.

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Figure 1. Trust in the government

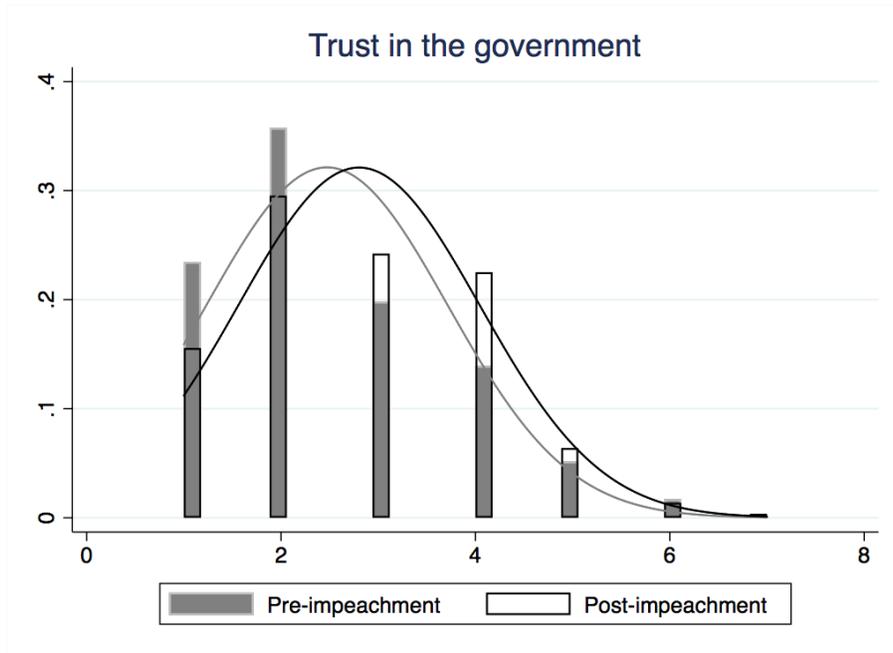
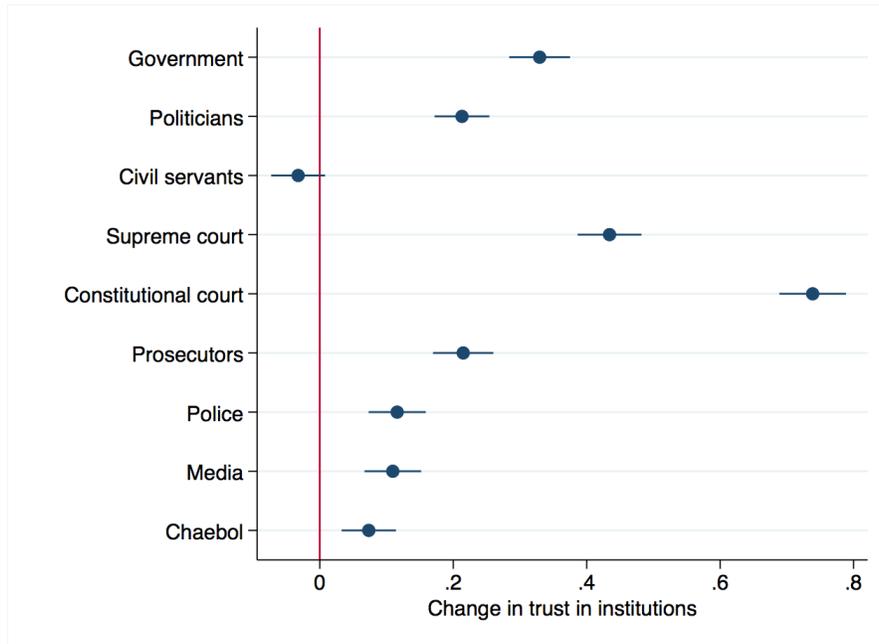


Figure 2. Change in trust in institutions



Notes: The dot represents the average of the change in people's trust in each institution and the bar indicates the 95% confidence intervals.

Table 1. Summary statistics

Variable	Mean	Std. Dev.	Min	Max	Obs
Change in the probability of starting a business within 5 years	-0.27	21.29	-100	100	2,749
Probability of starting a business within 5 years	31.34	27.70	0	100	2,749
Change in trust in the government	0.00	0.99	-4.33	4.61	2,749
Graduated/Attend a top 7 university	0.09	0.28	0	1	2,749
Graduated/Attend a top 10 university	0.11	0.31	0	1	2,749
Graduated/Attend a top 30 university	0.30	0.46	0	1	2,749
Engineering/Science major	0.31	0.46	0	1	2,749
Business major	0.15	0.35	0	1	2,749
Law major	0.01	0.10	0	1	2,749
Medicine major	0.05	0.21	0	1	2,749
Education major	0.03	0.18	0	1	2,749
Arts/Sports major	0.06	0.23	0	1	2,749
Humanities and Social Science major	0.39	0.49	0	1	2,749
Female	0.50	0.50	0	1	2,749
Age	35.09	11.85	20	59	2,749
Political spectrum	3.58	1.15	1	7	2,749

Table 2. Impeachment and the change in trust in the government

	(1)	(2)	(3)	(4)	(5)
	Change in the trust in the government				
Impeachment improved overall trust in society (post-impeachment survey)	0.123*** (0.0174)	0.119*** (0.0173)	0.112*** (0.0177)	0.0797*** (0.0191)	0.0638*** (0.0164)
The president should be impeached (pre-impeachment survey)				0.392*** (0.0906)	0.0320 (0.0777)
Initial trust in the government					-0.406*** (0.0150)
Political belief fixed effect	No	No	Yes	Yes	Yes
Gender fixed effect	No	Yes	Yes	Yes	Yes
Age fixed effect	No	Yes	Yes	Yes	Yes
Region fixed effect	No	Yes	Yes	Yes	Yes
Employment status fixed effect	No	Yes	Yes	Yes	Yes
Education level fixed effect	No	Yes	Yes	Yes	Yes
Income level fixed effect	No	Yes	Yes	Yes	Yes
R-squared	0.023	0.053	0.054	0.062	0.278

Notes: Number of observations is 2,749. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3. Change in the perception of institutions and entrepreneurial intentions

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Change in the probability of starting a business within 5 years						
Change in the trust in the government	1.968*** (0.448)	1.903*** (0.452)	1.664*** (0.416)	1.642*** (0.416)	0.931* (0.530)	0.933* (0.533)	0.918* (0.535)
Change in the trust in politicians					0.661 (0.527)	0.697 (0.530)	0.671 (0.534)
Change in the trust in civil servants					0.463 (0.474)	0.387 (0.481)	0.393 (0.490)
Change in the trust in the courts					0.444 (0.528)	0.502 (0.582)	0.544 (0.587)
Change in the trust in the prosecutor						-0.626 (0.530)	-0.689 (0.536)
Change in the trust in the police						0.705 (0.545)	0.564 (0.559)
Change in the trust in the media							-0.192 (0.466)
Change in the trust in chaebols							0.485 (0.501)
Initial probability of starting a business within 5 years			-0.297*** (0.0155)	-0.310*** (0.0164)	-0.312*** (0.0165)	-0.312*** (0.0165)	-0.312*** (0.0165)
Risk preference				1.550*** (0.551)	1.581*** (0.553)	1.596*** (0.554)	1.599*** (0.554)
Base controls	No	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.008	0.047	0.176	0.178	0.180	0.181	0.181

Notes: Base controls includes political beliefs fixed effects, gender fixed effect, age fixed effects, region fixed effects, employment status fixed effects, education level fixed effects, and income level fixed effects. Number of observations is 2,749. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4. Change in trust and the allocation of talent to entrepreneurship

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Change in the probability of starting a business within 5 years						
Change in the trust in the government	1.516*** (0.487)	1.569*** (0.429)	1.616*** (0.434)	1.752*** (0.473)	1.595*** (0.502)	1.635*** (0.507)	1.925*** (0.539)
STEM major	-1.791** (0.877)				-1.715* (0.924)	-1.692* (0.936)	-2.252** (1.101)
Change in the trust in the government x STEM major	0.389 (0.933)				-0.111 (0.965)	-0.0988 (0.973)	-0.615 (1.104)
Graduated/Attend a top 7 university		0.940 (1.453)			1.197 (1.876)		
Change in the trust in the government x Graduated/Attend a top R university		1.077 (1.690)			-1.119 (1.934)		
Graduated/Attend a top107 university			-0.0187 (1.303)			0.198 (1.644)	
Change in the trust in the government x Graduated/Attend a top 10 university			0.291 (1.475)			-1.301 (1.686)	
Graduated/Attend a top 30 university				0.0763 (0.912)			-0.313 (1.135)
Change in the trust in the government x Graduated/Attend a top30 university				-0.431 (0.978)			-1.599 (1.201)
STEM major x Graduated/Attend a top 7 university					-0.822 (2.730)		
Change in the trust in the government x STEM major x Top 7 University					7.127** (3.182)		
STEM major x Graduated/Attend a top 10 university						-0.950 (2.454)	
Change in the trust in the government x STEM major x Top 10 University						5.806* (2.991)	
STEM major x Graduated/Attend a top 30 university							1.384 (1.769)
Change in the trust in the government x STEM major x Top 30 University							3.764* (2.061)
Initial entrepreneurship intention	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Risk preference	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Base controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,749	2,749	2,749	2,749	2,749	2,749	2,749
R-squared	0.180	0.178	0.178	0.178	0.181	0.181	0.181

Notes: Base controls include political beliefs fixed effects, gender fixed effect, age fixed effects, region fixed effects, employment status fixed effects, education level fixed effects, and income level fixed effects. Number of observations is 2,749. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5. Sensitivity of results based on major

	(1)	(2)	(3)	(4)	(5)	(6)
	Change in the probability of starting a business within 5 years					
	Major = Business	Major = Law	Major = Medicine	Major = Education	Major = Arts/Sports	Major = Humanities/ Social Sciences
Change in the trust in the government	1.572*** (0.466)	1.593*** (0.433)	1.598*** (0.439)	1.633*** (0.438)	1.420*** (0.431)	1.602*** (0.590)
Graduated/Attend a top 7 university	0.741 (1.592)	0.761 (1.465)	0.654 (1.488)	0.599 (1.472)	1.278 (1.443)	1.388 (1.711)
Change in the trust in the government x Graduated/Attend a top 7 university	1.312 (2.035)	1.060 (1.697)	1.347 (1.730)	0.634 (1.739)	1.447 (1.704)	2.637 (1.973)
Major	3.234*** (1.157)	-1.459 (3.234)	0.566 (1.665)	-0.296 (2.474)	5.025*** (1.669)	-1.808** (0.885)
Change in the trust in the government x Major	-0.0739 (1.185)	-2.800 (2.511)	-0.696 (2.178)	-1.575 (2.285)	2.408 (1.860)	-0.0370 (0.857)
Major x Graduated/Attend a top 7 university	0.324 (3.528)	14.81* (8.583)	4.966 (5.742)	8.695 (6.883)	-21.37 (20.39)	-2.416 (2.981)
Change in the trust in the government x Major x Top 7 University	-0.730 (3.595)	3.491 (16.11)	-3.832 (7.674)	9.815* (5.571)	-28.15* (16.84)	-6.723** (3.425)
Initial entrepreneurship intention	Yes	Yes	Yes	Yes	Yes	Yes
Risk preference	Yes	Yes	Yes	Yes	Yes	Yes
Base controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,749	2,749	2,749	2,749	2,749	2,749
R-squared	0.181	0.179	0.179	0.180	0.183	0.181

Notes: Base controls include political beliefs fixed effects, gender fixed effect, age fixed effects, region fixed effects, employment status fixed effects, education level fixed effects, and income level fixed effects. Number of observations is 2,749. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6. Robustness tests

	(1)	(2)	(3)	(4)	(5)	(6)
	Change in "Most preferred job is"					
	<u>Work for large business</u>			<u>Civil servant or teacher</u>		
	Age 20s only	Age above 30	Full sample	Age 20s only	Full sample	Age 20s only
Change in the trust in the government	1.647** (0.813)	1.610** (0.647)	0.00317 (0.00844)	-0.00565 (0.0145)	0.00900 (0.0132)	0.00382 (0.0186)
Engineering/Science major	-1.564 (1.198)	-2.112 (1.450)	-0.00604 (0.0182)	-0.0196 (0.0300)	-0.0223 (0.0238)	-0.0291 (0.0315)
Graduated/Attend a top 7 university	0.253 (2.692)	1.245 (2.575)	-0.0103 (0.0365)	-0.00382 (0.0700)	-0.0268 (0.0497)	-0.0351 (0.0654)
Change in the trust in the government x Engineering/Science major	-1.532 (1.300)	0.948 (1.462)	-0.0308* (0.0181)	-0.0320 (0.0307)	-0.00611 (0.0219)	-0.0341 (0.0295)
Change in the trust in the government x Graduated/Attend a top 7 university	-4.237 (3.023)	0.712 (2.669)	0.0112 (0.0461)	-0.0484 (0.0796)	0.0213 (0.0594)	0.118 (0.0775)
Engineering/Science major x Graduated/Attend a top 7 university	3.070 (3.809)	-3.742 (3.841)	-0.0595 (0.0579)	-0.0553 (0.101)	0.0484 (0.0718)	0.0385 (0.0960)
Change in the trust in the government x Engineering/Science major x Top 7 University	10.87** (4.559)	4.368 (4.537)	0.0827 (0.0815)	0.0986 (0.111)	-0.123 (0.0911)	-0.259** (0.117)
Initial entrepreneurship intention	Yes	Yes	Yes	Yes	Yes	Yes
Risk preference	Yes	Yes	Yes	Yes	Yes	Yes
Base controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,266	1,482	2,749	1,266	2,749	1,266
R-squared	0.192	0.192	0.032	0.043	0.034	0.043

Notes: Base controls include political beliefs fixed effects, gender fixed effect, age fixed effects, region fixed effects, employment status fixed effects, education level fixed effects, and income level fixed effects. Number of observations is 2,749. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix

Survey implementation

We used the marketing and survey company Macromill-Embrain, a Korean affiliate of Macromill Inc., a multinational marketing survey, to conduct both the pre and post impeachment survey. The pre-impeachment survey was conducted between March 1 and March 7, 2017, which was shortly before the constitutional court's ruling on March 10, 2017. The sample was randomly targeted across four age group categories (20s, 30s, 40s, and 50s) and additionally sampled college students, since the latter are more likely to use social media. The initial survey sample was contacted by email to participate in the web-based survey on personal computers. In cases respondents did not participate, another email was sent out after three to four days. The target size for the first survey was 3,000 people with 3,114 ultimately participating in the first survey.

We survey the same respondents after the impeachment ruling. The post-impeachment survey was conducted between April 3 and April 7, 2017. As before email invitations were sent out but additional encouragements were made through text messages. Participants accrue points by participating in the firm's various surveys, and they can later use the accrued points to exchange for cash or use for online purchases. Compensation is set by the expected time of completion and translates to about 100 KRW (approximately 10 US cents) per minute. The survey firm's expected time for completion was between 6 and 7 minutes. The median time for actual completion was 7 minutes and 44 seconds. After surveys that were incomplete or had implausibly short response times were excluded, we ended up with a panel of 2,749 people that fully responded to both surveys.

Appendix Table 1. Comparison of basic characteristics

	Our sample	Economic Activity Population Census (2017.5)
Male	50.21%	57.5%
College degree or above	65.09%	45.8%
Seoul	32.3%	19.3%
Busan	6.1%	6.4%
Daegu	5.8%	4.6%
Inchon	6.6%	5.8%
Gwangju	3.0%	2.8%
Daejeon	3.9%	2.8%
Ulsan	1.5%	2.2%
Gyeonggi-do	23.9%	24.9%
Gangwon-do	2.1%	3.0%
Chungchungbuk-do	1.9%	3.2%
Chungchungnam-do	2.5%	4.8%
Chollabuk-do	2.7%	3.5%
Chollanam-do	1.3%	3.6%
Gyeongsangbuk-do	3.0%	5.4%
Gyeongsangnam-do	2.7%	6.4%
Jeju-do	0.6%	1.4%

Appendix Table 2. Ranking of universities

Rank	University
1	Seoul National University
2	Korea Advanced Institute of Science and Technology
3	Pohang Univeristy of Science and Technology
4	Korea University
5	Yonsei University
6	Sungkyunkwan University
7	Hanyang University
8	Kyung Hee University
9	Ewha Women's University
10	Sogang University
11	Chung-Ang University
12	Busan Univesity
13	Hankuk University of Foreign
14	Dongkuk University
15	Chonbuk University
16	Catholoic University
17	Inha Univesity
18	Kyungbuk University
19	University of Seoul
20	Ajou University
21	Chonnam University
22	University of Ulsan
23	Chungnam University
24	Hallym University
25	Dankuk University
26	Konkuk University
27	Gwangju Institute of Science and Technology
28	Sejong University
29	Youngnam University
30	Seoul National University of Science and Technology

Note: Rankings are based on the average of Times Higher Education World Rankings from 2015, 2016, and 2017.