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When massified higher education meets shrinking birth rates: the case of South Korea

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Abstract
Most discussions of higher education research in the last four decades have focused on expanding higher education, including increasing access, equity, and quality. However, the growth of higher education enrolment has slowed in many advanced higher education systems since the achievement of massification, with enrolment declining more dramatically in some systems than in others. South Korea (hereafter Korea), which has experienced one of the most dynamic evolutions in higher education, was recently reported to have the lowest birth rate among OECD countries, and its drastic demographic changes are significantly affecting all aspects of higher education. This paper describes Korea's shrinking youth population and its impact on different stakeholders in Korean higher education. It also reviews and evaluates Korea's policies in reaction to the declining population in higher education. The findings of this paper provide policy implications for countries that will experience similar challenges associated with declining enrolment in the years to come, including institutional closures, mergers, and strategies to maintain competitiveness.

Keywords Massification · Birth rate · Demographic cliff · University closure · University merger · University quota · South Korea

Introduction

In the last decade, a popular newspaper headline in South Korea (hereafter Korea) has been 'Universities will be bankrupt in the order of cities of blooming cherry blossoms' (Hong, 2021). Every year, cherry blossoms begin flowering in the south, a relatively warm area of the Korean peninsula, and move north. This headline reveals social concerns about university closures in Korea, which have already started to occur due to declining enrolment. Universities in the southern part of the Korean peninsula, located in relatively small, isolated, and distant regions from Seoul (the country's capital), have struggled to attract students and maintain their operations. Eighteen higher education institutions have closed down since 2000, mostly small private institutions in medium-sized or small cities (Ministry

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of Education (MOE), 2021). Many other institutions have merged or are scheduled to be merged in the coming years (Korean Council for University Education (KCNU), 2022).

The main cause of declining enrolment in higher education in Korea is the shrinking birth rates. According to Statistics Korea (2021), there were 715,000 births in 1995, 435,000 in 2005, and only 270,200 in 2020. Every ten years during this period, the number of births decreased by almost 200,000, dropping to one-third of the original number over 25 years. The number of vacancies in higher education institutions has already exceeded the size of the college enrolment age group (18 to 21 years old) in Korea. In 2021, enrolment as a percentage of targets was 94.9 percent for four-year universities and 84.4 percent for technical colleges; more than 40,000 seats were unmet nationwide (KEDI, 2022). The enrolment projections for upcoming years are even more daunting. Based on the 2019 quotas, unmet vacancies are projected to be more than 100,000 in 2024, and 10 percent of universities in the country will have less than 50 percent of their target enrolment (Cho, 2021; Seo, 2020).

Universities with significantly low enrolment rates may face the threat of closure or merger, as universities without students cannot conduct business as usual. Declining enrolment affects several aspects of the higher education sector, including students, academics, university management, and the local community. More specifically, a lack of enrolment imposes budget constraints on institutions, affecting the quality of teaching and research. The job security of staff comes under threat. In addition, towns whose local economies are tied to colleges lose economic vitality because of reduced housing, the closure of small businesses, and decreasing property value (Drozdowski, 2023). The Korean case shows that the impact of declining enrolment is more serious in some institutions and regions than in others. For example, enrolment in two- to three-year technical colleges has decreased by 26.9 per cent, whereas the decrease is 8.6 percent among four-year universities in 2021. In addition, 96 percent of colleges that did not meet their target number are small institutions with fewer than 500 students, mostly located in small cities (Cho, 2021; MOE, 2021). As enrolment has declined, the Korean government has implemented multiple policies, including restructuring higher education, implementing closures and mergers, supporting universities experiencing the enrolment crisis, and encouraging colleges to improve their competitiveness. Institutions have also developed strategies to overcome enrolment challenges, such as recruiting international or non-traditional students, developing new curricula, and collaborating with industry. Despite these diverse policies at the governmental and institutional levels, the fundamental problem caused by population shrinkage will be persistent.

Previous studies on East Asian higher education, including Korean cases, have focused largely on the massification of higher education in the region and related issues like privatisation and quality control (Mok et al., 2022; Shin, 2018). However, in a recent paper describing emerging challenges in East Asian higher education, Horta (2023) points out that the region's ageing population, combined with its extremely low fertility rate, will be the most challenging issue in the years to come, directly affecting the future labour force and the country's fiscal outlook. Yonezawa (2020) describes Japan's ageing population and projects how population change would affect the globalisation of Japanese higher education. Although trends in enrolment changes vary, the populations of nearly all countries with massified higher education systems are ageing as a result of low fertility (Christensen et al., 2009). However, there is a lack of case studies or empirical approaches in higher education research regarding demographical changes and their related issues. Based on the Korean case, this study aims to describe the current situation of higher education driven by low birth rate and declining enrolments. The study illuminates challenges and future directions by assessing the current policy responses to the enrolment crisis. Its research

questions are as follows. How has the enrolment trend in higher education changed in Korea? What are the causes and effects of declining enrolment in higher education? What policies have been implemented at the governmental and institutional levels to overcome enrolment issues?

This descriptive and explorative study delineates the current figures and policies and discusses the potential consequences of low enrolment for Korean higher education. The study is based on documents and secondary data. Document analysis is a systematic procedure for reviewing or evaluating texts, whether printed or electronic (Bowen, 2009, p.27). It is useful in providing data on a specific research context and producing rich descriptions of a phenomenon. The present study considers a wide range of documents; namely, demographic data from national and international agencies and policy documents from the government, research institutes, and higher education institutions. Some cases presented in the paper are from local newspaper articles that vividly depict the situations caused by declining higher education enrolment. Newspaper articles include stories about issues perceived to be relevant to the audience, even if a careful approach is necessary in citing newspaper articles due to the subjectivity of journalists (Harcup & O'Neill, 2017). In particular, reviewing newspaper articles is useful when there is a lack of empirical research on a topic that is a relatively new social phenomenon. All the collected data and documents were analysed using framework analysis, which is suitable for periodically reviewing and assessing policies and procedures related to specific questions (Ritchie et al., 2013; Srivastava & Thomson, 2009). Based on the literature review, the analytical framework was defined, and the set of themes and categories was used to analyse the documents.

Expansion of higher education in Korea: the desire for 'more' universities

Korean higher education is recognised worldwide as a dynamic and successful case of educational development accompanied by economic development. Rapid economic growth following the Korean War in the 1950s and social and cultural aspirations for higher education led to a steady increase in higher education enrolment (Jung, 2018; Shin, 2012). The strong desire for higher education peaked during the 1980s and 1990s, driven by the baby-boom generation born between 1955 and 1974 (Lee, 2023). Korea's rate of participation in higher education increased from below 6 percent in the 1960s to 20 percent in 1970, 33 percent in the 1990s, 68 percent in 2000, and 84 percent in 2008 (KEDI, 2007), the highest level of participation among Organisation for Economic Cooperation and Development (OECD) countries (OECD, 2021). Shin (2012) claimed that Korean higher education and economic development mutually reinforced one another during this period, as there was a growing job market for college graduates with economic growth. The government increased its investment in public funding for higher education, believing that highly educated people contribute to the national economy.

Despite the government's continuous investment, there was a lack of higher education institutions that could accommodate rising demand during the early stage of development. The government had to rely on private providers to meet the high social demand for higher education. During the 1990s, 107 universities were opened, most of them private. More than 80 percent of today's Korean higher education institutions are private, enrolling approximately 80 percent of undergraduates (Chae & Hong, 2009). The critical moment in private higher education expansion was the Presidential Committee's 1995 publication

of *Korea's Education Reform for the 21st Century*, often called the *May 31 Education Reform*. The following two policies were highlighted in the reform: the University Establishment Rules and the Deregulation of University Student Quota (Han et al., 2007). First, the University Establishment Rules encouraged private providers to open more universities by lowering the establishment criteria. They were permitted to open new universities if they met only four criteria: campus land and educational buildings, the minimum number of staff, and the minimum size of property to maintain the business. Many private foundations were actively engaged in the university business, as there was high market demand, and educational businesses helped them improve their social recognition. Second, the Korean government had a strict College Enrolment Quota Policy since 1965. The old policy limited the number of admission slots at each college and department in both public and private higher education institutions. However, by adopting the Deregulation of University Student Quota Policy in 1995; the colleges were permitted to increase admissions by 130 per cent, helping private providers to accommodate higher enrolments (Shin, 2012).

As a result, the number of higher education institutions increased steadily between 1970 and 2015, rising from 168 to 431, but there was no further increase after 2015. The increase occurred in both four-year universities and two- to three-year technical colleges. The number of institutions has decreased in recent years, especially for technical colleges. The number of students enrolled also significantly increased from 1970 to the early 2010s, increasing eight times between the 1970s and the 1990s, and doubled again by 2000. However, the number of students started dropping from 2005 in technical colleges and 2015 in the universities. During the expansion of higher education, the number of applicants was much greater than the quotas at most institutions, which could thus select students based on their merit; however, many institutions now struggle to meet their minimum quotas due to the declining number of applicants.

Private higher education institutions in Korea are operated by educational foundations on a non-profit basis. Tuition fees at private universities are higher than those at public ones as they receive significantly fewer subsidies from the government and rely heavily on tuition fees; however, they must follow the same government regulations as public universities in terms of admission, academic matters (i.e., transfer of credits, types of degrees), and institutional evaluations (Chae & Hong, 2009; Kim, 2008; Kim & Lee, 2006). Private providers have made an undeniable contribution to Korean higher education in terms of meeting social demand, which the public sector could not handle promptly. In addition, many private universities in Korea have made remarkable progress in teaching and research for the last five to six decades (Chae & Hong, 2009). Despite these significant contributions, this rapid expansion of the private sector in higher education has caused several problems in the long term. For example, Yeom (2016) criticised the rapid expansion of Korean higher education despite insufficient infrastructure support, systematised curricula, and professional staff. In addition, unlike the expectation of the market principle in the private sector generally, it became difficult to close institutions due to the multiple stakeholders and issues involved, even if they had significantly low enrolment. This explains why there has been almost no change in the number of institutions (except for technical colleges) despite the significantly declining student numbers, as Table 1 shows.

As the expansion of higher education, including in the private sector, became bloated, restructuring universities has been a top priority for the Korean government since the late 1990s. For example, the Restructuring of National Universities (1998) was implemented in 1998, and succeeding governments have also initiated policies to downsize the higher education sector by imposing strict evaluation results and limiting financial resources (Kim, 2020). Thus, the results of institutional evaluations for budgetary allocation purposes have

Table 1 Number of higher education institutions and students in Korea

	Number of institutions				Number of students			
	Total	University (4 years)	Technical college (2–3 years)	Other	Total	University (4 years)	Technical college (2–3 years)	Other
1970	168	71	65	32	201,436	146,414	33,483	21,539
1980	237	85	128	24	647,505	402,979	165,051	79,475
1990	265	107	117	41	1,691,681	1,041,166	323,825	326,690
2000	372	161	158	53	3,363,549	1,665,398	913,273	784,878
2005	419	173	158	88	3,548,728	1,859,639	853,089	836,000
2010	411	190	145	76	3,644,158	2,028,841	767,087	848,230
2015	431	192	138	101	3,608,071	2,113,293	720,466	774,312
2020	429	191	136	102	3,276,327	1,981,003	621,772	621,772
2023	424	190	133	101	3,042,848	1,855,374	509,169	678,305

Other: Universities of education, military universities, industrial universities, polytechnic colleges, miscellaneous schools, distant/cyber/remote colleges, company colleges, specialised colleges, and independent graduate schools

Source: Statistical Yearbook of Education https://kess.kedi.re.kr/eng/index

been expanded; for example, the evaluation-based budget allocation was 90 percent of Korea's total higher education in 2008 (Shin, 2012). As institutional performance and strategic planning are the determinants of resource allocation, higher education institutions in Korea are accustomed to preparing many types of government-mandated evaluations, and the evaluation system is now widely institutionalised (Shin & Jang, 2013).

These institutional experiences account for the positive relationship between higher accountability and organisational performance in Korean universities (Choi & Chun, 2020), even if higher accountability constrains an organisation's decision-making autonomy (Rainey & Bozeman, 2000). Admittedly, although those policies were useful for assuring quality among institutions and improving performance during the expansion period, they often decreased university management's flexibility. For example, most Korean higher education institutions have no significant differences in their institutional missions, programmes, and student selection criteria (Weidman & Park, 2000). In addition, government-centralised resource allocation often causes problems with institutions pursuing all types of evaluations and funding schemes, even if those evaluations and schemes are not aligned with their institutional and programme goals. Some resourceful institutions have obtained extra resources with overlapped financial investments, while others heavily depend on tuition fees alone (Kim & Park, 2017). The structural issues of higher education aggravate the issue of low enrolment without providing the flexibility or autonomy to change practices.

Demographic and enrolment cliffs: the need for 'fewer' universities

The striking changes in demographic structure with a declining birth rate and an ageing population are often described as a 'demographic cliff' (Dent, 2015). Similarly, universities have experienced an 'enrolment cliff', which refers to the dramatic drop in the college-age population. The situation is not only a problem in Korea. In the USA, the enrolment cliff

is expected to begin in 2025 as a result of the drastically low birth rate during the Great Recession that began in 2008. It is projected that the 18-year-old population will decrease by 15 percent over the next four years, and colleges will lose approximately 576,000 students (Drozdowski, 2023). At least 44 public or nonprofit colleges in the USA have closed, merged, or been scheduled for closures or mergers since March 2020 (Castillo & Welding, 2024). Japan, an ageing society, has been through similar challenges. The number of newly enrolled students in special training colleges decreased from 364,687 in 1992 to 264,255 in 2014. The decline was much more serious in Japan's junior colleges, whose enrolment dropped from 254,953 in 1992 to 61,699 in 2012. Since the mid-2000s, the closure and suspension of new enrolment in less prestigious private universities in Japan have occurred frequently (Yonezawa, 2020).

With the lowest fertility rate among the OECD countries, Korea's case is dramatic, as Fig. 1 shows. The total fertility rate in a specific year is defined as the number of children that would be born to each woman if she lived to the end of her childbearing years. It is calculated by totalling age-specific fertility rates defined over five-year intervals (OECD, 2023). The fertility rate in Korea was 4.53 in 1970, 2.82 in 1980, 1.57 in 1990, and 1.48 in 2000. The situation worsened after the financial crisis in the 2000s. Since 2018, the fertility rate has dropped to below one, reaching 0.81 in 2021. In 2022, Korea broke its record for the world's lowest total fertility rate, at 0.78 (Statistic Korea, 2022). Although the decline in fertility rate is a common trend among OECD countries, the case of Korea is quite serious, as it is the only country with a rate below 1, which is significantly lower than the OECD average fertility rate of 1.58 (OECD, 2023). Experts have explained that dropping fertility rates are based on rising housing costs, child care and education, increasing scarcity of jobs, and young people's mounting anxiety about their future (Yoo, 2023). Korea's fertility rate is projected to drop even further in 2023, bringing concerns about the country's shrinking and ageing population. In the 1970s, more than one million children were born each year, while only 249,000 children were born in 2022 (McCurry, 2023).

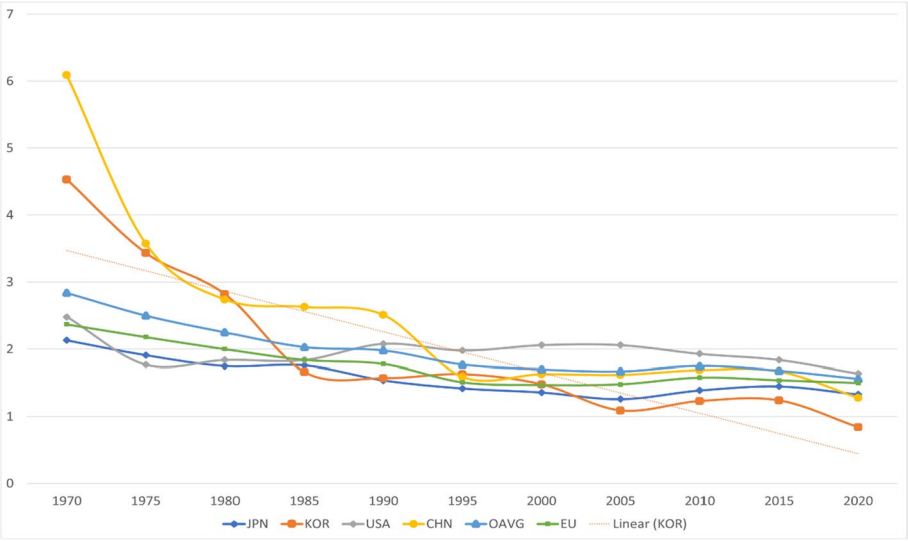

Fig. 1 Fertility rates among selected OECD countries. Source: OECD (2023), Fertility rates (indicator). https://doi.org/10.1787/8272fb01-en (accessed 12 September 2023)

The declining birth rate is the direct cause of the declining number of students in higher education. Table 2 demonstrates that university quotas and the number of admitted students have continuously decreased since 2010. The enrolment rate seems stable at first glance; however, this is due to the significant decrease in the quotas, which the government strongly coordinated. Despite the many efforts to reduce the quotas, recent enrolment has still fallen short, especially for technical colleges. In 2021, the number of unfilled vacancies was 15,986 for four-year universities and 24,223 for technical colleges. The enrolment rate has slightly bounded back since 2022 after the COVID-19 pandemic. However, the yearly statistics show a continuous decline in the number of admitted students. Korean Council for University Education (KCNU) (2022) reported that 162 institutions did not recruit enough students in 2022. According to the latest estimation, 200,000 vacancies will be unfilled in 2040 if current quotas are maintained (Korea Higher Education Research Institute, 2023).

Most of the institutions that did not meet the quota were private universities in small or medium-sized cities. As of 2020, Korea had 339 universities, 116 (34 per cent) located in Sudogwon (Seoul and cities close to the Seoul area, which contains more than 50 percent of the country's population and is Korea's economic and cultural centre). Most of Korea's elite universities are located in Seoul, including 13 out of the 19 ranked in the top 500 world universities. Large universities in metropolitan cities have less serious problems recruiting students. In contrast, institutions in relatively remote areas from the big cities or with relatively short histories and poorer reputations have been struggling to recruit a minimum number of students, enrolling only 76 percent of their target numbers (Cho, 2021) (Fig. 2). According to the latest data, 163 of 4,889 departments at 190 institutions did not receive a minimum number of applicants in 2023, of which 162 were located outside Sudogwon. One of the four years of private universities in the small city received only one application in the

Table 2 Higher education quotas and enrolment rates

	Universities (4 years)			Technical colleges (2–3 years)		
	Target number (quota)	Admitted students	Enrolment rate (%)	Target number (quota)	Admitted students	Enrolment rate (%)
2010	329,045	325,537	98.9	218,432	211,565	96.8
2011	331,586	329,356	99.3	220,653	212,748	96.4
2012	342,004	339,376	99.2	209,313	201,978	96.5
2013	341,151	336,066	98.5	199,918	195,046	97.6
2014	340,447	333,707	98.0	192,049	188,087	97.9
2015	331,854	327,644	98.7	183,025	181,253	99.0
2016	322,379	318,276	98.9	177,877	175,053	98.4
2017	317,367	313,276	98.7	172,601	166,910	96.7
2018	314,024	311,125	99.1	168,467	162,828	96.7
2019	313,884	310,229	98.8	166,229	161,687	97.3
2020	312,655	309,060	98.9	162,335	152,072	93.7
2021	313,614	297,628	94.9	155,746	131,523	84.4
2022	311,447	300,042	96.3	148,255	129,249	87.0
2023	306,858	298,663	97.3	140,698	125,178	89.0

Enrolment rate (%) = (admitted students/target number) × 100

Source: KEDI (2022). Analysis of Educational Statistics: Higher Education

department in 127 quotas (Choi et al., 2024). Small institutions rely heavily on tuition fees, and recruitment directly impacts university budgets, thus endangering their ability to maintain daily operations, including core teaching and research tasks (Kim & Park, 2017). One small private university in Busan (the second largest city in Korea) suspended practicums in medicine and nursing due to budget cuts in 2023 (Choi et al., 2024).

Declining enrolment is also partially explained by the fact that the role of universities has been diminished in the public's perception, especially concerning unemployment among those with tertiary qualifications and reduced earning premiums for tertiary education (Horta, 2023). Tuition fees significantly increased from the 1970s until the mid-2000s, although recent politically driven policies have forced universities not to increase tuition (Kim, 2020). Relative to the cost of a university education, the high unemployment rate for university graduates has created high levels of dissatisfaction among students and their families (Mok et al., 2022). In all universities except top-tier universities, the enrolment rate has started dropping for the first time since 2009 (Seo, 2020). One might think that the decrease in the youth population would alleviate the competition for university entry and the job market; however, a decrease in the number of graduates in one country does not automatically ensure less competition, especially in the fiercely competitive global economy (Yonezawa, 2020). In fact, the competition for large and prestigious universities has become even stronger among students and parents in Korea because they are eager to enjoy a selectivity premium when competing with smaller cohorts (Jung & Lee, 2016).

Analytical framework

As the literature review demonstrated, the Korean government and higher education institutions have adopted a number of policies in response to the changing demands for higher education. The present study has constructed an analytical framework to explore stakeholders' policy responses to low enrolments caused by Korea's shrinking birth rate, as Fig. 3 demonstrates. First, the government has the power to close higher education institutions.

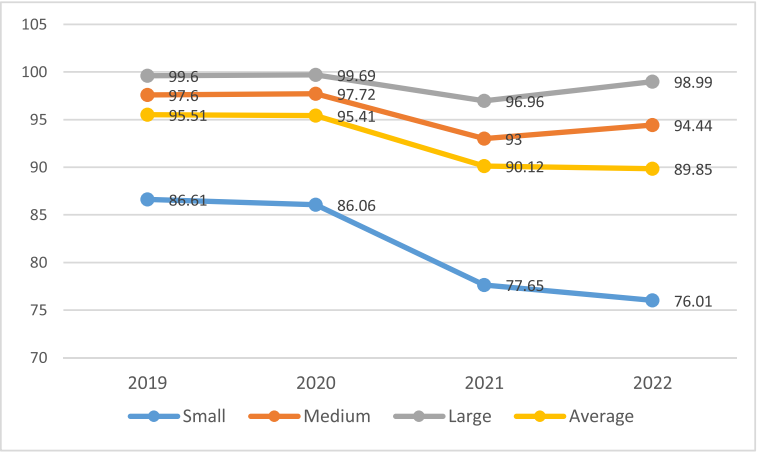

Fig. 2 Enrolment rate by university size (unit: percentage, %). Note: University size was based on the number of students (small: fewer than 500 students; medium: 500–2500; large: more than 2500). Source: Higher Education in Korea (https://www.academyinfo.go.kr/index.do)

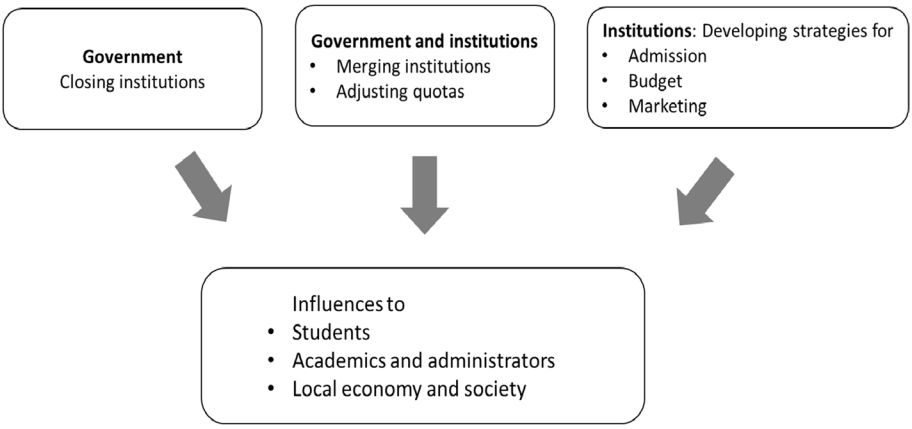

Fig. 3 Analytical framework

Second, several policies involve both government and higher education institutions, as most institutions have to follow government policy directions to overcome the challenges of low enrolment. Examples include government-mandated or institutionally driven mergers. Higher education institutions have also adjusted their target numbers of students based on government evaluation results. For the decision-making of institutional closures, mergers, and quota adjustments, the Korean government applies strict evaluation policies, linking the evaluation results to the budget allocation. Third, as an independent entity, each higher education institution develops its own strategies to maintain competitiveness. Few institutions are free from concerns about recruiting students, given the shrinking college population, and enrolment management has become a priority for most institutions. Hossler and Bean (1990) define enrolment management as institutional responses that aim to enrol and retain a desirable student population. This approach includes different strategies, mainly in admissions, finance, and marketing (Jaquette et al., 2016). The present study illustrates how governmental and institutional policy responses have affected different stakeholders in higher education—namely, students, academics, and administrators—and the local economy and broader society.

Government response: institutional closures

Higher education institutions facing financial or demographic challenges have three basic long-term choices: close, merge, or affiliate (Tobenkin, 2020). As the strongest level of regulatory policy, institutional closure involves ending operations and no longer accepting students, offering courses, employing staff, or attempting to find resources to continue operations (Britton et al., 2023). Institutions with limited financial resources and under-enrolling years face closure orders from the government or quality accreditation agencies (Tobenkin, 2020). Since 2000, 18 Korean institutions, all private, have been closed, including both universities and technical colleges. These closures did not occur in one step; instead, the government conducted several evaluations and provided the institutions with opportunities to improve while making its final decision. However,

when the institutions do not compel certain actions to improve, the government can order closure by law, enabling those institutions to recruit fresh students.

Britton et al. (2023) distinguished two types of closure of institutions: loss of accreditation and closure due to financial difficulty. In the early 2000s, most of the closures in Korea were due to loss of accreditation as a result of findings in the audit process involving malpractice in university management, such as misuse of the university budget and corruption of private institutional owners. The second type of closure is becoming common today due to the financial difficulties caused by low enrolment. The institutions that are the most vulnerable to closure are private, less selective institutions with fewer than 1000 students (MOE, 2021). According to the MOE (2021), more than eight financially insolvent institutions must close soon. In a *Times Higher Education* article, Pola Lem (2023a) quoted several experts' opinions, including Philip Altbach and predicted that Korean private colleges would voluntarily close or choose 'assisted suicide' by the government to avoid becoming 'zombie universities' without people on campus.

Closing institutions whose operations have become unsustainable is unavoidable, and closures will occur more frequently in the upcoming years than in the past. However, closing is not easy because once higher education institutions have been established, their capacity to enrol students is not easily decreased (Yonezawa, 2020). Institutional closures pose several challenges that require a long period of preparation by every stakeholder. For example, students who do not complete their degrees during the notice period preceding the closure are likely to drop out of higher education (Barshay, 2022). Some Korean institutions plan with other universities in the same region and help their students transfer to neighbouring universities; however, these transfers are against the students' wishes, as they chose a specific institution and programme with the expectation of graduating from that institution and programme. It is also challenging for students to find a similar major and resolve academic credit issues at other universities (Kim, 2021a). In addition, a closed university means lost employment for both academics and administrative staff. Because their universities experienced management and financial issues before closing, these employees often suffered from job insecurity for a while before the official closure. They may not even be paid their salaries for some periods (Korean Advancing Schools Foundation, 2022). For the institutions, the decision to close is challenging. They have remaining non-profit assets, including buildings and properties, that are not attractive enough to be purchased by others, including local governments (Kim, 2021b).

The local community and economy feel the long-term effect of university closure. Previous studies have reported the positive relationship between local universities and the local economy, which is often referred to as a revitalisation of shrinking cities (Revington et al., 2023). Some cities experience 'studentification' resulting from the concentration of students and 'youthification' due to the concentration of young adults (Moos, 2016), which creates a largely positive environment for the local community (Revington et al., 2023). Higher education also has spillover effects on the local economy through creating and transferring knowledge, providing an educated workforce, and fostering innovative spin-offs (Rodin, 2005). Once institutions are closed, the local community loses vitality. In some small regions, the disappearance of one university means the disappearance of the entire city, including rental businesses and small businesses. In addition, some non-traditional, life-long, part-time adult learners lose their opportunity to learn from local higher education institutions (Kim, 2021b). The collapse of regional universities drains regional talent in the big cities, affecting regional development in the long term (Ehlenz, 2016).

Government and institutional responses: merging or reducing quotas

Institutional mergers are a policy tool used to reduce costs and improve economies of scale, even if they do not necessarily originate from the demographic challenges in several European higher education (Pinheiro et al., 2016). Some mergers take place voluntarily and are initiated by the institutions involved, as they both see the advantages of strategic partnerships, alliances, and sometimes full-scale mergers (Skodvin, 1999). However, as Russell (2019) showed in his case study, integration can be a struggle for institutions with dissimilar missions and dissatisfied students. Most mergers are initiated and led by the government at the national level; in that case, institutions are merged involuntarily. Some mergers are a form of consolidation that integrates equally sized universities; in contrast, acquisitions are mergers in which one institution absorbs or takes over another, especially when the institutions are different sizes (Harman, 1991).

In 2004, the Korean government initiated structural reforms in higher education institutions by fostering mergers both among four-year universities and between four-year universities and two-year colleges (Chae & Hong, 2009). Driven by the government, 18 national universities were merged into nine between 2003 and 2008. This strategy has been widely implemented. For example, some public universities located in the same region arrange their MOUs and submit proposals for a merger. The government approves the merger, providing financial incentives to support the necessary costs (e.g., when a comprehensive university merges with a teacher training university or technical college in the same region). The most important condition for such mergers today is downsizing the programmes and reducing the quotas.

Although Korean higher education has managed to reduce a significant number of quotas by closing or merging institutions, the problem of low enrolment persists. In addition, the policy decision to close or merge institutions has mostly disadvantaged small, less well-known, and less resourceful institutions. In response to criticism of the lack of consideration of unequal status among institutions, the government adopted wide control of the university quota across all institutions (Seo, 2020). Specifically, the government uses financial tools related to the results of institutional evaluations and requires each institution to reduce its quota. Since 2017, the government has evaluated entire universities and divided them into five groups. For each level, different actions are required regarding any decrease in the enrolment quota, including restrictions on participating in governmental financial support programmes, government funding, restrictions on students' loans, and leading the voluntary closure (MOE, 2021). The worse the evaluation results, the more the quotas were reduced. In particular, unless poorly evaluated institutions improve their results in the subsequent evaluation round, they are expected to close permanently.

However, there has been major policy resistance to this evaluation system among universities (Ban et al., 2013). Although the government claims that this system fosters specialisation and variation, the characteristics of individual schools are not considered when reducing university quotas (Seo, 2020). This is mainly because the government applies several performance indicators to evaluate institutions, which are complicated for most institutions to achieve. The indicators are graduates' employment rate, student retention rate, financial aid per student, expenditure per student, and faculty-to-student ratio (Yi et al., 2015). Individual institutions' vicious cycle begins when they have relatively few resources and a relatively poor reputation, struggle to attract enough students, receive poor results in government evaluation, limited funding, and show reduced quality. It ends with shrinking enrolment. This cycle damages the diversity of the higher education system, as some small

institutions serve a specialised function (i.e., religious schools, professional training) or tailored degree programmes in local communities.

Therefore, the recent policies have encouraged institutions to develop a long-term sustainable development strategy of their own. For example, institutions must submit a proposal for reducing the number of students to the MOE while improving their competitiveness based on regional demand and institutional capacity. The government recently launched the new Glocal project in 2023 with 100 billion won (£60 million) over five years, aiming that the regional universities develop long-term strategies amidst falling population, including mergers, departmental restructurings, working closely with local industries and culture, new programmes, or curricula (MOE, 2023). The initiative aims to make regional universities more competitive with radical approaches such as breaking traditional departmental boundaries (Lem, 2023b). Unfortunately, there are sceptical views on whether that investment with a respect of institutional initiatives will solve the problem of low enrolment. In fact, the latest statistics showed no improvements in the students' enrolments in universities selected as Glocal projects (Choi et al., 2024). Finding strategies to improve competitiveness and maintain enrolment is challenging, particularly in a higher education system such as Korea's, which is hierarchical and based on social reputation. The student's choices are almost fixed based on academic results regardless of individual institutions' differentiated strategies (Lee & Müller, 2019).

Institutional response: widening admission, reducing budgets, and enhancing marketing

Higher education institutions in Korea have reacted to the challenges of declining enrolment by either reducing their costs or investing increased resources for improvement. To widen their admissions, institutions have diversified student profiles for recruitment. Aggressive recruitment policies for international students are among the most common strategies for many institutions. The number of international students in Korea has increased significantly, rising from 40,585 in 2009 to 160,165 in 2019 (KEDI, 2019). However, COVID-19 proved that heavy reliance on international students is not a sustainable enrolment strategy. As enrolment management becomes an institutional survival strategy, there are unexpected and sometimes unethical consequences. All higher education institutions should show a higher enrolment rate because that rate will be the most important evaluation criterion in determining the size of departments and budget allocations. As a result, some small and local institutions take the risk of engaging in 'fake enrolment' or 'ghost enrolment', which does not represent real students and exists only for the enrolment period. Institutions pay their enrolment fee, and such students mostly drop out of the programme in their first year (Hong, 2021). On the other hand, there are some positive cases of enrolment increases by widening admission to non-traditional learners, especially for adult learners. One of the private universities in a relatively small city has recently focused on recruiting adult learners above 30 years old and launched tailored programmes for them (Kim, 2023). In addition, a few successful cases commonly showed that the partnership between universities and local societies and industries are essential in developing innovative programmes.

When institutions fail to attract substantial funding for management from tuition or the government, they have to find ways to save costs. Many institutions implement departmental restructuring to reduce costs and improve efficiency. Low-demand fields—particularly

in the arts and humanities—face closure for reasons of financial efficiency. Elite, well-funded universities continue to offer a wide range of majors, but most do not have that luxury (Drozdowski, 2023). In many universities in Korea, some departments are closed, merged, or transformed into departments that offer more attractive or 'fashionable' majors. For example, many universities decide to close their traditional humanities departments (i.e., philosophy, foreign languages) and open more vocationally oriented departments (i.e., sports medicine, beauty, health information). Universities adopt every possible strategy to reduce costs; they reduce research funding and hire academics into temporary contract positions instead of tenure-track positions (Oh, 2015). As the temporary contract positions are filled with short-term contract academics with lower job security, their turnover rate is high, and the new courses are assigned to new part-time academics without providing sufficient time for preparation, which leads to unstable teaching schedules and lowers the quality.

Institutions also use aggressive marketing strategies to attract students. They have become attuned to the job market, creating and expanding academic programmes in high-demand fields. They also have increased the number of online and hybrid courses or added micro-credential programmes despite the criticism of the university as a marketing place (Oh, 2015). Some universities in Korea provide incentives and scholarships or gifts in exchange for enrolment (Hong, 2021). However, such marketing strategies are temporal, as this competition is a zero-sum game, a competition for a slightly larger slice of a shrinking pie (Drozdowski, 2023).

Conclusion

Based on the Korean case, this study describes the phenomenon of declining enrolment caused by low birth rates and its impacts on higher education. The study illustrates the multiple challenges that emerge from low enrolment in higher education and policy responses at the government and institutional levels in Korea. In the early 2000s, when the rapid reduction in the university-age population became an urgent matter on Korea's policy agenda, the government implemented multiple policies to prevent the eventual collapse of the higher education system. Specifically, institutional closure, merger, and quota control are explained, along with related issues. In addition, several institutional strategies for enrolment management, including recruitment, finance, and marketing, are explained to emphasise the challenges for universities caused by the declining number of students. The findings indicate that declining enrolment is a serious problem for institutions, the local community, and the economy.

As demographic projections indicate, it is impossible to maintain the current number of institutions, programmes, and enrolment quotas in Korean higher education. However, restructuring higher education is challenging, as it involves resistance from all stakeholders (Ban, 2015). Most universities and departments recognise the crisis and want to reform the structure; however, few want to be affected by such changes, including merging or transforming, as such changes mean cutting resources and investments. This is because of the resource competition among departments, such that the advantage of one department is the disadvantage of another department. The government faces the dilemma of whether to invest more resources and support institutions to prolong their business or to adopt more aggressive strategies to restructure universities, improve efficiency, and reduce the financial burden on taxpayers. The government has combined 'carrot' and 'stick' approaches for the last two decades and implemented diverse policies for restructuring; however, Korea's

demographic decline is occurring too quickly, making the current system extremely vulnerable and leaving many institutions incapable of survival.

Because the whole system is affected by declining enrolment, Korea's latest policies mainly focus on achieving efficiency; the government uses a strict evaluation system to make decisions about institutional closure, mergers, and quota reductions. Unfortunately, the system's diversity has diminished even more due to the standardised evaluation process. In principle, the restructuring should be accompanied by system diversity. For a long time, most Korean universities have focused on improving social recognition by following a similar departmental structure, curriculum, and admission criteria, which has created one of the most hierarchical structures in the higher education system based on student achievement scores (Kim & Lee, 2006). Given the changing future outlook, featuring economic recession, technological advancement, and an uncertain labour market (Jung, 2020; Kang, 2022; Lee et al., 2019), the traditional and hierarchical structure of comprehensive universities should be transformed into multiple models of institutions that can serve different purposes. For instance, some research-intensive universities can consider transforming themselves into graduate school models by building an intensive programme for research training; alternatively, they can reduce their quotas for undergraduate programmes. In contrast, small local universities, which are currently at the greatest risk, can focus on connecting their institutional goals with regional and local demands. Adult learners, working professionals, and retraining programmes for professionals or company employees should be expanded as college programmes and flexibility for admission can be developed (Seo, 2020).

For institutional closure and mergers, long-term preparation and coordination among stakeholders are necessary to minimise the damage to students, academics, and the local community. In the process, the government's role is to make laws or regulations to monitor the overall process rather than engage in individual institutional cases. In particular, the government has to build sustainable long-term policy directions on handling the assets and campus facilities of closed institutions. In addition, the government can create a portal system to support students, academics, and institutions that seek support in searching for alternative ways to continue their study, research, or restructuring. Policy inconsistency and a lack of coordination among policies need to be fixed.

With birth rates projected to fall even further and societies expected to continue to age, university restructuring will be common in several massified higher education systems in the years to come. The present study offers implications for preparing for restructuring issues and minimising disruptions in higher education systems. At the national level, analysing what institutions and departments are most vulnerable to low birth rates can be predicted more systematically, and policies should be developed to prepare for such decreasing enrolment. Those policies can be coordinated to protect a system's diversity and regional balance. At the institutional level, strategies to maintain competitiveness can be developed to ensure academic quality, meet market demand, and allow schools to find exit strategies when they lose the ability to sustain operations. It is important to consider national system differences such as admission, enrolment quota, and funding allocations in implementing policies of institutional closure or merger.

Because the enrolment decline affects most aspects of higher education, the topic should be studied more thoroughly using ample empirical evidence. Future studies could include demographic projections and simulation of the scope of the affected number of institutions and programmes. In addition, qualitative research involving different stakeholders' views will be necessary to shed light on stakeholders' most urgent issues and potential solutions. Last, a comparative study with other higher education systems that are facing similar challenges will be useful in providing a common understanding of the relationship between declining enrolment and higher education.

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