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Japan's higher education and the public good

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Abstract
The purpose of this study is to analyze different interpretations of public good(s) in the context of higher education, the contributions that higher education makes to the public good, and how these contributions are measured in Japan. The analysis draws on 17 semi-structured interviews with policy makers, presidents of national professional associations, institutional leaders, deans and professors from contrasting disciplines, and other administrators from two national universities in Japan. Firstly, all interviewees believed that Japan's higher education could be considered to be a public good. However, they did not consider it a pure public good. Secondly, the study not only reveals a wide variety of interviewees' interpretations of the public good, the public good of higher education, the contributions that higher education makes to the public good, and the measurement of these contributions, but also suggests to what extent interviewees' understanding deviates from the literature. Finally, while the structure of Japan's higher education system, including the quantitative dominance of private universities, tuition fee system, and existing oversight of the public good, may suggest that there are fewer contributions to public good in Japan's higher education than in European continental countries, the study reveals that Japan's higher education, including private universities, contributes the public goods, and its contributions to the public good or public goods are highly valued.

Keywords Public good · Japan's HE · Semi-structured interview · Stakeholders

Introduction

There is little doubt that policy makers' understandings of the public nature of higher education affect the structure, funding, and functions of higher education systems (OECD 2019). From an international and comparative perspective, there are huge differences in

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interpretations of public good(s) in the context of higher education, often typified by the differences evident between the USA, the UK, and East Asian countries such as China (Tian and Liu 2019; Marginson and Yang 2020). Furthermore, interpretations of the public good(s) of higher education also vary remarkably between diverse stakeholders even within one country or one higher education system (Hazelkorn and Gibson 2019).

Japan established a modern higher education system modeled on western countries in the late nineteenth century (Altbach and Selvaratnam 1989). The fundamental aim of this system, especially at the national or so-called Imperial Universities, was to teach academic skills and professional studies to meet the needs of the nation and to carry out in-depth basic research (MOE 1980). After World War II, influenced by American educational philosophy, according to Article 83 of the *School Education Act* originally formulated in 1947, Japan's universities were to transmit a wide range of knowledge, deeply teach and research into specialized disciplines, and cultivate students' intellectual, moral, and applied abilities. They were to undertake teaching and research activities in order to achieve these objectives and contribute to social development by disseminating the outcomes of research. It is expected that national universities should play a key role in providing democratic and mass higher education for general public, ensuring equal access and undertaking academic research. Since 2004, when all national universities became national university corporations, changes have occurred in these missions, and universities have been asked to assume new responsibilities. For example, a report issued by the Central Education Council, an advisory body of the Ministry of Education, Culture, Sports, Science and Technology (MEXT), emphasized that national universities should play an important role in facilitating high-level academic research, producing talents based on national planning, contributing to regional activation, and ensuring equal opportunity for university education (MEXT 2005). Further, in 2019, MEXT requested that national universities should also play a decisive role in facilitating the provision of the most advanced teaching and undertaking the cutting-edging research, becoming a hub for innovation and talent cultivation. MEXT argued that, as a center of regional teaching and research, national universities should contribute not only to equal opportunity for higher education at a national level, but also to draw out the potential of the region through regional revitalization. In combination, national universities are asked to play a unique role in passing on the baton of knowledge to the next generation (MEXT 2019a, b).

In contrast to the USA, the UK, and many European countries, Japan has formed a higher education system consisted of national and local public and private sectors. These different sectors are expected to have distinctive missions and play different roles. In a major sense, as mentioned above, national universities have a more comprehensive mission, play more diverse roles in Japan's higher education system, and are expected to produce a wider variety of public goods for Japan and international communities than the other two sectors. Local public universities are particularly involved in the provision of professional and vocational educational programs relevant to the economic development of local communities, thereby supporting regional economic development within Japan. Compared to national universities, the majority of private institutions are primarily engaged in educational activities in humanities and social sciences, especially at the undergraduate level. Although the operation of these private institutions is more market-driven, responsive to the changing labor market, and charge much more expensive tuition fees than both local public and national universities, it is generally agreed that they have also contributed significantly to the massification of Japanese higher education since the 1960s (Tsuchimochi 1996; Huang 2012). The laissez-faire policy on private higher education institutions (HEIs) implemented by Japan's government soon after

World War II resulted in a quick rise in the numbers of both private universities and privately enrolled students by the early 1970s. The subsequent Act on Subsidies for Private Schools in1976 facilitated further rapid expansion of Japanese private universities. As a result, private institutions and student enrollments account for nearly 80 percent of the total in 2020. However, private universities are so pervasive, and the quality of private universities varies considerably. Further, even if the Japanese government has been providing financial support for private universities since 1976, the purpose of subsidy is to maintain their educational quality, improve academic conditions, and reduce the economic burden on students, rather than emphasize the contributions to the public goods (Ogata 1977). All these different missions have made the general public have difficulty in perceiving "publicness" in higher education (Kurobane 2002; Maruyama 2002).

Apparently, those factors such as the changing missions and roles of Japanese higher education over time, no consistent and clear national policies in relation to public goods of higher education, a wide gap between policies and reality, the formation of complicated higher education system, and the division of role or function between them bring into difficulties in discussing higher education and its relations to the public good (s) in Japan. These things, however, reflect the importance and meaningfulness of this research.

As discussed in the following section, compared to the large number of previous studies on this topic in western countries, very little research has been made about whether higher education could be defined as a public good(s) in Japan (Ichikawa 2000; Yano 1996, 2015). As a matter of fact, the public values or goods of higher education have been underestimated in Japan (Nakazawa 2014), despite the fact that the Japanese government has recently launched a national-level discussion about whether higher education should be provided for free (MEXT 2020).

The purpose of this study is to analyze different interpretations of public good(s) in the context of higher education, the contributions that higher education makes to the public good, and how these contributions are measured in Japan. The study draws on the findings from 17 semi-structured interviews with policy makers, presidents of professional associations, institutional leaders, deans and professors from contrasting disciplines, and other administrators from two national universities in Japan. The following part reviews previous studies on this topic, drawing on literature in both English and Japanese. The third part of the paper explains the research methodology. The fourth part presents the main findings from the interviews. The fifth part is concerned with discussion of these main findings, before the paper concludes by summarizing the paper's contributions, offering implications for the future research and policy, and pointing out limitations.

Review of literature

An influential early definition of public goods was provided by Samuelson (1954) who suggested that public goods are "non-rivalrous" and "non-excludable." Namely, public goods are non-rivalrous when they can be consumed by any number of people without being depleted and non-excludable when the benefits cannot be confined to an individual (Marginson 2016, p. 85; 2018). Samuelson's definition is grounded in the field of public economics, posits public goods in opposition to private goods, and is usually expressed in plural form. Bringing up national defense and lighthouses as examples, Samuelson locates public goods in the context of market failure and thus perceives public funding as inevitable and necessary for their provision. When strictly applying this economic definition of public goods in higher

education, access and participation rates do not appear to satisfy the condition of being both non-excludable and non-rivalrous. Usher (2015, para. 2) states that "classroom space is very definitely rival, and it is trivially easy to exclude people from education – no money, no degree." Several economists, however, argue that higher education does provide public goods. For instance, Stiglitz (1999, p. 310–311) pointed out that the new knowledge such as a mathematical theorem produces benefits for many people without being depleted. McMahon (2009, p. 255) also asserts that higher education can be seen as serving public goods, especially when funded directly by the state, because of "the social benefit efficiency gains and potential equity effects on the opportunity and reduced inequality." Externalities, or spillover effects, are another economic term, which helps to express public contributions generated by higher education. According to the Institute for Higher Education Policy in the USA, benefits such as reduced crime rates, increased quality of civic life, social cohesion, and improved ability to adapt to and use technology are categorized as public goods that "spill over" from the private benefits of those directly receiving higher education (Institute for HE Policy 1998, p. 20).

While the above discussion stems from an economic standpoint and raised specifically by economists, when expressed as public "good" in singular form, more diverse perspectives have emerged. Especially in western countries, the public good is generally defined as a benefit to the well-being of society (Collins 2017). Not strictly bound by economists' definitions, many scholars in the field of higher education try to perceive the public good as a certain function or social contribution of higher education with an emphasis on its public nature. In previous research and discussion, the public good of higher education is decoded into the three primary functions of universities. The first of them is the creation and dissemination of knowledge produced and realized by research and education since it contributes to both scientific and economic development (Gumport 2002; Marginson and Considine 2000; Slaughter and Rhoades 2004). Secondly, higher education is concerned with the cultivation of human resources as it is believed that those who received higher education will appropriately lead and maintain the democratic society as good citizens (Giroux 2003). And the third function is the commitment to the social contribution in their local communities through their educational practices such as service learning (Schneider 2005). Furthermore, Habermas's "public sphere" is another notion that gives validity to the characterization of higher education as the public good. Habermas (1989) defines the public sphere as a communicative sphere for molding public opinion where everyone can participate in constructive discussion without the intervention of political and economic influences. Although Habermas himself does not directly mention higher education's contribution to the public sphere, several scholars insist that the university should be the typical form of public sphere since free speech is protected and democratic movements have been born there (Budd 2015; Calhoun 2006; Pusser 2006).

In western countries, without being strictly bounded by original economic definitions of public goods, much broader perspectives have been developed to contribute to the discussion of the public good(s) of higher education. However, it is difficult to convey such multiple nuances when translated into Japanese. In many cases, the phrase "public good(s)" is translated as "kōkyō-zai" in Japanese regardless of its singular or plural form. The term is a combination of "kōkyō" (public) and "zai" (goods/property/fortune) and only conveys economic nuance. In consequence, the existing research into the public good(s) of higher education in Japan is only limited in discussing the perspectives of economics and public funding. For example, in his discussion of whether higher education is a public good, Ichikawa (2000) states that higher education in Japan is not broadly conceived as public goods when strictly applying economic definition because it cannot accommodate those who do not pay for tuition and it also sets

meritocratic limitations by entrance examination. Ichikawa adds, however, that since not only university graduates but society at large consumes external positive effects from those educated at higher education institutions, it is not appropriate for students and their parents to cover all the expenses for receiving higher education. Yano (1996) also raises the external effects to society as the grounds upon which more public funding should be invested in higher education and accordingly places higher education in Japan as a quasi-public good.

Except for these discussions based on economic perspective, there is little literature in which the term "public good" is explicitly used (Huang and Horiuchi 2020). This absence is related to contextual characteristics of Japanese higher education that affect how people consider the connection between higher education and the public good. Firstly, Japanese higher education consists of both public and private sectors. As Geiger (1986) points out, Japan is among few advanced industrial countries in which private universities clearly outnumbered public ones. According to MEXT's Basic School Survey in 2020, among the 795 universities in Japan, 615 are private, 86 are national, and 94 are local public universities. As for the student enrollment ratio, 74 percent of students are enrolled at private universities. While the government directly funds national universities where a limited number of students could benefit from public funding (Kaneko 1988), it is the rapid expansion of private universities and private students studying at their own expense that realized the massification of and near universal access to higher education in Japan (Huang 2012; Pempel 1973; Tsuchimochi 1996). Secondly, "a conjugation of economic policy and education" is another characteristic of Japanese higher education (Hata 1999, p. 146). Although the postwar higher education system in Japan was established under the influence of the US model with its emphasis on democratization, the Japanese government's top priority in the postwar era was placed on economic recovery. Especially since the early 1960s when Japan entered into the era of rapid economic growth, higher education policy has been subordinated to policies of economic development. Even in recent years, the domestic reputation of universities has been measured based on the degree to which universities could satisfy demands from business corporations, rather than on their ability to educate the individual for civic life or to distribute expertise for the public good (Hawkins 2006, p. 47). Thirdly, people's awareness of equity creates conceptual distance between higher education and public good(s). Hamanaka and Yano (2016) conducted a public opinion survey on public funding in higher education, which revealed that the majority think public funding should be directed to social systems such as medical care or daycare services rather than to universities. They analyzed that Japanese people have a strong sensitivity to equity, and a higher education system that requires entrance examinations and tuition fees is not regarded as fulfilling of such an egalitarian concept. Compared to most European continental countries, Japanese higher education has never been free of charge although the tuition of national universities is less expensive than private ones. It is taken for granted that those who receive higher education should be charged tuition for the benefit they receive in the future. These contextual reasons appear to have restrained the discussion of higher education and its relations to the public good in Japan. With referring to the discussion and research accumulated in western countries, it would be significant to explore how stakeholders perceive the public good of higher education in Japan in order to build the foundation on which further discussion of this universal topic would be developed.

Based on the above description of the Japanese context and a review of previous studies, the following three research questions were created:

1. How are the phrases of public goods and the public good in higher education interpreted in Japan?

2. What does higher education contribute to the public good?
3. Can that contribution be measured?

Research method and samples

As the purpose of the study is to explore the variations of interviewees' perceptions of public goods, the public good of higher education, the contribution of higher education to the public good, and the measurement of the contribution, the study uses phenomenography as a qualitative research approach to guide data collection and analysis. Phenomenography focuses on exploring the qualitative different ways in which people experience or describe specific phenomena. The different ways that people experience phenomena are described as "conceptions." They are represented as a set of categories of descriptions that is sometimes referred to as an "outcome space." These categories are the primary outcomes and are the most important results of phenomenographic research (Marton 1986; Marton and Booth 1997). Phenomenography has been an established methodological approach in educational science since the 1980s (Marton 1981).

The data of the study was collected via 17 semi-structured interviews with key persons from different government agencies, professional associations, and university leaders and academic staff in two case study universities in Japan. The main characteristics of interviewees are summarized in Table 1.

Following the ethical guidelines of the project, the research team contacted potential key persons through emails and asked them to accept our interviews. As indicated in Table 1, for the key persons from government, we invited one interviewee who is in charge of national

Table 1 Main characteristics of 17 interviewees

Interviewee	Affiliation	Title	Gender	Discipline
A	MEXT	Director	Male	Unknown
B	MEXT	Chief researcher	Male	Public policy
C	X Association	President	Female	Education policy
D	Y Association	President	Male	Sociology of education
E	T University	Vice president	Male	Economics
F	Graduate School of Engineering, T University	Dean	Male	Engineering
G	Institute of Social Economics, T University	Director	Male	Economics
H	Graduate School of Linguistics and Culture, T University	Dean	Male	Linguistics
I	Graduate School of Linguistics and Culture, T University	Professor	Male	Linguistics
J	Graduate School of Engineering, T University	Lecturer	Male	Engineering
K	Graduate School of Economics, T University	Associate professor	Male	Economics
L	Center for Global Initiatives, T University	Associate professor	Female	Higher education
M	S University	Vice president	Male	Philosophy
N	Graduate School of Engineering, S University	Dean	Male	Engineering
O	Graduate School of Social Sciences, S University	Dean	Male	Economics
P	Graduate School of Engineering, S University	Professor	Male	Engineering
Q	Graduate School of Social Sciences, S University	Professor	Male	Economics

Note: MEXT refers to Ministry of Education, Culture, Sports, Science and Technology, Japan

higher education policy in Japan and another who is directly concerned with analysis of the changes, trends, and prospects of Japan's universities focusing on science and technology. We also interviewed two presidents from national education and research associations. One association focuses on undergraduate education research in Japan (X Association), and the other has a longer history and stronger influence on both national policy and institutional strategies in relation to university education, research activities, and broader academic activities in Japan (Y Association). As case study research is a common method in social sciences and can be used to understand, describe, explain, and explore complex social phenomena (Yin 2014), the study uses two case studies. The first case, anonymized as T University, is one of the former "Imperial Universities" which was established in the late nineteenth century. It is a large comprehensive institution located in a global city, and the number of academic staff and students is far larger than the second one. The second case, anonymized as S University, is one of the newly founded national universities soon after the World War II. It is a comprehensive national university in which teaching, research activities, and societal engagements are all emphasized in its mission. These two different case studies are considered to represent important features of Japan's national university sector. While both are concerned with teaching, research, and social engagements, as T University is one of the former "Imperial Universities" and ranked among the top 100 universities in major global university ranking systems, it is a more research-intensive university and more prestigious at both the national and global levels. Although S University has been making efforts to be listed among the top 100 universities since it was selected as one of 13 universities for the national "Top Global University" project in 2014, compared to T University, its missions focus on teaching activities and contributions to the regional development. In the two case study universities, in addition to interviewing the two institutional leaders who are directly involved in developing university strategy alongside their various academic activities, two deans and one director from T University and two deans from S University were invited for interview. They come from engineering and social sciences (economics), respectively. Further, six faculty members representing the academics fields of engineering, linguistics, and social sciences, including three professors, two associate professors, and one lecturer also attended the interview.

All interviews were undertaken between August 2017 and January 2020. The team members conducted face-to-face semi-structured qualitative interviews with these participants at their workplace or meeting rooms in their affiliated institutions. Before organizing interviews, the research team explained the project to participants with an information sheet before they agreed to take part. Participants were given a copy of a consent form to keep and refer to at any time. If they were happy to participate, they were asked to complete all sections and sign the consent form. Normally, interviews began with a brief explanation of the key terms of the public goods of higher education and keywords relating to the interview, such as university missions, public roles, and functions of higher education, based on our review of literature. Except for one interview, all were recorded and transcribed. Some participants reviewed and approved the interview transcript as a precondition of participation. The duration of interviews varied, but most lasted between 1 and 2 h.

This research is part of two international joint research projects that the research team in Japan has participated in since 2015, and only relevant questions were selected from one of the two projects and were asked to the interviewees in this study. Some common questions were asked to almost all the interviewees such as "What do you understand by the term 'public good'?"; "What does higher education contribute to the public good, or public goods?"; "Can you tell us how it is we know that higher education contributes to these goods?"; "Can we

measure that contribution?". Other specific questions were developed for different groups of interviewees. For example, the main questions asked for faculty members included "Do governments do enough to support the public good activities of higher education institutions?"; "What are the responsibilities of your institution to students, to the state, to 'the public'?"; "How is 'performance' measured in your institution?"; "It is sometimes argued that higher education should be treated as a private good. What are your views on this?"; "Does your discipline contribute to society? What are the benefits to those who are not graduates in this discipline?"

In terms of the analytical process, following the phenomenographic principles, firstly, the team members read all relevant transcripts of interviews until they became familiar with their main ideas and key points (Marton et al. 2005). Secondly, the team members searched for and identified their observations in relation to the research questions and created a databank. Thirdly, the team members developed a set of categories or groups of descriptions by sorting, comparing, and differentiating their statements within the databank (Åkerlind 2005). The focus was primarily placed on the variation in their perceptions of the key phrases in the three research questions. The set of categories of descriptions provide a fundamental source for the different thematic analysis of the study. Finally, the team members identified and described the referential and structural aspects of each category of interviewees' statements and developed an overall sense of the structure of all analyzed data, which is presented below.

Main findings

How are the phrases "public good," the public good of higher education, and public goods of higher education understood in Japan?

In terms of interviewees' understanding of the phrase "public good," despite offering different interpretations of the public good, some contrasting points of view were identified. The majority of them described it in the economic sense. Main examples include the following remarks.

> Simply, they are goods and services that are necessary for society as a whole that are not adequately supplied by the market. (E)

> Public goods are goods that cannot be eliminated and that are non-competitive. So, a library is a public good or benefit because it can be used by anyone without exclusion and without competition. (K)

Although slightly different in their expressions, some interviewees emphasized that "public good" is something that can benefit all people.

> From an administrative point of view, the term of public good can be translated as 'public welfare' in Japan, I suppose. (B)

Since it is 'public good', I think it refers to something that is equally enjoyed by all people. (L)

> I have the image that public good is something that many people can share without paying extra. In practice, I think it's about knowledge, culture and other intangible things. (P)

However, some interviewees emphasized that "public good" should not be considered to be something profitable or produce any economic interests, especially "good" should not be only understood as benefits or profits but should be conceived as being eternal happiness of human beings.

> When the English public good is translated as 'public interest' in Japanese, it feels like profit or benefit. … 'Good' of public good should be translated as happiness. (H)
> 'Good' should not be understood as profit or benefit, but should be interpreted as happiness of human being, a sort of foundation on which sustainable development of human beings could be made for the betterment of society. (M)

As for their interpretations of the public good of higher education, and public goods of higher education, the study also found various observations made by interviewees. Some interviewees argued that higher education should be regarded as a public good. Further, according to them, the public good of higher education should be understood as its contribution to improving society over the long term, rather than its immediate effects and results.

> I think there is a part where the results of research conducted in university can benefit everyone in the world, rather than simply opening up educational opportunities for people in one country…Especially in the case of education, not only the immediate benefits and profits, but it brings the long-term contribution by which human beings can live really well and society will prosper. (D)
> I think that responding to the demands of society is adjacent to public good for university...I think the university has a mission to do more than what society wants the university to do… Not within the range of the last 10 years, but creating new value from the perspective of how society should change in the next 30 or 50 years. (H)

The vice president of the T University expressed his view in a more explicit way below:

> Universities exist as an organization that guarantees knowledge that can be used by everyone, and in the sense that they are not closed to the domestic public, universities in any country undertake educational activities relating to the global public interest. Also, as long as research is undertaken at a university, I think it contributes to the global public interest. (E)

However, most interviewees believed that Japan's higher education is not a pure public good, nor does it provide total public goods.

> I think university education is located on both sides of 'public good' and 'public benefits or profits,' and has both positive and negative sides. The positive side is that customers come to the university, graduate, and go out into the business world, and in the sense that they pay tuition fees, the university generates profit. Other than that, there are other things such as passing on knowledge to society in general, and the research itself does not bring profit at the time itself. (F)

The president of X Association also expressed the same point of view below.

> I think half of higher education has a private side (not public). That's why it is necessary for everyone to be able to access it, but I think that the selection function is still necessary when accessing it… partly because of financial issue, university is not a place in which anyone can go to as he or she wishes. Therefore, I think that the selection

> function is an indispensable part of higher education. In that sense, it does not provide total public goods. (C)

Similarly, the director in the field of economics from T University emphasized that Japan's higher education, including Japanese national universities, has a strong character of being a public good and a private good.

> Because undergraduate studies lead to more private goods as university graduates benefit more from them. In contrast, especially doctoral education creates more public goods… On the research side, publishing academic papers is a typical supply of public goods, isn't it? Promoting research has a high public interest, so if you leave it to the market, its public good will be minimized. In particular, the purer the theory is, the more it cannot be used directly, so I think it has a strong aspect of the public good. (G)

The two interviewees from the MEXT also stressed that, compared to compulsory education, Japan's higher education produces more private goods than public goods.

> Compared to the compulsory education that is necessary not only for the benefit of individuals but also for that of society, it is often argued that higher education brings a large benefit to the individual's interests. In particular, there is talk of making it free of charge in Japan these days, so when discussing whether to invest so much, the aspect of personal interests is greater, so it seems that it should be lent back properly rather than making it free of charge. (A)
>
> It is difficult to talk about if there is public good in higher education in a simple way… however, it is recognized that it is difficult to connect the public good with educational aspect of higher education. (B)

Obviously, while a large number of interviewees perceived the phrase "public good" in the technical economic sense, other different interpretations were also found in Japan. Further, although no one denied that Japan's higher education can be considered to be a public good, most interviewees emphasized that it is not a pure public good and has a strong aspect of both the public good and the private good. Regarding the similarities in their understandings of the public good of higher education, almost all the interviewees agreed that university research activities, especially basic and pure research, are more directly related to public goods and social benefits which are not only limited to the national level but also extend to the global level.

What does higher education contribute to the public good, or public goods?

It seems that all the interviewees affirmed the contributions of higher education, including Japanese private universities, to the public good(s). According to what aspect of the contributions of higher education to the public good(s) they primarily focused on, the study created four categories. However, it is worth stressing that while some interviewees only emphasized one aspect of the contributions of higher education to the public good(s), others mentioned several types of contributions. All the four categories were basically developed based on how differently they observed the contribution of higher education to the public good(s).

The first category includes their observations of the general contributions of higher education to the public good(s). The president from Y Association and the vice presidents from the two case universities stressed the specific mission of higher education to produce

professionals and be preserving and transmitting knowledge for the future, which cannot be easily replaced by other institutions. They stated its contribution to the public good as follows.

> University is a place where anyone can learn and any education and research can be conducted. Most importantly, it accepts students from different parts of the world and fosters them to know the world and contribute to society, promote the progress of human civilization through these activities. (D)
> Fostering talents for the next generation, producing knowledge for the welfare of the human beings, and undertaking intellectual activities of pursuing the truth. (E)
> One of the most important missions of our comprehensive university is to preserve and transmit the disciplinary knowledges which are not necessarily popular in the current social trends. These knowledges might become useful in 30 years or later. This is just what higher education could contribute to the public good or public goods (M).

Although a large number of interviewees illustrated the contribution of higher education to the public good largely based on Japan's cases, rather than echoing its perceived roles and functions relating to teaching and research activities and societal engagements, most of them focused on more specific points. Their main comments can be grouped into three broad categories.

The second category is consistent with most interviewees' observations of "public good" and "the public good of higher education." The interviewees believed that, although students can also benefit from going to university, the most important contribution that Japan's higher education makes to the public good is producing manpower and cultivating talents, regardless of national or private universities. This is especially true in relation to producing productive undergraduates with professional knowledge and high-level skills:

> I want to emphasize that professional education, especially teacher training and medical sciences, is important. (C)
> I think that the first thing that is imposed on higher education is human resource development, so we will contribute to the welfare of people at home and abroad through developing human resources that will lead the research and knowledge production in the next generation conducted at higher education institutions. I think this is the most different point from companies. (L)
> Most government officers and big company presidents and managers are graduated from Faculties of Law or Economics, the professional knowledge and abilities they acquired in university can help them to administer and manage this country and companies in a professional way. (O)

Within this category, in addition to the production of manpower and professional talents, the two interviewees from MEXT also mentioned that universities contribute to cultivating good citizens and developing active citizenship. One of them mentioned that:

> There is also contribution of cultivating students with citizenship. Higher education not only benefits economic growth, but also contributes to reducing negative aspects of society by providing citizenship education. (B)

Further, it was admitted by some interviewees from the soft sciences that non-professional education, such as general or liberal arts education, can also make a special contribution to the public good. For example, the dean of the Graduate School of Linguistics and Culture from T University said:

> Education in linguistics and culture can also contribute to the public good by teaching students with relevant knowledge from humanistic perspectives that cannot be learnt from other disciplines. (H)

In the third category, as noted above, largely because one of the most important functions of Japan's national universities is to undertake in-depth scientific research, yielding good and especially innovative research was considered to be a significant contribution to the public good. Undertaking innovative research was viewed as almost equally important as educational activities in contributing to the public good by almost all the interviewees. For example, the two interviewees from the MEXT admitted that in its "research" aspect, higher education produces public goods that benefit society at large. More comments from the interviewees are presented below.

> When it comes to 'creating innovation,' innovation in the sense of bringing about a large positive economic price is largely due to the research that accompanies higher education....Moreover, I think that there is an unconscious sense of value that brings the public interest at the global level, not only at the national level. (B)
> One more contribution is conducting new research resulting in innovation for social development. (C)
> I think this will make a great contribution in the sense that higher education and research will deepen or expand the public interest and body of knowledge in a very wide range. When we are in the Faculty of Engineering, we create something like a research base that brings about innovation, and we will collaborate with related teachers or researchers both inside and outside the belonging institution. (F)
> Individual faculty members contribute to society by publishing research papers with global impacts and being awarded internationally like the Nobel Prize, or being involved in developing national policy. (Q)

As a doctoral education is normally considered to be part of research activities and Japan's national universities play a more important role in producing doctoral degree holders or future academics than private universities, some interviewees also mentioned this point.

> Especially doctoral education trains high-level researchers and professionals who can contribute to the advancement of science and technology as well as the development of good policies. (G)

The fourth category includes their comments on the contribution of higher education to the public good(s) through universities' societal engagements. Many individual academics claimed that they were directly involved in external activities through teaching and research mainly based on their academic fields. Compared to those from humanities and social sciences, a greater number of the interviewees from engineering field emphasized this point. For example, a lecturer in engineering from T University mentioned that:

> I contribute to society by publishing academic papers and undertaking collaborative research with companies. (J)

Other interviewees shared similar observations.

> My discipline is industry chemistry and it is directly concerned with the technological development. As most of my students work in industry and companies after graduation,

> they use their professional knowledge and skills to develop and produce new products. And my research can also result in the emergence of new techniques and technology. (P)

One interviewee from the field of economics also expressed his field's direct contribution to the real world.

> My field is economic geography, so I can contribute to national land improvement directly, especially for regional revitalization. (K)

Can the contribution be measured?

With respect to the measurement of the public good of Japan's higher education, at least three different observations were identified. First, in contrast to many other interviewees, the two interviewees from the MEXT emphasized the necessity and importance of measuring the contribution that Japan's higher education makes for the public good, because higher education is expected to be accountable and transparent. However, it seems that most interviewees, including the two interviewees from the MEXT, believed that some contributions that Japan's higher education makes can be measured while others cannot.

> It is easier to measure the number of graduates, research papers, citations, patents, but difficult to measure the contribution made by art or citizenship. (A & B)

Similarly, most institutional leaders believed that the number of research papers or research grants could be measured, but it is impossible or extremely difficult to measure social, moral, and ethical contributions to the society. More importantly, the contribution that higher education makes to public good(s) should be measured over the long term, and more attention should be paid to the quality rather than the quantity.

Second, some interviewees, especially the interviewees from humanities and social science claimed that it is difficult to measure these contributions in a qualitative way because there are some contributions that cannot be measured based on data or objective indicators.

> How about measuring the effect? As I said earlier, I feel that good, which is visible and can be quantified so much, is not such a thing. Social, ethical, and moral things are difficult to measure immediately. (E)

Third, a few interviewees from linguistics and culture and economics argued that there is no need to measure that contribution. They thought that it is not necessary to measure that contribution, nor can it be measured because of a long-term effect of higher education and the complexities of that contribution.

> No need to measure it, and I don't think it can be measured. The public good doesn't consider the issue of time. It will be useful in 100 years or 50 years…Measurement cannot figure the multi-layered contributions. That's why trying to measure with a strange measurement tool is a mess. You'll find if it actually useful after 100 years, isn't it? (H)

> I don't think it's possible to measure the contribution. The reason is that the effect doesn't appear now. I don't know about science, but the effects of our field will not come out soon. … The public interest is something like the effect of our education in the future, I

don't think we should measure where and who got a job. After all, the effect should come out in 10 or 20 years. It depends on the economic situation at that time. I don't think it can be visualized. (O)

Discussion

As found in previous studies (Marginson 2011; Williams 2016; Hazelkorn and Gibson 2019), a variety of differences were found in interviewees' interpretations of the phrases "public good," "the public good of higher education," the contribution that higher education makes for the public good, and the measurement of the contribution of higher education to the public good(s). There are several reasons for these. First, regarding some contrasting perceptions of "public good" and "the public good of higher education," while the law and national documents clearly stipulate the missions and roles of national university that are concerned with the public good(s) in Japan's higher education, the current structure of Japanese higher education with the largest proportion of private university and the influence of industry and business on the development of Japan's higher education since the 1960s have all affected interviewees' observations of these phrases. Partly they can explain why the term "public good" is understood by a large number of interviewees in the economic sense in Japan. Most importantly, while all the interviewees believed that Japan's higher education could be conceived to be a sort of public good, the majority of them emphasized that it is not a pure public good. The key reason for this is that the public good of Japan's higher education, even in the case of national university, is not accessible to and reaped by all students or Japanese society at large, let alone benefits of its private universities (Huang 2018).

Second, in terms of interviewees' observations of the contribution of higher education to the public good(s), despite a clear division of role or function between the two sectors, both Japan's national universities and private universities have all contributed to the massification of higher education and near universal access to higher education. Partly influenced by the American higher education ideas, national universities were established in every prefecture and fully funded by the central government soon after World War II. They play a critical role in stimulating equal access to higher education and realizing social justice and promoting social mobility by providing quality higher education with much cheaper tuition fees, while private universities played a central role in promoting Japan's higher education to move from the elite phase to mass higher education and enter into the phase of near universal access to higher education (Huang 2012; Yonezawa and Huang 2018). Perhaps it is the most important reason why almost all the interviewees agreed with the contribution that Japan's higher education makes to the public good(s), especially to the production of manpower and the realization of near universal access to higher education. Regarding their different perceptions of the contribution of Japan's higher education to the public good(s), it is true that, compared to the private sector, Japan's national universities are more primarily engaged in research activities. Further, they have much stronger doctoral education, and a few Japanese institutions listed among the top 100 in the major global university ranking tables are all national universities. Perhaps these are important reasons why the majority of interviewees thought graduate education and research activities in the national universities contribute more to the public good(s) than undergraduate education in Japan.

Finally, with respect to the measurement of the public good of Japan's higher education, the variety and complexity of the contributions that Japan's higher education makes to the public good make it impossible to measure all the contributions in a quantitative way. Further, as mentioned by some interviewees, while the short-term effect of teaching and research activities may be measured, it is more difficult to measure the long-term effect. In addition, as most interviewees from linguistics and culture and economics had a doubtful attitude toward the measurement of the public good of Japan's higher education, it seems that these differences may also be caused by disciplinary differences. Most importantly, the differences in interviewees' understanding of "public good" and "the public good of higher education" may significantly affect their views of whether the public good of higher education is quantifiable, whether there is no need to measure it, and to what extent it can be measured.

Conclusion and implications

As analyzed and discussed above, three main conclusions can be summarized as follows.

First, compared to the existing research, the study not only reveals a wide variety of interpretations of the public good, the public good of higher education, the contributions that higher education makes to the public good, or public goods, and the measurement of these contributions in Japan, but also suggests to what extent interviewees' understanding deviates from the literature. Further, the study also analyzes to what extent the backgrounds of interviewees such as academic disciplines and administrative and academic positions affected the variations in their understanding.

Second, while the structure of Japan's higher education system, including the quantitative dominance of private universities, tuition fees system, and existing oversight of the public good, may suggest that there are fewer contributions to public good in Japan's higher education than in European continental countries, actually, the study reveals that Japan's higher education, including private universities, contributes to the public goods, and such contributions are highly valued. Namely, higher education in the market system like Japan can also provide public goods. To some extent, this exploratory study could be considered to fill the gap between research on the public good of higher education in Japan and other western countries and provide a basis on which more comprehensive analysis can be made.

Finally, the findings that highlight the specific case of Japan further develop the study of the public good in higher education in a global and comparative perspective. Therefore, it can help academics, policy makers, and other stakeholders have a better understanding of how these concepts are interpreted in the Japanese context.

Important implications derived from this study include the following. First, more case studies of understandings of the public good, public goods, and the public good of higher education in a global and comparative perspective need to be undertaken before more precise and generally agreed definitions of these terms can be made. Further, this study poses new questions, such as How can contributions of different sectors within one national higher education system be understood? How do these different sectors contribute to the public good respectively? and What indicators or instruments can be developed to measure these contributions? Second, even if all the interviewees emphasized that Japan's higher education can be considered to be a public good, and it contributes greatly to the public good, there is little doubt that it is difficult or impossible for the government to provide full financial support for the university education system in this challenging era. While it is realistic for the government,

local authorities, school corporations, etc. to understand the inherent character of Japan's higher education as a public good and to operate Japan's higher education as a "system that has both public and private property characteristics," it is also important for students, their parents, and other stakeholders to recognize this and to develop consensus on this point.

It goes without saying that there are some limitations to this study. First, because no interviews were conducted with key persons from private universities or industry, the discussion here is largely confined to the national sector; it is difficult to provide a complete portrait of perspectives of the public good in Japan's higher education. Second, though the two case study universities had different characteristics, no data was collected from other types of national universities, focused primarily on teaching activities, teachers training, or one main discipline like foreign language studies, medical sciences, or dentistry. Finally, as the public good and public goods are not widely used terms in Japan's higher education, it is possible that some interviewees might not be sufficiently familiar with these terms while they shared their observations with us. These weaknesses of this study need to be addressed and improved in future studies by discussing with interviewees in more generally accepted terms, expanding the number of participants to more diverse fields and ranks of Japan's society, and selecting more case studies to represent the variation in Japan's higher education sector.

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