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Disciplinary Variations in Graduate Student Experiences: A Study of Osaka University

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ABSTRACT

Given the perceived imbalance in resource allocation and the recognized disparities in degree completion rates across academic disciplines in Japan's higher education system, this study explores the perceptions and experiences of graduate students through a comparison between graduate students in Humanities and Social Sciences and those in Sciences and Engineering. Osaka University has been chosen as the case study because it is one of the former empirical and research-intensive universities located in the international city of Osaka, Japan, which is well-known as one of the most DEI-promoting universities in Japan. The data from the Students Experiences in the Research University (SERU) survey conducted at Osaka University from 16th November 2020 to 19th February 2021 was utilized in the study to delve into graduate students' perceptions of their host institutions and their individual issues. The study suggests that graduate students in Sciences and Engineering generally had better learning and research experience

* [Student Experience in the Research University \(SERU\) Consortium](#) is an academic and policy research collaboration based at Center for Studies in Higher Education at the University of California – Berkeley (CSHE) working in partnership with Etio and member universities.

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at both institutional and individual levels, including a higher level of recognition and satisfaction with academic context (e.g., advising, guidance, facilities, and opportunities) and financial support (e.g., scholarships and research assistantships). Regarding the organizational climate, the data analysis reveals that graduate students in Humanities and Social Sciences tend to depict their institutions as a more accommodating and welcoming environment for students with diverse backgrounds. At an individual level, overwhelmingly graduate students in Humanities and Social Sciences considered themselves less competent regarding their professional knowledge and skills, which leads to significant anxiety and concern about their future employment. Based on the research findings, several recommendations are offered to both researchers and university administrators to address the identified issues and provide enhanced support for students in the future.

In Japan and elsewhere, there is a growing dual perspective on higher education that emphasizes developing “the whole person” as well as job training. A challenge for higher education institutions (HEIs) and their faculty is the increased pressure by policymakers and governing boards that their primary missions should be career preparation and to shift their research from basic to applied research. Government initiatives are increasingly focused on evaluating this perceived central purpose of universities, and particularly their returns on investment. While much attention is on the undergraduate side of this story, it is also true for describing a shift in the perceived purpose of graduate education – the focus of this research report.

In Japan’s context, it should be acknowledged that faculty members in the arts, humanities, and social sciences find themselves working in an environment where funding and attention are mostly directed toward STEM disciplines. In addition, degree attainment rates of graduate students in Humanities and Social Sciences are much lower than that of those in Sciences and Engineering at Japanese HEIs (MEXT, 2019). This raises scholarly questions concerning how graduate students at Japanese universities perceive institutional practices and the values of the institutions they enroll in.

This study explores the perceptions and experiences of graduate students through a comparison between graduate students in Humanities and Social Sciences and those in Sciences and Engineering. Osaka University has been chosen as the case study because it is one of the oldest empirical and research-intensive universities located in the international city of Osaka, Japan. This selection allows for the exploration of a relatively egalitarian and diversified contextual environment, contributing to a less biased and unfair university atmosphere.

The data from the Students Experiences in the Research University (SERU) survey conducted at Osaka University from 16th November 2020 to 19th February 2021 was utilized in the study. Based on the general principle concerning the discipline provided in HEIs, 27.9% of the participants were categorized as graduate students in Humanities and Social Sciences, including those from Management, Marketing, Economics, Education, Linguistics, International Public Policy, etc. In addition, 48.9% were identified as

graduate students in Sciences and Engineering, comprising students from Agriculture, Architecture, Biomedical Sciences, Computer and Information Sciences, Engineering Sciences, and so forth. And 23.2% of the participants' majors were missing, thus, could not be defined.

Regarding the experiences of graduate students, firstly, their perceptions of their host institutions were examined. According to the data analysis, the study indicates that both academic resources and financial support of Osaka University provided in Sciences and Engineering were perceived as higher than those in Humanities and Social Sciences. Specifically, graduate students in Sciences and Engineering were more likely to experience better advising regarding their scientific activities, networking, and collaboration. In addition, graduate students in Sciences and Engineering were also found more satisfied with the tangible factors (e.g., academic writing, research network, and computer and library resources) and less satisfied with intangible factors (e.g., autonomy and encouragement) in their programs.

Lastly, they were less likely to have financial concerns since the provision of scholarships and salary through being a research assistant in their affiliated programs seemed quite adequate. Despite the perceptual disadvantages, interestingly, the graduate students in Humanities and Social Sciences were more inclined to consider their institutions as diverse and inclusive for students with diverse backgrounds. The institutional climate of Osaka University was characterized as open and accommodating for minority students, including those who are international, female, disabled, LGBT, etc.

In terms of the perceptions in relation to their individual issues, overwhelmingly, the study found that graduate students in Humanities and Social Sciences tend to face more professional and mental issues. For example, they were more prone to be less competent in their professional capabilities and achievements regarding applying research methods, sharing research findings, following best practices of integrity and reproducibility in scientific research, collaborating with other researchers and staff, and managing a research project to completion, which contributes to their greater concern about securing a job after graduation from Osaka University. Moreover, they were reported as more likely to encounter mental issues, such as general anxiety and depression disorder, than those in Sciences and Engineering. In general, they were more likely to have little interest in doing things and feel depressed, lonely, and isolated.

1. PERCEPTIONS OF HOST INSTITUTIONS

To better explore the experiences of graduate students at Osaka University, their perceptions of host institutions were investigated through a comparative approach between the graduate students in Humanities and Social Sciences and those in Sciences and Engineering, including their perceived academic support, financial support, and lastly organizational climate. The results of the data analysis are shown subsequently. Firstly, the academic support of graduate students was addressed from three main aspects, namely, advising, guidance, and institutional facilities and opportunities.

Figure 1 shows that graduate students in Sciences and Engineering tend to perceive a higher level of tangible advising from their institutions, especially regarding their research and networking

establishment. In contrast, graduate students in Humanities and Social Sciences considered that the advising provided to them is more autonomous and freer, considering their individuality, in line with the instructions and pedagogy used specifically in the Humanities and Social Sciences fields.

Regarding their perceived helpfulness of institutional guidance (Figure 2), without statistical significance though, the mean of graduate students in Sciences and Engineering is higher than those in Humanities and Social Sciences. Finally, except for instruction, graduate students in the Sciences and Engineering were more likely to express a higher satisfaction regarding the facilities and opportunities at Osaka University (Figure 3).

Figure 1. Perceived advising of participants.

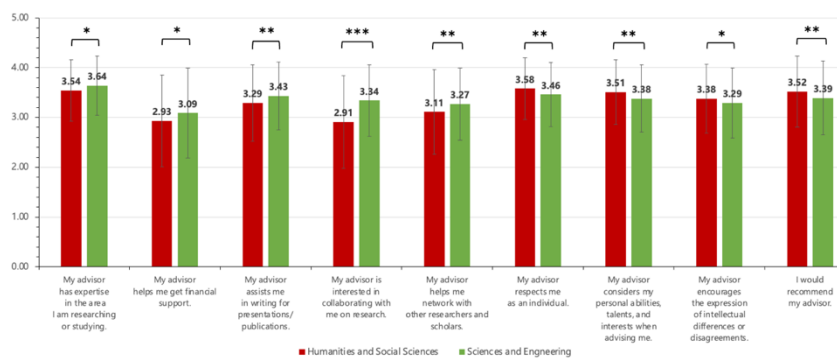


Figure 2. Perceived helpfulness of institutional guidance.

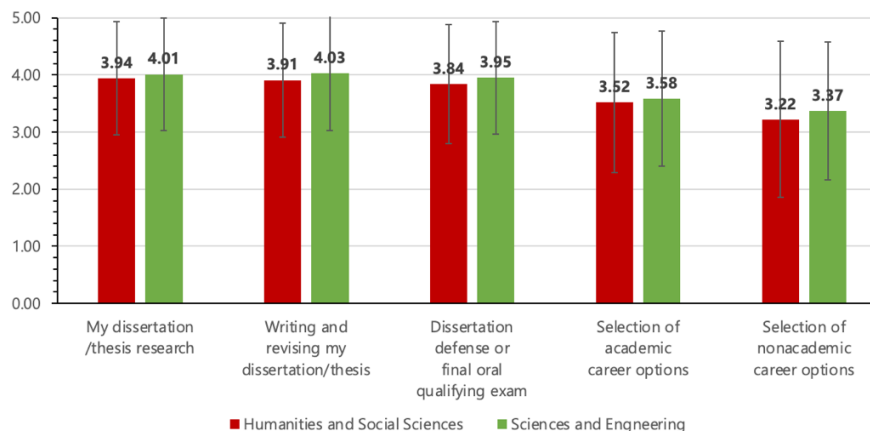
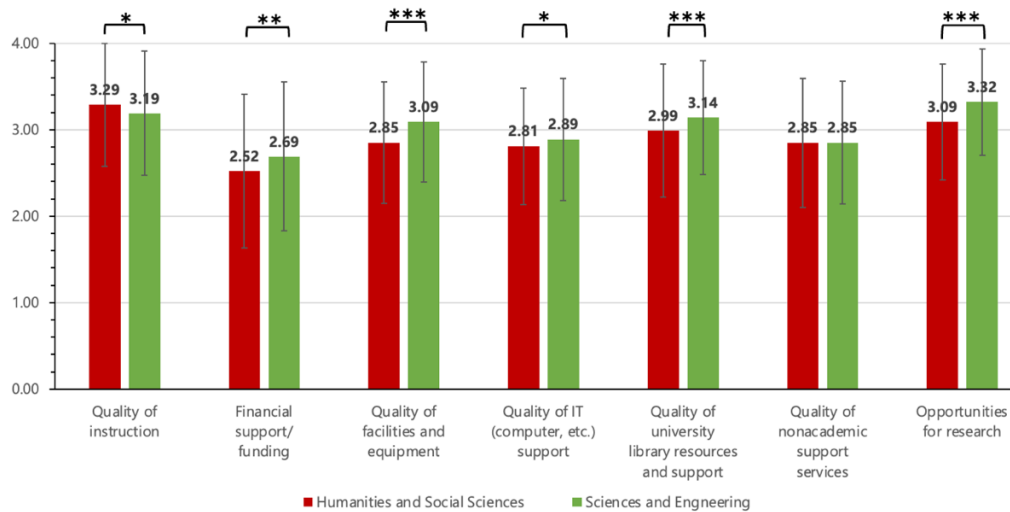


Figure 3. Participants' satisfaction with facilities and opportunities from their institutions.



Secondly, the financial support received by the participants was investigated. Figure 4 shows that graduate students in Sciences and Engineering were more inclined to be engaged with on-campus financial resources, such as universities or departmental fellowships or scholarships, and research assistants. Whereas the main financial resources of graduate students in Humanities and Social Sciences tend to be their personal savings and their other off-campus employment. In addition, it appears that comparatively graduate students in Sciences and Engineering were more likely to apply for loans to continue their studies at Osaka University. Consequently, as noted, graduate students in Sciences and Engineering expressed slightly higher satisfaction with financial support from their institutions (Figure 5).

Finally, the participants' perceptions of their organizational climate were asked. Data analysis suggests that compared with those in Sciences and Engineering, graduate students in Humanities and Social Sciences were more aware of the equality and accommodation of their institutions, covering gender, race, and political beliefs (Figure 6).

Figure 4. Financial support of the participants.

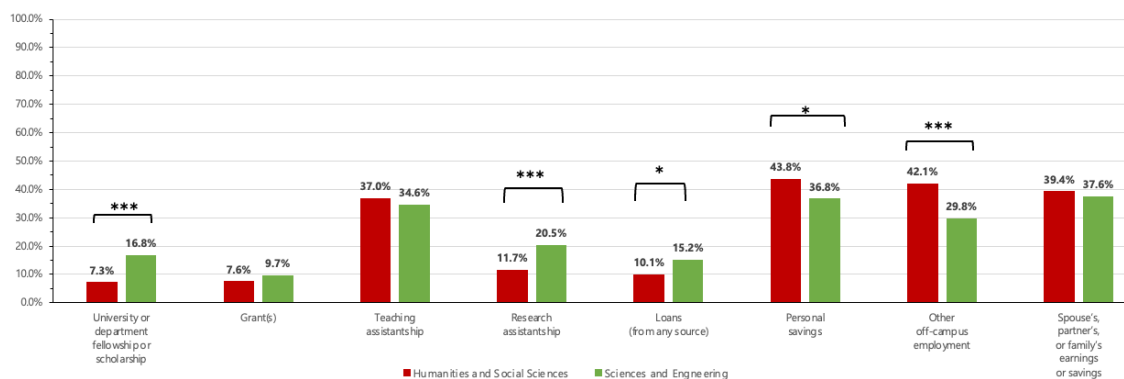


Figure 5. Satisfaction of the participants with their financial support.

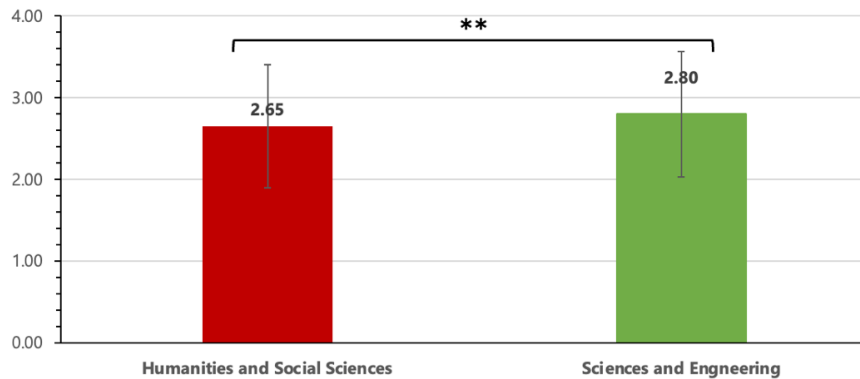
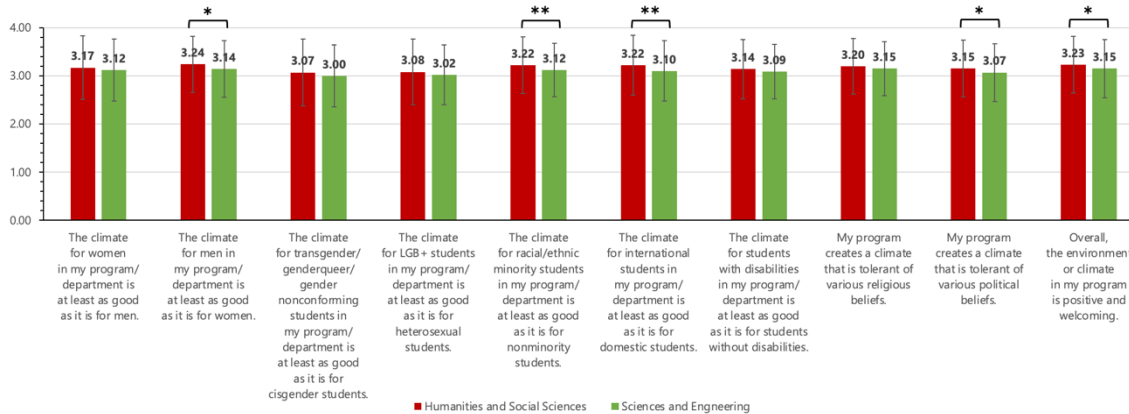


Figure 6. The agreement of the participants with their organizational climate.



2. PERCEPTIONS OF INDIVIDUAL ISSUES

In addition to their perceptions related to their institutions, the study further investigates their cognitions and feelings at an individual level. We found that except for the ability of “identifying a novel research question”, graduate students in Sciences and Engineering were more confident with their research competency in various aspects, comprising those in applying research methods, sharing research findings, following best practices of integrity and reproducibility in scientific research, collaborating with other researchers and staff, and managing a research project to completion (Figure 7).

In a related vein, more graduate students in Humanities and Social Sciences shared their concerns about securing a job after graduation, as shown in Figure 8. Finally, a higher level of mental problems faced by graduate students in Humanities and Social Sciences, such as anxiety and depression disorder, were observed (Figure 9).

Figure 7. Competency in relation to research within the fields/discipline.

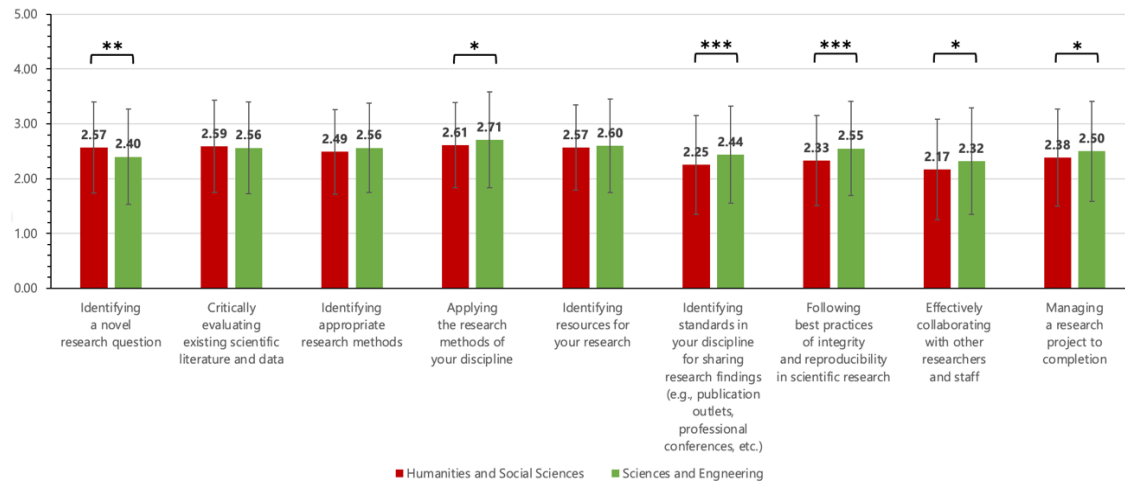


Figure 8. The concern regarding future employment

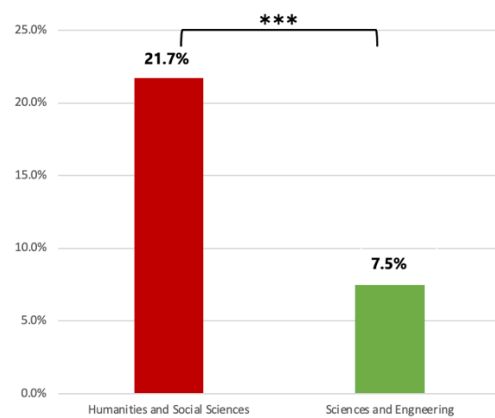


Figure 9. Mental issues encountered by the participants



3. CONCLUSIONS

Given the acknowledged differences in the degree attainment rate of graduate students in Humanities and Social Sciences and those in Sciences and Engineering, the study is the first attempt to explore the different perceptions and experiences of graduate students by disciplines. Despite the usage of the data from a case university--Osaka University, the study found that graduate students in Sciences and Engineering generally had better learning and research experience at both institutional and individual levels. For example, they have a higher level of recognition and satisfaction with academic (e.g., advising, guidance, facilities, and opportunities) and financial support (e.g., scholarships and research assistantships) provided by their institutions than graduate students in Humanities and Social Sciences.

With the introduction of neoliberalism-based new public management in Japanese HEIs, Japanese national universities were forced to be incorporated in 2004, which led to a reduction in annual management expense grants. In order to ensure the financial resources of each university, Japanese national universities gradually focused more on the collaboration between universities and industries, and thus, placed more emphasis on the majors in Sciences and Engineering disciplines (Umeki, 1995; Taniguti, 2015).

This explains why the overall resources and support for graduate students in Sciences and Engineering were considered better than those provided in Humanities and Social Sciences. This should be of concern, which may further lead to the two dichotomies of the two fields, thus, deteriorating the distinctiveness of the two cultures in higher education as suggested by C.P. Snow (2012).

Regarding the organizational climate, the data analysis, however, reveals that graduate students in Humanities and Social Sciences tend to depict their institutions as a more accommodating and welcoming environment for students with diverse backgrounds. This can be attributed to the fact that the proportion of international students in Humanities and Social Sciences is much higher than those in Sciences and Engineering at the graduate level.

Moreover, comparatively, students in Humanities and Social Sciences were more inclined to interact with students from different countries and thus, establish international networks (Kishita, 2004). Students in the Humanities and Social Sciences, therefore, tend to perceive their institutions as more equal and open-minded regardless of students' backgrounds.

Alternatively, unlike students in Sciences and Engineering who spend a lot of time in the lab, students in Humanities and Social Sciences have more time to interact with their peers, which indirectly contributes to their perception of a more welcoming and friendly organizational climate regarding their institutions.

In addition, at an individual level, overwhelming differences in professional and mental issues encountered by graduate students from different disciplines were observed. Comparatively, graduate students in Humanities and Social Sciences considered themselves less competent regarding their

professional knowledge and skills, which leads to significant anxiety and concern about their future employment.

It is undeniable that the lack of a sense of self-efficacy can cause mental issues in individuals. This finding echoes Finnie *et al.* (2016), asserting that the study in Non-STEM fields may not be able to bring students financial wealth or professional advancement. This is in contrast to what was reported by a recent study (Yogyakarta & Al-Ansi, 2021), suggesting that Social Sciences students were less anxious about their future careers than those specialized in Medical and Natural Sciences majors.

4. RECOMMENDATIONS

The findings drawn from our study portrayed comparatively bleak experiences of graduate students in the Humanities and Social Sciences at Osaka University. Undoubtedly, their academic and life experiences are closely intertwined with their degree attainment. A negative studying experience generally leads to a lack of interest in academic life, which in turn affects their further endeavor to strive for educational degrees. Having said this, the study offers the following theoretical and practical recommendations for researchers and university administrators.

For researchers

Extensive previous studies regarding the experiences of graduate students in Japan were conducted. The established literature, however, often took all students as a whole unit, and seldom addresses the characteristics of graduate students with diverse backgrounds. The scholarly focus of our study is placed on their disciplines though, given their distinctive experiences as revealed previously, the study calls for special attention to each distinguished individual university student. In addition, as the selection of discipline is always closely associated with students' gender, a future study, therefore, should be carried out to detect whether student experiences revealed above were influenced by their gender.

For university administrators

A significant difference in experiences between graduate students in Humanities and Social Sciences and those in Sciences and Engineering was identified in our study. To create a more equal and accommodating academic environment and to combat the professional and mental issues encountered by graduate students in Humanities and Social Sciences, special and specific interventions in terms of institutional configuration, including academic resources, financial support, and mental consultants/mentors, should be provided. Those are integral to establishing a legitimate, impartial, and attractive university environment, especially for those who are specialized in the Humanities and Social Sciences disciplines.

About the SERU data

The Student Experience in the Research University (SERU) Consortium administered the SERU survey to pursue and support academic and policy-relevant research related to the student experience, and more generally to how student support and interact in the tripartite mission of research-intensive university –

teaching and learning, research and knowledge production, and public service and civic engagement. The SERU Project engages a wide array of topics to better understand and assess undergraduates, graduates, and professional students' experiences, encompassing academic engagement, undergraduate research engagement, civic engagement, campus climate, technology and learning, the experience of sub-populations, learning outcomes, international comparative analysis, and Graduate Education.

Sample

The survey data used in this report was a census survey conducted at Osaka University from 16th November 2020 to 19th February 2021 to understand the students' experiences at Osaka University. The report uses data from 1190 graduate students. The response rate at Osaka University was 14.6%.

Methodology

All items we report in this research brief are categorical; therefore, we utilized Pearson's chi-square test to determine whether there is a statistically significant difference between the expected and observed frequencies of students' responses. We utilized the common probability level of $p < .05$, which serves as an a priori statement of the probability of an event occurring as extreme or more extreme than the one observed if the null hypothesis is true.

About the SERU consortium

The Student Experience in the Research University (SERU) Consortium is an academic and policy research collaboration based at the Center for Studies in Higher Education at the University of California – Berkeley (CSHE) working in partnership with the University of Minnesota and partner institutions. More information is available at <https://cshe.berkeley.edu/seru>.

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