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# Factors shaping the identity of South Korean college students during the COVID-19 pandemic: Does the "college experience" matter?*

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**Abstract**

This research analyzes the effect of online instruction and the resulting lack of an in-person campus experience during the COVID-19 pandemic on the importance of one's university for college students' identity. While previous research, mainly from the United States, underlines the importance of the "college experience" for fostering strong connections between university students and their alma mater, much less is known about the mechanisms at play in other academic systems. Using a sample of students from a South Korean university—Yonsei University Mirae Campus—that switched to exclusively online instruction in March 2020 and stayed entirely online for four consecutive semesters, we explore the importance of college experience for students' identity. We compare the importance of their university and their department for students with and

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without in-person campus experience using two-sample hypothesis testing as well as ordered probit regressions, and find no differences between the two groups and no effects of the length of a student’s offline experience on the importance of their alma mater for their identity. These findings limit the scope of the social interaction thesis for university students’ identity formation and underline the importance of further research on the topic, drawing on data from non-U.S. contexts and diverse academic systems.

**Keywords**
College experience, Covid-19, high education, South Korea, student identity

# Ⅰ. Introduction

The COVID-19 pandemic caused an unprecedented shock to education systems worldwide, followed by hurried transitions to online and hybrid learning as schools and universities tried to provide education for their students. Often unprepared for such a transition, many universities adopted remote learning with little time for students and instructors to adjust. The rapid transition stimulated ongoing research into the academic and social impacts of the new learning modalities and their effects on students' mental health. This study explores how participation in only online classes during the pandemic may have affected the importance of their alma mater for students' identity, against the background of a forced absence of the traditional in-person campus experience that typically fosters a strong sense of belonging to and participation in their university.

In psychology and sociology, identity may be defined as an individual's self-concept shaped by social roles, personal values, and affiliations. Erikson's (1968) theory underscores the importance of social interactions in identity development, which emphasizes the development of a sense of self through social interaction across the lifespan. This process is highly relevant in higher education because student identity is often tied to the university environment and its roles. Stryker's (1980) identity theory posits that individuals have multiple identities (e.g., as a student, friend, or professional) depending on their social roles, and these identities can become more salient depending on the context. Students' academic affiliation can become a central part of their identity, especially when linked to a prestigious institution.

From the perspective of symbolic interactionism developed by Blumer (1969), identity is shaped and reaffirmed through social interactions. University students engage with faculty, peers, and the campus community, internalizing institutional values and traditions that shape their identity. Ashforth & Mael (1989) argue

that these interactions enable students to integrate university culture into their personal and professional identities, notably when they feel aligned with the university’s values and mission.

More specifically, the in-person campus experience, with its face-to-face interactions and shared traditions, may be critical in strengthening a student's sense of belonging and identity. Tinto (1993) emphasizes that the social and academic integration students experience through in-person engagement is critical to fostering a deep connection with their university. Thomas (2002) adds that the sense of community created by being physically present on campus helps students more easily navigate academic life, thereby increasing their identification with the institution.

These hypothesized mechanisms of incorporating the university into one’s identity have mostly been examined in the context of the United States, where a vibrant university culture provides students with a strong sense of belonging by means of intramural and intercollegiate sports leagues and events, organized campus traditions, and alumni relations organized by a multitude of objectives and characterized by events such as homecoming days or even weekends. The question remains whether the same mechanisms are also at work in university systems that lack such features. Under this circumstance, students’ identity with universities may rest on alternative sources, such as the prestige and reputation that the institutions carry for them. Tajfel & Turner’s (1979) social identity theory emphasizes that group memberships—such as belonging to a particular university—may significantly affect identity. Students often feel pride from being enrolled in prestigious institutions, and these positive emotions may, in turn, increase their sense of belonging and status. Studies by Ellemers, Spears, & Doosje (2002) and Archer, Hutchings, & Ross (2003) also suggest that affiliation with prestigious universities can bolster students’ identities, as they perceive their institutional connection as a result of their success that will also affect their future opportunities in life. This sense of validation, in turn, also

reinforces their identification with the university, making the institution a core element of their identity.

We explore the importance of college students' alma mater for their identity in the South Korean university context. While lacking in a vibrant university culture, Korea presents a highly stratified university system where access to social power, privilege, and resources is significantly affected by the university that one has been affiliated with (전은희, 2017; 이건만, 2007; 임희성, 2014). This makes Korea an ideal case to limit the scope of the social interaction thesis for university students' identity formation. In particular, we seek to demonstrate that the thesis does not work in a circumstance that lacks a vibrant university culture.

This study uses data surveyed from students at a university that switched to fully online classes, with no hybrid or in-person instruction at all, in March 2020, and stayed online for four semesters. This resulted in a unique sample of older students who had experienced offline semesters before the pandemic and younger students deprived of opportunities for a "campus experience" and social integration during those four semesters. We find no statistically significant differences between the two groups when comparing the importance of their university for their identity. In addition, we find no differences between students in different years of study, concluding that the physical experience of campus life is less critical for incorporating one's alma mater as a facet of identity in the South Korean context. Likely, this facet is instead incorporated upon admission.

The remainder of this study is organized as follows: Section 2 provides a literature review focusing on the university's role in shaping identity and derives testable hypotheses for the empirical analysis. Section 3 describes the materials and methodology adopted to test the hypotheses above, and Section 4 presents results. Section 5 discusses and concludes.

# II. Literature Review and Arguments: The role of the university in shaping identity

Emerging adulthood, a concept introduced by Arnett (2004), refers to the developmental phase from an individual‘s late teens through the mid-twenties, characterized by exploration, self-discovery, and significant life transitions. During this stage, individuals often leave their parental homes, enter higher education, and begin career paths. All of this contributes to the development of their personal and social identities. University life is central to this process, providing an environment where young adults can explore their values, aspirations, and social roles in a relatively safe space. As Arnett (2004) discusses, the university may serve as a space for identity development, enabling students to experiment in different areas of their lives—both personal and professional—while connecting these explorations to their institutional affiliations. Exposure to new ideas, environments, and diverse social groups challenges students to reflect on their identities, making the college years pivotal in forming personal, academic, and professional self-concepts (Erikson, 1968). This developmental stage, called a "moratorium" by Erikson, is marked by a time of exploration before individuals settle into long-term roles, strengthening personal and social identity (Coté & Levine, 2002). Coté and Levine's framework emphasizes the structured opportunities universities provide for students to build "identity capital," including the values, skills, and social connections integral to their developing identity.

In face-to-face, offline learning university environments, a sense of belonging, direct interaction with faculty and peers, and academic integration may all contribute significantly to identity formation in emerging adulthood. In addition, extant research indicates that on-campus experiences significantly shape alumni identification with their alma mater. Mael and Ashforth’s (1992) seminal work

on organizational identification, defined as perceiving oneself as one with the institution, suggested that students who develop strong identification with their universities are more likely to show loyalty and contribute positively to the institution's reputation. Organizational identification is influenced by factors such as organizational distinctiveness, prestige, and satisfaction with the university experience (Mael & Ashforth, 1992). Shared experiences among students foster long-term loyalty and support for the university (McAlexander & Koenig, 2001). Later research by Jones (2010) and Trowler & Trowler (2011) also pointed out that students who engage more actively in campus life through clubs and organizations often see the university as a core part of their identity. Offline learning environments foster this engagement by creating opportunities for community building, mentorship, and peer interaction, all of which contribute to a stronger identification with the university (Armstrong & Hamilton, 2013). Academic and social experiences as an undergraduate substantially affect alumni involvement, loyalty, and philanthropy, especially for those with solid university ties (Etzelmueller, 2014; Koenig-Lewis et al., 2016). Furthermore, alumni engagement increases when their social identity is mirrored in fundraising solicitations, particularly for those sharing marginalized identities with profiled students (Drezner, 2018).

In contrast, studies by Rovai and Jordan (2004), O'Keeffe (2013), and Burge et al. (2017) show that fully online learning environments tend to limit these opportunities for social interactions, resulting in weaker institutional identification and a reduced sense of community. Online learning creates a more fragmented experience, as students engage with coursework in isolation from their peers and professors. This reduces opportunities for building a coherent student identity shaped by in-person experiences and interactions. Online students may feel less connected to the university than students who attend classes on campus. Therefore, offline learning environments seem to play a vital role in solidifying university affiliation as a component of student identity through their unique social and academic dynamics.

Whether these mechanisms are also at work in university systems outside of the United States remains an open question. Few studies have investigated the importance of one’s university for student identity formation, and the findings are diverse. In a comparative study, Italian students' identification with their university primarily focused on academics, while U.S. students emphasized social experiences (Di Battista et al., 2022). A South African study found that efforts to build a university identity were unsuccessful, with students reluctant to publicly display university branding (Rust & Uys, 2014). International students in the UK face challenges in adaptation, identity development, and integration, impacting their self-worth and confidence (Liu & Winder, 2014).

In the South Korean context, which lacks a vibrant university culture and also presents a highly stratified landscape for higher education, it is unclear how the college experience affects students‘ identity and identification with their alma mater. Employing survey data collected from selected university students during the Covid-19 period, we demonstrate that the social interaction thesis does not work in the Korean context. We conjecture that students’ sense of affiliation with their alma mater might have begun upon gaining admission for most students. Admission itself is a significant milestone, and previous research suggests that in such contexts, institutional prestige often serves as a critical facet of identity (Byun, Schofer, & Kim, 2012). This suggests that the physical on-campus experience might be less important than the perceived or real value of attending a prestigious institution, as admission could give students a strong sense of identity tied to academic success and future opportunities (Choi, 2018). Therefore, the identity-boosting experience of being admitted to a prestigious university may suffice for incorporating the alma mater into one’s identity and replace the need for a “college experience.“ If this is the case, there should be no differences in the importance of one’s university for identity between freshmen and older students and no differences between students with and without an offline campus experience.

Based on the reviewed literature, we posit the following two hypotheses:

H1: Since university identity is incorporated upon admission, we expect no differences in its importance between students in different years of study.

H2: Since university identity is incorporated upon admission, we expect no differences in its importance between students with and without experience of offline classes.

## III. Materials and Methods

We present quantitative findings from South Korea during the Covid-19 period. We utilize student survey data drawn from Yonsei University Mirae Campus. Yonsei University was one of the first universities in South Korea to switch to fully online teaching early in the pandemic. It offered only online classes for four consecutive semesters, providing a uniquely suited setting to analyze the effects of experiencing online classes on the importance of their university for students' identity. From a research method perspective, Yonsei's experience presents a 'most-likely case' context (Eckstein 1975) to support the social interaction thesis of identity formation. It featured students with no experience of social interaction in their entire college years, along with others who had been exposed to offline semesters before the pandemic kicked in. If the thesis is correct, we would find tangible differences in the identification of the two groups with Yonsei. Yet, if they all exhibited similar feelings of belonging, Yonsei's data may provide a clearly deviant case for the social interaction thesis, thereby limiting its causal explanatory power (Gerring, 2017, pp.74-75).

Let us report details of the data collection process. Our research project was designed and implemented by a team of three researchers from different

disciplines. The Institutional Review Board (IRB) for Human Subjects Research reviewed and approved the research protocol (1041849-202109-SB-155-02). Ethical guidelines were rigorously followed to ensure students understood that their participation was voluntary and that opting out would not result in penalties. Written informed consent was obtained from all respondents before both survey participation and the interviews. Ten faculty members participated in recruitment across seven departments and divisions at Yonsei University's Mirae Campus. The recruitment took place in undergraduate courses via video clips, in-class visits, and written announcements on the university’s learning platform. Detailed information about the study was provided both orally and in writing. Participation was optional, and students could choose whether to participate in the survey or the interviews. Since participation was voluntary, the sample may not be representative of the student population, especially regarding experiences with online and offline learning. The survey data analyzed here offer the possibility to quantitatively assess key variables, including averages, distributions, and relationships derived from student responses.

Data for the quantitative analysis were gathered through an online survey hosted via Google Forms from April 11 to May 31, 2022. Students who completed the survey received a KRW 10,000 gift certificate. The final sample consisted of n = 217 students, where 117 students had experienced both online and offline semesters, while the remaining 100 students had experienced only online semesters. The survey included questions about the importance of several facets of identity for the respondents. Additional questions included demographic information, including socio-economic background, family structure, and study-abroad experience during middle and high school years.

To analyze the importance of different facets of their identity, students were asked to rate various aspects of their identity, such as the importance of being a Yonsei student, their department, and year of study, using five-point Likert scales. Verbal rating scales were used, as research suggests they offer

advantages over numerical scales in terms of reliability and user interpretation (Menold, 2020). Although identity is a multidimensional construct encompassing cognitive, emotional, and behavioral dimensions, this study operationalizes it using a single-item measure assessing the perceived importance of different aspects of identity. While this approach certainly does not capture the full complexity of identity formation, it allows for a comparative assessment of the relative importance of various identity facets across individuals. Prior research has similarly relied on single-item measures for identity-related constructs, particularly when survey length constraints necessitate a parsimonious approach (e.g., Fisher et al., 2016; Halsam et al., 2022; Postmes et al., 2013). While multi-item scales may enhance measurement precision, research suggests that single-item measures can still be valid and reliable in capturing subjective evaluations of identity importance, particularly when the measured concept is concrete and familiar to respondents (Wanous, Reichers, & Hudy, 1997). Thus, while acknowledging this limitation, the current measure remains useful for examining differences in identity salience across individuals.

Appendix A provides full descriptive statistics and a correlation matrix for all key variables. The full survey is provided in the appendix (to be confirmed. While the project also included semi-structured interviews to explore students' experiences more deeply, this study focuses exclusively on the quantitative data from the survey.

We tested for common method bias using Harman's single-factor test to mitigate the risk of bias from using data gathered in a single survey (Harman, 1967). Factor 1 has an eigenvalue of 2.16857, which explains about 42.73% of the variance. This is well below the 50% threshold commonly used in the test, which indicates that common method bias is not a major problem in this study. The full test results are provided in the Appendix (Table A.3).

Next, we also tested for possible multicollinearity by examining pairwise correlations and variance inflation factors (VIFs). The highest pairwise

correlation was $\rho$ = 0.4758 (between the importance of age and the importance of gender for one’s identity). Also, variance inflation factors were all below the often-suggested threshold value of 3 (Hair et al., 1998; O’Brien, 2007), with a maximum of 2.94 and a mean VIF of 1.73, suggesting multicollinearity is not an issue, either. Variance inflation factors are also provided in the Appendix (Table A.4).

The data were analyzed using statistical hypothesis tests (Mann-Whitney and Kruskal-Wallis tests, Mann & Whitney 1947 and Kruskal & Wallis 1958) and ordered probit regression models, with all analyses conducted in STATA 17.0. Descriptive statistics were used to summarize key student characteristics, such as year of study, age, and major. Hypothesis testing examined differences in identity-related outcomes across online and offline semesters, while regression models explored the determinants of these outcomes, including the number of offline semesters completed before transitioning to fully online learning.

## IV. Results

The following section summarizes the key characteristics of the sample used for the regression analysis. The Appendix provides detailed descriptive statistics and a correlation matrix. Among the 217 students who completed the survey, 51.61% (112 students) were female, 47.47% (103 students) were male, and 0.92% (2 students) preferred not to disclose their gender. The average age of respondents was 22 years. The majority of students (58.07%, or 126) had spent their middle and high school years living in the Korean metropolitan area, including Seoul, Incheon, and Gyeonggi province. A smaller portion (16.59%, or 36 students) had lived outside Korea during that time, while 10.14% (22 students) had lived in Gangwon province. Regarding socio-economic background, 43.32% (94 students) classified their families as middle class, followed by

35.02% (76 students) identifying as upper-middle class, 12.44% (27 students) as lower-middle class, 5.07% (11 students) as lower class, and 4.15% (9 students) as upper class.The majority of students (77, or 35.48%) were juniors, followed by seniors (52, or 23.96%), freshmen (50, or 23.04%), and sophomores (38, or 17.51%). Regarding their department, most students (31.80%, or 69) were from the Division of East Asian Studies, an English-language study program on campus, while 18.43% (40) were from the Division of Biological Science and Technology, 15.21% (33) from the Department of International Relations, 9.22% (20) from the Division of Business Administration, and 7.37% (16) from the Departments of Philosophy and History & Culture.

Table 1 summarizes students' answers on the importance of a particular factor for their identity. Since the answer options make this an ordered variable, both mode category and means are reported. While the focus of this research is on the importance of one's university and one's department for identity, this table provides an overview for results of all the possibly important facets of identity that were surveyed. The results suggest that religion, region of origin, gender, and family income group are less important for students' identity. In contrast, their family, future career, and the two university-related facets (being a Yonsei student and their department) are considered more important by the students. This is not unexpected for a sample of young adults and is very much in line with the concept of emerging adulthood discussed in the literature survey: while their family of origin is still „very important" or „important" for the majority of students, their university and university-related aspects, as well as their future career, also rank highly in importance.

## Table 1: Identity

| | Yonsei student | Department | Year of study | Acad. Perf. | Religion | Region | Age group | Gender | Inc. group | Future career | My family |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Don't know | 4.61% | 1.38% | 1.84% | 1.38% | 5.53% | 1.84% | 1.38% | 3.69% | 5.07% | 4.15% | 5.07% |
| Not important at all | 11.06% | 3.23% | 8.29% | 8.76% | 41.94% | 29.49% | 11.52% | 17.51% | 29.03% | 10.14% | 12.9% |
| Not important | 8.29% | 1.84% | 11.52% | 12.44% | 21.2% | 22.12% | 13.36% | 18.43% | 21.66% | 5.07% | 9.22% |
| Neither important nor unimportant | 29.49% | 16.13% | 27.19% | 23.5% | 17.05% | 29.03% | 23.96% | 35.48% | 28.11% | 24.42% | 17.05% |
| Important | 36.87% | 51.61% | 42.4% | 40.09% | 10.14% | 15.21% | 43.32% | 19.82% | 12.9% | 41.47% | 27.65% |
| Very important | 9.68% | 25.81% | 8.76% | 13.82% | 4.15% | 2.3% | 6.45% | 5.07% | 3.23% | 14.75% | 28.11% |
| Mean (excluding "don't know") | 3.27 | 3.96 | 3.32 | 3.38 | 2.08 | 2.38 | 3.20 | 2.76 | 2.36 | 3.48 | 3.51 |
| Mode | 4 | 4 | 4 | 4 | 1 | 1 | 4 | 3 | 1 | 4 | 5 |
| *n* | 217 | 217 | 217 | 217 | 217 | 217 | 217 | 217 | 217 | 217 | 217 |

The following tables explore the importance of the two directly college-related aspects for a student's identity, comparing students who had and did not have offline classes experience at the time of the survey. The mode answers in all questions are the second-highest answer options, meaning the identity aspect under consideration is “important” for the student’s identity, for students with and without offline experience. Two-sample Wilcoxon rank-sum tests showed that there is no statistically significant difference in importance for students’ identity between those with and without experience of offline classes (for being a Yonsei student, z = -0.515 and prob > |z| = 0.6064; for the student’s department, z = 0.588 and prob > |z| = 0.5567).

Table 2.1 Importance of being a Yonsei student for identity

| | Offline experience | No offline experience |
|---|---|---|
| Don’t know | 4.27% | 5.00% |
| Not important at all | 12.82% | 9.00% |
| Not important | 9.40% | 7.00% |
| Neither important nor unimportant | 26.50% | 33.00% |
| Important | 39.32% | 34.00% |
| Very important | 7.69% | 12.00% |
| *n* | 117 | 100 |

Table 2.2 Importance of own department for identity

| | Offline experience | No offline experience |
|---|---|---|
| Don’t know | 0.85% | 2.00% |
| Not important at all | 1.71% | 5.00% |
| Not important | 1.71% | 2.00% |
| Neither important nor unimportant | 17.95% | 14.00% |
| Important | 50.43% | 53.00% |
| Very important | 27.35% | 24.00% |
| N | 117 | 100 |

Table 3 analyzes the number of offline semesters (a measure of the varying degree of social interaction) as a possible determinant of the importance of the two facets for a student’s identity. Since the dependent variable is ordered, an ordered probit model was estimated. To save space, the estimated coefficients for cut points are only provided in the full table in the appendix. Gender, year of study, family income group, a dummy variable equaling 1 if the student spent time abroad during middle and high school, and year of birth were included as control variables since they might affect the importance of a particular identity factor.

Seen from the table, the number of offline semesters a student experienced showed no statistically significant association with the four university-related facets of identity analyzed here. However, there are some statistically significant and interesting results for the control variables. Female students place higher importance on being a Yonsei student and their academic performance for their identity. Students in higher years of study and those who spent time abroad during their middle and high school years place lower importance on their academic performance for their identity. Lastly, younger students place higher importance on their year of study for their identity.

**Table 3: Number of offline semesters and importance of factors for identity**

| | Yonsei student | Department | Year of study | Acad. performance |
|---|---|---|---|---|
| Number of offline semesters | 0.0194 | 0.0005 | 0.0122 | 0.0219 |
| | [0.0217] | [0.0222] | [0.0217] | [0.0217] |
| Female | 0.1660** | 0.0229 | 0.0695 | 0.2340*** |
| | [0.0800] | [0.0829] | [0.0804] | [0.0808] |
| Year of study | -0.0399 | 0.145 | 0.0964 | -0.1990* |
| | [0.108] | [0.113] | [0.109] | [0.110] |
| Family's income group | 0.0587 | -0.0315 | -0.0586 | -0.0873 |
| | [0.0800] | [0.0834] | [0.0809] | [0.0804] |
| Spent time abroad during | 0.0104 | 0.0222 | 0.0129 | -0.0552** |

| | | | | |
|---|---|---|---|---|
| middle and high school | [0.0214] | [0.0221] | [0.0215] | [0.0219] |
| Year of birth | -0.00943 | 0.0701 | 0.133** | -0.0189 |
| | [0.0566] | [0.0585] | [0.0569] | [0.0572] |
| Observations | 217 | 217 | 217 | 217 |

Standard errors in brackets
*** p<0.01, ** p<0.05, *p<0.1

In the last step, we tested whether there are differences in the importance of being a Yonsei student and one's department for students' identity between different years of study.

**Table 4.1: Year of study and importance of being a Yonsei student for identity**

| | 1st year | 2nd year | 3rd year | 4th year |
|---|---|---|---|---|
| Don't know | 4.00% | 5.26% | 2.60% | 7.69% |
| Not important at all | 8.00% | 10.53% | 16.88% | 5.77% |
| Not important | 14.00% | 7.89% | 2.60% | 11.54% |
| Neither important nor unimportant | 24.00% | 39.47% | 37.66% | 15.38% |
| Important | 38.00% | 26.32% | 31.17% | 51.92% |
| Very important | 12.00% | 10.53% | 9.09% | 7.69 |
| *N* | 50 | 38 | 77 | 52 |

The mode answers here are "important" for freshmen and senior students, while the mode answers for sophomores and juniors are "neither important nor unimportant." A Kruskal–Wallis equality-of-populations rank test showed that there are no statistically significant differences in the importance of being a Yonsei student for identity between students in the four years of study ($\chi$ 2(3) = 3.499 and p = 0.3209 for the version of the test without ties, $\chi$ 2(3) = 3.847 and p = 0.2785 for the version of the test with ties).

Table 4.2: Year of study and importance of own department for identity

| | 1st year | 2nd year | 3rd year | 4th year |
|---|---|---|---|---|
| Don't know | 2.00% | 0.00% | 1.30% | 1.92% |
| Not important at all | 4.00% | 5.26% | 2.60% | 1.92% |
| Not important | 4.00% | 0.00% | 1.30% | 1.92% |
| Neither important nor unimportant | 8.00% | 13.16% | 23.38% | 15.38% |
| Important | 60.00% | 57.89% | 48.05% | 44.23% |
| Very important | 22.00% | 23.68% | 23.38% | 34.62% |
| *n* | 50 | 38 | 77 | 52 |

Regarding the importance of one’s department for identity, the mode categories for all years of study are “very important”. A Kruskal–Wallis equality-of-populations rank test showed that there are no statistically significant differences in the importance of one’s department for identity between students in the four years of study ($\chi$ 2(3) = 1.743 and p = 0.6275 for the version of the test without ties, $\chi$ 2(3) = 2.072 and p = 0.5576 for the version of the test with ties).

# V. Discussion and Conclusion

Based on the reviewed literature and characteristics of the South Korean university system, we posited the following two hypotheses:

H1: Since university identity is incorporated upon admission, we expect no differences in its importance between students in different years of study.

H2: Since university identity is incorporated upon admission, we expect no differences in its importance between students with and without experience of offline classes.

In the empirical analysis, we found no statistically significant differences between students with and without experience of offline semesters, no differences between years of study, and no statistically significant effect of the number of offline semesters a student had experienced at the time of the survey. This is intriguing, given the large volume of the previous literature stressing the importance of the on-campus “college experience" for identity formation. In addition, a previous article using the same survey data found much lower overall satisfaction with college life in online semesters (Kim et al., 2023), which could be an additional apparent reason for the lower importance of one’s alma mater for identity but is not. These findings challenge the commonly held view that social and interpersonal interactions and a satisfying “college experience" foster a stronger sense of student identification with their institution. Focusing on South Korea with its highly stratified university system, we tested whether the importance of their university for students' identity is shaped by their experiences in online (low interaction) versus offline (high interaction) learning environments. Our findings suggest that students' identities remain stable regardless of their learning mode or the number of years enrolled, suggesting that in this specific context, the “college experience“ has little impact on identity formation.

Beyond this possible importance of the number of offline semesters experienced, we found some interesting associations for the control variables, with female students placing higher importance on their university and academic performance for identity. Previous research has suggested that female students often report a stronger connection to their academic environment and achievements. This may be because more than men, women tend to integrate their academic success with their identity (Buchmann & DiPrete, 2006). Regarding the finding that students in higher years of study place lower importance on academic performance, a candidate explanation is that as students progress through their academic journey, other aspects of their identity (e.g.,

future career prospects, preparation for employment or state exams) might become more salient than their academic performance. This aligns with Tinto's (1993) theory of student integration, which suggests that academic identification may diminish as students approach graduation and focus more on their lives after university.

The finding that students who spent time abroad during middle and high school place lower importance on academic performance might be explained by their exposure to different educational systems and cultures during formative years, reducing the centrality of academic performance to their identity. This is in line with the findings of Brown and Holloway (2008), who suggest that study-abroad experiences (although for post-graduate students) can foster a more global or multifaceted identity, where academic success becomes just one aspect of identity among many others. Lastly, for younger students, the immediate context of their academic journey (e.g., their year of study) might be more prominent in shaping their identity, especially as they adjust to the transition from high school to university. The developmental stage of emerging adulthood is often marked by an exploration of identity, with education and academic standing playing a critical role (Arnett, 2004) before, again, other aspects of identity might become more central in the period before graduation.

In addition to the characteristics of the South Korean university system, possible explanations for these surprising findings include the following reasons. First, students may have internalized the severity of the pandemic, leading them to adjust their expectations and perceptions of what a traditional college experience should entail. Previous research suggests that individuals often adapt to drastically changed conditions during crises by redefining priorities and goals (Bonanno, 2004). Given the extraordinary circumstances of the COVID-19 pandemic, especially during its early days, students might have perceived the mere continuation of education during a global crisis as a significant achievement, even if it was all online. In this sense, their alma mater could

have been a symbol of stability and continuity in uncertain times. This might explain why in-person experiences seemed less critical for identity formation during this period.

Second, cultural differences between the Korean and U.S. contexts might explain these results. Much of the literature on identity formation and university experiences is based on colleges in the United States, where campus life and extracurricular activities are essential components of “the campus experience" and identity development (Tinto, 1993; Astin, 1999). South Korea's university culture is distinct from that of many Western higher education systems, primarily due to its intense focus on prestige and stratification (Park, 2013). Unlike U.S. universities, which often emphasize campus engagement, student life, and extracurricular activities as central to identity formation (Di Battista et al., 2022), Korean universities serve as status markers that play a crucial role in social mobility and career prospects (Shin, 2012). This prestige-driven culture could imply that students develop a strong institutional identity upon admission rather than through campus experiences. Given the weight of university prestige in determining future employment opportunities, social standing, and personal networks, students' affiliation with their alma mater is shaped more by external perceptions and social comparisons than by on-campus involvement. This may explain why we find no significant differences in university identity between students with and without offline class experiences.

Moreover, the role of university prestige in South Korea is deeply embedded in broader social structures, including the labor market and familial expectations. Admission to a top university is often viewed as a lifelong achievement that defines one's social and professional trajectory (Byun et al., 2012). Unlike in Western contexts, where students may cultivate university identity through shared traditions, alumni networks, and campus engagement (McAlexander & Koenig, 2001; Mael & Ashforth, 1992), in Korea, university identity may be less about participation in university life and more about the symbolic value of

institutional affiliation. This distinction suggests that the conventional understanding of identity formation through social interaction may not fully apply in this setting, reinforcing our argument that identity incorporation occurs upon admission rather than through ongoing university experiences.

South Korean students may derive a sense of identity primarily from their academic success and institutional affiliation, with less importance placed on the communal aspects of university life than their US counterparts, although a campus life with student clubs and festivals certainly exists. The cultural emphasis on academic prestige may also help explain why the importance of their alma mater was not lower for students without in-person campus experiences or why there are no differences between years of study.

In addition to Erikson's (1968) identity development framework and Tajfel & Turner's (1979) social identity theory, self-categorization theory (Turner et al., 1987) might provide a useful lens for understanding university identity formation. This theory suggests that individuals categorize themselves into groups based on perceived similarities and shared social identity, which helps explain why students strongly identify with their university when they see it as a distinctive and prestigious institution. The theory posits that group identification is driven by the salience of the social category, meaning that when students view their university as a significant social marker, it becomes a central part of their identity. This perspective is particularly relevant in highly stratified educational systems, such as South Korea's, where university prestige significantly impacts future opportunities and social mobility (Byun, Schofer, & Kim, 2012). Unlike contexts where university identity is built through campus engagement and traditions, in hierarchical systems, students may derive their identity primarily from their institution's reputation rather than their direct experiences.

Another relevant framework is Bourdieu's (1986) concept of cultural and social capital, which helps explain how university prestige translates into identity

formation. Bourdieu argued that cultural capital—such as institutional reputation—confers social advantages that shape individuals' self-perceptions and social positioning. In this sense, students attending prestigious universities may internalize their institution's status as part of their self-concept, reinforcing their identity without necessarily requiring extensive social interactions or traditional university experiences. This aligns with research showing that in education systems where elite universities act as gatekeepers to high-status careers, students often form their identity around admission success rather than on-campus involvement (Kim & Kim, 2020). Unlike Western university systems where identity formation is closely tied to extracurricular engagement and campus traditions (Arnett, 2004; Tinto, 1993), students in prestige-driven systems may see university identity as an outcome of selection rather than participation.

Furthermore, social comparison theory (Festinger, 1954) provides additional insight into how students' university affiliation influences identity formation. The theory posits that individuals evaluate themselves in relation to others, which can lead to upward or downward comparisons depending on their perceived status. In South Korea's hierarchical university system, students attending elite institutions may develop a strong sense of identity because they compare themselves favorably to peers attending lower-ranked universities. This social comparison process reinforces their institutional affiliation, independent of campus-based experiences. The strong societal emphasis on university prestige in Korea (Seth, 2002) suggests that the mere act of gaining admission to a high-status institution may be sufficient for identity incorporation, even in the absence of rich social interactions within the university setting.

Our results might have several implications and result in desiderata for further research. Firstly, regarding alumni relations, the findings suggest that "COVID graduates" who missed up to two years of in-person college experience might not be all that different from other graduates in terms of the importance of their alma mater for their identity. This implies no need for specialized programs for

them to foster their loyalty after graduation. Secondly, our findings challenge the established narrative of the "campus experience" as vital to identity formation. This opens the door for further research in university systems other than the United States, examining whether the importance of social interactions and in-person experiences is similarly diminished in shaping student identity. Cross-cultural comparisons between education systems could help determine how identity formation varies based on local academic cultures and institutional hierarchies.

A key limitation of this study is the potential for systematic differences between students who experienced only online classes and those who also had offline classes. While propensity score matching (PSM) is often used to balance observed characteristics between groups, its application in this study is limited due to the relatively small sample size (n = 217), which could lead to substantial data loss and reduced statistical power. Additionally, PSM is primarily designed for binary treatment comparisons, whereas our study involves multiple groups (e.g., students in different years of study). Instead, we employed direct group comparisons and regression analysis while controlling for key covariates to adjust for potential confounding factors. While this approach mitigates some concerns about selection bias, we acknowledge that unobserved differences may still influence our findings. Future research with larger samples and more comprehensive background data could further explore these differences using matching or weighting techniques.

In this study, we employed an ordinal probit model to analyze our five-point Likert-scale dependent variable. While some argue that treating Likert-scale responses as continuous and using OLS regression is a reasonable approach in social science research (see, for instance, Norman (2010), others suggest that ordered models better respect the ordinal nature of such data. For instance, Olsson (2022) demonstrated through simulations that ordinal regression methods, such as the ordinal probit model, exhibit higher statistical power compared to

traditional t-tests and nonparametric methods when analyzing Likert-type data, and Liddell & Kruschke (2018) discuss the limitations of treating ordinal data as continuous, as well as providing arguments in favor of using ordinal models. To address this methodological debate, we provide additional OLS regression results in the appendix, which yield identical findings. This robustness check confirms that our conclusions do not hinge on the choice of modeling approach, reinforcing the validity of our results.

Last, the reader should remember that these results were based on a sample of students at the satellite campus of a top South Korean university, and our findings might have limited generalizability to other universities in the country. However, as mentioned, the unique setting of four consecutive online semesters to study their possible effects on student's identity provides a valuable case study that will hopefully spark further research into the topic.

## References

이건만. (2007). 한국사회의 학벌주의와 계급갈등: 학벌자본의 이론화를 향해. 교육사회학연구, 17(4), 53-85.

임희성. (2014). 통계로 본 학벌사회. 대학교육연구소.

전은희. (2017). 학벌주의 정체성에 대한 내러티브적 이해: 서울대생의 사례를 중심으로. 교육인류학연구, 20(3), 103-148.

Archer, L., Hutchings, M., & Ross, A. (2003). *Higher education and social class: Issues of exclusion and inclusion*. Routledge.

Armstrong, E. A., & Hamilton, L. T. (2013). *Paying for the party: How college maintains inequality*. Harvard University Press.

Arnett, J. J. (2004). Emerging adulthood: *The winding road from the late teens through the twenties*. Oxford University Press.

Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, 14(1), 20-39.

Astin, A. W. (1999). Student involvement: A developmental theory for higher education. *Journal of College Student Development*, 40(5), 518–529.

Blumer, H. (1969). *Symbolic interactionism: Perspective and method*. University of California Press.

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, 59(1), 20–28.

Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), Handbook of Theory and Research for the Sociology of Education (pp. 241–258). Greenwood Press.

Brown, L., & Holloway, I. (2008). The adjustment journey of international postgraduate students at an English university: An ethnographic study. *Journal of Research in International Education*, 7(2), 232–249.

Buchmann, C., & DiPrete, T. A. (2006). The growing female advantage in college completion: The role of family background and academic achievement. American Sociological Review, 71(4), 515–541.

Burge, E. J., Gibson, C. C., & Gibson, T. (2017). *Flexible pedagogy, flexible practice: Notes from the trenches of distance education*. Athabasca University Press.

Byun, S., Schofer, E., & Kim, K. K. (2012). Revisiting the role of cultural capital in East Asian educational systems: The case of South Korea. *Sociology of Education*, 85(3), 219–239.

Coté, J. E., & Levine, C. (2002). *Identity formation, agency, and culture: A social psychological synthesis*. Psychology Press.

Choi, H. (2018). Education as meritocracy: The struggle for elite status in South Korea. *Asian Journal of Comparative Education*, 3(2), 84–101.

Daniel, S. J. (2020). Education and the COVID-19 pandemic. *Prospects*, 49(1), 91-96.

Di Battista, S., Smith, H., Mongelli, L., & Berti, C. (2023). Students' university identification: An exploratory study in the United States and Italy. *International Journal of Educational Psychology*, 12(1).

Drezner, N. D. (2018). Philanthropic mirroring: Exploring identity-based fundraising in higher education. *The Journal of Higher Education*, 89(3), 261-293.

Ellemers, N., Spears, R., & Doosje, B. (2002). Self and social identity. *Annual Review of Psychology*, 53(1), 161-186.

Erikson, E. H. (1968). *Identity: Youth and crisis*. W. W. Norton.

Etzelmueller, K. L. (2014). Organizational Identification in Alumni Relations. *Marquette University College of Professional Studies Professional Projects, Paper 71*. Available at https://epublications.marquette.edu/cps_professional/71/, last accessed on October 11, 2024.

Eckstein, Harry. (1975). Case Study and Theory in Political Science.In Fred I. Greenstein and Nelson W. Polsby, eds. *Handbook of Political Science, Vol.1, Political Science: Scope and Theory*. Addison-Wesley.

Festinger, L. (1954). A theory of social comparison processes. Human Relations,

7(2), 117−140.

Fisher, G. G., Matthews, R. A., & Gibbons, A. M. (2016). Developing and investigating the use of single-item measures in organizational research. Journal of Occupational Health Psychology, 21(1), 3−23.

Gerring, J. (2017). *Case study research: Principles and practices (2nd ed.)*. Cambridge University Press.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). Multivariate data analysis. *New Jersey*, 5(3), 207-219.

Harman, D. (1967). A Single Factor Test of Common Method Variance. *The Journal of Psychology*, 35, 359-378.

Haslam, S. A., Steffens, N. K., & Peters, K. (2022). Introducing and validating a single-item measure of identity leadership: The visual identity leadership scale (VILS). British Journal of Social Psychology, 61(3), 1012−1035.

Houlden, S., & Veletsianos, G. (2021). The problem with flexible learning: Neoliberalism, freedom, and learner subjectivities. *Learning, Media and Technology*, 46(2), 144-155.

Jones, S. R. (2010). Constructing identities at the intersections: An autoethnographic exploration of multiple dimensions of identity. *Journal of College Student Development*, 51(6), 661-675.

Kim, Y., & Kim, Y. (2020). University prestige and employment in South Korea: The role of organizational hiring patterns. Higher Education, 80(6), 1071−1091.

Kim, H., Bessey, D. & Park, S. (2023). Connectivity in university education: Student satisfaction and performance amongst COVID-19 pandemic. *Social Science Review*, 54(1), 57-91.

Koenig-Lewis, N., Asaad, Y., Palmer, A., & Petersone, E. (2016). The effects of passage of time on alumni recall of ‘student experience’. *Higher Education Quarterly*, 70(1), 59-80.

Kruskal, W. H., & Wallis, W. A. (1952). Use of Ranks in One-Criterion Variance Analysis. *Journal of the American Statistical Association*,

47(260), 583-621.

Liddell, T. M., & Kruschke, J. K. (2018). Analyzing ordinal data with metric models: What could possibly go wrong? Journal of Experimental Social Psychology, 79, 328–348.

Liu, D. W. Y., & Winder, B. (2014). Exploring foreign undergraduate students' experiences of university. *International Journal of Qualitative Studies in Education*, 27(1), 42-64.

Mael, F., & Ashforth, B. E. (1992). Alumni and their alma mater: A partial test of the reformulated model of organizational identification. *Journal of Organizational Behavior*, 13(2), 103-123.

McAlexander, J. H., & Koenig, H. F. (2001). University experiences, the student-college relationship, and alumni support. *Journal of Marketing for Higher Education*, 10(3), 21-44.

Menold, N. (2020). Rating-scale labeling in online surveys: An experimental comparison of verbal and numeric rating scales with respect to measurement quality and respondents' cognitive processes. *Sociological Methods & Research*, 49(1), 79-107.

Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. Advances in Health Sciences Education, 15(5), 625–632.

O'Brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. Quality & quantity, 41, 673-690.

O'Keeffe, P. (2013). A sense of belonging: Improving student retention. *College Student Journal*, 47(4), 605-613.

Olsson, U. (2022). Power Properties of Ordinal Regression Models for Likert Type Data. Practical Assessment, Research, and Evaluation, 27(1), Article 6.

Park, H. (2013). "Re-evaluating Education in Japan and Korea: De-mystifying Stereotypes." Routledge.

Postmes, T., Haslam, S. A., & Jans, L. (2013). A single-item measure of social identification: Reliability, validity, and utility. British Journal of Social

Psychology, 52(4), 597–617.

Reid, A., & Purcell, L. (2004). The prestige of a university and its impact on identity. *Journal of Higher Education*, 75(5), 462-487.

Rovai, A. P., & Jordan, H. M. (2004). Blended learning and sense of community: A comparative analysis with traditional and fully online graduate courses. *International Review of Research in Open and Distributed Learning*, 5(2), 1-13.

Rust, A. A., & Uys, C. S. (2014). The importance of a university identity for students and alumni: The case of the Cape Peninsula University of Technology, South Africa. *Journal of Social Sciences*, 40(1), 29-40.

Seth, M. (2002). Education fever: Society, politics, and the pursuit of schooling in South Korea. University of Hawai’i Press.

Shin, J. C. (2012). Higher education development in Korea: Western university ideas, Confucian tradition, and economic development. *Higher Education*, 64(1), 59–72.

Stryker, S. (1980). *Symbolic interactionism: A social structural version*. Benjamin-Cummings Publishing.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In *The social psychology of intergroup relations* (pp. 33-47). Brooks/Cole.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). Rediscovering the Social Group: A Self-Categorization Theory. Blackwell.

Temple, P., Callender, C., Grove, L., & Kersh, N. (2014). Managing the student experience in higher education: Managing institutional cultures and identity. *Higher Education Quarterly*, 68(2), 160-174.

Thomas, L. (2002). Student retention in higher education: The role of institutional habitus. *Journal of Education Policy*, 17(4), 423-442.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*. University of Chicago Press.

Trowler, V., & Trowler, P. (2011). Student engagement, identity, and learning

outcomes. *Higher Education Research & Development*, 30(5), 1-25.

Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? Journal of Applied Psychology, 82(2), 247–252.

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# Appendix: Additional tables

## Table A.1: Complete descriptive statistics

### A.1a: Students' majors

| | Percentage |
|---|---|
| Business | 9.22% |
| Biological Science and Technology | 18.43% |
| Digital Healthcare | 0.46% |
| EastAsia International College | 31.80% |
| Exchange student | 0.46% |
| Health Administration | 0.46% |
| History | 5.53% |
| International Relations | 15.21% |
| Mathematics | 0.46% |
| Philosophy | 1.84% |
| Physics | 0.46% |
| Software | 7.83% |
| Undecided | 7.83% |
| *n* | 217 |

### A1.b: Students' place of residence during middle and high school

| | Percentage |
|---|---|
| Abroad | 16.59% |
| Busan metropolitan city | 3.69% |
| Chungcheong provinces | 1.38% |
| Daegu metropolitan city | 1.38% |
| Daejeon metropolitan city | 0.92% |
| Gangwon province | 10.14% |
| Gyeonggi province | 26.27% |
| Gyeongsan provinces | 4.15% |
| Incheon metropolitan city | 5.07% |
| Jeju special self-governing province | 0.46% |
| Jeolla provinces | 1.84% |
| Seoul | 26.73% |
| Ulsan metropolitan city | 1.38% |
| *n* | 217 |

## Table A.2 Correlation matrix

| | Imp.of Yonsei | Imp.of department | Imp.of year of study | Imp.of academic perf. | Imp.of religion | Imp.of Region | Imp.of Age | Imp.of Gender | Imp.of Income group | Imp.of Future career | Imp.of Family | Gender | Year of study | Income group | Time spent abroad | Year of birth |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Imp.of Yonsei | 1 | | | | | | | | | | | | | | | |
| Imp.of department | 0.2079 | 1 | | | | | | | | | | | | | | |
| Imp.of year of study | 0.0315 | 0.3187 | 1 | | | | | | | | | | | | | |
| Imp.of academic perf. | 0.3176 | 0.3222 | 0.2001 | 1 | | | | | | | | | | | | |
| Imp.of religion | 0.0475 | 0.0343 | 0.0918 | 0.2509 | 1 | | | | | | | | | | | |
| Imp.of Region | -0.1266 | -0.0607 | 0.1962 | -0.0632 | 0.2389 | 1 | | | | | | | | | | |
| Imp.of Age | 0.042 | 0.0437 | 0.3446 | -0.0732 | 0.0748 | 0.4515 | 1 | | | | | | | | | |
| Imp.of Gender | -0.0697 | -0.0336 | 0.1728 | -0.0024 | 0.2526 | 0.3703 | 0.4758 | 1 | | | | | | | | |
| Imp.of Income group | 0.1517 | 0.1156 | 0.1142 | 0.2839 | 0.2541 | 0.2508 | 0.1831 | 0.1353 | 1 | | | | | | | |
| Imp.of Future career | 0.2825 | 0.1148 | 0.0125 | 0.3825 | 0.1652 | -0.0057 | -0.0307 | 0.0398 | 0.3598 | 1 | | | | | | |
| Imp.of Family | 0.2508 | 0.0473 | -0.0057 | 0.2866 | 0.2345 | 0.1126 | 0.1086 | 0.0668 | 0.283 | 0.4251 | 1 | | | | | |
| Gender | 0.1391 | 0.0503 | 0.1196 | 0.2277 | 0.0415 | 0.0437 | 0.1401 | 0.1367 | 0.0932 | 0.0565 | 0.0603 | 1 | | | | |
| Year of study | 0.001 | 0.0386 | -0.105 | -0.1877 | -0.1204 | -0.0199 | 0.0522 | -0.1065 | 0.1032 | 0.0179 | -0.0334 | -0.1 | 1 | | | |
| Income group | 0.0447 | -0.0493 | -0.072 | -0.1248 | 0.0039 | -0.1036 | -0.1072 | -0.0155 | -0.1084 | -0.0348 | -0.0583 | -0.1383 | 0.1713 | 1 | | |
| Time spent abroad | 0.0229 | 0.0833 | 0.0532 | -0.1911 | -0.0413 | 0.0293 | 0.0615 | 0.0348 | -0.0122 | -0.0295 | 0.0259 | -0.1622 | 0.1166 | 0.0506 | 1 | |
| Year of birth | 0.0266 | 0.0476 | 0.2077 | 0.1821 | 0.1066 | 0.0458 | 0.0098 | 0.1398 | -0.1299 | -0.0131 | 0.0042 | 0.3131 | -0.7663 | -0.1415 | -0.0513 | 1 |

## Table A.3 Harman’s (1964) Single-Factor Test
### Unrotated single-factor rotation

| Factor | Eigenvalue | Difference | Proportion | Cumulative |
|---|---|---|---|---|
| Factor1 | 2.16857 | 0.65513 | 0.4273 | 0.4273 |
| Factor2 | 1.51344 | 0.13574 | 0.2982 | 0.7256 |
| Factor3 | 1.37771 | 0.7597 | 0.2715 | 0.9971 |
| Factor4 | 0.61801 | 0.28255 | 0.1218 | 1.1189 |
| Factor5 | 0.33546 | 0.0921 | 0.0661 | 1.185 |
| Factor6 | 0.24335 | 0.08539 | 0.048 | 1.2329 |
| Factor7 | 0.15797 | 0.15358 | 0.0311 | 1.264 |
| Factor8 | 0.00439 | 0.0566 | 0.0009 | 1.2649 |
| Factor9 | -0.05221 | 0.01656 | -0.0103 | 1.2546 |
| Factor10 | -0.06877 | 0.01464 | -0.0136 | 1.2411 |
| Factor11 | -0.08341 | 0.08694 | -0.0164 | 1.2246 |
| Factor12 | -0.17034 | 0.03888 | -0.0336 | 1.1911 |
| Factor13 | -0.20922 | 0.00753 | -0.0412 | 1.1498 |
| Factor14 | -0.21675 | 0.02582 | -0.0427 | 1.1071 |
| Factor15 | -0.24257 | 0.05845 | -0.0478 | 1.0593 |
| Factor16 | -0.30102 | . | -0.0593 | 1 |

LR test: independent vs. saturated: $\chi$ 2(120) = 760.31 ,Prob > $\chi$ 2 = 0.0000

Factor loadings (pattern matrix) and unique variances

| Variable | Factor1 | Factor2 | Factor3 | Factor4 | Factor5 | Factor6 | Factor7 | Factor8 | Uniqueness |
|---|---|---|---|---|---|---|---|---|---|
| Imp.of Yonsei | 0.2716 | 0.2 | -0.3231 | 0.1201 | 0.0274 | 0.24 | 0.0494 | -0.0125 | 0.7065 |
| Imp.of department | 0.2546 | 0.125 | -0.1714 | 0.4414 | 0.1207 | -0.0863 | 0.0054 | 0.0049 | 0.6733 |
| Imp.of year of study | 0.3874 | -0.0299 | 0.1976 | 0.406 | 0.0841 | -0.1036 | -0.0006 | -0.0054 | 0.6274 |
| Imp.of academic | 0.5519 | 0.1089 | -0.4335 | 0.0921 | -0.0787 | -0.1389 | 0.0597 | -0.0115 | 0.458 |
| Imp.of religion | 0.3947 | 0.1063 | 0.0515 | -0.2239 | 0.0987 | -0.1695 | 0.1676 | 0.0136 | 0.7134 |
| Imp.of Region | 0.3236 | 0.1063 | 0.5261 | -0.1335 | 0.0107 | -0.0869 | -0.0587 | 0.0069 | 0.5782 |
| Imp.of Age | 0.3604 | 0.149 | 0.5845 | 0.1402 | -0.0489 | 0.1512 | -0.0392 | -0.0248 | 0.4592 |
| Imp.of Gender | 0.3714 | 0.0111 | 0.4797 | -0.0963 | 0.0063 | 0.0589 | 0.151 | -0.0046 | 0.5962 |
| Imp.of Income group | 0.4144 | 0.4114 | 0.0038 | -0.1055 | -0.0362 | -0.1051 | -0.0892 | 0.016 | 0.6273 |
| Imp.of Future career | 0.3923 | 0.3411 | -0.3206 | -0.1648 | 0.059 | 0.0747 | -0.045 | -0.0002 | 0.5887 |
| Imp.of Family | 0.4001 | 0.2941 | -0.166 | -0.2279 | 0.0982 | 0.1361 | -0.0699 | -0.0043 | 0.6408 |
| Gender | 0.3492 | -0.1263 | -0.0303 | 0.0961 | -0.3678 | 0.1361 | 0.0508 | 0.0276 | 0.6948 |
| Year of study | -0.4034 | 0.6946 | 0.1132 | 0.1627 | -0.139 | 0.0257 | 0.0595 | 0.024 | 0.2914 |
| Income group | -0.2139 | 0.094 | -0.0236 | -0.0143 | 0.1423 | 0.0763 | 0.2658 | -0.0025 | 0.8479 |
| Time spent abroad | -0.0846 | 0.097 | 0.1285 | 0.1115 | 0.319 | 0.1323 | -0.066 | 0.0318 | 0.8298 |
| Year of birth | 0.4729 | -0.7151 | -0.0689 | 0.0037 | 0.0591 | 0.0896 | 0.0075 | 0.0234 | 0.2481 |

The results indicate that multiple factors (8 retained factors) explain the variance in the data, further reducing the likelihood that a single method is causing systematic bias in variable measurement.

## Table A.4 Variance Inflation Factors

| | VIF |
|---|---|
| Year of birth | 2.94 |
| Year of study | 2.73 |
| Number of offl. sem. | 1.34 |
| Gender | 1.24 |
| Income group | 1.07 |
| Spent time abroad | 1.06 |
| Mean VIF | 1.73 |

Notes: Since we estimated an ordered probit model, which is non-linear, variance inflation factors can only provide a rough check of possible multicollinearity problem, since the correlation structure of the independent variables will remain consistent even though the estimated coefficients will be different. Given the relatively low correlations found in pairwise correlations (see table A.2) and the low VIF values reported above, we refrained from calculating Generalized Variance Inflation Factors (GVIFs).

## Table A.5: Number of offline semesters and importance of factors for identity (OLS regression)

| | Yonsei student | Department | Year of study | Acad. performance |
|---|---|---|---|---|
| Number of | 0.0169 | 0.00260 | 0.0170 | 0.0292 |
| offline semesters | [0.0266] | [0.0205] | [0.0232] | [0.0236] |
| Female | 0.219** | 0.0209 | 0.0628 | 0.229*** |
| | [0.0990] | [0.0763] | [0.0861] | [0.0876] |
| Year of study | -0.0391 | 0.153 | 0.103 | -0.178 |
| | [0.134] | [0.103] | [0.117] | [0.119] |
| Family's income group | 0.0824 | -0.0621 | -0.0696 | -0.104 |
| | [0.0993] | [0.0766] | [0.0865] | [0.0879] |
| Spent time abroad during | 0.0177 | 0.0229 | 0.0216 | -0.0503** |
| middle & high school | [0.0266] | [0.0205] | [0.0231] | [0.0235] |
| Year of birth | -0.0106 | 0.0786 | 0.153** | 0.0130 |
| | [0.0703] | [0.0542] | [0.0611] | [0.0622] |
| Constant | 1.767* | 2.850*** | 1.541* | 3.600*** |
| | [0.957] | [0.738] | [0.833] | [0.847] |
| Observations | 217 | 217 | 217 | 217 |
| R-squared | 0.028 | 0.025 | 0.060 | 0.110 |

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1