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COLLEGE SCHOOL STUDENTS' SOCIODEMOGRAPHIC PROFILE, SELF-EFFICACY, BEHAVIORAL ADJUSTMENT, SCHOOL PERFORMANCE AND ITS CORRELATION

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Abstract

This study examined how sociodemographic characteristics and histories of after-school programs—Hagwon—(학원)—relate to self-efficacy, behavioral adjustment, and academic performance among engineering students at Inha University in South Korea. Using a quantitative design and self-constructed Likert-type measures, 332 students (mean age 25.44; 53.3% male) reported their Hagwon participation and psychosocial and academic outcomes. Most respondents had long-term Hagwon attendance (five years or more) and commonly studied academic tutoring and foreign languages. Self-efficacy and behavioral adjustment were high, and academic records were generally strong; however, perceived academic achievement and participation/attendance were moderate. Age and higher year level were associated with lower self-efficacy and adjustment, while gender differences were observed across several outcomes. Hagwon length and subject type showed no meaningful associations. Findings highlight transition-sensitive and equity-focused supports to sustain confidence and adjustment under increasing collegiate demands.

Keywords: Hagwon, After-school program, Self-efficacy, Behavioral adjustment, School performance, Academic achievement, Attendance and Participation, Engineering college students

Introduction

Across South Korea's intensely competitive education system, after-school programs—Hagwon (학원)—function as a parallel track to formal schooling. Commonly labeled “cram schools,” these private academies deliver targeted instruction across core subjects (e.g., mathematics, science, English) as well as enrichment areas (arts, music, sports) to help students keep pace with peers and prepare for high-stakes examinations such as the College Scholastic Ability Test (CSAT; 수능). Their ubiquity is evident in national tallies reporting tens of thousands of operating institutions, underscoring Hagwon's role in shaping students' academic and developmental journeys. Within this ecosystem, parents frequently invest time and resources in provider selection and progress monitoring, reflecting a broader cultural emphasis on educational attainment.

The learning conditions cultivated in Hagwon—structured routines, intensive practice, and frequent feedback—are theorized to influence three constructs central to collegiate success. First, self-efficacy, or students' beliefs in their capability to accomplish academic tasks, supports

persistence, strategy use, and adaptive responses to difficulty [Bandura, 1999]. Second, behavioral adjustment—including time management, study discipline, and regulation of effort—may be reinforced by balancing school and Hagwon demands. Third, school performance reflects how these beliefs and behaviors translate into grades and other indicators of academic attainment. Prior work also highlights the surrounding family context: Korean parents' strong involvement in private tutoring decisions and oversight can eclipse formal school contact, potentially redirecting how academic guidance is sourced and enacted [Park et al., 2018].

Despite Hagwon's prominence, important within-group differences among college students remain underexamined. Students' sociodemographic profiles—notably gender and age—and their after-school program histories—such as the length of participation and the subjects studied—may help explain variation in self-efficacy, behavioral adjustment, and school performance at the tertiary level. Mapping these profiles alongside psychosocial and academic indicators provides a necessary foundation for identifying patterns and testing associations that can inform advising, student services, and evidence-based collaboration with families and supplemental education providers.

Objectives of the Study

This study presents the sociodemographic profiles of college students, along with their self-efficacy, behavioral adjustment, and academic performance. Furthermore, the study explores the correlations among these variables to determine their interrelationships.

Specific Objectives:

1. Describe the sociodemographic profile of college students in terms of, gender, age, length of after-school program experience, and after-school program subjects;
2. Describe the College students' self-efficacy, behavioral adjustment, and school performance.
3. Find out the relationship between the College students' sociodemographic profile and self-efficacy, behavioral adjustment, and school performance.

Hypothesis of the Study

The null hypothesis tested in this study was:

There is no significant relationship between the students' sociodemographic and Hagwon-related profiles (gender, age, college level, length of after-school participation, and after-school subjects) and their outcomes in self-efficacy, behavioral adjustment, and school performance indicators (CSAT, GPA, perceived academic achievement, and participation & attendance).

Materials and Method

Research Design

Assessing college students' sociodemographic profiles and their educational outcomes is crucial for understanding their academic and personal development. This study used a descriptive-correlational research design to examine how students' gender, age, length of after-school program experience, and after-school program subjects were related to their self-efficacy, behavioral adjustment, and school performance. A quantitative approach was mainly used to give a clear picture of these factors and their relationships. The participants were college students, and data were gathered through self-constructed questionnaires and sociodemographic profiles. Statistical methods were applied to describe the students' educational outcomes and to test the correlations between these outcomes and the sociodemographic variables.

The population for this study comprised undergraduate (second year and above) and postgraduate college students in Incheon, together with their parents. A total of 332 college

engineering students at InHa University were surveyed. To ensure a representative sample, stratified sampling was employed, capturing a range of academic disciplines, a public university, and a community within Incheon.

Data Collection

The study involved 332 participants, including college students from Inha University, a private institution in Incheon, South Korea, during the winter and spring seasons [December, February, March, and May 2025].

The researcher collected data on-site at Inha University, where the engineering departments are located. During the survey period, the researcher spent most of the time outside the engineering building, waiting for students in and out. The researcher approached them one by one, first introducing herself in a short Korean sentence and asking if they were willing to listen. If they agreed, the researcher asked whether they were currently enrolled in an engineering program to confirm they met the criteria.

After confirming that they were engineering students, the researcher showed them the survey questionnaire. The researcher explained that it was for research purposes, that their participation was voluntary, and that their (respondents') answers would be kept confidential. Students who agreed to take part completed the questionnaire on the spot. The researcher also walked around the campus and the nearby cafeteria to reach more students and followed the same steps: the researcher asked whether they were engineering students, and if they said yes, the researcher invited them to answer the survey.

After students finished answering the questionnaire, the researcher gave them a small token of appreciation, which was a pocket warmer with a short thank-you note attached.

Ethical Considerations

Ethical considerations are critical at every stage of the research process, and this study adhered to the guidelines. Participant confidentiality and anonymity are upheld with strict adherence to ethical standards governing research with human subjects. Ethical safeguards were observed at all stages of the study. Approval was obtained from the institutional ethics committee [CLSU ERC Code: 2024-676]. Informed consent was secured from all participants, and participation was strictly voluntary respondents. Participants were informed of the purpose of the study, procedures, risks/benefits, and their right to withdraw at any time. Confidentiality and anonymity were protected, secure storage of data, and restricted access to research files, in accordance with standards for research involving human participants. Thus, guaranteeing the participants' participation remains voluntary and helps protect their privacy.

Materials

This study used a descriptive-correlational research design with a quantitative survey to examine how students' gender, age, length of after-school program experience, and after-school program subjects relate to their self-efficacy, behavioral adjustment, and school performance. A self-constructed survey questionnaire served as the main tool for data collection.

The questionnaire first collected information on gender, age, length of after-school program experience, and the subjects of the after-school programs the students attended. This part provided a basic understanding of the sociodemographic background of the participants. After this, additional sections of the questionnaire were used to measure college students' self-efficacy, behavioral adjustment, and school performance. These sections included statements where respondents rated their agreement on a five-point Likert scale, ranging from "Strongly disagree" to "Strongly agree."

The survey was designed specifically for this research to measure college students' sociodemographic profiles (gender, age, year level, length of after-school program participation, and after-school program subjects), as well as their self-efficacy, behavioral adjustment, and school performance.

The college sociodemographic profile consisted of five questions that may correlate with the main variables. These included:

- Age, to determine the age range of the respondents;
- Gender, to see if there were any gender differences in the outcomes;
- Year level, to identify the academic year of the respondents and any patterns linked to their level of study;
- Length of after-school program participation, to understand how long they had been attending after-school programs; and
- After-school program subjects, to identify the types of subjects or activities they joined during their after-school programs.

The self-efficacy section consisted of six questions using a 5-point Likert scale (5 = strongly agree, 4 = agree, 3 = neither agree nor disagree, 2 = disagree, 1 = strongly disagree). Respondents indicated their level of agreement with statements about their academic self-efficacy, social efficacy, and problem-solving efficacy.

The behavioral adjustment section also consisted of six questions using the same 5-point Likert scale. These items focused on aspects of behavioral adjustment such as social skill development, emotional regulation, and behavioral compliance.

The school performance section consisted of fifteen questions using the same 5-point Likert scale. These items focused on school performance indicators, such as academic achievement, classroom participation, attendance, and punctuality.

Under school performance, students were also asked about their CSAT (College Scholastic Ability Test) scores and their current college GPA (Grade Point Average), as cumulative measures of academic performance. Two specific questions were used to relate these scores to the research variables. To improve the accuracy of the self-reported GPA scores, an additional set of five Likert-scale questions was included as a form of triangulation. These indirect items asked about course load, the types of courses taken, confidence in academic ability, study habits, and experience of academic awards or honors. Respondents again rated their agreement on the same 5-point scale.

In total, the 32 self-constructed Likert-scale items on self-efficacy, behavioral adjustment, and school performance, together with the added triangulation items related to self-reported GPA, produced quantifiable scores of students' self-perception of their self-efficacy, behavioral adjustment, and school performance.

Analysis

This study used a comprehensive and systematic approach to analyze the quantitative data gathered from the self-constructed questionnaires. The data set included students' sociodemographic profiles (gender, age, college level, length of after-school program experience, and after-school program subjects), as well as their scores on self-efficacy, behavioral adjustment, and school performance.

Descriptive statistics (frequency, percentage, mean, and standard deviation) were computed using the Statistical Package for the Social Sciences (SPSS) to describe the sociodemographic

profile of the engineering students and to determine their levels of self-efficacy and behavioral adjustment.

For school performance, descriptive statistics such as frequency and percentage distribution were used to present the respondents' subjects enrolled, college level, CSAT (College Scholastic Ability Test) score ranges, and GPA (Grade Point Average) score ranges. In addition, mean and standard deviation were calculated in SPSS to determine the levels of academic achievement, classroom participation, and attendance as perceived by the college engineering students.

Spearman's rho correlation was applied to determine the relationship between the students' sociodemographic profile (independent variables: age, gender, college level, length of after-school program participation, and after-school program subjects) and their perceived self-efficacy, behavioral adjustment, and school performance indicators (dependent variables: CSAT, GPA, academic achievement, participation, and attendance). This non-parametric test was chosen because several variables in the dataset were ordinal (such as CSAT and GPA score ranges, college level, and Likert-scale scores for self-efficacy, behavioral adjustment, and school performance indicators) or categorical (such as age group, gender, length of after-school program participation, and after-school program subjects).

A statistician from Central Luzon State University (CLSU) assisted with running SPSS procedures, verifying the accuracy of the computations, and confirming that the selected statistical tests were appropriate for the study's level of measurement and design, also to strengthen the rigor of the quantitative analysis.

Results and Discussion

This section discussed the results of the study in relation to college students' sociodemographic profiles and the correlations between students' gender, age, length of after-school program experience, and after-school program subjects with their self-efficacy, behavioral adjustment, and school performance. The presentation and discussion of data and pertinent findings follow the order of the study's objectives.

Table 1. College Students Demographic Profile

Demographic Profile		Frequency N= 332	%
Age (in years)	21 to 30	332	100%
	Mean = 25.44 SD = 1.71		
Gender	Female	155	46.7%
	Male	177	53.3%
Length of After-school Program Experience	3 to 5 years	26	7.8%
	5 years or more	306	92.2%
After-school Program Subjects	Academic Tutoring	320	100%
	Foreign Languages	320	100%
	Took Arts classes	127	38.3%
	Took Sports classes	192	57.8%

Age

A total of 332 engineering college students responded, and they were between 21 and 30 years old. The mean age was 25.44 years old with a standard deviation of 1.71, showing that the respondents are close in the age group (young adults) and the range is not wide; therefore, the standard deviation supports little variability.

Because ages are tightly clustered near the mid-20s, age does not vary much in this sample. This restriction of range means any age-related differences in outcomes may be small or harder to detect. This age clustering is consistent with national context: OECD 2025 data indicate that South Korea is among the top countries for bachelor's-degree attainment in the 25–34 age group, so it is expected that college-enrolled and recently graduated young adults are concentrated in their mid-20s.

This suggestion helps explain why our engineering sample has similar ages, but it isn't just about engineering it reflects the country's college-age group overall.

Gender

The gender distribution is relatively balanced, but more male (177 or 53.3%) participants were represented compared to female (155 or 46.7%). This allows for comparative gender-based analysis within an even population.

Because the recorded data is close to even, the pattern aligns with the reports that some engineering programs have seen a gradual increase in women's overtime. Profiles of Engineering & Engineering Technology (2021) in ASEE show male majorities across many U.S. fields alongside steady gains among women. At the same time, previous studies find that an average women show greater interest in health-related subjects [Funke et al., 2016; Lin et al., 2021]. These are patterns, not rules. The context is consistent with our roughly balanced gender mix, but program culture and supports likely determine whether any differences turn into enrollment gaps.

Length of after-school program experience

As regards length of after-school program experience, 306 students (92.2%) reported having five years or more of after-school program experience, and about 26 (7.8%) had 3 to 5 years of after-school experience, meaning the evidence of long-term engagement. Vandell et al. (2007) found that structured after-school activities do more than just provide a short-term "inoculative effect" on youth. An inoculative effect would imply that even a brief involvement (like one year) could provide long-lasting benefits. This finding aligns with the Hagwon participation in this study, supporting the interpretation of that multi-year engagement is more likely to yield durable gains than short-term experiences.

After-school Program Subjects

All the respondents (100%) attended the Academic Tutoring and Foreign Language. Research on after-school STEM programs [e.g., Krishnamurthi, Bevan, Rinehart, & Coulon, 2013] indicates that structured STEM activities can foster curiosity, enthusiasm, and practical skills for science, technology, engineering, and mathematics. Such programs also help learners see the value and relevance of STEM for future study, careers, and society.

While foreign language is not STEM, a previous study showed that Korean learners commonly enroll in hagwon for English test preparation (TOEFL/IELTS) to demonstrate proficiency for academic and career goals [Jeon, 2010; Malone & Montee, 2014; Liu, 2014; S. Kim, 2021]. These findings align academically oriented participation of all respondents in academic tutoring and foreign languages, indicating these were the most commonly attended or preferred as after-school subjects.

Regarding enrichment activities, 127 engineering college students (38.3%) took arts-related programs, while 205 students (61.7%) did not participate in art classes. Stiegelbauer (2008) classifies types of arts programs arts education (learning a specific art form vs. arts integration (using art to learn other subjects). This finding partly aligns that art related subjects are recognized as an after-school program subject.

In contrast, 190 students (57.8%) reported attending sport-related programs, while 140 students (42.2%) did not participate. A previous study showed that regular physical activity benefits health and well-being, Roberts & Barnard (2005). This finding partly aligns that sports are also recognized as an after-school program subject.

Self-Efficacy

The responses registered a high level of self-efficacy, with an overall mean score of 3.94 and a low standard deviation of .19, where the small SD score, results were tightly cluster to “agree” that indicate consistent perception of strong self-efficacy across participants. This finding relates with Zimmerman et al. (1992) who found that students with high self-efficacy tend to feel confident understanding lessons, solving academic problems, and taking on harder courses. As this is a single-time, self-report measure, the results indicate links rather than proof of cause-and-effect or of later course-taking

Students agreed that after school programs helped them gain confidence in understanding and mastering course material (M=3.95). The score is near “agree” that indicate that consistent endorsement that participation supported academic confidence in course-related self-efficacy.

Blomfield and Barber (2009) reported that participating in extracurricular activities contributes to adolescents’ character development. This finding aligns with the item showing that most students agreed on “*Participating in after-school programs helped me gain confidence in understanding and mastering my course material.*” Even though self-concept or self-worth and academic self-efficacy are different, past research supports the idea that activities outside regular classes can help students feel more confident about learning

Students agreed that after-school programs helped them achieve most of their goals (M= 3.95). This score is near “agree” that indicate consistent endorsement that participation backed goal attainment. Zajacova et al. (2005) reported that students with higher self-efficacy tend to show greater effort and persistence, and when the students struggle, they seek effective ways to manage difficulties to achieve their goals. This finding aligns on the item “*Participating in after-school program helped me achieve most of the goals that I have set for myself.*” where the majority of the college respondents agreed that indicating a perceived link between participation and goal achievement.

Most college respondents reported high collaboration confidence attributed to after school participated (M=3.97 and SD= .29) where the scores cluster near “agree” that indicate consistent confidence in collaborating on difficult task. Creo et al. (2021) found that extra-curricular participation is associated with strong interpersonal/communication skills. Thus, it is consistent with our result where most respondent agreed on the item, “*Participating in an after-school program helped me feel confident in my ability to collaborate on difficult tasks with others.*” Thus, programs that include structured team tasks may be effective for building collaboration confidence.

Students agreed that after-school programs made them comfortable starting conversations with unfamiliar people. (M=3.93). The score near “agree” that indicate consistent positive social self-efficacy in conversation initiation. Kim and Cicchetti (2003) found that social self-efficacy is associated with lower loneliness or depression and can serve as a protective factor, and that related to shyness and career decision efficacy [Smith & Betz, 2002]. Thus, is it consistent with our result where majority of respondents agreed on the item, “*Participating in after-school programs has made me feel more comfortable starting conversations with people I don't know well.*” These studies were used for background context, the item reflects student’s perceived program impact, not a direct measure of mental health-outcomes.

The respondents agreed that after-school programs helped them find solutions more effectively when facing challenges. (M=3.88) The score near “agree” with low SD (0.42) that indicate consistent problem-solving confidence attributed to program participation. Crippen and Earl (2007) found that structured learning can enhance problem-solving skills and academic self-efficacy. Another study found that in mathematical courses, academic self-efficacy has shown to be a significant predictor of problem-solving efficacy [Pajares & Miller, 1994]. Therefore, it is consistent with our results where most students agreed on the item, “When faced with challenging situations, I feel that after-school programs have helped me find solutions more effectively.” This suggests that building academic confidence could improve problem-solving skills.

Students reported high confidence that after-school programs improve their ability to solve complex problems. (M=3.97). The score near “agree” and low SD (0.24) that indicate consistently that their afterschool participation may provide positive reinforcement that boost confident especially strong problem-solving skill across the college students’ participants. In line with this, Salazar & Hayward (2018) found that problem-solving efficacy predicts motivation, test performance, and anticipated learning outcomes. Similar study in economics-education found that greater academic confidence is linked to higher motivation to pursue academic goals (Benabou & Tirole, 2002; Koch et al., 2015). Thus, it is consistent with the result of the most students agreed on the item, “After-school programs have improved my confidence in solving complex problems.” This suggests that higher confidence could help student approach future challenges such as exams and academic performance more effectively.

Table 2. Self-efficacy as perceived by the College Students respondents

Self-efficacy	Frequency				Mean	Standard Deviation
	5= strongly agree	4= agree	3= Neither agree nor disagree	2= Disagree		
1. Participating in after-school programs helped me gain confidence in understanding and mastering my course material.	24	266	42		3.95	.44
2. Participating in after-school program helped me achieve most of the goals that I have set for myself.	29	257	46		3.95	.47
3. Participating in an after-school program helped me feel confident in my ability to collaborate on difficult tasks with others.	9	304	19		3.97	.29
4. Participating in after-school programs has made me feel more comfortable starting conversations with people I don't know well.	5	301	26		3.93	.30
5. When faced with challenging situations, I feel that after-school programs have helped me find solutions more effectively.	8	280	40	4	3.88	.42
6. After-school programs have improved my confidence in solving complex problems	5	313	14		3.97	.24
OVERALL MEAN					3.94	.19

Behavioral Adjustment

Students also indicated high ratings across all items, with an overall mean score of 3.85 and a low standard deviation of 0.28 for behavioral adjustment. The scores clustered near “agree” for every items. This is in line with what Rothbaum et al. (1982) and Heckhausen and Schulz (1995) found that behavioral adjustment is a form of secondary control, people adapt to their surroundings. However, secondary control usually involves mental strategies like reframing. Behavioral adjustment emphasizes action changing one’s behavior to fit the situation. This finding is aligned with the students’ high ratings on behavioral adjustment, because the behavioral adjustments items focus on doing things differently such as interacting effectively, following rules, managing emotion, which fit with the result.

Students agreed that after-school programs enhanced their ability to interact effectively with others ($M = 3.92$). The score near “agree” which indicates positive perception of social interaction skills. [Moradi & Kalantari, 2007; Hatami & Kawsian, 2014] found that life-skills training, especially problem-solving skills, strengthen social skills and behavioral adjustment. This is consistent with the results where most of the students agreed on item, “Participating in after-school programs has enhanced my ability to interact effectively with others.” This suggests the item question is self-report of perceived impact that reflects how students feel that interpret results.

Students agreed that after-school programs helped them feel comfortable with their identify and enhanced their social acceptability. ($M=3.86$) The score near “agree” which consistent perceptions of identity comfort and social acceptance. Scholars [Dennis et al., 2005; Pascarella & Terenzini, 2005] found that peer support and peer-group interaction is higher education foster sense of belonging and adjustment particularly in the first year. Similarly, Johnson (2009) reported that students actively seek peer groups to meet needs for belonging, security and influence. These findings align the item reflect participants’ perceptions of enhanced social acceptability and identity comfort. Thus, it is consistent on the results where mean score near “agree” on the item, “Participating in the after-school program helped me feel comfortable with my identity and enhanced my social acceptability.”

Students agreed that the after-school program helped them believe in their inherent worth and feel deserving of self-respect and recognition ($M=3.86$). The score near “agree” indicates a positive perception of worth and deserved respect across the participants. Mokrcek (2022) found that students who feel respected by instructors exhibit greater focus and motivation, facilitating smoother learning. This finding aligns the item to measure reflects self-perception. Thus, it is consistent on the result where mean score near “agree” on the item, “*Participating in an after-school program helped me believe in my inherent worth and feel deserving of respect and recognition.*” This support the items rather than observed classroom behavior.

Student agreed that after-school programs helped them manage emotions in stressful situations ($M=3.88$). A score near “agree” and consistent perceptions of improved emotion regulation. This is in line with what other scholars found [e.g., Jennings & Greenberg, 2009; Durlak et al., 2011] that showing emotional regulations equips students to handle school-related stress and supports a positive classroom climate and academic functioning. This finding aligns on the item, “Participating in after-school programs has helped me manage my emotions better in stressful situations.” where the respondents mean is “agreed”. Thus, suggest consistency in the context of self-reported perception and their link.

Students agreed that the after-school programs taught them to follow rules and guidelines more effectively ($M=3.85$). A mean score “agree” indicating positive consistent perceptions of improved following rules or discipline. According to Kim et al. (2017) structured, rules-based extracurricular activities like Taekwondo under a sport category after-school subject can strengthen

discipline and related psychosocial outcomes in youth. It aligns with the item, “*Participating in after-school programs has enhanced my ability to interact effectively with others.*” where students mean is “agree”. Thus, suggest consistency in the context data of self-report from the college respondent that ruled-based activity can build discipline, however it does test whether a particular activity caused change over time.

Students agreed that after-school improved their ability to adhere to expected behaviors across settings (M=3.84). The mean score is “agree” indicates consistent perception of improved behavioral adjustment among participants. It is consistent with social-psychology models of commitment and cognitive dissonance (Joule, Girandola, & Bernard, 2007), which suggests that enacting behavior repeatedly such as meeting program rules, attendance that can lead individuals to adjust their attitudes to align with their actions. It is persistent on the item, “After-school programs have improved my ability to adhere to expected behaviors in various settings.” where student mean score is “agree.” Thus, after-school program helps by giving structure and clear expectations meaning students may follow the rules and over time their attitudes line up their behavior.

Table 3. Behavioral adjustments as perceived by the College Students respondents

Behavioral Adjustment	Frequency				Mean	Standard Deviation
	5=Strongly Agree	4=Agree	3=Neither agree nor disagree	2=Disagree		
1. Participating in after-school programs has enhanced my ability to interact effectively with others.	13	288	21	10	3.92	.47
2. Participating in the after-school program helped me feel comfortable with my identity and enhanced my social acceptability.	9	280	32	11	3.86	.49
3. Participating in an after-school program helped me believe in my inherent worth and feel deserving of respect and recognition.	12	273	34	13	3.86	.52
4. Participating in after-school programs has helped me manage my emotions better in stressful situations.	15	270	38	9	3.88	.50
5. Participating in after-school programs has taught me to follow rules and guidelines more effectively.	19	243	70		3.85	.49
6. After-school programs have improved my ability to adhere to expected behaviors in various settings.	13	252	67		3.84	.46
OVERALL MEAN					3.87	.28

Academic Background

Using Shin et al. (2011) taxonomy courses were mapped as elective (general), major (fundamental major, specialized (advance). The enrollment profile showed the majority of the respondents (63%) were taking in specialized courses, with others attending major-specific courses (20.5%) and elective courses (16.6%). This distribution is consistent with an upper-level data sample from the respondents, where the largest number of respondents who are currently in their fourth year (39.5%) and post-graduate level (34.3%).

This finding is consistent with sample group, with most of the respondents reaching degree completion or pursuing graduate level.

CSAT (College Scholastic Ability Test)

Most students scored within the 400-499 range on the CSAT (84%).

GPA (Grade Point Average)

GPA distribution showed that 88.6% of the students had a GPA between 3.6 to 4.0, indicating a strong academic profile.

Table 4.1 School Performance in terms of CSAT and GPA

Demographic Profile		Frequency N= 332	%
Subjects Enrolled	Major-specific or Advanced course	302	91.0%
	Specialized course	28	8.4%
	Elective course	2	.6%
College Level	Second Year	35	10.5%
	Third Year	49	15.7%
	Fourth Year	131	39.5%
	Post-Graduate	114	34.3%
CSAT (College Scholastic Ability Test) score	350-399	33	9.9%
	400-449	279	84.0%
	450-500	20	6%
GPA (Grade Point Average) currently	2.6 - 3.00	5	1.8%
	3.1 – 3.5	3	.9%
	3.6 - 4.0	294	88.6%
	4.1- 4.5	29	8.7%

Academic Achievement

Despite strong GPA records, the academic achievement scale had a lower overall mean of 2.27 (SD = 0.39), suggesting students did not strongly perceive that after-school programs directly influenced their academic excellence which aligns with meta-analytic findings that program effects are frequently stronger for social-emotional/behavioral outcomes than for academic outcomes. In addition, the highest individual items was, “I believe my GPA is higher than most of my classmates.” (M = 2.47, SD = 0.89), although not as strong as to self-efficacy or behavioral adjustment measures,

Participation and Attendance

The overall mean score was 2.38, and the standard deviation of 0.89 for participation and attendance. The highest scoring question was “I frequently spend time on academic activities outside of regular school hours.” (M = 2.68, SD = 1.17), suggesting differences in the extent of the level of student engagement. Other items like satisfaction in learning, participation in discussions, and school attendance scored moderately between M = 2.18 to 2.61.

The data indicate that while students felt that after-school programs contributed to self-efficacy and behavioral adjustment, the perceived impact on academic achievement, participation, and attendance was more moderate. These findings suggest that these programs' benefits are more noticeable in the personal development area than in direct academic performance measures. This may be particularly expected in retrospective college-student reports, as alumni-focused research often highlights identity, social networks, and perceived skill development as salient outcomes of extracurricular participation (Stuart et al., 2011; Clark et al., 2015).

Table 4.2 School Performance as perceived by the College Students respondents.

Academic Achievement	Frequency					Mean	Standard Deviation
	5=Strongly Agree	4=Agree	3=Neither agree nor disagree	2=Disagree	1=Strongly Disagree		
1. I believe my GPA is higher than most of my classmates.	29	2	66	235		2.47	.89
2. Participating in after-school program helped me feel that I am performing well academically.	3	6	36	287		2.17	.48
3. Participating in after-school program helped me stay focused more easily while studying.	2	4	44	282		2.18	.45
4. Participating in after-school program helped me feel that my education is preparing me well for my chosen career.	4	6	53	266	3	2.22	.55
5. Participating in after-school program helped me feel more confident that completing my college degree is a valuable accomplishment.	9	4	76	243		2.33	.64
6. Participating in after-school programs has given me a sense of achievement when I surpass my	10	4	54	259	5	2.26	.66

academic challenges.							
OVERALL MEAN						2.27	.39
Participation and Attendance							
7. How many courses subjects are you currently enrolled in this semester?		4	199	126	3	2.61	.53
8. I frequently spend time on academic activities outside of regular school hours.	61	6	30	235		2.68	1.17
9. I regularly dedicate time to studying or completing academic tasks, and I have received academic awards or honors in the past year.	6	7	29	290		2.18	.55
10. Participating in after-school program helped me experience pleasure and satisfaction from learning new things during the class.	4	4	55	269		2.22	.52
11. Participating in after-school programs has increased my participation in class discussions.	5	4	109	206	8	2.37	.63
12. Participating in after-school programs has improved my attendance at school.	9	4	54	259	9	2.21	.60
OVERALL MEAN						2.38	.38

Relationship Between the College students' sociodemographic profile and self-efficacy, behavioral adjustment, and school performance.

Table 5. The Correlation Between College Students' Sociodemographic Profile and Self-Efficacy, and Behavioral Adjustment, and School Performance.

Variable	Self-efficacy	Behavioral Adjustment	CSAT	GPA	Academic Achievement	Participation/Attendance
Age	-.162**	-.249**	-.008	.123*	.007	-.075
Gender	.129*	-.056	.225**	-.101	.223**	.227**
Length of after-school program	.032	-.085	.056	.046	--	--
After-school program subjects	-.049	-.007	.035	.089	.075	.028
College Level	-.153*	-.147**	-.064	.083	--	--

* correlation is significant at $p < .05$

** correlation is significant at $p < .01$

This is the result of the relationship between students' sociodemographic profiles (age, gender, length of after-school program, after-school subjects, and college level) and their outcomes in self-efficacy (SE), behavioral adjustment (BA), and school performance—measured through CSAT, GPA, academic achievement (AA), and participation/attendance (P/A).

Age

A negative correlation between age and self-efficacy ($r = -0.162$, $p < .01$), indicates that as college students grow older, their levels of self-efficacy tend to decline. This finding suggests that increased age does not necessarily equate to heightened confidence in one's academic abilities or personal competence. The older students may encounter more complex academic demands, career pressures, which could contribute to reduced self-belief. In addition, older students might become more aware of their limitations or experience increased self-criticism as they compare themselves to younger peers or struggle to meet their expectations. It may also be attributed to burnout on academic fatigue, particularly among students in higher years who have undergone prolonged exposure to rigorous academic environments, which in line with Luo et. Al (2022) presents longitudinal evidence that academic self-efficacy can decline across college years.

A negative correlation with behavioral adjustment ($r = -0.249$ **, $p < 0.01$) indicates that students tend to show lower levels of behavioral adjustment as age increases. Behavioral adjustment includes social development, emotional regulation, and behavioral compliance. This finding suggests that younger students may be more socially active due to academic and social environments and can cope more easily with educational and emotional demands than older student respondents. This may be true due to older students facing increasing external responsibilities, and they might also be experiencing academic fatigue or burnout, especially if they have been engaged in prolonged study or intensive programs. This study highlights the importance of continued behavioral support for all students at all academic levels and ages. Even though younger students may naturally benefit from peer integration and program participation, older students might require more specific intervention, like counseling, stress management among others to help them maintain a healthy level of behavioral adjustment. It is similar pattern in higher education research linking later stages of study with higher burnout and lower engagement (Salmela-Aro & Read, 2017).

A positive correlation with GPA ($r = 0.123$ *, $p < 0.05$) and academic achievement ($r = 0.007$, $p < 0.05$), this finding suggests that older students slightly perform better academically, and it is consistent from previous research indicating that strong academic performance in adults and older

learners is feasible even at later ages (Imlach et al., 2017). Older students, especially those in higher college levels who are closer to graduation or pursuing an advanced degree, may be more motivated or goal-oriented, which positively influences their academic outcomes. Their strong sense of purpose could be interpreted into better time management, study habits, and academic persistence that all contribute to improved GPA and self-perceived academic achievement. In addition, older students possibly approach learning with more experience or real-world context that connects with their future plans or personal interests. These findings emphasized the value of academic maturity and lived experience in influencing positive outcomes. While younger students may excel in social and behavioral adjustment, older students appear to focus on experience and apply it to achieve academic success. This may help institutions to consider providing age-specific support programs to maximize strengths across all age groups.

Gender

The results indicate that gender is significantly associated with multiple key areas of student development, as demonstrated by positive correlation with self-efficacy ($r = 0.129^*$, $p < 0.05$), CSAT scores ($r = .225^{**}$, $p < 0.01$), academic achievement ($r = 0.223^{**}$, $p < 0.01$), and participation and attendance ($r = 0.227^*$, $p < 0.01$). The results suggest that gender plays a meaningful role in shaping academic performance and behavioral engagement. Male students dominated in higher levels of self-efficacy, better performance on CSAT scores, greater educational achievement, and more frequent participation and attendance in school-related activities than female students.

The correlation between gender and self-efficacy is significant ($r = 0.129^*$); study shows that the male students were more likely to perceive themselves as academically capable, confident in their abilities to reach personal goals, and effective in collaborative or challenging tasks. The finding suggests that male students tended to express greater confidence in their academic capabilities, such as the ability to master coursework, contribute to group projects, etc, might be influenced by various factors, such as experiences of success, perceived societal expectations, or level of assertiveness in the academic environment. Thus, male students may be more inclined to self-report higher confidence, even if their actual performance is similar to that of their female peers. This research has shown that in some educational contexts, male students demonstrate a higher level of self-efficacy even when academic outcomes are comparable, which aligns with Moraga-Pumarino, A., et al. (2025). In contrast, female students may undervalue or underreport their competencies, regardless of achieving similar or even superior academic results. This could reflect broader cultural or social influences that impact how confidence is expressed across genders.

Furthermore, another angle to review is the role of after-school programs, which may have been structured or delivered in ways that aligned more closely with the learning styles or interests of male participants in this study, as a result of enhancing their sense of confidence and efficacy. These findings highlight a gender gap in self-perception, with male students reporting higher self-efficacy. It emphasizes the significance of creating a learning environment that fosters self-efficacy and confidence equally among all college students, regardless of gender.

Next, the positive correlation with CSAT score is significant ($r = 0.225^{**}$), the study shows male students performed better on standardized college entrance assessments, which may reflect differences in test-taking strategies, academic preparation or support, and similar claims from Calsamiglia, C., et al. (2025). The highly competitive college examination in South Korea assesses academic skills as a major criterion for university admission, and based on the sample collected that male students were more likely to achieve higher CSAT score, that may have been due to several factors such as test-take strategies, academic preparation, parental or societal expectation, strength in subject area, all male students perceived in excellency. In comparison, according to this result, female students may underperform slightly in standardized tests. Though it is also worth noting that

performance on CSAT does not always align with broader academic skill or classroom performance, having a higher CSAT score may reflect exam readiness rather than general academic merits.

Then, a relatively significant correlation between gender and academic achievement ($r = 0.223^*$), further implies that male students reported higher levels of academic success or perceived academic competence during their college experience. The academic achievement variable in this study likely mirrors students' self-assessment of how well they perform in their studies, including how confident they feel about their GPA, academic progress, and preparedness for future careers. Male students perceived themselves to be performing more successfully in these areas based on the data results. In a cultural and psychological educational context, male students may report higher academic confidence, even if their objective performance, like GPA, is similar or lower than that of female students. This may be attributed to gender norms or social conditioning, where male students are more likely to express their achievements.

Furthermore, the positive significant link between gender and participation and attendance ($r = 0.277^{**}$) supports the idea that male students were more consistently involved in academic activities outside regular school hours, class discussions, or school attendance, and is positively linked to the previous case from Aguillon, S. M., et al. (2020). These findings offer insight into the possible gender-based dynamics influencing educational outcomes among South Korean engineering college students. While traditionally, some studies suggest female students excel in behavioral and academic engagement, this study shows that male students, within the context of after-school program participation, may benefit equally or more prominently in key areas of learning and adjustment.

Length of After-School Program Participation

There were no significant correlations between the length of the after-school program experience and any outcome-dependent variables. This suggests that the duration of participation in after-school programs alone may not determine a student's development. Thus, it shows that the quality and content of programs might matter more than how long the students attended them.

After-School Program Subjects

Correlations with all dependent variables, such as self-efficacy, behavioral adjustment, CSAT, GPA, academic achievement, participation, and attendance under school performance, were not significant. This means that the types of subjects students participated in, such as academic tutoring, foreign language, arts, and sports, were not strongly associated with differences in educational or behavioral outcomes. This pattern is consistent with after-school research showing that outcomes often vary by program quality and intensity of participation rather than by activity type alone (Durlak et al., 2010; Pierce et al., 2010)

Negative correlation with self-efficacy ($r = -0.153^*$, $p < 0.05$) and behavioral adjustment ($r = -0.147^*$, $p < 0.01$) suggests that as students progress through college level from the second year to postgraduate, they may experience lower confidence and greater challenges adjusting behaviorally. This could be interpreted as students at higher college levels indicating a decline in self-efficacy and a feeling of less assurance about their academic abilities or performance. Their confidence might gradually decrease as they encounter more complex coursework, greater academic pressures and expectations, job preparation, or career decisions.

Comparably, the drop in behavioral adjustment could reflect the growing emotional and psychological demands associated with advanced studies. Students may experience higher stress,

time management difficulties, or social and emotional fatigue, which can negatively impact on their ability to regulate emotions, follow routines, and maintain healthy peer or academic interactions. Prior research in higher education similarly shows that later stages of study are associated with higher stress and burnout profiles, which are linked to reduced academic efficacy and poorer adjustment/engagement (Salmela-Aro & Read, 2017).

College Level

Reduced social support or structured guidance may also influence this direction as students move into higher academic years. During their early years, students may benefit from close peer interaction or program-led assistance resources that may become more limited as academic independence increases.

Furthermore, these results could highlight a potential gap in after-school programs targeted at upper-level or graduate students. The absence of

continued support may leave higher-level students less equipped to navigate academic and emotional demands, especially since after-school programs available in South Korea are mostly catered to or focused on younger kids up to early college levels. The negative correlation indicates a need to re-evaluate how after-school program systems address the needs of students in higher college levels, to provide continuous, level-appropriate intervention to help improve self-efficacy and behavioral adjustment throughout students' academic progression.

Conclusions

This study profiled engineering undergraduates at Inha University and examined how their sociodemographic characteristics and after-school program (Hagwon, 학원) histories relate to self-efficacy, behavioral adjustment, and school performance. The sample comprised 332 students (mean age 25.44, SD 1.71), with a relatively balanced gender distribution (53.3% male; 46.7% female). Most respondents reported long-term Hagwon experience (≥ 5 years, 92.2%) and universal participation in academic tutoring and foreign language instruction, reflecting the prominence of supplemental education in the students' preparation pathways. Descriptively, students reported high self-efficacy (overall mean = 3.94) and high behavioral adjustment (overall mean = 3.87), alongside strong academic records (CSAT most commonly in the 400–449 range; GPA concentrated in 3.6–4.0). At the same time, perceived academic achievement (overall mean = 2.27) and participation/attendance (overall mean = 2.38) were more moderate, suggesting that the clearest perceived benefits of Hagwon participation may lie in confidence, problem-solving, and socio-emotional regulation rather than in uniformly elevated self-ratings of day-to-day academic engagement.

Correlation analyses clarified which background factors were most salient. Age was negatively associated with self-efficacy ($r = -.162, p < .01$) and behavioral adjustment ($r = -.249, p < .01$), but showed a small positive association with GPA ($r = .123, p < .05$), indicating that older students tended to feel less confident and less behaviorally adjusted even as their grades were modestly higher. Gender correlated positively with self-efficacy ($r = .129, p < .05$), CSAT ($r = .225, p < .01$), academic achievement ($r = .223, p < .01$), and participation/attendance ($r = .227, p < .01$), pointing to gender-linked differences in confidence, test performance, and engagement. In contrast, neither the length of Hagwon participation nor the types of Hagwon subjects showed significant relationships with any outcome, underscoring that duration and menu alone are insufficient to explain variation. Finally, college level was negatively related to both self-efficacy ($r = -.153, p < .05$) and behavioral adjustment ($r = -.147, p < .01$), consistent with increasing academic complexity and autonomy challenging students' confidence and regulation as they advance.

Taken together, these findings suggest that while Hagwon participation is near-universal and long-standing in this cohort, the most robust perceived gains reside in psychosocial domains (self-belief, collaboration, emotion regulation) rather than in consistently higher self-assessments of academic achievement or engagement. Moreover, age and stage (year level) emerge as risk points for dips in efficacy and adjustment, and gender differences appear in confidence and engagement patterns. For educators and policymakers, the results highlight three actionable directions: first, transition-sensitive supports that sustain self-efficacy and coping as students advance through higher levels; second, equity-focused practices that cultivate confidence and participation across genders; and third, a quality-over-duration orientation for supplemental education—emphasizing program fit, feedback, and transferable skills rather than years accrued or subject breadth. In sum, the study enriches understanding of how sociodemographic profiles and supplemental education histories interface with college success indicators, and it points toward targeted, developmentally attuned interventions that help students convert early advantages into durable collegiate outcomes.

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