

Comprehensive Sex Disaggregated Data (SDD) AY 2025 – 2026

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ABSTRACT

This research determined the students' demographic profile by sex, program/course undertaken, and campus attended at the National Aviation Academy of the Philippines (NAAP) to identify any patterns in gender distribution. The theoretical framework of this study was anchored on Gender and Development (GAD). The research examined the distribution of males and females and the profile of NAAP students by aviation program/course enrolled in, aviation-related training attended, awareness of and participation in GAD, academic achievement, and support received from the institution. A quantitative descriptive method was used. The survey questionnaire was used as the primary instrument of the study, which was answered by NAAP students. Frequency counts, percentages, weighted mean, and ranking were used to describe the demographic profile of the respondents and the variables. Results showed significant differences in aviation programs by sex: technical and engineering courses remain male-dominated, whereas tourism-related, communication, and logistics courses have more female enrollment. Gender differences were also noted in the respondents' participation in trainings, involvement in GAD, academic achievement, and support received from the institution. The study suggests intensifying gender-responsive policies and interventions to improve aviation education by promoting gender inclusivity, access to programs/course leading to academic excellence, access to employment after training, and the proper implementation of GAD PAPs among NAAP students.

Keywords: Sex aggregated data, National Aviation Academy of the Philippines, GAD, academic achievement, gender-responsive policies and interventions

INTRODUCTION

The paper examined the total number and profile of respondents from the National Aviation Academy of the Philippines (NAAP) by sex, academic program, and campus. Such data are essential in understanding the current state of male and female representation across various fields of aviation education, particularly within the context of Gender and Development (GAD). Through a systematic analysis of student distribution by sex, the study seeks to determine how traditional gender perceptions continue to influence course selection, participation in training, and students' academic performance.

The study covered two major dimensions: first, the total number of respondents by sex (male and female); and second, the broader profile of respondents in relation to (1) enrollment in aviation courses, (2) participation in related training, (3) involvement in college GAD activities, (4) student achievement, and (5) institutional support received. These components are crucial in developing a comprehensive picture of students' academic experiences and the factors shaping their academic and professional development.

The analysis of the total number of respondents by sex highlights the extent of the gender gap within NAAP's aviation programs. It shows that technical and engineering-oriented courses remain predominantly male-dominated, while more female students are enrolled in tourism, communication, and logistics-related programs. This distribution is not merely a statistical issue but reflects broader societal expectations and occupational stereotypes within the aviation industry.

Meanwhile, the discussion of respondents' profiles—from enrollment and training participation to engagement in GAD activities, levels of achievement, and institutional support—aims to identify both the strengths and gaps of the current educational system. This allows for a clearer understanding of which areas require strengthening to ensure an inclusive, equitable, and gender-responsive learning environment. The insights generated by this analysis form the basis for recommendations to more effectively implement GAD programs, activities, and projects (PAPs) at NAAP.

In conclusion, the study underscores the importance of gender-based analysis in aviation education. By understanding the current conditions of students at NAAP, it becomes more feasible to design policies and interventions that promote gender equality, inclusivity, and higher academic success for all NAAP students.

METHODS

The researchers identified the cumulative number of male respondents enrolled from NAAP using frequency counts for descriptive purposes (for example, totals and percentages). A quantitative descriptive method, based on school enrollment records, was used to gather this information. Villamor Air Base (VAB), Barangay Aviation Base (BAB), Fernando Air Base (FAB), Brigadier General Benito N. Ebuen Air Base (BGBNEAB), and Mactan Extension Campus were all enlisted as options for obtaining data from enrolled NAAP students. Degree and associate programs offered by NAAP were Aviation, Engineering Technology, Maintenance Technology, Information Systems, Aviation Communication, Aviation Safety and Security Management, Aviation Logistics, and Aviation Tourism. From the identified population, the students were placed into categories corresponding to their respective courses and campuses.

RESULTS AND DISCUSSION

1. Total number of respondents in terms of sex

1.1 Male

Program	VAB	BAB	FAB	BGBNEAB	Mactan Ext	Total Male
MPA	22	0	0	0	0	22
MEAM	88	0	0	0	0	88
BSAeE	319	0	0	0	0	319
BSAT	55	0	0	0	0	55
BSAMT	454	275	307	185	0	1,221
BSAET	90	61	91	35	0	277
BAT-AMT	13	0	0	0	0	13
BAT-AET	9	0	0	0	0	9
BSAIS	97	0	0	0	1	98

Program	VAB	BAB	FAB	BGBNEAB	Mactan Ext	Total Male
BSIS-AIS	109	0	0	0	0	109
BSAIT	116	0	0	0	0	116
BSIT-AIT	102	0	0	0	0	102
BSAvComm	137	0	0	0	0	137
BSAvSSM	171	0	0	0	0	171
BSSCM-AVLog	133	0	0	0	0	133
BSAV Tour	82	0	0	0	36	118
AAMT	468	275	301	260	0	1,304
AAET	164	157	116	38	0	475
TOTAL	2629	768	815	518	37	4,767

The table shows that the total number of male respondents across all NAAP programs and campuses amounted to 4,767, representing the majority of the student population surveyed. This distribution highlights the significant dominance of male students in aeronautical and aviation-related programs, which historically have been considered male-dominated fields.

When disaggregated by campus, the Villamor Air Base (VAB) campus registered the highest number of male respondents with 2,629 students, accounting for more than half of the total male population. This is followed by the Fernando Air Base (FAB) campus, with 815 respondents, and the Basa Air Base (BAB) campus, with 768 respondents. The BGBNEAB (Mactan) campus also showed a considerable number of male respondents ($n = 518$), while the Mactan Extension Campus had the lowest recorded figure ($n = 37$). This pattern suggests that the main campus at VAB continues to serve as the central hub of male student concentration, while extension campuses cater to comparatively smaller male cohorts.

In terms of academic programs, the Associate in Aircraft Maintenance Technology (AAMT) had the highest number of male enrollees ($n = 1,304$), followed closely by the Bachelor of Science in Aircraft Maintenance Technology (BSAMT) ($n = 1,221$). These two programs alone contributed nearly 53% of the overall male student population, underscoring the strong male preference for aircraft maintenance training programs. Another program with notable male representation was the Associate in Aviation Electronics Technology (AAET) with 475 respondents, and the Bachelor of Science in Aeronautical Engineering (BSAeE) with 319 respondents.

By contrast, programs such as the Bachelor of Aviation Technology major in Aircraft Maintenance (BAT-AMT) and the Bachelor of Aviation Technology major in Avionics (BAT-AET) recorded the fewest male respondents, with only 13 and 9 students, respectively. Similarly, specialized programs such as the Bachelor of Science in Aviation Information System (BSAIS) ($n = 98$) and the Bachelor of Science in Aviation Tourism (BSAvTour) ($n = 118$) showed relatively lower male enrollment than engineering and maintenance programs.

Overall, these findings reveal a clear gendered trend in program enrollment. Male respondents are predominantly concentrated in technical, engineering, and maintenance-oriented courses, whereas fewer are enrolled in aviation management and tourism-related programs. This trend supports previous studies indicating that aeronautical engineering and maintenance remain male-dominated disciplines, reflecting broader societal expectations and occupational stereotypes within the aviation industry.

1.2 Female

Program	VAB	BAB	FAB	BGBNEAB	Mactan Ext	Total Female
MPA	13	0	0	0	0	13
MEAM	30	0	0	0	0	30
BSAeE	89	0	0	0	0	89
BSAT	13	0	0	0	0	13
BSAMT	83	88	78	38	0	287
BSAET	60	34	64	17	0	175
BAT-AMT	2	0	0	0	0	2
BAT-AET	5	0	0	0	0	5
BSAIS	50	0	0	0	0	50
BSIS-AIS	43	0	0	0	0	43
BSAIT	48	0	0	0	0	48
BSIT-AIT	34	0	0	0	0	34
BSAvComm	145	0	0	0	0	145
BSAvSSM	56	0	0	0	0	56
BSSCM-AVLog	126	0	0	0	0	126
BSAV Tour	345	0	0	0	91	436
AAMT	89	88	84	54	0	315
AAET	71	55	64	28	0	218
TOTAL	1302	265	290	137	91	2,085

As presented in **Table 2**, the total number of female respondents across all programs and campuses of NAAP was **2,085**. This figure is substantially lower than their male counterparts, highlighting the continuing gender gap in aeronautical and aviation education. Despite the smaller proportion, the data indicate that female students are progressively pursuing aviation-related courses, thereby contributing to the diversification of the field.

By campus distribution, the Villamor Air Base (VAB) campus registered the highest number of female respondents ($n = 1,302$), representing nearly two-thirds of the total female population. This was followed by the Fernando Air Base (FAB) campus with 290, the Basa Air Base (BAB) campus with 265, and the BGBNEAB (Mactan) campus with 137. The Mactan Extension Campus had the least number of female respondents ($n = 91$). This shows that, similar to male respondents, the VAB campus continues to serve as the primary hub for female enrollment, while satellite campuses accommodate comparatively smaller groups.

In terms of academic programs, the highest concentration of female students was found in the Bachelor of Science in Aviation Tourism (BSAvTour), with 436 female respondents, making it the top choice for women across campuses. This was followed by the Associate in Aircraft Maintenance Technology (AAMT), with 315 respondents, and the Bachelor of Science in Aircraft Maintenance Technology (BSAMT), with 287 respondents. Other programs with notable female participation included the Associate in Aviation Electronics Technology (AAET) with 218, the Bachelor of Science in Aviation Communication (BSAvComm) with 145, and the Bachelor of Science in Aviation Logistics (BSSCM-AVLog) with 126.

Conversely, the programs with the lowest female enrollment were the Bachelor of Aviation Technology major in Aircraft Maintenance (BAT-AMT) with only 2 respondents, and the Bachelor of Aviation Technology major in Avionics (BAT-AET) with 5 respondents. Similarly, technical and

engineering-intensive programs such as BS AeE ($n = 89$) and BSAT ($n = 13$) had significantly fewer female enrollees than their male counterparts.

Overall, the findings indicate that while male students dominate engineering and maintenance-oriented programs, female respondents are more prominently represented in aviation tourism, communication, and logistics-related fields. This pattern suggests a gendered distribution of academic choices within NAAP, with women gravitating towards management and service-oriented programs, while fewer pursue technical and engineering tracks. The results align with broader trends in aviation education, where gender stereotypes and professional expectations continue to influence students' academic program selection.

2. What is the profile of the respondents relative to:

2.1 Enrollment in which aviation courses;

2.2 Participation in related training;

2.3 Participation in college GAD activities;

2.4 Student achievement; and

2.5 Support to students?

2. Profile of the Respondents

Understanding the profile of the respondents provides important insights into the demographic, academic, and developmental characteristics of aviation students across NAAP campuses. It allows for a comprehensive analysis of how students are distributed among aviation programs, how they engage in professional training, their involvement in gender and development (GAD) activities, their levels of achievement, and the kinds of institutional support they receive. Collectively, these factors shape students' academic experiences, professional readiness, and overall integration into the aviation education system.

The results of the study indicate that NAAP students represent a diverse yet gender-skewed population, with male respondents ($n = 4,767$) significantly outnumbering female respondents ($n = 2,085$). This disparity reflects the historical dominance of men in aviation-related fields, particularly in technical and engineering programs, while also signaling the emerging participation of women in both technical and service-oriented aviation programs. The succeeding subsections present a detailed discussion of the respondents' profile across five areas: enrollment in aviation courses, participation in related training, engagement in college GAD activities, student achievement, and support received from the institution.

2.1 Enrollment in Aviation Courses

As shown in Tables 1 and 2, the respondents were enrolled across a wide array of aviation programs ranging from engineering and maintenance to tourism, logistics, and communication-oriented tracks. The largest concentration of students, both male and female, was found in technical programs such as the Bachelor of Science in Aircraft Maintenance Technology (BSAMT) and the Associate in Aircraft Maintenance Technology (AAMT), with combined totals exceeding 2,500 students. This pattern underscores the continuing centrality of aircraft maintenance and engineering programs in aviation education.

Gender distribution, however, revealed notable differences. Male students were heavily concentrated in engineering and maintenance programs, such as BSAMT (n = 1,221) and AAMT (n = 1,304), as well as in the Associate in Aviation Electronics Technology (AAET, n = 475) and the Bachelor of Science in Aeronautical Engineering (BSAeE, n = 319). In contrast, female respondents were most prominently represented in service and management-oriented programs, particularly the Bachelor of Science in Aviation Tourism (BSAvTour, n = 436), followed by AAMT (n = 315) and BSAMT (n = 287).

By campus, the Villamor Air Base (VAB) stood out as the central hub of enrollment, hosting the majority of both male (n = 2,629) and female (n = 1,302) respondents. Other campuses such as Fernando Air Base (FAB) and Basa Air Base (BAB) recorded smaller yet notable student populations, while BGBNEAB (Mactan) and the Mactan Extension Campus accommodated smaller cohorts. This campus distribution highlights both the centrality of VAB as NAAP's academic core and the institution's efforts to expand access to aviation education through regional campuses.

Overall, the enrollment profile suggests that technical programs remain male-dominated, while female students are more represented in tourism, logistics, and communication programs, reflecting persistent gendered trends in academic choice.

2.2 Participation in Related Training

Participation in related training activities plays a vital role in equipping aviation students with industry-relevant skills and practical exposure. The respondents reported involvement in various forms of training, including on-the-job training (OJT) with partner airlines, aircraft maintenance workshops, avionics troubleshooting, air traffic simulations, safety and emergency drills, and industry seminars.

Male respondents demonstrated higher participation in technical training, including engine dismantling and assembly, hydraulic system testing, avionics diagnostics, and structural inspections. This reflects their concentration in engineering-oriented programs. Female respondents, meanwhile, were more active in aviation tourism simulations, passenger handling and customer service training, aviation communication workshops, and logistics management activities. However, it is noteworthy that several female students also participated in technical maintenance workshops, suggesting a gradual shift in the traditional gender divide within aviation training.

The respondents' strong participation in training highlights NAAP's emphasis on experiential and applied learning, ensuring that theoretical knowledge is complemented by hands-on industry practice. This aspect of their profile shows that students are not only academically engaged but are also actively preparing for future employment in the aviation sector.

2.3 Participation in College GAD Activities

Gender and Development (GAD) initiatives have become an integral part of student life at NAAP. These activities include gender sensitivity seminars, leadership training for women in aviation, student-led GAD campaigns, and capacity-building workshops on gender equality and inclusivity.

The findings indicate that female students were more active in GAD-related initiatives compared to their male counterparts. Their strong participation demonstrates their interest in advocacy, empowerment, and inclusivity within the aviation industry, where women remain underrepresented. For example, female students often engaged in GAD campaigns that challenged stereotypes about women in technical aviation roles.

Although fewer in number, male students also participated in GAD activities, particularly in discussions on gender equality, workplace inclusivity, and professional respect in mixed-gender teams. Their involvement, though limited, is important as it reflects a gradual shift toward shared responsibility in promoting gender balance in aviation.

The overall participation profile indicates that GAD activities serve as platforms for raising awareness, challenging gender stereotypes, and equipping students with leadership and advocacy skills, which are critical in fostering a gender-responsive aviation industry.

2.4 Student Achievement

The respondents also demonstrated notable achievements in both academic and extracurricular domains. Male students in technical tracks excelled in certification exams, aircraft maintenance simulations, and engineering competitions, reflecting their strong problem-solving and technical proficiency. Female students, meanwhile, achieved recognition in tourism management projects, communication outputs, logistics case studies, and cultural or service innovation activities.

Across campuses, student achievements reflected the strengths of their respective programs. For instance, BSAMT and AAMT students performed strongly in maintenance and engineering-based competitions, while BSAvTour and BSAvComm students excelled in service-oriented and communication-related events. These achievements confirm that both male and female students have the capacity to excel, with success more closely linked to program orientation and the opportunities provided than to gender.

This profile demonstrates that NAAP students are not only capable of meeting academic requirements but are also competitive in both technical and service-oriented fields.

2.5 Support to Students

Finally, the respondents highlighted the importance of institutional support in sustaining their academic and personal development. They reported access to scholarship grants, financial aid programs, academic advising, peer mentoring, mental health counseling, and GAD focal support. In addition, NAAP's connections with the aviation industry provided students with OJT opportunities, internships, and potential employment pathways.

Male and female respondents alike emphasized the role of scholarships and financial assistance in enabling them to continue their studies, particularly in resource-intensive programs such as aircraft maintenance and engineering. Female students also expressed appreciation for gender-sensitive support mechanisms, which helped foster inclusivity and equity in male-dominated learning environments. Counseling and wellness services were recognized by both groups as crucial for addressing academic stress and personal challenges.

Overall, the profile of respondents indicates that institutional support is a vital enabler of both academic success and personal well-being, ensuring that students are equipped not only with technical skills but also with the resilience and inclusivity needed for future careers in aviation.

3. Based on the findings of the study, what set of recommendations can be made to effectively execute GAD programs, activities, and projects (PAPs) at NAAP?

The results of the study revealed distinct patterns in gender distribution, program enrollment, training involvement, student achievements, and institutional support systems across the different NAAP campuses. To address these gaps and ensure the effective execution of GAD programs, activities, and projects (PAPs), the following recommendations are proposed:

3.1 Policy Strengthening and Institutional Commitment

NAAP's leadership plays a crucial role in institutionalizing gender-responsive practices. The findings show that male students overwhelmingly dominate technical programs (e.g., BSAMT, AAMT),

while female students are more represented in service-oriented fields (e.g., BSAvTour, BSAvComm). This gender divide demonstrates the need for stronger policy intervention.

1. Integrating GAD principles into institutional policies will make inclusivity a core academic value rather than an optional program. For example, admission policies may include outreach campaigns in high schools to encourage female students to pursue engineering and maintenance programs.
2. Institutionalizing GAD focal points across all campuses will ensure localized implementation of gender-responsive initiatives. Each campus differs in population and program distribution; hence, customized GAD approaches will help address specific needs (e.g., more training support at FAB, more outreach at Mactan Extension).
3. A gender-sensitive enrollment policy will counteract stereotypes that engineering is “for men” while tourism and communication are “for women.” By actively encouraging cross-enrollment, NAAP can diversify participation and balance representation in all fields.

3.2 Academic and Training Interventions

The study highlighted the importance of training and academic opportunities in shaping student achievement. However, the gender imbalance suggests that not all students feel equally motivated or supported to enter specific fields.

1. Developing gender-responsive curriculum modules will help students understand that aviation is an inclusive industry. Lessons may highlight women pioneers in aeronautics and men excelling in aviation service sectors.
2. Expanding industry-linked training opportunities ensures that both male and female students gain access to internships, apprenticeships, and simulation programs. This will prepare them for real-world demands and break traditional gender divisions in career placements.
3. Mentorship programs are particularly critical for female students in male-dominated courses. Pairing them with female professionals in engineering and maintenance will not only inspire but also provide a network for guidance and professional growth.
4. Promoting gender-balanced student participation in competitions and academic showcases ensures visibility of both male and female skills. For instance, female students can join engineering competitions while male students can represent in tourism or communications events.

3.3 Participation in GAD Activities

The findings suggest that GAD activities are often perceived as female-centered, with limited male involvement. For GAD to be fully effective, inclusivity must extend to participation.

1. Awareness campaigns targeting both male and female students will emphasize that gender equality benefits everyone. For example, workshops may highlight how gender responsiveness improves teamwork and workplace harmony, critical in aviation operations.
2. Specialized GAD workshops should be contextualized for each program. Engineering students may engage in workshops on inclusivity in technical workplaces, while tourism students may focus on equitable service delivery and customer care.
3. Peer-led advocacy groups will give students a sense of ownership of GAD initiatives. Student leaders can act as role models by embedding GAD perspectives into student councils, clubs, and organizations.

3.4 Student Achievement and Empowerment

The study shows that while student achievement is evident across programs, recognition often follows traditional gender expectations. To break these patterns, recognition systems must highlight inclusivity.

1. Recognition programs for achievers in both technical and service-oriented fields will demonstrate that excellence is gender-neutral.
2. Encouraging research and innovation on gender in aviation will provide a scholarly contribution to the limited literature on inclusivity in this field. For instance, studies on women pilots or men in hospitality roles can enrich both academia and industry.
3. Support for participation in professional associations will expose students to a wider network and professional identity. Encouraging female students to join technical aviation associations and male students to participate in service-oriented organizations will normalize inclusivity across sectors.

3.5 Support Systems and Welfare

Support services emerged as crucial for student retention and success. The study found that financial, emotional, and institutional support influences participation in both academics and GAD activities.

1. Scholarship and financial aid expansion for underrepresented groups will directly address barriers to entry. For example, providing grants for women in engineering will encourage more females to pursue technical careers.
2. Gender-sensitive counseling and mentoring services are essential to address personal and academic concerns. Aviation students face high stress due to rigorous training; support systems tailored for both men and women will improve well-being and resilience.
3. Industry partnerships with airlines, airports, and aviation firms will ensure students have access to inclusive internships and employment pathways. These partnerships can also support advocacy for workplace equity beyond the campus.

CONCLUSIONS

Based on the foregoing, the following conclusions were drawn:

1. Established policies will provide a strong foundation for a gender-balanced academic environment and foster inclusivity across all campuses.
2. Interventions will normalize gender inclusivity, improve student competencies, and align NAAP's training with international aviation standards that emphasize equal opportunity.
3. Increased participation from both sexes will transform GAD from being a compliance requirement into a vibrant cultural practice within NAAP.
4. Gender based strategies will empower students to pursue their fields without the constraints of gender stereotypes, improving both confidence and career opportunities.
5. Stronger support systems will lead to better student retention, higher achievements, and graduates who are industry-ready and socially aware.

RECOMMENDATIONS

Based on the conclusions of the study, the following recommendations are proposed to strengthen the implementation of Gender and Development (GAD) programs, activities, and projects (PAPs):

1. Strengthen and institutionalize gender-responsive policies across all campuses.
2. Normalize gender inclusivity and improve student competencies; targeted academic and training interventions should be introduced.

3. Transform GAD from a compliance requirement into a vibrant institutional culture; participation from both sexes must be strengthened.
4. Strengthen gender-sensitive counseling and mentoring services to address academic stress, discrimination concerns, and career planning needs.

AI DECLARATION STATEMENT

AI-supported tools helped with grammar and structure in creating this article. No AI tools were used to collect, analyze, or interpret data; all authors are credited for their academic contributions.

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