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Analysis of student retention, graduation, and employment status in undergraduate programs, academic years 2020-2024, Mahasarakham University

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ABSTRACT

Student retention, graduation, and employment are major outcomes in higher education. They reflect the effectiveness of the institution in shaping the future workforce. Thus, this study examined undergraduate retention, graduation, and employment in 2020-2024. The Divisions of Academic Affairs, Registration, and Planning provided secondary data on 9 issues: admission plans, enrolment reporting, course registration, leave of absence, academic results, loss of student status, retention, graduation, and employment status. The study found that most students who lost status were from large northeastern institutions and were reported for portfolio round enrolment. They had low entrance academic performance. Most students in this cohort had GPAXs between 0.00 and 0.99 in 2024, with the lowest being 1.19. The Faculty of Environment and Resource Studies lost the most students. Mahasarakham Business School had the most, mostly first-year students. Many retained students came from big northeastern schools and reported for enrolment in the Portfolio round, followed by the Quota round. The mean entrance GPAX was 3.27, and the mean current GPAX was 2.34. The Faculty of Nursing had the greatest retention rates in the second and third years. Pharmacy and veterinary sciences had the highest retention rates in the fifth year and above. Most students who graduated within the curriculum's timeframe came from major northeastern schools and reported for portfolio round enrolment. Most students graduated on schedule, usually in the second semester. Large-school graduates worked largely in the northeast. The Faculty of Environment and Resource Studies had the greatest employment rate, whereas Mahasarakham Business School had the most employed graduates. Overall, 94.92% of graduates found work within a year. At 100.00%, the Faculty of Medicine achieved the greatest employment rate in its field.

Keywords: Analysis, retention rate, graduation, employment status, Mahasarakham University.

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INTRODUCTION

A national education policy currently drives higher education in Thailand, emphasizing the production of that emphasizes producing graduates who meet labour market needs and support national development. This emphasis is particularly strong in the transition to a digital economy and society under the Thailand 4.0 strategy, which prioritizes innovation, technology, and creativity. As a result, higher education institutions have had to adjust their roles and missions significantly. Mahasarakham University, a leading higher education institution, has accordingly adopted the educational philosophy of "Integrated Education Approach for Lifelong Learning, Innovative Creation, and Global Promotion of Local Wisdom" It aims to raise curriculum quality in line with 21st-century skills, such as English language skills, digital skills, and artificial intelligence technology. It is also accelerating the development of student support systems and career guidance to strengthen graduates' competitiveness in the labour market. The success of this policy will be reflected in three key outcome indicators: the student retention rate, student graduation, and the employment status of graduates.

An analysis of undergraduate education management in academic years 2010-2014 found that the ratio of students who lost status to entering students remained high. It also found that most students graduated with a cumulative grade point average (GPAX) lower than their entry GPAX, although students with good entry academic results tended to graduate with good academic achievement. This finding is consistent with most international research, which indicates that retention and loss of student status are affected by multidimensional factors. These include economic and financial factors (Marshall, 2022; Mitra and Zhang, 2022; Collier and McMullen, 2023); academic achievement (Ortiz-Lozano et al., 2020); the effectiveness of support systems and educational quality assurance during the early period of enrolment (Ortiz-Lozano et al., 2020; Llauró et al., 2023; Pitcher and Parsons, 2023; Jones and Emenike, 2024; Arias et al., 2024); and peer-mentoring systems and extracurricular activities linked to cultural identity (Pray, 2021; Melton, 2024). Fass-Holmes (2016), however, reported a different finding for international students, whose retention and graduation rates were higher than previously assumed and for whom academic problems were not the main reason for withdrawal. Employment status also interacts structurally with retention, as the unemployment rate is positively associated with the dropout rate (Srari, 2021). In addition, institutions that adopted an active learning support system through the Learning Assistant model had retention and graduation rates that were statistically significantly higher than those of general institutions by 4-15% (Feng et al., 2025).

Despite this evidence, Mahasarakham University currently lacks an effective overall analysis of retention that links data in an integrated and systematic way at the program level, from admission and the period of study through to graduation and entry into the labour market. This gap matters because economic volatility and technological disruption are changing employment structures. Furthermore, different admission formats naturally reflect different academic foundations, motivation, and social skills. These differences may affect educational success as well as employment opportunities in students' home areas or in business organizations in different contexts.

For these reasons, this study analysed the retention, graduation, and employment status of undergraduate students at Mahasarakham University in academic years 2020-2024. It covered data over 5 academic years on student admission plans, reporting for enrolment, course registration, leave of absence, loss of student status, academic results, retention rate, and graduation, through to the employment status of graduates. The university, faculties, and programs can transform the results into strategic information and important knowledge. They can be used to plan student admissions, to improve student support processes for the proactive prevention of loss of student status, and to develop curricula that produce graduates who meet standards and respond efficiently and sustainably to labor market needs in the era of the digital economy.

Research question

How do student retention, graduation, and employment outcomes differ across academic years, faculties, and undergraduate programs?

Objective of the analysis

To explore the retention rate, graduation, and employment status of undergraduate students at Mahasarakham University in academic years 2020-2024.

Conceptual framework

Student retention, graduation, and employment status are important indicators of the effectiveness of higher education institutions in supporting students and preparing them for the labor market. Student retention reflects an institution’s capacity to support students in continuing their studies. Graduation represents the successful completion of academic requirements. Employment status provides an indication of graduates’ transition from higher education into the workforce and the potential relevance of their educational experiences to labor-market needs.

This study adopts an outcome-oriented framework to examine student progression and graduate outcomes at Mahasarakham University during the academic years 2020–2024. The framework considers 3 interrelated dimensions: student retention, graduation, and employment status. These can help identify trends, differences among programs, and potential areas for improvement in student support, academic management, and graduate employability. The conceptual framework treats retention, graduation, and employment as related but distinct outcomes. Retention concerns students’ continued participation in their programs, graduation concerns successful program completion, and employment concerns graduates’ post-study status. Although these outcomes may be connected, the study should not assume a causal relationship among them unless the available data and research design support such an analysis (Figure 1).

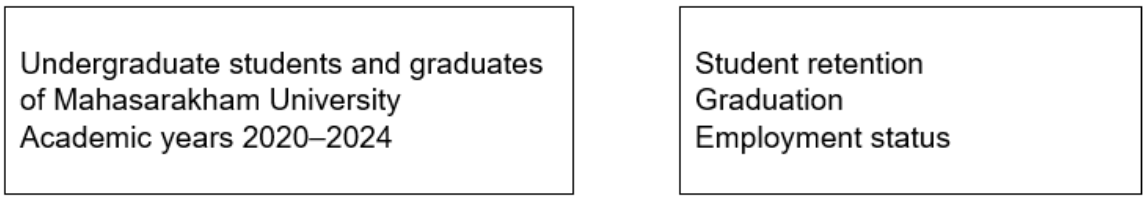

Figure 1. Conceptual framework.

The framework uses academic year and undergraduate program as key comparison variables to identify changes and differences across the five-year study period. The results of the analysis can be reported to inform institutional decision-making and quality assurance.

METHOD

Scope of the analysis

This analysis used data only on students and graduates who entered academic years 2020-2024, and only for undergraduate programs in 17 faculties and 2 colleges. It covered nine issues: (1) student admission plans, (2) reporting for enrollment, (3) course registration, (4) leave of absence, (5) academic results, (6) loss of student status, (7) retention rate, (8) graduation, and (9) employment status. There were a total of 60,491 students during the years 2020-2024. The details of students can be provided in Table 1.

Table 1. Details of students.

Year	Enrolled students	Dropout students	Actual students	Graduated students	Employed students
2020	11,048	2,522	257	8,246	5,339
2021	11,313	2,805	979	7,527	4,784
2022	11,073	2,529	6,338	2,161	259
2023	12,873	3,064	9,596	213	139
2024	14,184	2,467	11,712	4	-
Total	60,491	13,387	28,882	18,151	10,521

Data sources

The analysis used secondary data from three internal university units: (1) admission data from the database of the Division of Academic Affairs; (2) data on reporting for enrollment, course registration, leave of absence, academic results, loss of student status, retention rate, and graduation from the database of the Division of Registration; and (3) data on student admission plans and employment status from the database of the Division of Planning.

Data collection instrument

Data were collected with a data recording table designed to record and process data from the information databases.

Analytical procedure

Preparation stage

Literature and context review: University regulations, rules, and announcements were reviewed, together with the analysis by Wicharapote (2016), which identified significant problems of loss of student status and low cumulative grade averages. This review served as the basis for formulating hypotheses and defining the conceptual framework for analyzing the retention rate, graduation, and employment status of undergraduate students at Mahasarakham University in academic years 2020-2024.

Definition of variables and data scope: The independent variables were the admission system

(TCAS), cumulative grade point average (GPAX), and size of the previous school. The dependent variables were student status and employment status. The secondary data were categorized to cover nine issues.

Quality verification of the instrument: The tables of the conceptual framework and the analysis were presented to experts for verification of content validity.

Implementation stage

The secondary datasets from the university's three main databases (the Division of Academic Affairs, the Division of Registration, and the Division of Planning) were collected and integrated into a single system for convenient processing in Microsoft Excel.

Interpretation and summarization stage

The data were interpreted and the statistical results summarized to provide policy information. The data were displayed in tables together with narrative text and easy-to-understand charts. A complete report was prepared for university, faculty, and college executives and units, as strategic information for planning curriculum development, managing admissions, and resolving the problem of students losing status promptly.

Data analysis

Data on undergraduate students and graduates were analyzed and compared using the mean, standard deviation, and percentage.

RESULTS

Among the admission rounds that use entry academic results, Round 1 Portfolio had the highest overall entry academic results, followed by Round 3 Admission and Round 2 Quota. Round 4 Direct Admission had the lowest entry grade. Overall, the portfolio round had the highest entry academic results, but some faculties differed. In the Faculty of Pharmacy, students in Round 4 Direct Admission had the highest entry grade, and in the Faculty of Nursing, Round 3 Admission was the highest. These data can be used for further analysis of the accuracy and effectiveness of each faculty's student selection instruments, as shown in Figure 2.

Student retention

Students registered within the regular period at a rate of 87.75%, whereas 12.25% registered late. At the faculty level, the health science faculty had a very high proportion of registration within the period (97-98% or higher), whereas the College of Politics and Governance had the lowest (79.12%). This discrepancy suggests behavioral problems or problems in the course management system in some faculties, which require special attention.

Curriculum and course management can be reported. First, academic results differed by course category. Major courses had the lowest cumulative grade point average (GPAX), at 2.35, compared with free electives (2.66) and general education (2.75). This indicates that the difficulty of course content or the evaluation criteria in major courses across all faculties is an important factor affecting students' GPAX. Second, the selection of free elective courses changed over time. In 2020-2022, students' accumulated academic results were highest in the general education category, but in 2023-2024, the cumulative mean score was highest in the free elective category. This reflects a course selection behavior in which students returned to choosing courses that might help raise their GPAX (Figure 2). Third, credit loads were heavy, averaging 16.88 credits (76.73%). The Faculty of Veterinary Sciences had the heaviest study load, at 20.48 credits (93.09%), whereas the Faculty of Nursing registered the fewest, at an average of 15.11 credits. Fourth, students in the fourth year and above had the highest proportion of registered students, at 120.93%. This figure includes students studying beyond the curriculum duration, and some programs last 5 or 6 years as shown in Figure 3.

Most students who lost student status came from large schools in the northeastern region, and the largest number had reported for enrollment in Round 1 Portfolio. This group had a relatively low overall mean entry grade. In academic year 2024, the lowest cumulative grade point average in the group was 1.19, and the overall mean GPAX was 1.46, mostly in the score range of 0.00-0.99. The Faculty of Environment and Resource Studies had the highest rate of student status (30.71%) (Figure 4). Mahasarakham Business School had the largest number of students who lost status (22.57%), and most were first-year students (42.87%), as shown in Figures 5 and 6.

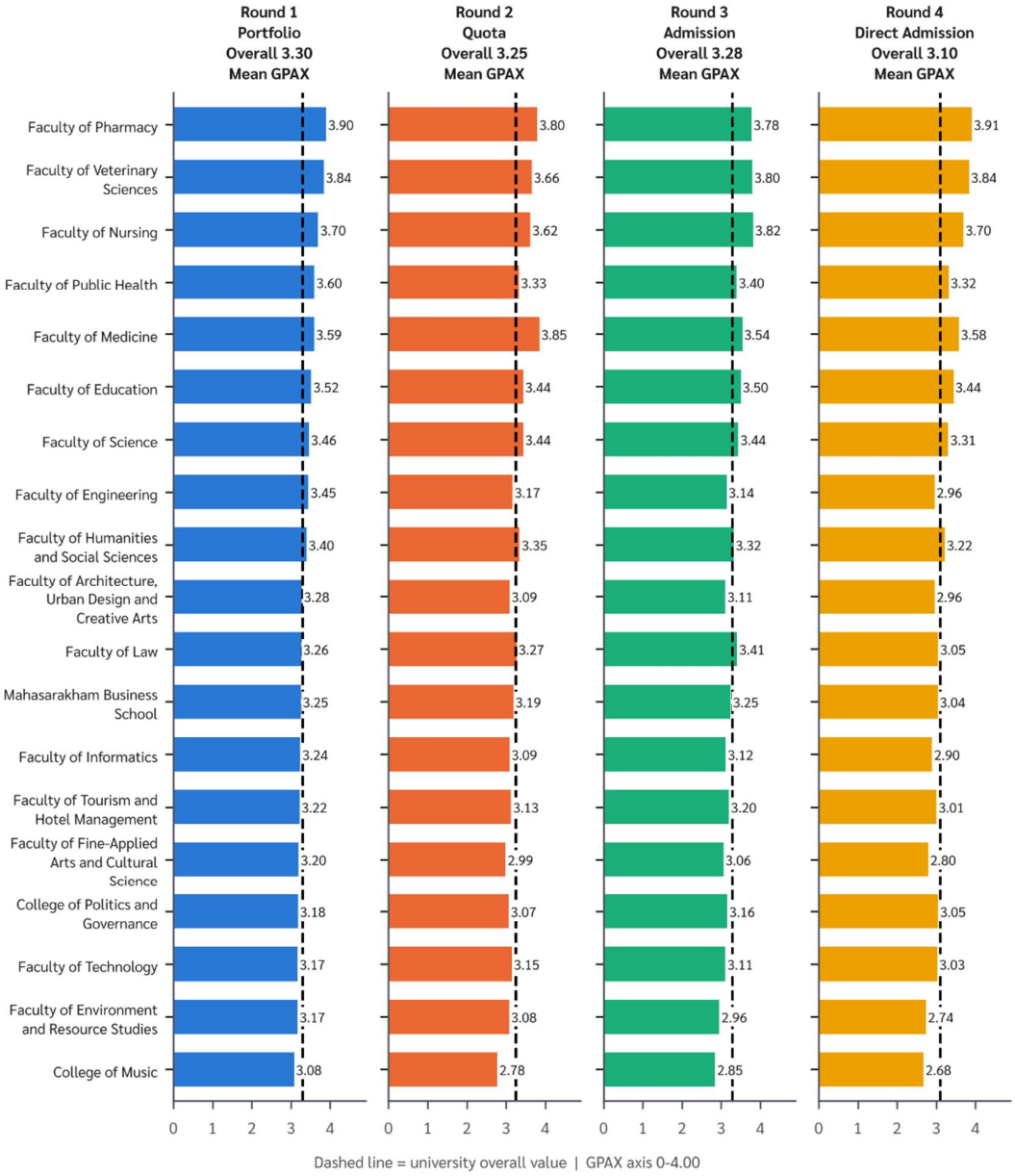

Figure 2. Cumulative academic results (GPAX) classified by TCAS round and faculty.

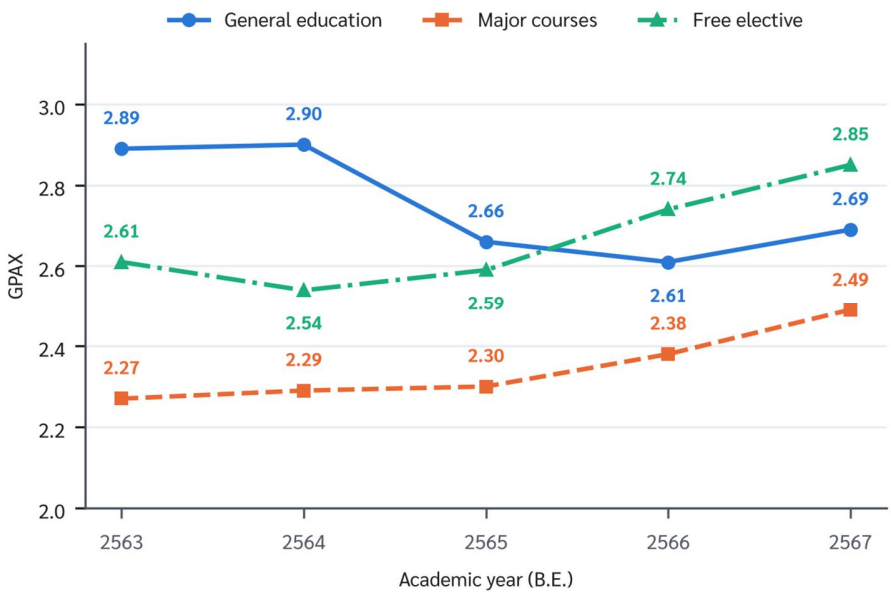

Figure 3. Cumulative academic results (GPAX) of all student groups according to curriculum structure in each academic year.

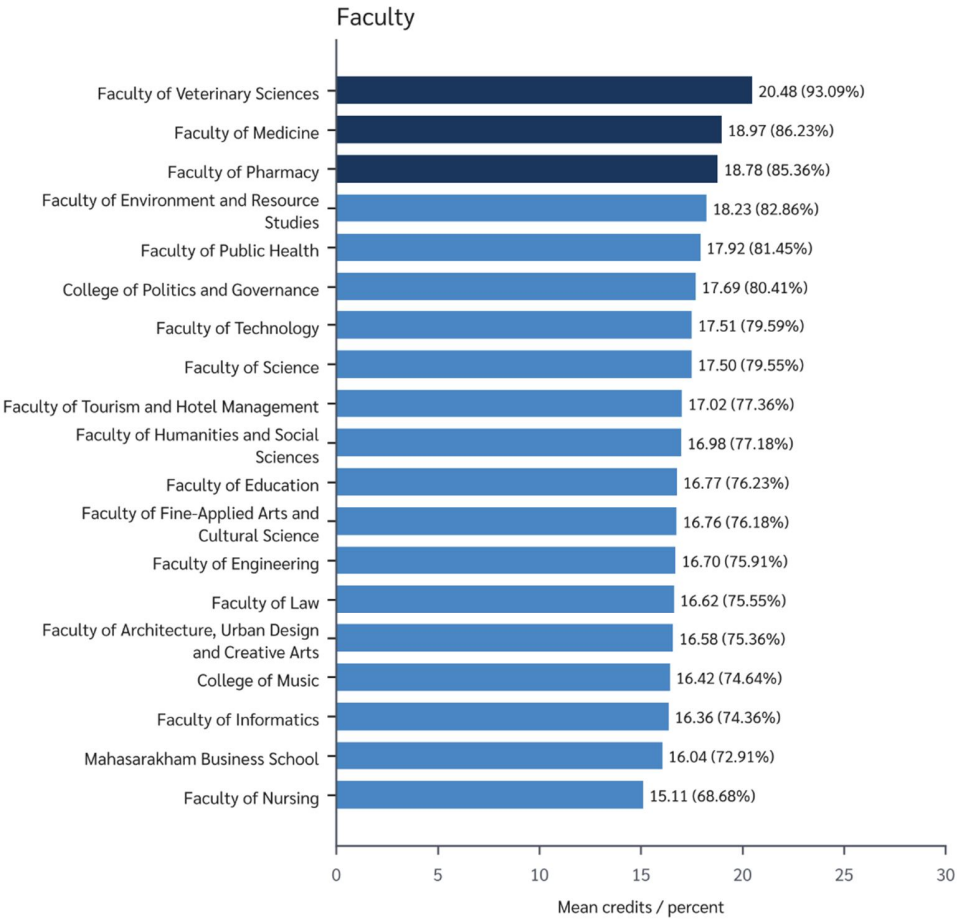

Figure 4. Number of credits registered at the undergraduate level, classified by faculty.

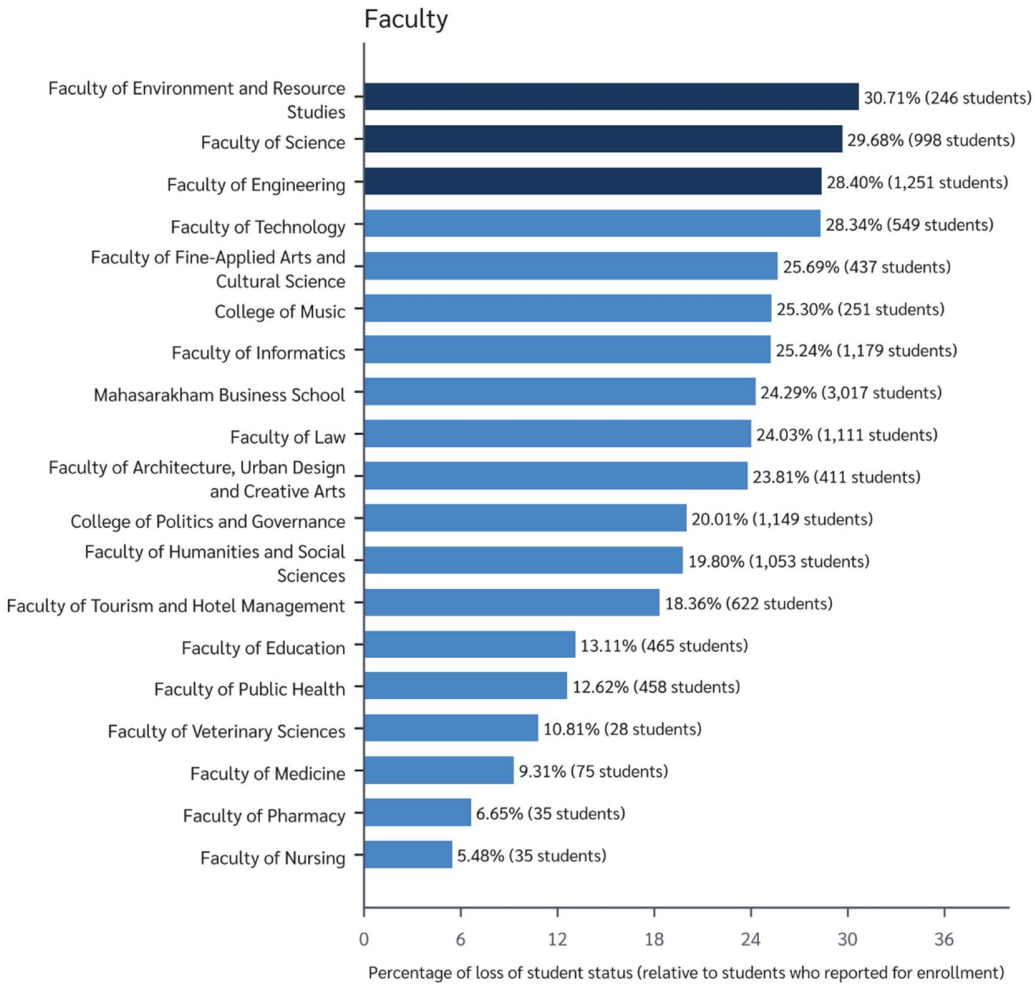

Figure 5. Rate of loss of student status, classified by faculty.

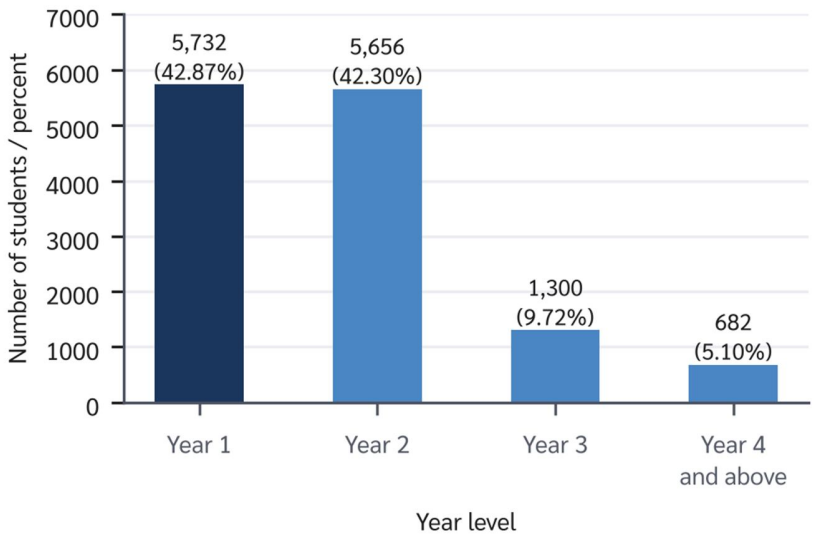

Figure 6. Year level at which students lost student status according to the regulations.

Graduation

Most retained students came from large schools (78.43%) in the northeastern region (85.47%), and the largest proportion had reported for enrollment in Round 1 Portfolio (33.83%), followed by Round 2 Quota (31.15%). They had a mean entry academic result of 3.27 and a mean current academic result of 2.34. Students of the Faculty of Nursing had the highest retention rates, at 95.77% in the second year and 94.52% in the third year. At the fifth-year level and above, the faculties with the highest retention, owing to their curriculum structure, were the Faculty of Pharmacy (55.70%) and the Faculty of Veterinary Sciences (50.19%).

Most students who graduated within the period prescribed by the curriculum came from large schools in the northeastern region, and the largest number had reported for enrollment in Round 1 Portfolio. They had a mean entry academic result of 3.27 and a mean academic result at graduation of 3.09. The grade range in which the largest number of students graduated was 3.01-3.25 (17.61%). The Faculty of Nursing had the highest proportion of graduates relative to the number of students in the cohort who reported for enrollment (57.12%), whereas Mahasarakham Business School had the largest number of graduates in the university overall (16.89%). Most graduates finished within the prescribed period (89.65%) and in the second semester (75.44%).

Employment status

Most employed graduates came from large schools. Most worked in the northeastern region (75.21%), followed by the central region (18.07%). They had reported for enrollment in the Round 1 Portfolio, and most had a GPAX of 3.09. The Faculty of Environment and Resource Studies had the highest proportion of employment status (89.52%), whereas Mahasarakham Business School had the largest number of employed graduates (19.01%). Overall, 94.92% of graduates secured employment within one year. The Faculty of Medicine had a rate of employment within 1 year of 100.00% and the highest rate of employment in line with the curriculum (96.48%). Most of the university's graduates worked in private-sector organizations (53.17%), as shown in Figure 7.

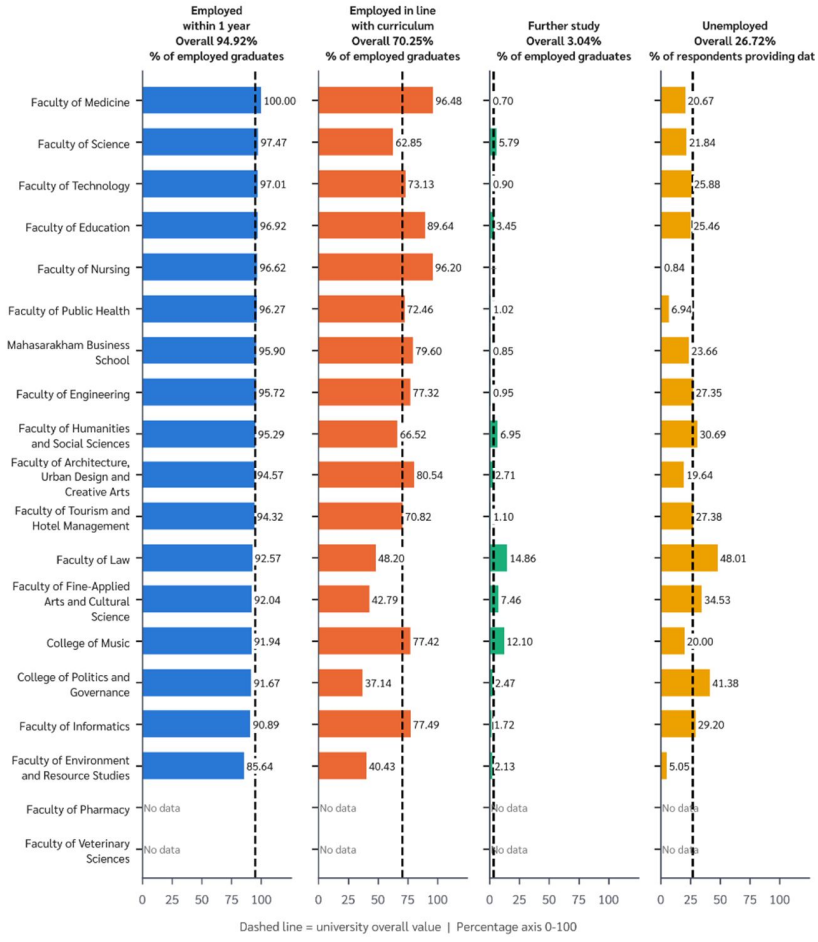

Figure 7. Employment status data, classified by faculty.

Distribution and spatial demand of the labor market. First, Mahasarakham University graduates worked most in the northeastern region (75.21%), followed by the central region (18.07%) and the eastern region (4.87%). This reflects graduates' labor movement into the central economic zone and the Eastern Economic Corridor (EEC). Second, the job market differed by faculty. Graduates of the Faculty of Nursing (70.04%) and the Faculty of Education (65.72%) worked mainly in government agencies, whereas graduates of the Faculty of Architecture, Urban Design and Creative Arts (75.57%) and the Faculty of Engineering (72.33%) worked predominantly in private-sector organizations. This helps the university see clearly each faculty's dependence on the external economic system, as shown in Figure 8.

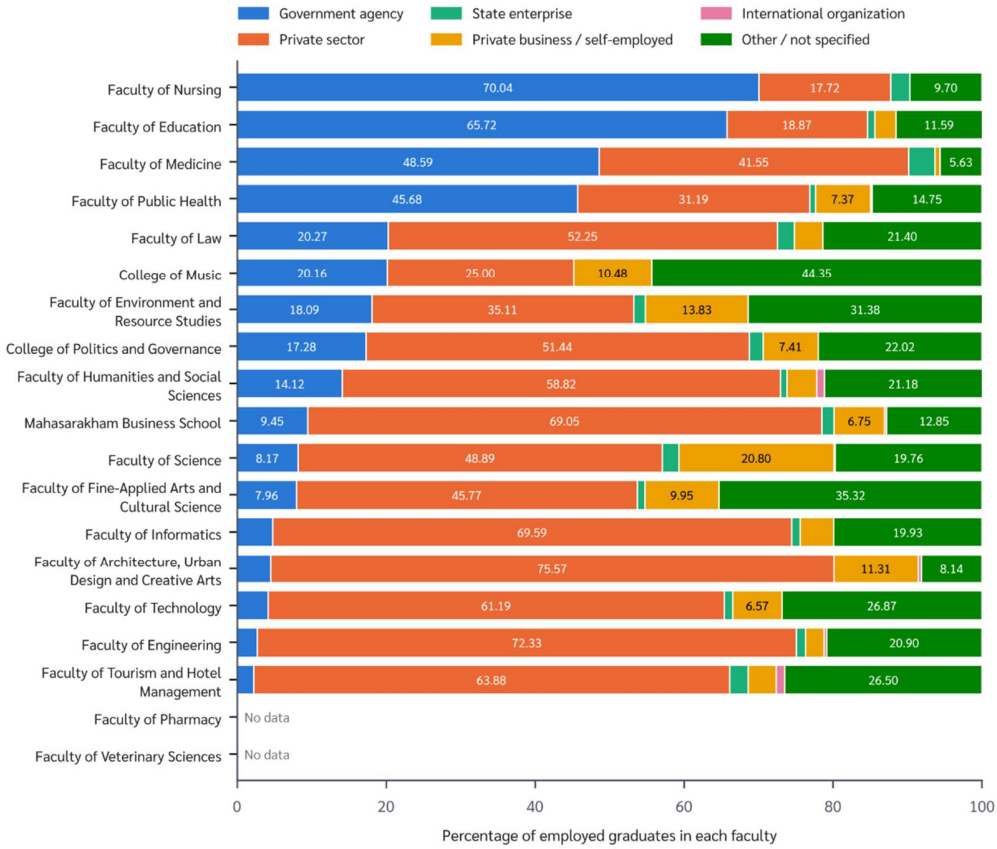

Figure 8. Workplace, classified by faculty.

DISCUSSION

The overall rate of loss of student status was 22.10%, and the highest-risk point was the first year (42.87%). According to the regulations, the main cause was failure to pay education fees to maintain student status (33.68%), followed by a cumulative grade average below the university's threshold, in the range of 0.00-0.99. First-year students are adjusting to a form or method of study different from that at the secondary level, and many live away from their home area. Barber et al. (2024) indicated that well-being and the building of attachment to a place through continuing training or educational contexts are important determinants of graduates' decisions to practice student status. An important risk for the university's education management may occur (Phanchamlong et al., 2022). Their cumulative grade average falling below the threshold may be due to uncertainty. Non-payment of tuition may be due to a lack of funds from parents, since most Mahasarakham University students are children of farmers. Climatic, economic, social, and political conditions and global society fluctuate and change rapidly. Parents' occupations may be affected by the cost of living for each student. The proportion of government student loans has also decreased. These issues may therefore have contributed to the large number of first-year students losing student status.

This conclusion is consistent with the findings of Punsuwan and Phetkaew (2021) used association rule mining and found that educational background factors.

They have fair-level average grades in mathematics and foreign language learning areas. This can be an important catalysts of mid-course dropout among first- and second-year students. Ortiz-Lozano et al. (2020) studied the prediction of dropout among engineering students in Spain and indicate that higher education institutions need to add English language and computer or information technology knowledge and abilities, and that first-semester academic results in the first year were the most effective indicator for identifying risk. This evidence suggests that loss of student status among first-year students at Mahasarakham University arises not from the academic dimension alone but from multiple combined causes involving students' education and families' finances.

Student retention rate

The health science faculty, particularly the Faculty of Nursing, had the highest retention rates at Mahasarakham University (95.77% in the second year and 94.52% in the third year). The Faculty of Environment and Resource Studies and the Faculty of Science, both in the science and technology faculty group, had the lowest retention rate (79.78%). Students entering the health science faculty aim to care for and treat the physical and mental health of people and animals. They strive for the public benefit in the health of individuals and living beings. The retention rate in the first semester, according to Barber et al. (2024), indicated that well-being and the building of attachment to a place through continuing training or educational contexts are important determinants of graduates' decisions to practice in the second year, was 86.54%. Mueangsong et al. (2017) studied factors in the retention of nursing students in the northeastern region and found that the factors with the highest positive relationship with retention were the relationship factor (r = 0.75) and love for the nursing profession (r = 0.73). This study reflects the clear professional identity of the Faculty of Nursing, Mahasarakham University. It also reflects effective management and care of students in academic matters, daily life, and mental health. Faculty of Nursing has the proportion of faculty members prescribed by the professional council, the ministry, and the university.

This is an important mechanism that enables students to maintain their study status so that they can graduate as prescribed by the curriculum and the university. Pusapanich et al. (2023) at Chiang Mai University explained that academic adjustment, psychological well-being, and intrinsic motivation are variables with a significant positive influence on retention. The low retention rates in faculties such as the Faculty of Science and the Faculty of Environment and Resource Studies may result from students encountering systemic adjustment problems in the modern university learning environment. Faculties and programs should therefore give importance to closely caring for, advising, and monitoring students' academic results and daily lives so that students can maintain their study status and graduate as prescribed by the curriculum or the university.

Graduation

A total of 18,151 students graduated, equivalent to 30.01% of the students who reported for enrolment; most of the others are still studying. Most graduates had a GPAX of 3.09 at graduation, and 89.65% graduated within the time prescribed by the curriculum. This trend may be because students followed the study plan. The university communicated this to them from the time they first entered by allowing them to plan their studies and course registration appropriately. Considering academic results by course category, major courses had the lowest GPAX (2.35), compared with free electives (2.66) and general education (2.75). This may indicate that the difficulty of course content or the evaluation criteria in major courses across all faculties is an important factor affecting students' overall GPAX. It may also be because the major course category contains many course groups (core courses, required major courses, elective major courses, and other groups prescribed by the curriculum of the discipline) and has the largest total number of credits.

Kocsis and Molnár (2025) processed a database of more than 600,000 students and concluded that grade point average (GPA) and the number of credits earned are the most consistent and most influential predictors of academic achievement and graduation. It is also consistent with the findings of Gunawan et al. (2021), who used data mining techniques to predict graduation within the prescribed period and showed that GPA and entry grade are the main characteristics for accurately predicting success. Although the GPAX of major courses is lower than that of free elective and general education courses, most students chose to register for free elective or general education courses. This is possibly to raise their GPAX or to meet the university's regulatory criteria so that they could graduate within the prescribed period. In addition, entry academic results are important data that faculties and units should consider when raising the minimum cumulative grade average required for admission to Mahasarakham University. They are an important variable for students' GPAX during their studies and will affect retention rates, loss of student status, graduation, and employment status.

Employment status

Graduates were employed within 1 year at a rate of 94.92%; the main source of employment was private-sector organizations (53.17%), and graduates chose to work in the northeastern region at the highest rate (75.21%). Mahasarakham University is a leading higher

education institution at the regional, national, and international levels. The university aims to create educational opportunities for students, and the largest number of students who passed the selection to study at the university come from the northeastern region. In addition, sources of employment are not concentrated only in Bangkok and its vicinity. The presence of students from the northeastern region, the university's location at the midpoint of the region, teaching and skills or experience training in the area, and graduates' choice to work in the northeastern region are important empirical indications. The university produces manpower efficiently and in line with the purposes of graduate production set by the ministry and the nation.

This evidence reflects that Mahasarakham University functions as a higher education institution that produces manpower responding precisely and efficiently to the economic structure of the northeastern region. Rangsiyopas et al. (2018) pointed to structural problems for graduates in the humanities and social sciences group, who often work outside their field or not in line with what the curriculum prescribes. Feedback from both graduates and employers consistently indicated that higher education institutions need to add English language and computer or information technology knowledge and ability to curricula to increase competitiveness in the present labor market. Mahasarakham University has applied this finding in curriculum development, educational management, teaching and learning management, and administration to raise the quality of graduate production and graduates' work so that graduates have income and are given opportunities for employment at both the national and international levels in the future.

RECOMMENDATIONS

1. Executives of faculties with high rates or numbers of loss of student status, such as Mahasarakham Business School, the Faculty of Environment and Resource Studies, the Faculty of Science, and the Faculty of Engineering, should use the results of this analysis to review the courses in which students cannot achieve high scores and the major courses with relatively low average scores. They should do so by providing a mentoring system, a tutoring system, or an academic clinic system, and by increasing the intensity of guidance or academic adjustment for first- and second-year students.

2. The Division of Academic Affairs and the faculties should note that most students came from large schools (78.43%) and reported for enrollment through Round 1 Portfolio most often (33.83%). This data should be used to plan proactive marketing and public relations strategies aimed at large schools in the northeastern region. The selection criteria of the Direct Admission round, which had the lowest entry grade (GPAX = 3.10), should also be improved in order to obtain students who are more ready and who match the competencies of the curriculum.

3. Some faculties and colleges have graduates who work outside their field or not in line with the curriculum or have a high rate of temporary unemployment. The Faculty of Law has a high rate of further study (14.86%) and a high rate of having no employment or preparing for examinations (48.01%), and the College of Politics and Governance has a low rate of working in the field or in line with the curriculum (37.14%). These units should use the data to adjust their learning management by adding work-readiness modules, providing intensive tutoring from the fourth year for the bar examination, the lawyer licensing examination, or the Civil Service Commission examination, and expanding cooperation networks with government and private-sector organizations to support internships and employment.

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