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Factors Affecting the Academic Performance of CEBA Students: The Role of Bridging Program

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ABSTRACT

The K to 12 program in the Philippines allows Senior High School (SHS) students to select a track that provides specialized courses and track-specific competencies. SHS graduates are encouraged to pursue related higher education programs but are not restricted from pursuing unrelated degrees. Therefore, students not in the Accountancy, Business, and Management (ABM) track may still enroll in business programs. Consequently, the CEBA of MSU-IIT has implemented a bridging program for non-ABM SHS graduates to help them gain the necessary business competencies. The study aimed to assess the impact of the bridging program and other factors on academic performance. Using a quantitative research design, data were collected from 269 third- and fourth-year CEBA students during the academic year 2021–2022. The analysis employing multiple linear regression revealed a strong and statistically significant association between the university entrance exam score and participation in the bridging program. Results of the t-test showed that there is no significant difference between the academic performance of ABM and non-ABM students, implying that the bridging program has closed the gap in competencies.

Keywords: *ABM, Academic Performance, Business Competency, Bridging program, Entrance Exam*

INTRODUCTION

Education reform has been a long-standing issue in the Philippines (CHED, 2020), and the Republic Act 10533, also known as the Enhanced Basic Education Act of 2013, dubbed the K to 12 Program, is a significant step in this direction. This program aims to enhance the primary education system by strengthening its curriculum and increasing the years for primary

education. One of the fundamental changes introduced by this program is adding two years to the senior high school (SHS) level. During these two years, students are exposed to specialized courses designed to provide sufficient time for the mastery of concepts and skills, develop lifelong learning, and prepare them for their SHS curricular exit: either pursue tertiary education, middle-level skills development, engage in employment, or venture to entrepreneurship (Official Gazette, 2020). As a result, SHS students must choose among three tracks: Academic, Technical-Vocational-Livelihood (TVL), and Sports and Arts.

During the 2017-2018 school year, the first year of the K to 12 Program, out of the 564,252 total Philippine SHS students, 398,090 students (or 70.54%) were enrolled in the academic track, 28.93% were enrolled in the TVL track, and only 0.53% were enrolled in the Sports and Arts track (Department of Education [DepEd], n.d.). Enrollment in the TVL track increased to 36.15% in the 2018-2019 school year, 34.54% in 2019-2020, and 32.29% in 2020-2021. Meanwhile, the Sports and Art track only increased to 0.6% within the same period.

Enrollment in the Academic track slightly faltered to 63.27% in the second year of K to 12 Program implementation before increasing to 64.83% in the SY 2019-2020 and 67.09% in SY 2020-2021. The popularity of the said track may emanate from the strands that are specific and available: Business, Accountancy, Management (BAM, widely known as ABM); Humanities, Education, Social Sciences (HESS); and Science, Technology, Engineering, Mathematics (STEM). The list of specialized courses demonstrates that the competencies acquired are particular to each track. SHS students who graduate from STEM or HESS strands may not have the necessary skills for unrelated higher education programs, such as STEM graduates who want to pursue business programs. As a result, these students may not be immediately eligible to enroll in business-related programs at the tertiary education level.

The difference in performance is also noticeable in the administration of the qualifying exam for first-year students of the BS Accountancy program. Non-ABM SHS graduates tend to perform below their ABM counterparts (Department of Accountancy, 2023). As a result, non-ABM students either fail the exam or quit midway after realizing their lack of competency.

Although there is no explicit prohibition for SHS graduates to enroll in unaligned higher education programs, higher education institutions (HEIs) are given academic freedom to craft their admission requirements (Commission on Higher Education [CHED], 2017). Nonetheless, CHED CMO No. 10-2017 allows HEIs to require students to enroll in a bridging program during their first-year level or over several weeks in the summer before classes start. Hence, students who are not graduates of the accounting business management strand will have to take business finance, marketing, and economics subjects through the bridging program (Edukasyon.ph, 2020).

Consequently, the College of Economics, Business, and Accountancy (CEBA) of the Mindanao State University–Iligan Institute of Technology (MSU-IIT) has incorporated the requirement of a bridging program in its revised curriculum. Thus, non-ABM SHS graduates

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who wish to enroll in either BS Accountancy, BS Entrepreneurship, BSBA Marketing Management, BSBA Business Economics, or BS Hospitality Management program are required to take up the bridging program composed of five business courses, namely Organization and Management, Business Finance, Basic Accounting, Applied Economics, and Introduction to Marketing (BOR Resolution No. 163, Series of 2018; Special Order No. 01988 Series of 2018, MSU-IIT, 2018). This five-week program is designed to equip incoming non-ABM students with the essential business-related competencies to prepare them for the more technical and advanced courses of their chosen business programs, thereby increasing their likelihood of being successful in the program (i.e., higher academic performance). This bridging program can be a crucial tool in promoting inclusive education. According to Paguirigan (2020), "inclusive education provides all students with the most fitting learning environments and opportunities for them to attain their potential best."

Prior studies have found that taking up additional preparatory courses (bridging courses) before enrolling in university results in lesser withdrawal from courses (Poladian & Nicholas, 2013) and enrollment in cram (intense review) courses, engaging in online practice, or working through review manuals do better in university (Kajander & Lovric, 2005). Lastly, Murray and Klinger (2012), cited by Elsom et al. (2017), state that tertiary preparation and bridging programs have a retention rate of around 50%.

According to the input-environment-output (IEO) model developed by Astin (1993), input factors (i.e., demographic characteristics, prior academic achievement) and environmental factors (i.e., university organizations, peer relations) influence the students' academic performance (output).

Studies have shown that gender influences students' academic performance, with girls, on average, achieving better grades in high school than boys (Orabi, 2007; Dayioglu & Turut, 2007; Khwaileh & Zaza, 2011; Machin & McNally, 2005). Almazan et al. (2020) also found a statistical correlation between the academic performance and sex of STEM students. However, Esguerra and Gasmen (2023) revealed that females performed the same as their male counterparts in terms of academic performance in civil engineering programs. In addition, the marital status of the head of the household negatively influences academic performance, as divorce and separation were found to have a positive correlation between diminished school achievement and children's performance (Milling et al., 1991). Further, parents' education is essential to students' academic achievement. Parents with higher education expose their children to many educational opportunities (Furstenberg, 1999).

In the systematic review conducted by Rodriquez-Hernandez et al. (2019), household resources are a significant indicator of socioeconomic status and imply a conducive learning environment at home, thereby enhancing academic performance. These household resources are the goods (i.e., cars, books, computers, internet connection, and musical instruments) owned by the household (De Clercq et al., 2017). In addition, the study by Sun et al. (2009)

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found a significant positive effect of the parent's income and educational levels on the academic achievement of primary school students.

Interestingly, a study revealed that students from urban areas perform better in the tertiary education admission test than rural students (Kwame Nkrumah University of Science and Technology Planning Unit, 2009). The result can be attributed to the limited access of students from a rural area to quality education compared to students in an urban area (Assié-Lumumba, 2008).

Previous academic achievement, which is not captured by socioeconomic status, is one of the inputs that can affect a student's academic performance. Several studies revealed the importance of prior academic achievement to a student's academic performance (Casillas et al., 2012). Deussen et al. (2017) found that high school GPA predicts college course grades strongly. Other researchers found that students from Government-owned science high schools perform better than those who graduated from the primary curriculum and that students graduating from public schools perform better than those from private high schools (Sicat & Pangabiban, 2010).

While there are various studies on factors affecting the academic performance of students, Rodriquez-Hernandez et al. (2019) emphasized the need for more theoretical foundations in some studies. Most of the research pays more attention to the effect of socioeconomic status on the student's academic performance. However, students' academic performance can be driven by more than just socioeconomic status (De Clercq et al., 2013). Based on Astin's Theory of Involvement (1984, 1999), students' involvement in the University positively relates to their learning and development. Such a student who spends more time studying, actively participates in school organizations, and interacts with the teachers, staff, and other students is highly involved (Astin, 1999). Elsom et al. (2017) expressed that students' success at University dramatically depends on their motivations and experiences.

The university experience is "how a student connects to the university's academic environment" (Astin, 1999). Bruinsma and Jansen (2007) revealed that students who are more satisfied with their teacher's teaching ability performed better academically than those who are unsatisfied. Similarly, active participation in extracurricular activities positively impacts a student's life by improving behavior, school performance, and social aspects. As to the effect of the number of academic loads on academic performance, students with fewer academic loads tend to perform better academically (Bruinsma & Jansen, 2007).

Higher education has also been affected by the reform of the primary education system in the Philippines. 2023 marks the sixth year of implementing the revised business programs anchored on the K to 12 Program changes.

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Objectives of the Study

This study aimed to assess the varying factors that affect the academic performance of CEBA students and determine whether the bridging program served its purpose of gearing students with basic business-related skills and competencies to prepare them for more advanced courses. Specifically, it sought to look into the following: (1) profile of ABM and non-ABM students, (2) level of satisfaction with the quality of instruction provided by their teachers, (3) determinants of academic performance, and (4) differences in the academic performance of ABM and non-ABM CEBA students.

METHODOLOGY

Research Design

This study employed a quantitative research design to investigate the factors influencing academic performance among CEBA students.

Participants of the Study

The participants consisted of third- and fourth-year students of CEBA during the academic year 2021-2022. Some students are classified as non-ABM graduates in SHS and underwent a bridging program.

Research Instrument

Primary data was meticulously collected through a comprehensive questionnaire comprising four sections: ethical consent, socioeconomic status, prior academic achievement, and university experience. A Likert scale question on the quality of instruction under section III of the questionnaire was adapted from Sagunro (2017), while the researchers created all the remaining questions in the survey questionnaires. Additionally, the researchers utilized secondary data on their Cumulative Grade Point Average (CGPA) from the Electronic School Management System (eSMS), an integrated MSU-IIT student records management system.

It is important to note that the CGPA, a key metric in this study, only encompasses GPA for semesters with business courses covered in the bridging program. Academic performance in higher education can be assessed using various indicators, including academic achievement, competency, and persistence. Students' GPA often quantifies academic achievement (Rodriquez-Hernandez et al., 2019; De Clereq et al., 2017; Yao et al., 2015). In this study, the academic performance of CEBA students was evaluated based on their CGPA, which reflects their overall performance. Note that the grading system of MSU-IIT follows a five-point scale ranging from 5.00 to 1.00. The highest grade is 1.0, while the passing grade is marked at 3.0, and 5.0 indicates failure.

Data Gathering Procedure

In the academic year 2021-2022, there are 609 enrolled students in the 3rd and 4th year level under CEBA programs. Among these students, 144 participated in a bridging program. The researchers implemented a complete enumeration method for the selection of participants. A survey questionnaire was disseminated to the students through their university email accounts. Out of the 609 students who were emailed, only 269 responded, yielding a response rate of 44.17%. Of these respondents, 193 were ABM CEBA students, while the remaining 76 were classified as non-ABM CEBA students.

Data Analysis

The research used both descriptive and inferential statistics. Descriptive statistics, specifically frequency distribution, were used to calculate mean and percentage values. Multiple linear regression analysis was used to estimate the factors influencing academic performance. To ensure the reliability of the estimated parameters, regression diagnostic tests such as multicollinearity and heteroscedasticity tests were performed. The multicollinearity test showed that the regression model did not suffer from multicollinearity based on the Variance Inflation Factor (VIF) result. Robust regression was used to address this issue.

RESULTS AND DISCUSSIONS

1. Profile of ABM and non-ABM students

Considering that CEBA does not discriminate against the students it accepts for admission in any of its business programs, both ABM and non-ABM students were allowed to enroll in its programs. Consequently, out of the 269 respondents on their third-year and fourth-year levels in their respective programs, 76 or 28.25% are non-ABM senior higher school (SHS) graduates. Table 2 also shows that both ABM and non-ABM CEBA students are dominated by females, which reflects the national enrollment in terms of gender, wherein the majority of SHS students across different tracks are also female. This may imply that females have a stronger preference for studying business, management, and accounting-related fields.

In implementing the K-12 program, the government issued vouchers to students to allow them to enroll in their preferred track in private schools, primarily located in urban areas. A voucher is a financial subsidy the government gives qualified students to enable them to enroll in private SHS (DepEd Order No. 020, s. 2023). This addresses the issue that public high school amenities still need to be fully capacitated to cater to the specialized tracks. Consequently, most of the CEBA students from both groups were enrolled in SHS located in urban areas, as shown in Table 2. However, it can be observed that the gap between enrollment in terms of location for non-ABM students narrowed, suggesting that this strand

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may be more accessible in this area.

Table 2

Socioeconomic profile of CEBA Students classified according to their SHS track

Variables	ABM (n=193)	Non-ABM (n=76)
Sex (%)		
Female	78.23	77.63
Male	21.76	22.37
Location of Residence (%)		
Rural	34.20	43.42
Urban	65.80	56.58
Average Household Size	5	5
Average Monthly Household Income	31117.65	26200

Note: n is the number of observations

As presented in Table 2, it can be further observed that there is no difference in the average household size between the ABM and non-ABM students. At the same time, there is only a minimal difference in the average household monthly income, with ABM students having slightly higher incomes than non-ABM students. This may imply that the student's family profiles are relatively similar.

It can be noted from Table 3 that the majority of the respondents from both groups (i.e., ABM and non-ABM) graduated from the regular or primary SHS curriculum. This is expected due to the nature of the programs offered in CEBA (i.e., business), wherein advanced Science and Technology training offered in the Science curriculum might need to be revised. A higher average enrollment in private schools can also be observed among ABM CEBA students. Still, the reverse is seen in the profile of the non-ABM students, wherein most of the enrolled students from the said group came from public SHS. This reflects the national SHS enrollment trend, where private schools recorded more than 60% of the total ABM enrollment across the Philippines from SY 2017-2018 to 2020-2021 (DepEd, n.d.).

Moreover, Gamboa et al. (2020) found that insufficient facilities, laboratories, and library holdings are a common problem in conventional public senior high schools. Consequently, most ABM CEBA students are from private high schools, as shown in Table 3. However, the majority of the non-ABM CEBA students are from public schools. This may imply that SHS students may still need to decide on what program to pursue in higher education when choosing their SHS track or that the ABM track may not be available in their public schools.

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Table 3

The Academic Profile of CEBA Students when classified according to their SHS track

Variables	ABM (n=193)	Non-ABM (n=76)
SHS Type of Curriculum (%)		
Regular/Basic Curriculum	84.46	84.21
Science Curriculum	15.54	15.79
SHS Classification (%)		
Private	56.99	48.68
Public	43.01	51.32
With computer and Internet (%)	62.69	61.84
Participate in Extracurricular (%)	68.39	68.42
Average number of books available at home	27	28
Average SHS GPA	91.26	90.37
Average SASE Score	84.44	81.26
Average CGPA in College	1.62	1.54

Note: n is the number of observations

Exciting results in Table 3 also show that most of the students from the two groups own a computer and have access to the Internet. This indicates that most of them have better access to digital learning tools, which also implies the acknowledgment of the importance of these tools in education in the 21st century.

Furthermore, as shown in Table 3, both groups have a slight difference in the other academic profiles (i.e., number of books available at home, average SASE score, SHS GPA, and college CGPA) of CEBA students. It can be seen that the mean SASE score for both groups is higher than the overall University's mean SASE score of 79. SHS GPA is also above 90%. Highly analytical programs like economics and accountancy require higher SASE scores and SHS grades. These imply that students accepted into any of the CEBA programs are already performing before their University admissions. The results in Table 3 also show a relatively high average college GPA of 1.5994. Based on the MSU grading system, this GPA is excellent. It is also worth emphasizing that there is a consistency in the academic data that can be observed.

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2. Level of satisfaction with the quality of instruction

Table 4
Level of satisfaction with the Quality of Instruction provided by teachers

Variable	ABM (n=193)		Non-ABM (n=76)	
	Mean	Description	Mean	Description
Level of Satisfaction on Quality of Instruction	4.3129 (0.5937)	Satisfied	4.4763 (0.5493)	Satisfied

Note: Standard deviations are reported in parentheses.

Based on the results in Table 4, the respondents from both groups are generally satisfied with the quality of instruction they received from CEBA. This construct encompasses the competency of the faculty members, the use of variety in the teaching method, and the student's engagement as facilitated by the faculty members, among other things. This implies that the University remained true to its primary mission of providing quality education.

3. Regression Analysis on the Determinants of Academic Performance

Table 5 presents the multiple regression results on the determinants of academic performance. It can be noted from the results of the multiple regression analysis in Table 5 that at a 5% significance level, only the SASE Score and participation in the bridging program are found to be statistically significant in the academic performance of CEBA students.

Consequently, the SASE score has a significant, positive effect on the CGPA of the students. This result implies that when a student performs well in the entrance examination, this may predict their exemplary academic performance, in terms of CGPA, while enrolled in the CEBA program. This is consistent with prior research wherein entrance examination results are significant in their academic performance (Li et al., 2010; Byrne & Flood, 2008; Casillas et al., 2012).

In addition, participation in the bridging program positively and significantly affects academic performance, as shown in Table 5. This indicates that students who participate in bridging programs perform better academically while enrolled in CEBA programs than those who do not. The bridging program is designed to equip incoming business students with the introductory courses relevant to their programs and increase their appreciation of the courses, consequently increasing their CGPA. Poladian and Nicholas (2013) and Kajander and Lovric (2005) also uncovered the same findings.

Table 5

Multiple regression results on the determinants of academic performance

Dependent Variable: Average CGPA in College			
Independent Variables	Coefficient	Robust Std. Err.	P-value
Household size	0.008	0.02	0.637
Household head highest education	0.01	0.05	0.770
Household monthly income	-6.79e-07	5.66e-07	0.231
SASE Score	-0.02***	0.01	0.000
Senior High School GPA	-0.011	0.01	0.188
Number of books available at home	0.0004	0.001	0.457
Quality of Instruction	-0.08	0.06	0.178
Computer and Internet ownership (Owned=1, Otherwise=0)	0.0820	0.08	0.289
Sex of Student (Female=1, Male=0)	-0.11	0.09	0.256
Parents' Marital status (Married=1, 0=Otherwise)	0.16	0.09	0.062
Location of residence (Urban=1, Rural=0)	0.06	0.07	0.433
SHS Curriculum (Science Curriculum=1, Regular Curriculum= 0)	0.04	0.09	0.659
SHS Type of ownership (Private=1, Public = 0)	-0.06	0.07	0.416
Participate in extracurriculars (Yes=1, No=0)	-0.0005	0.08	0.995
Participate in the bridging program (Yes=1, No=0)	-0.17**	0.08	0.035
constant	4.93***	0.94	0.000
Number of observations		269	
Prob > F		0.0001	
Adjusted R-squared		0.1257	

*Note: The zero value inside the parenthesis is the base category used to compare the effect of dummy variables. ***significant at 1%, **significant at 5%.*

It can also be noted that the independent variables presented in Table 5 only account for 12.57% changes in the dependent variable, academic performance, as evidenced by the adjusted R-squared. Emphasis is given to the statistical significance of SASE score and participation in the bridging program. However, other factors (e.g., demographic factors) are found to be significant in different studies. Nonetheless, the results also do not undermine the effects of these variables, including prior academic performance (i.e., SHS GPA), as these may have shaped their readiness to take the entrance examination, SASE, and their attitude towards learning and academic achievement.

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4. Differences in the academic performance of ABM and non-ABM CEBA students

Considering that participation in the bridging program is significant to the academic performance of CEBA students, it is understandable that there is no difference in the average CGPA (as a measure of their academic performance) between groups, as presented in Table 6.

Table 6

Test of difference of Average College GPA between ABM and Non-ABM CEBA students

Variable	ABM	Non-ABM	Difference	t	Remarks
Average College GPA	1.62 (0.59)	1.54 (0.52)	0.0789	0.9695	Not significant

Note: n=269, and the value inside the parenthesis is the standard deviation

Generally, the first two years of the business programs focus on primary business courses as a foundation for the more advanced courses in their third—and fourth-year levels. The results support the regression in Table 5 and imply that the bridging program has closed the gap in the fundamental knowledge/competency requirement of business courses in both strands.

CONCLUSIONS

In general, this analysis yields essential insights concerning the characteristics, resource access, and academic performance of ABM and non-ABM CEBA students. Based on the findings, CEBA does not discriminate in its admissions process for its business programs, as both ABM and non-ABM students have equal opportunities to enroll. Many CEBA students are female, aligning with the prevailing national trend for business courses. Academic profiles, such as SASE scores and SHS GPA, are generally high for CEBA students. ABM CEBA students are likelier to come from private SHSs, while non-ABM students are primarily from public SHSs. ©…The higher prevalence of ABM CEBA students coming from SHSs can be attributed to the availability of government-issued vouchers, which allow eligible students to enroll in private institutions. Moreover, family profiles, in terms of household size and income, are similar between the two groups. In addition, both ABM and non-ABM CEBA students have good access to digital tools for learning and are satisfied with the quality of instruction provided by MSU-IIT. Through multiple regression analysis, it is evident that the SASE score and participation in the bridging program positively and significantly influence the academic performance of CEBA students. These findings align with previous research emphasizing the significance of entrance examination results and bridging programs about students' academic performance. Nevertheless, the lack of statistical significance for variables including parental

educational attainment, income, prior academic performance, and type of SHS curriculum does not negate their potential impact on academic performance. Variables contribute to the preparedness of students for the entrance examination. Likewise, the bridging program effectively addresses the gap in the basic knowledge for business courses between ABM and non-ABM CEBA students, as their average CGPA shows no significant difference.

RECOMMENDATIONS

The results suggest that the bridging program should be further implemented and enhanced, as it benefits non-ABM CEBA students by helping them acquire the basic competency required in the business programs. This, in turn, leads to better academic performance. Additionally, future researchers may explore additional factors influencing student performance and identify effective strategies to enhance learning outcomes.

ETHICAL STATEMENT

The authors sought approval from the top management to conduct this study. Upon receiving approval, the researchers included a detailed discussion in the questionnaire outlining the study's objectives. Additionally, a declaration statement was provided, allowing students to decide whether or not to participate in the study.

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