

# FACTORS AFFECTING COLLEGE DEGREE PREFERENCES OF SHS STEM STUDENTS OF THE COLLEGE OF ENGINEERING AND TECHNOLOGY OF WESTERN MINDANAO STATE UNIVERSITY

SALIMAR BENDANILLO TAHIL<sup>1</sup>

<sup>1</sup> Western Mindanao State University, Zamboanga City, Philippines

<sup>1</sup> tahl.salimar@wmsu.edu.ph

## ABSTRACT

The enforcement of the Senior High School (SHS) in the Philippines has caused fear among college programs of higher education institutions such as Western Mindanao State University (WMSU) that they might have a low turnout of enrollees. This research sought to identify factors impacting the college degree choice of Grade 12 STEM students of WMSU concerning the number of enrollees to its college degree programs. Results served as inputs on what measures can be taken by programs with a low number of enrollees. The study employed a descriptive-quantitative research design. Data were collected using a validated survey questionnaire on 160 students. The results revealed that interest factors were considered very influential among the five leading factors. Opportunity and personality factors have influenced students' college degree preference. In contrast, family factors somehow influenced them, while Peer factors have less influence on determining their college degree. The study further revealed that programs that integrate actual work experiences, have abundant career opportunities, and individual personality ideal to their chosen career significantly impacts students, thereby boosting their interest in pursuing that program. Students are also aware that family support is one crucial factor that affects their decision. However, no significant difference in the influence of family, interest, opportunity, and peer factors among graduating SHS STEM students, except for personality factors. Thus, a comprehensive information dissemination campaign regarding the program – its value, influence, and even employability, must be done by the college units is recommended.

## Keywords

senior high school, K-12, college degree preference, influence factors

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## Introduction

President Benigno "Ninoy" Aquino III signed into law on 15 May 2013 the K to 12 Program or Republic Act 10533, better known as the Enhanced Basic Education Act of 2013. (Official Gazette, 2013). The twelve-year basic education program aims to produce graduates who are competent to serve as the backbone of a highly-skilled and employable workforce. A significant modification is implementing Senior High School (SHS), an enhancement to the basic education program, which added two years in secondary education. The goal of SHS is to provide adequate time to master concepts and skills, develop lifelong learners, and prepare graduates for tertiary education, development of middle-level skills, employment and entrepreneurship (Official Gazette, 2013.). The SHS program will allow secondary school graduates to become mature enough to make sound career decision making regardless of their path. The Implementing Rules and Regulation (IRR) of the Republic Act (R.A.) No. 10533 stipulates that DepEd shall forge

alliances with higher education institutions (HEIs) to oversee the initial introduction of the enhanced basic education programme. And the projected low multi-year enrollment turnout for HEIs beginning in the 2016-2017 school year should be mitigated (Official Gazette, 2013).

The Western Mindanao State University (WMSU), the lead and the comprehensive state university of Western Mindanao, is among the many HEIs offering SHS, under the Office of the Vice President for Academic Affairs (OVPA). It has 1183 SHS students under various tracks and strands during the second semester of the school year (S.Y.) 2017-2018. WMSU is offering academic, and technical-vocational-livelihood (TVL) tracks. Science, Technology, Engineering, and Mathematics (STEM) and General Academic Strand (GAS) are under the academic track. In contrast, Information and Communications Technology (ICT) and Home Economics (HE) are under the TVL track. Sports track is also available in WMSU. The pioneering batch of SHS students started in the S.Y. 2016-2017 and will complete their secondary education by the S.Y. 2017-2018.

The SHS program implementation has caused fear among teachers and non-teaching staff in HEIs, such as WMSU, that they would lose their jobs due to the lack of college enrollees. For the past years before the implementation of SHS in WMSU, it has been observed that some college degree programs have lesser enrollees as compared to others, which caused other programs to have a lesser number of students. It may be due to the lack of students' information on the program's existence, value, impact, or even employability. However, SHS offering in WMSU will pave the number of college enrollees in the university since there will be a low enrollment turnout of tertiary students for two consecutive academic years due to the SHS implementation program. Despite the former, it is still observed that some college degree programs have a lesser number of enrollees as compared to others. This situation leads to insufficient teaching load for some faculty members, requiring them to solicit teaching load from related programs just so the minimum regular teaching load of 18 hours will be attained.

Due to the unequal number of enrollees between college degree programs, college department heads need to be aware of the underlying factors considered by graduating secondary students when choosing programs to pursue in college. The pioneering batch of the enhanced education program's college degree preferences is crucial to HEIs like WMSU. This problem prompted the researcher to assess the factors that had an effect on the choice of Grade 12 STEM students of the College of Engineering and Technology (CET) of WMSU, which, in turn, will determine why some programs have more enrollees than others. This research's findings are significant to the WMSU and CET management in crafting strategies and plans that will better attract SHS graduates to enroll in college degree programs.

## METHODS

A descriptive-quantitative research design method was utilized in this study. The respondents were Grade 12 SHS students under the Science, Technology, Engineering, and Mathematics (STEM) strand of the College of Engineering and Technology of Western Mindanao State University. They were classified based on gender and were determined using total enumeration

sampling. A total of 160 respondents, 84 are Male and 76 are Female, participated in this study.

A survey questionnaire in gathering data was used for this study. The questionnaire is divided into three (3) sections with twenty-two (22) questions. The first section deals with the demographic profile of the respondents. The second section centered on the respondents' course preference to take in college and specialization (if any). And the third section, which is the questionnaire proper, focused on the factors that influenced the respondent's answers in the second section. Respondents evaluate each item using a Likert's scale of 1 to 5 with 1, lowest as "not influenced" and 5, highest as "very much influenced." Part 3 of the survey questionnaire for this study was adopted from the survey questionnaire used in the study of Japitan, Camangyan, Rodrigo, Paez, Remeticado, and Bacarisas in 2015. However, with the oral examination committee's suggestion, the researcher added four (4) more questions under the "Peer" factor, which is not included in the latter.

The instrument utilized in this study was content-validated and reviewed by three (3) experts who have a masters degree in education.

A request letter was given to the Dean of the CET through the college's senior high school coordinator to seek approval to conduct the survey. Upon approval of the request, the researcher distributed the survey questionnaires per classroom during break time to not disturb the classes. The respondents were provided sufficient time to respond to the survey questionnaire while the researcher was waiting. The survey questionnaires were collected right after the respondents answered it. Students who were absent during the classroom distribution of the questionnaires were no longer considered as respondents of the study. The researcher adheres to confidentiality and ethical standards in dealing with the gathered data.

Weighted mean, frequency distribution, independent samples t-test, and range were the statistical tools used in analyzing and interpreting the survey results.

## RESULTS, DISCUSSIONS, AND CONCLUSIONS

This section analyzes, simplifies, and presents the gathered data from a total of 160 respondents representing the CET STEM Grade 12 students of

WMSU. A survey questionnaire was distributed to the class presidents, and out of 183 target respondents, a total of 160 respondents were able to answer and return the survey questionnaire. Some respondents were not able to answer the survey questionnaire because they were absent during the conduct of the survey. Nevertheless, still, the majority of the target respondents participated in the study.

**Table 1**  
**Number of Respondents per Section per Gender**

Section	Male	Female	Total
CET STEM 12 A	16	18	34
CET STEM 12 B	17	18	35
CET STEM 12 C	16	14	30
CET STEM 12 D	17	16	33

CET STEM 12 E	18	10	28
TOTAL RESPONDENTS	84	76	160

The table above shows the total number of respondents. Eighty-four (84) out of 160 or 52.50% of the respondents are male, while seventy-six (76) or 47.50% are female.

**What factors significantly affect the SHS students' college degree preference among the areas of Personality, Family, Interests, Opportunities, and Peers?**

The tables below show the perceptions of Grade 12 STEM students in terms of the level of influence of the leading factors that affect their college degree preference.

**Table 2 Weighted Mean on Personality Factors**

PERSONALITY FACTORS	Male		Female		Grand Mean	Interpretation
	Mean	Interpretation	Mean	Interpretation		
1. My personality is best suited to the chosen career that I would take from this course.	4.06	Influenced	3.82	Influenced	3.94	Influenced
2. My knowledge of science and/or mathematics and course comprehension will give me an advantage in getting to my career.	3.85	Influenced	3.64	Influenced	3.75	Influenced
3. I'm going to be more effective with my career that I'm going to practice because of my attributes.	4.18	Influenced	3.99	Influenced	4.09	Influenced
4. My qualities should be suitable for the profession I'd like to work on.	4.23	Very Much Influenced	3.97	Influenced	4.11	Influenced
<b>ALL</b>	<b>4.08</b>	<b>Influenced</b>	<b>3.86</b>	<b>Influenced</b>	<b>3.97</b>	<b>Influenced</b>
Legend: 4.21 – 5.00 Very Much Influenced		2.61 – 3.40 Somewhat Influenced		1.00 – 1.80 Not Influenced		
3.41 – 4.20 Influenced		1.81 – 2.60 Less Influenced				

Table 2 exhibits several personality factors that might have influenced CET STEM 12 students to choose their college degree. Based on the table, the fourth factor exhibited the highest mean of 4.23 with an equivalent interpretation of *Very Much Influenced*. In contrast, other personality factors were rated as *Influenced* by the CET STEM Grade 12 Male respondents. Next, the CET

STEM Grade 12 Female respondents rated all of the personality factors as *Influenced*. Altogether, the findings revealed a grand mean of 3.97 with a corresponding interpretation of *Influenced*. This indicates that Male and Female CET STEM Grade 12 students consider personality factors presented to them as influential in choosing their college degree.

**Table 3 Weighted Mean on Family Factors**

FAMILY FACTORS	Male		Female		Grand Mean	Interpretation
	Mean	Interpretation	Mean	Interpretation		
1. My parents followed the same path that I was going to take.	2.17	Less Influenced	1.88	Less Influenced	2.03	Less Influenced
2. It is my parents who chose my path.	1.98	Less Influenced	1.91	Less Influenced	1.94	Less Influenced
3. In my chosen path, my family will provide me with support.	4.46	Very Much Influenced	4.57	Very Much Influenced	4.52	Very Much Influenced
4. I think my family is responsible for selecting a career for me and they know what's best for me.	2.40	Less Influenced	2.09	Less Influenced	2.26	Less Influenced
<b>ALL</b>	<b>2.75</b>	<b>Somewhat Influenced</b>	<b>2.61</b>	<b>Somewhat Influenced</b>	<b>2.69</b>	<b>Somewhat Influenced</b>
Legend: 4.21 – 5.00 Very Much Influenced		2.61 – 3.40 Somewhat Influenced		1.00 – 1.80 Not Influenced		
3.41 – 4.20 Influenced		1.81 – 2.60 Less Influenced				

Table 3 exhibits several family factors that might have influenced CET STEM 12 students to choose their college degree. Based on the table, the third factor exhibited the highest grand mean of 4.53 with an equivalent interpretation of *Very Much Influenced*. Other family factors were rated *Less Influenced* by both the Male and Female CET

STEM Grade 12 respondents. Altogether, the findings revealed a grand mean of 2.69 with a corresponding interpretation of *Somewhat Influenced*. This indicates that somehow the family has influenced the decision-making of CET STEM Grade 12 students regarding their college degree preferences.

**Table 4 Weighted Mean on Interest Factors**

INTEREST FACTORS	Male		Female		Grand Mean	Interpretation
	Mean	Interpretation	Mean	Interpretation		
1. This profession that I'm pursuing from this course interests me in particular.	4.55	Very Much Influenced	4.42	Very Much Influenced	4.49	Very Much Influenced
2. I like to do the career-related stuff I want to specialize in.	4.45	Very Much Influenced	4.23	Very Much Influenced	4.35	Very Much Influenced
3. Experience has developed my interest in this profession.	4.01	Influenced	3.78	Influenced	3.90	Influenced
4. In this work which I will follow from this course, I see myself capable.	4.13	Influenced	4.14	Influenced	4.13	Influenced
<b>ALL</b>	<b>4.29</b>	<b>Very Much Influenced</b>	<b>4.14</b>	<b>Influenced</b>	<b>4.22</b>	<b>Very Much Influenced</b>
Legend: 4.21 – 5.00 Very Much Influenced		2.61 – 3.40 Somewhat Influenced		1.00 – 1.80 Not Influenced		
3.41 – 4.20 Influenced		1.81 – 2.60 Less Influenced				

Table 4 exhibits several interest factors that might have influenced CET STEM 12 students to choose their college degree. Based on the table, the first two factors exhibited the highest grand mean of 4.49 and 4.35 respectively with an equivalent interpretation of *Very Much Influenced*. In contrast, other interest factors were rated as *Influenced* by Male and Female CET STEM Grade 12 respondents. Altogether, the findings

revealed a grand mean of 4.22 with a corresponding interpretation of *Very Much Influenced*. Also, it can be noted that male respondents were *Very Much Influenced*, while female respondents were *Influenced*. This indicates that, in general, individual's interests in their preferred career have a factor on what degree to take in college.

**Table 5 Weighted Mean on Opportunity Factors**

OPPORTUNITY FACTORS	Male		Female		Grand Mean	Interpretation
	Mean	Interpretation	Mean	Interpretation		
1. There are plenty of opportunities that I can take advantage of from my profession.	4.18	Influenced	4.29	Very Much Influenced	4.23	Very Much Influenced
2. The path I've selected will help me quickly choose the right profession.	4.21	Very Much Influenced	4.39	Very Much Influenced	4.30	Very Much Influenced
3. The career I'd follow is timely on demand.	4.01	Influenced	4.17	Influenced	4.09	Influenced
4. I am well conscious of the possibilities that accompany the profession that I am searching for.	4.15	Influenced	4.18	Influenced	4.17	Influenced
<b>ALL</b>	<b>4.14</b>	<b>Influenced</b>	<b>4.26</b>	<b>Very Much Influenced</b>	<b>4.20</b>	<b>Influenced</b>
Legend: 4.21 – 5.00 Very Much Influenced		2.61 – 3.40 Somewhat Influenced		1.00 – 1.80 Not Influenced		
3.41 – 4.20 Influenced		1.81 – 2.60 Less Influenced				

Table 5 exhibits several opportunity factors that might have influenced CET STEM 12 students to choose their college degree. Based on the table, the first two factors exhibited the highest grand mean of 4.23 and 4.30 respectively with an equivalent interpretation of *Very Much Influenced*. In contrast, other opportunity factors were rated as *Influenced* by Male and Female CET STEM Grade 12 respondents. However, it can be noted that female respondents consider opportunity

factors as *Very Much Influenced* with an overall mean of 4.26 as compared to that of CET STEM Grade 12 male respondents who overall rated opportunity factors as *Influenced* with an overall mean of 4.14. Altogether, the findings revealed an total mean of 4.20 with an equivalent interpretation of *Influenced*. This implies that the type of career that the students can obtain from their preferred college degree has a significant factor in choosing their course.

**Table 6 Weighted Mean on Peer Factors**

PEER FACTORS	Male		Female		Grand Mean	Interpretation
	Mean	Interpretation	Mean	Interpretation		
1. The preference of my friend inevitably influences my choice of a	2.37	Less Influenced	2.16	Less Influenced	2.27	Less Influenced



<i>course.</i>						
2. My friends encouraged me to take my chosen course.	2.25	Less Influenced	2.31	Less Influenced	2.28	Less Influenced
3. My peers have a great influence in my course of preference.	2.46	Less Influenced	2.24	Less Influenced	2.36	Less Influenced
4. Bits of advice from family friends who experienced or took the same course have influenced my choice of course.	3.20	Somewhat Influenced	3.09	Somewhat Influenced	3.15	Somewhat Influenced
<b>ALL</b>	<b>2.57</b>	<b>Less Influenced</b>	<b>2.45</b>	<b>Less Influenced</b>	<b>2.52</b>	<b>Less Influenced</b>
Legend: 4.21 – 5.00 Very Much Influenced		2.61 – 3.40 Somewhat Influenced		1.00 – 1.80 Not Influenced		
3.41 – 4.20 Influenced		1.81 – 2.60 Less Influenced				

Table 6 exhibits several peer factors might have influenced CET STEM 12 students to choose their college degree. Based on the table, the fourth factor exhibited the highest grand mean of 3.15 with an equivalent interpretation of *Somewhat Influenced*. In contrast, other peer factors were rated *Less Influenced* by both the Male and Female CET STEM Grade 12 respondents. Altogether, the findings revealed a grand mean of 2.50 with a corresponding interpretation of *Less Influenced*. This indicates that peer factors, in general, have less influence on CET STEM Grade 12 students' decision making in choosing their college degree preferences.

**Is there a significant difference in the leading factors that affect the respondent's college course preferences when data are grouped according to gender?**

The following tables present the overall mean score of male and female respondents in all factors and its equivalent p-value (significance). Independent T-test samples were used to analyze the significant difference in all factors between the mean scores of male and female respondents. If the significance value is equal to or less than the 0.05 (p-value), then a significant difference between the two mean scores exists.

**Table 7 T-Test on the Level of Influence of Personality Factors per Gender**

Variable	$\bar{x}$	t-value	p-value	Remark
Gender	Male 4.09	2.209	0.029	Significant
	Female 3.86			

Table 7 reveals a higher mean score recorded on the level of influence of personality factors on male respondents ( $\bar{x} = 4.09$ ) than that of female respondents ( $\bar{x} = 3.86$ ). The p value

( $p=0.029$ ) is less than the significance value (0.05), therefore the hypothesis is rejected. It implies that each gender perceived personality factors differently in determining their college degree preferred.

**Table 8**  
**T-Test on the Level of Influence of Family Factors per Gender**

Variable	$\bar{x}$	t-value	p-value	Remark
Gender	Male	1.049	0.296	Not Significant
	Female			
	2.75			
	2.61			

Table 8 reveals a mean score recorded on the level of influence of family factors on male respondents ( $\bar{x} = 2.75$ ) and female respondents ( $\bar{x} = 2.61$ ). The p value ( $p=0.296$ ) is higher than

significance value (0.05), therefore the hypothesis is accepted. It implies that both genders perceived family factors as somewhat influential in determining their college degree preferred.

**Table 9**  
**T-Test on the Level of Influence of Interest Factors per Gender**

Variable	$\bar{x}$	t-value	p-value	Remark
Gender	Male	1.213	0.227	Not Significant
	Female			
	4.29			
	4.14			

Table 9 reveals the computed mean score recorded on the level of influence of interest factors on male respondents ( $\bar{x} = 4.29$ ) and female respondents ( $\bar{x} = 4.14$ ). The p value ( $p=0.227$ ) is higher than significance value (0.05), therefore the hypothesis is accepted. It implies that male and female graduating SHS students mostly agree that

interest is one factor considered to affect their college degree preference. As noted in Table 4, it is evident that both genders are particularly interested in the possible career from their desired college degree. Also, both genders are interested in specialized activities related to their chosen profession, which significantly affects choosing their college degrees.

**Table 10**  
**T-Test on the Level of Influence of Opportunity Factors per Gender**

Variable	$\bar{x}$	t-value	p-value	Remark
Gender	Male	-1.075	0.284	Not Significant
	Female			
	4.14			
	4.26			

Table 10 reveals a higher mean score recorded on the level of influence of opportunity factors on female respondents ( $\bar{x} = 4.26$ ) than that of male respondents ( $\bar{x} = 4.14$ ). The p value ( $p=0.284$ ) is higher than significance value (0.05), therefore the hypothesis is accepted. It

implies that both genders perceived opportunity factors as influential in determining their college degree preferred next to interest factors. However, as noted in Table 5, female respondents were highly influenced by the number of opportunities available from the career they intend to pursue.

**Table 11**  
**T-Test on the Level of Influence of Peer Factors per Gender**

Variab le	$\bar{x}$	t- value	p- value	Remar k
Gender	Male 2.57	0.676	0.500	Not Signific ant
	Fema le 2.46			

Table 11 reveals a mean score recorded on the level of influence of peer factors on male respondents ( $\bar{x} = 2.57$ ) and female respondents ( $\bar{x} = 2.46$ ). The p value ( $p=0.500$ ) is higher than significance value (0.05), therefore the hypothesis is accepted. It implies that both genders perceived family factors as less influential in determining their college degree preferred. However, as shown in Table 6, both genders somehow consult with their family friends or someone who took a college degree of their preference. Bits of Advice they get from these people somehow influence them in considering their desired degree in college.

### Conclusions

1. The research findings reveal that the pioneering batch of graduating SHS STEM students from the College of Engineering and Technology of Western Mindanao State University agrees that personal interest is one leading factor affecting their college degree preference significantly. Abundant career opportunities and an individual personality or attribute ideal to their chosen career have greatly influenced students' decision to select their preferred college degree.
2. Students are also aware that family support is one crucial factor that affects choosing a preferred college degree. However, overall, they do not rely on the family's preference for choosing their desired college program. Furthermore, peer factors have a lesser impact on determining their college degree, except that they consult them for assurance.
3. The study showed a significant difference in the impact of personality factors in determining college degree preference while no significant difference in the

influence of family, interest, opportunity, and peer factors on male and female graduating SHS STEM students.

### Recommendations

1. It is recommended that the WMSU, specifically the SHS department, develop a career-orientation program for graduating SHS students since no such plan is in place yet. There must be an avenue for career orientation for graduating SHS students. In this way, students will grasp their future career they would like to pursue before entering college. This career-orientation program will help SHS students identify the right degree for them in college, eventually bringing them to their desired job. Most importantly, family members, especially the parents, be involved in developing the career-orientation program of students in order to personally assist their children in choosing which degree best suits their child's interest, personality, skills, and academic ability.
2. To attract students to enroll in college programs, subject teachers teaching in SHS must boost their interest in the subject they are leading by providing students first-hand experiences on how it feels like to be in the actual workplace. It can be reinforced by integrating career-related activities into the curriculum.
3. As for the college units, wide information dissemination regarding the program - its value, impact, and even employability, must be done by the program's concern to attract students. Furthermore, each program or college can also provide essential information regarding the career they can get out of the program, the advantages of taking the degree like the



annual income, and the comfort it will bring to them in the future. The department heads should ensure that a competency-based curriculum is in place to guide students in their career choice.

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