Parental Influence, Environment, and Personality Factors on Strand Selection of Grade 10 Students: A Structural Equation Model (SEM)

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ABSTRACT

This study focused on determining the impact of parental influence, environment, and personality factors on the strand selection of Grade 10 students and proposed a best fit model. A Raosoft sample size calculator was used to determine the 328 randomly selected respondents currently enrolled at Esperanza National High School. A descriptive-causal research design was employed through the structural equation model (SEM). The mean, standard deviation, correlation, and path analysis were utilized to analyze the data. Assumptions were checked to ensure the proper utilization of inferential statistics. The path analysis was used to examine the three hypothesized models for the strand selection model. The findings of the study revealed a positive significant correlation between the strand selection and parental influence (r = .441, p = 0.00), environment (r = .545, p = 0.00), and personality factors (r = .726, p = 0.00). The findings further revealed that hypothesized Model 3 was the best-fit model for strand selection where parental influence (β = -0.2) reduces personality factors. In contrast, environmental factors (β = .66) increase personality factors (β = .64) on strand selection. Likewise, it was also noticed that environmental factors have a direct effect (β = .13) on strand selection. Thus, it is concluded that hypothesized model 3 is the best fit model for Grade 10 strand selection.

Keywords: Parental Influence, Environment, Personality Types, Strand Selection, Structural Equation Model (SEM)

INTRODUCTION

Career decision-making has an impact on a person's lifelong effects. They serve as a determining factor and predictor of future earnings potential and the nature of work. It is challenging for everyone to decide regarding their chosen career. Kazi and Akhlaq (2017) emphasized that the greater scales of motion are displayed in a country's economic success. People who do not fit in with their workplaces typically produce less efficiently and cannot attain their goals. It unites into one of the most difficult decisions and challenges a student will ever face. It involves the interaction of a significant number of intricately related elements. It is a challenging task that requires complex decision-making (Ouano et al., 2019).

Moreover, Borchert (2002) noticed that the career decisions of high school students were influenced by a variety of factors; parents, educators, and industry professionals could gain insight or ideas regarding the aspects of the career decision process in which students place the most confidence by identifying these

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factors. The selection of strands by students can also be influenced by environmental, personality, and family-related factors (Kaneez & Medha, 2018). Furthermore, in Australia, Akosah-Twumasi et al. (2018) highlighted that career planning is crucial for life fulfillment, but cultural heritage can conflict with youths' interests. Personal interest is the primary factor influencing career choice in individualistic settings, and youth are more independent in their career decisions. Further research is needed to understand parental influence and diversity, particularly for bicultural youths, and their ability to use resources effectively for meaningful future career goals.

In the same way, in the Philippines, the 7.1% unemployment rate in January 2013 was the highest among the countries, and 16.9% of people in Southeast Asian countries have a college degree. Unfit graduates are among the analyzed causes of the nation's high rates of underemployment and unemployment. The causes might either be that the graduates don't match the demands of the current economy or the graduates don't match the demand of the produced course and do not possess the qualities needed by the relevant industry (Pascual, 2014). Further, Condes and Toni-an (2022) underscore that a job mismatch affects labor market productivity and economic growth, like in the case of a growing number of nurses working in fields unrelated to the nursing profession. To develop strategies to reduce graduate mismatches to the required workforce of companies and the government, the Department of Education works to improve the quality of educational institutions' graduates before they even enroll in college. This is one of the reasons why the government implemented the K-12 program.

Upon reviewing the literature, the researchers noticed that the selection of strands by students can be influenced by environmental, personality, and family-related factors. It does not provide any specific information on the extent of parental influence on strand selection, which needs more information on the role of parental influence in strand selection among high school students. Thus, further research is required to understand the extent of parental influence on strand selection and the interplay between personality factors, environmental factors, and parental influence in the students' career decision-making process.

This matter pushes the interest of the researchers to explore the impact of parental influence, environment, and personality factors on strand selection of Grade 10 students, which the current study aimed to propose for the best-fit model for strand selection of Grade 10 students. Generally, this study aimed to determine the impact of parental influence, environment, and personality factors on strand selection and propose a best-fit model. Specifically, this study sought to answer the following research questions.

1. What is the level of parental influence, environmental factors, personality factors, and strand selection of Grade 10 students?
2. Is there a significant correlation between the strand selection and parental influence, environment, and personality factors?
3. What model best fits the strand selection of Grade 10 students?

RESEARCH METHODOLOGY

This section presented the methods used in this research study, particularly the research design, locale of the study, respondents of the study, sampling technique, research instrument, confirmatory factor analysis (CFA), data gathering procedures, and statistical treatment.

Research Design

The study used a descriptive-causal research design to explore the predictive aspects of independent variables to the dependent variable. Correlational aspects established links between independent and dependent variables, while a causal relationship determined predictive aspects among independent variables' indicators (Sheard, 2018). Likewise, the structural equation model (SEM) was used to create the

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best-fitting model for students' strand selection.

Locale of the Study

This study was conducted at Esperanza National High School, Poblacion, Esperanza, Sultan Kudarat, Philippines. It is located at Mabolo Street, Poblacion, Esperanza, Sultan Kudarat, which is one of the most prominent public secondary schools in Region XII, as well as the center of academic excellence and a Hall of Famer in the whole Sultan Kudarat province.

Respondents of the Study

The study's respondents were randomly selected 328 Grade 10 students of Esperanza National High School. This sample population was from Grade 10, composed of 17 sections with a total population of 948.

Sampling Technique

The study used a stratified sampling technique, where the Grade 10 individual sections were utilized as the strata. Raosoft's sample size formula was applied to determine the sample size of the respondents. Additionally, the proportional allocation formula was employed to obtain the sub-sample size for each section. To identify the individual respondents within each section of Grade 10, simple random sampling through the fishbowl method was utilized. This sampling technique ensured that all respondents had an equal chance of being selected for the study. The sampling technique mentioned above ensures that all the respondents have an equal opportunity to be part of the study. The formula is as follows.

$S = (n_1 n)/N$

where:

S = sub-sample

n_1 = sub-population

n = sample size

N = total population

Research Instrument

In this study, an adapted survey questionnaire was used to gather the necessary data for identifying the parental influence, environment, and personality factors affecting the strand selection of Grade 10 students. The instrument consisted of four (4) parts. Part I assessed the level of parental influence on the Grade 10 students. It consisted of three (3) indicators and six (6) item statements derived from the study conducted by Alphonse (2016). Part II assessed the level of environmental factors that influenced the strand selection of Grade 10 students. It comprised three (3) indicators and six (6) item statements derived from the study conducted by Pascual (2014). Part III assessed the level of personality factors that influenced the strand selection of Grade 10 students. It consisted of three (3) indicators and six (6) item statements derived from the study conducted by Tortor et al. (2020). Part IV assessed the level of strand selection among Grade 10 students. It comprised three (3) indicators and six (6) item statements derived from the study conducted by Clutter (2000). The adapted survey questionnaire underwent a validity and reliability test. The pilot test involved 300 randomly selected participants who were used to assess the instrument. The convergent validity of the survey questionnaires was tested within the setting of Esperanza National High School. Thus, a confirmatory factor analysis (CFA) was employed. Similarly, the reliability and internal consistency of the

items in the instrument were determined using Cronbach's alpha.

Confirmatory Factor Analysis (CFA)

The CFA was conducted to determine whether the 72 items, four factors, and 12 sub-factors about parental influence (Alphonse, 2016), environmental factors (Pascual, 2014), personality factors (Tortor, 2020) and strand selection (Clutter, 2000) were appropriate and measured what it intended to measure. Before the analysis began, the data sets were screened for outliers and missing values. A sample size (n = 300) was used in this study, which meets the minimum requirement of at least 200 sample sizes in conducting CFA analysis (Guildford, 1954; Hair et al., 2010). Then, the 300 respondents were used for CFA using the maximum likelihood estimation. A four-factor structured model with 12 sub-factors was subjected to CFA using the data sets obtained from the 300 respondents of the pilot test.

Hu and Bentler (1999) emphasized that researchers can employ different goodness-of-fit metrics in analyzing a model. In this case, the goodness-of-fit indices (GFIs) proposed by Karakaya-Oyzer and Aksu-Dunya (2019) were utilized. In order to assess the item statements or indicators, they should be loaded significantly in their respective factors. A factor loading must be statistically significant, and of at least 0.5 (minimum) to 0.7 (ideal), standard estimates must be met by the items (Hair et al., 2010; Gefen et al., 2000). The table below shows the results of the factor loading estimates of the model.

A. CFA of Parental Influence

Table 1. Factor Loadings Estimates Results of Parental Influence

Factor	Indicator	p	Stand. Estimate
Parents Educ. Background	item1	< .001	0.770
	item2	< .001	0.786
	item3	< .001	0.790
	item4	< .001	0.776
	item5	< .001	0.809
	item6	< .001	0.718
Parental values and expectation	item7	< .001	0.645
	item8	< .001	0.715
	item9	< .001	0.730
	item10	< .001	0.722
	item11	< .001	0.721
	item12	< .001	0.787

Socio-economic Status	Item13	< .001	0.563
	Item14	< .001	0.618
	Item15	< .001	0.662
	Item16	< .001	0.750
	Item17	< .001	0.810
	Item18	< .001	0.890

The analysis of the factor loads estimates manifested in Table 1 shows that all the scales in the factor loadings of parental influence are statistically significant and above 0.5, indicating a good convergent validity ranging from 0.530 to 0.809 (Hair et al., 2010; Gefen et al., 2000).

Table 2. AVE and CR values of Parental Influence

Dimensions	**AVE**	**CR**
Parents education Background	0.60	0.94
Parents' values and expectations	0.52	0.92
Socio-economic status	0.52	0.72

Table 2 presents the AVE and CR values of parental influence. The composite reliability (CR) and average variance extracted (AVE) were computed to confirm the convergent validity of the items further. The CR was 0.94, 0.92, and 0.72, respectively, which were greater than the threshold value of 0.6, signifying the high internal consistency of the items in the scale. Likewise, the AVE was 0.60, 0.52, and 0.52, greater than the threshold value of 0.5, denoting that the scale item statements reflect a variable's characteristics in the construct (Cortes et al., 2021; Srinivasan et al., 2002). Therefore, it is concluded that the parental influence construct is acceptable and has clear evidence of convergent validity.

Table 3. Model fit values results of Parental Influence

Examined Fit Indices	**Computed value**
CFI	0.876
TLI	0.856
RMSEA	0.0925
SRMR	0.0642
X^2	471
p-value	<0.001

Table 3 presents the model fit values of parental influence obtained from the results of CFA. Five goodness of fit indices (GFIs) were utilized to test the model's overall fit proposed by Alphonse (2016). Based on the analysis, the results were (CFI = 0.876; TLI = 0.856; RMSEA = 0.0925; SRMR = 0.0642; X^2= 471, *p*-value <0.001). The Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) are supported by Arbuckle and Wothke (1999), signifying that TLI and CFI should be at least close to 0.90. The Standardized Root Mean Square Residual (SRMR) result is supported by Bentler (1990), Konca et al. (2022), Tabachnick and Fidell (2007), and Yadama and Pandey (1995) denoted that SRMR value should be less than the value of 0.09 and

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Root Mean Square Error Approximation (RMSEA) values should be between 0.05 and 0.10 indicate acceptable fit (Asci, 2022; Cokluk et al., 2010; Schremelleh et al., 2003; & Yilmaz & Cerik, 2009). Although the chi-square (X^2) was found to be statistically significant (p<0.001), this may be considered acceptable because this measure is easily affected by the large sample size (Karaka-Oyzer & Aksu-Dunya, 2018). However, pondering the other fit indices, it may be safe to conclude that this construct is acceptable based on the clear evidence derived from the CFA.

Table 4. Discriminant validity of parental influence

Factor	**1**	**2**	**3**
1. Parents Education Background	0.77	—	—
2. Parental values and expectation	0.72	0.72	—
3. Socio-economic status	0.69	0.80	0.72

Table 4 presents the discriminant validity of parental influence. As can be gleaned from the table, Factor 1 (parents' education background) is higher than the squared correlation of each construct where it is compared, indicating that Factor 1 is more significant than the squared correlation between constructs, providing sufficient evidence of the distinction from other constructs. Meanwhile, Factor 2 (parental values and expectations) and Factor 3 (Socioeconomic status) are the relatively lower squared correlations of the other constructs, indicating a moderately weak discriminant validity. However, they cannot necessarily compromise the scale's properties and signify that all constructs are identical since not all constructs have a higher squared correlation than the square roots of other AVE constructs. Bagozzi and Philips (1999) emphasized that there are other practical means of validating the model besides discriminant validity. As supported by theoretical underpinnings and reasoning, the conceptual distinctions of each aspect should be the primary determinants of whether or not two constructs correlate (Bollen & Lennox, 1991). Likewise, there might be a problem with the discriminant validity of the measure. However, this can be addressed in future research. The primary basis for preserving the factors or items is based on the conceptual differences between each factor, as supported by the theoretical underpinning and argumentation (Cortes et al., 2021). Thus, it may be safe to conclude that the constructs are different from one another.

B. CFA of Environmental Factors

Table 5. Factor Loadings Estimates Results of Environmental Factors

Factor	Indicator	p	Stand. Estimate
Teachers, peers, and Siblings	Item1	< .001	0.750
	Item2	< .001	0.890
	Item3	< .001	0.800
	Item4	< .001	0.711
	Item5	< .001	0.686
	Item6	< .001	0.613

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Curriculum	Item7	< .001	0.790
	Item8	< .001	0.688
	Item9	< .001	0.900
	Item10	< .001	0.663
	Item11	< .001	0.890
	Item12	< .001	0.662
Guidance and Counseling	Item13	< .001	0.690
	Item14	< .001	0.692
	Item15	< .001	0.726
	Item16	< .001	0.588
	Item17	< .001	0.780
	Item18	< .001	0.890

Table 5 presents the factor loadings estimates results of environmental factors. The analysis of the factor loads estimates manifested in the table demonstrates that all the scales in the factor loadings of environmental factor are statistically significant and above 0.5, indicating a good convergent validity ranging from 0.613 to 0.890 (Hair et al., 2010; & Gefen et al., 2000).

Table 6. AVE and CR values of Environmental Factors

Dimensions	**AVE**	**CR**
Teachers, peers, and siblings	0.56	0.93
Curriculum	0.60	0.94
Guidance and Counseling	0.54	0.73

Table 6 presents the AVE and CR values of environmental factors. The composite reliability (CR) and average variance extracted (AVE) were examined to further confirm the convergent validity of the items. The CR was 0.93, 0.94, and 0.73, respectively, which were greater than the threshold value of 0.6, signifying the high internal consistency of the items in the scale. Likewise, the AVE was 0.56, 0.60, and 0.54, greater than the threshold value of 0.5, denoting that the scale item statements reflect a variable's characteristics in the construct (Cortes et al., 2021; Srinivasan et al., 2002). Therefore, it is concluded that the environmental construct is acceptable and has clear evidence of convergent validity.

Table 7. Model fit values results of Environmental Factors

Examined Fit Indices	**Computed value**
CFI	0.850

TLI	0.826
RMSEA	0.0668
SRMR	0.0811
X^2	392
p-value	<0.001

Table 7 presents the model fit values of environmental factors obtained from the results of CFA. Five goodness of fit indices (GFIs) were used to test the model's overall fit proposed by Pascual (2014). Based on the analysis, the results were (CFI = 0.850; TLI = 0.826; RMSEA = 0.0668; SRMR = 0.0811; X^2= 392, *p*-value <0.001). The Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) are supported by Arbuckle and Wothke (1999), signifying that TLI and CFI should be at least close to 0.90. The Standardized Root Mean Square Residual (SRMR) result is supported by Bentler (1990), Konca et al. (2022), Tabachnick and Fidell (2007), and, Yadama and Pandey (1995) denoted that the SRMR value should be less than 0.09 and Root Mean Square Error Approximation (RMSEA) values should be between 0.05 and 0.10 indicate acceptable fit (Asci, 2022; Cokluk et al., 2010; Schremelleh et al., 2003; & Yilmaz & Cerik, 2009). Although the chi-square (X^2) was found to be statistically significant (p<0.001), this may be considered acceptable because this measure is easily affected by the large sample size (Karaka-Oyzer & Aksu-Dunya, 2018). However, pondering the other fit indices, it may be safe to conclude that this construct is at an acceptable level based on the clear evidence derived from the CFA.

Table 8. Discriminant validity of parental influence

Factor	**1**	**2**	**3**
1. Teachers, peers, and siblings	0.75	—	—
2. Curriculum	0.536	0.77	—
3. Guidance and Counseling	0.503	0.628	0.73

Table 8 presents the discriminant validity of environmental factors. As can be gleaned from the table, all factors were higher than the squared correlation of each construct where they were compared; this indicates the strong relationship between the constructs, and all are different from one another (Hair et al., 2014).

C. CFA of Personality Factors

Table 9. Factor Loadings Estimates Results of Personality Factors

Factor	**Indicator**	**p**	**Stand. Estimate**
Believes & Attitudes	Item1	< .001	0.807
	Item2	< .001	0.752
	Item3	< .001	0.769
	Item4	< .001	0.695
	Item5	< .001	0.749
	Item6	< .001	0.765
Ability to adapt	Item7	< .001	0.688
	Item8	< .001	0.680
	Item9	< .001	0.780
	Item10	< .001	0.750
	Item11	< .001	0.661

	Item12	< .001	0.716
Assertiveness	Item13	< .001	0.680
	Item14	< .001	0.640
	Item15	< .001	0.752
	Item16	< .001	0.777
	Item17	< .001	0.763
	Item18	< .001	0.758

Table 9 presents the factor loadings estimates results of personality factors. The analysis of the factor loads estimates manifested in the table demonstrates that all the scales in the factor loadings of personality factor are statistically significant and above 0.5, indicating a good convergent validity ranging from 0.640 to 0.807 (Hair et al., 2010; & Gefen et al., 2000).

Table 10. AVE and CR values of Parental Influence

Dimensions	**AVE**	**CR**
Believes and Attitudes	0.57	0.93
Ability to adopt	0.51	0.91
Assertiveness	0.53	0.73

Table 10 presents the AVE and CR values of personality factors. The composite reliability (CR) and average variance extracted (AVE) were examined to further confirm the convergent validity of the items. The CR was 0.93, 0.91, and 0.73, respectively, which were greater than the threshold value of 0.6, signifying the high internal consistency of the items in the scale. Likewise, the AVE was 0.57, 0.51, and 0.53, greater than the threshold value of 0.5, denoting that the scale item statements reflect a variable's characteristics in the construct (Cortes et al., 2021; Srinivasan et al., 2002). Therefore, it is concluded that the personality factor construct is acceptable and has clear evidence of convergent validity.

Table 11. Model fit values results of Personality Factor

Examined Fit Indices	**Computed value**
CFI	0.854
TLI	0.831
RMSEA	0.0631
SRMR	0.106
X^2	578
p-value	<0.001

Table 11 presents the model fit values of personality factors obtained from the results of CFA. Five goodness-of-fit indices (GFIs) were used to test the model's overall proposed by Tortor (2020). Based on the analysis, the results were (CFI = 0.854; TLI = 0.831; RMSEA = 0.0631; SRMR = 0.106; X^2= 578, *p*-value <0.001). The Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) are supported by Arbuckle and Wothke (1999), signifying that TLI and CFI should be at least close to 0.90. The Standardized Root Mean Square Residual (SRMR) result is supported by Bentler (1990), Konca et al. (2022), Tabachnick and Fidell (2007), and Yadama and Pandey (1995) denoted that SRMR value should be less than the value of 0.09 and Root Mean Square Error Approximation (RMSEA) values should be between 0.05 and 0.10 indicate acceptable fit (Asci, 2022; Cokluk et al., 2010; Schremelleh et al., 2003; & Yilmaz & Cerik, 2009). Although the chi-square (X^2) was found to be statistically significant (p<0.001), this may be considered

acceptable because this measure is easily affected by the large sample size (Karaka-Oyzer & Aksu-Dunya, 2018). However, pondering the other fit indices, it may be safe to conclude that this construct is at an acceptable level based on the clear evidence derived from the CFA.

Table 12. Discriminant validity of Personality Factors

Factor	1	2	3
1. Believes and Attitudes	0.75	—	—
2. Ability to adopt	0.83	0.71	—
3. Assertiveness	0.70	0.83	0.73

Table 12 presents the discriminant validity of personality factors. As can be gleaned from the table, most of the factors are relatively lower than the squared correlation of the other constructs, indicating a moderately weak discriminant validity. However, they cannot necessarily compromise the scale's properties and signify that all constructs are identical since not all constructs have a higher squared correlation than the square roots of other AVE constructs. Aside from discriminant validity, there are other ways to practically validate the model, like considering the theoretical underpinnings and conceptual distinctions of each aspect of the constructs (Bagozzi & Philips,1999; Bollen & Lennox, 1991; Cortes et al., 2021). Thus, it may be safe to conclude that the constructs still hold their own distinctions from one another.

D. CFA of Strand Selection

Table 13. Factor Loadings Estimates Results of Strand Selection

Factor	Indicator	p	Stand. Estimate
Interest	Item1	< .001	0.623
	Item2	< .001	0.853
	Item3	< .001	0.847
	Item4	< .001	0.833
	Item5	< .001	0.877
	Item6	< .001	0.808
Aptitude	Item7	< .001	0.750
	Item8	< .001	0.731
	Item9	< .001	0.659
	Item10	< .001	0.783
	Item11	< .001	0.621
	Item12	< .001	0.729

Skills related factors	Item13	< .001	0.635
	Item14	< .001	0.764
	Item15	< .001	0.767
	Item16	< .001	0.850
	Item17	< .001	0.692
	Item18	< .001	0.669

Table 13 presents the factor loading estimates of the results of strand selection. The analysis of the factor loads estimates demonstrated in the table showed that all the scales in the factor loadings of strand selection are statistically significant and above 0.5, indicating a good convergent validity ranging from 0.623 to 0.877 (Hair et al., 2010; Gefen et al., 2000).

Table 15. AVE and CR values of Strand Selection

Dimensions	AVE	CR
Interest	0.66	0.95
Aptitude	0.51	0.91
Skills related factors	0.54	0.73

Table 15 presents the AVE and CR values of strand selection. The composite reliability (CR) and average variance extracted (AVE) were examined to further confirm the convergent validity of the items. The CR was 0.95, 0.91, and 0.73, respectively, which were greater than the threshold value of 0.6, signifying the high internal consistency of the items in the scale. Likewise, the AVE was 0.66, 0.51, and 0.54, greater than the threshold value of 0.5, denoting that the scale item statements reflect a variable's characteristics in the construct (Cortes et al., 2021; Srinivasan et al., 2002). Therefore, it is concluded that the strand selection construct is acceptable and has clear evidence of convergent validity.

Table 16. Model fit values results of Strand Selection

Examined Fit Indices	**Computed value**
CFI	0.883
TLI	0.864
RMSEA	0.0641
SRMR	0.100
X^2	528
p-value	<0.001

Table 16 presents the model fit values of strand selection obtained from the results of CFA. Five goodness-of-fit indices (GFIs) were used to test the model's overall fit of the proposed model by Clutter (2000). Based on the analysis, the results were (CFI = 0.883; TLI = 0.864; RMSEA = 0.0641; SRMR = 0.100; X^2= 528, *p*-value <0.001). The Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) are supported by Arbuckle and Wothke (1999), signifying that TLI and CFI should be at least close to 0.90. The Standardized Root Mean Square Residual (SRMR) result is supported by Bentler (1990), Konca et al. (2022), Tabachnick and

Fidell (2007), and Yadama and Pandey (1995) denoted that SRMR value should be less than the value of 0.09 and Root Mean Square Error Approximation (RMSEA) values should be between 0.05 and 0.10 indicate acceptable fit (Asci, 2022; Cokluk et al., 2010; Schremelleh et al., 2003; & Yilmaz & Cerik, 2009). Although the chi-square (X^2) was found to be statistically significant (p<0.001), this may be considered acceptable because this measure is easily affected by the large sample size (Karaka-Oyzer & Aksu-Dunya, 2018). However, pondering the other fit indices, it may be safe to conclude that this construct is at an acceptable level based on the clear evidence derived from the CFA.

Table 14. Discriminant Validity of Strand Selection

Factor	**1**	**2**	**3**
1. Interest	0.81	—	—
2. Aptitude	0.76	0.71	—
3. Skills related factors	0.86	0.92	0.73

Table 14 presents the discriminant validity of strand selection. As can be gleaned from the table, all factors are relatively lower than the squared correlation of the other constructs, indicating a moderately weak discriminant validity. However, they cannot necessarily compromise the scale's properties and signify that all constructs are identical since not all constructs have a higher squared correlation than the square roots of other AVE constructs. Aside from discriminant validity, there are other ways to practically validate the model, like considering the theoretical underpinnings and conceptual distinctions of each aspect of the constructs (Bagozzi & Philips,1999; Bollen & Lennox, 1991; Cortes et al., 2021). Thus, it may be safe to conclude that the constructs still hold their own distinctions from one another.

Reliability of the Instrument

The results of Cronbach's alpha and McDonald's omega were used to determine the reliability of the entire scales in this study. As seen in Table 15, the reliability statistics of the entire scale with a Cronbach Alpha of 0.926 are interpreted as "excellent" (George & Mallery, 2003, as cited in Gliem & Gliem, 2003). In particular, 0.826, 0.870, 0.934, and 0.940 were the individual observed Cronbach Alpha presented in Table 16, which was greater than the minimum acceptable value of 0.70, as Gliem and Gliem (2003) emphasized. Likewise, the values obtained by McDonald's Omega were at a reasonable level higher than 0.70, which can be signified by a sufficient internal consistency reliability coefficient (Fraenkel et al., 2018). Nevertheless, by looking at Table 16, it can be observed that the internal consistency of the items is close to each other and has almost the same values. It can be said that the item meets the criteria leading to the conclusion that the entire scale has excellent internal reliability coefficients.

Table 15. Reliability Statistics of Entire Scale

	Mean	**SD**	**Cronbach's α**	**McDonald's ω**
Scale	3.68	0.561	0.962	0.963

Table 16. Reliability Statistics of the Four Constructs

Factor	Mean	SD	Cronbach's α	McDonald's ω
1. Parental Influence	3.52	0.794	0.826	0.829
2. Environmental Factors	3.66	0.618	0.870	0.872

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3. Personality Factors	3.96	0.680	0.934	0.934
4. Strand Selection	3.85	0.709	0.940	0.941

Data Gathering Procedures

The first step before proceeding with the data gathering was to request permission for the approval to conduct the study at the respondents' school. Once the approval was granted, the researcher retrieved the necessary permission request for the data-gathering process. Subsequently, the researcher explored all possible options for gathering data and addressing the research questions. In disseminating the questionnaire, the researcher utilized the allotted time to avoid distractions during class. Sufficient time was given to the students to answer the questions. After the data had been collected, the researcher tallied and summarized the answers to facilitate statistical treatment and analysis, which would be used to formulate the conclusions and recommendations of the study.

Statistical Treatment

The researcher utilized parametric statistics such as descriptive and inferential statistical tools to analyze and interpret the data gathered from the respondents. In particular, the level of parental influence, environmental factors, personality factors, and strand selection of Grade 10 students were determined using mean and standard deviation. Consequently, inferential statistics, particularly Pearson's product-momentum correlation, were used to determine the significant relationship between strand selection, parental influence, environment, and personality factors through the aid of SPSS software version 27. In the same way, a structural equation model was used to determine which model best fit the strand selection of the grade 10 student through the aid of AMOS software version 23. Lastly, the behavior of the data was treated carefully to utilize appropriate inferential statistics properly. Thus, assumptions, such as the independence of observation, linear relationship, homoscedasticity, multicollinearity, outliers, and the normality of the data, were checked.

RESULTS AND DISCUSSIONS

This section presents the analysis and interpretation of the gathered data, which are presented in descriptive and tabular form. The results and discussions answer the statement of the problem presented in the previous section.

Table 17. The Level of Parental Influence on Grade 10 Students

Indicators	**Mean**	**Std. Deviation**	**Descriptive Level**
1. Parents' educational background	3.0191	.86927	Moderately High
2. Parental values and expectations	3.6457	.73684	High
3. Socio-economic status of the family	3.5642	.67604	High
Overall Mean	**3.4097**	**.61995**	**High**

Legend: 4.20 – 5.00 = Very High; 3.40 – 4.19 = High; 2.60 – 3.39 = Moderately High;

1.80 – 2.59 = Low; 1.00 – 1.79 = Very Low

Table 17 indicates the level of parental influence of Grade 10 students. As observed, the indicator "parental values and expectations" obtained the highest mean rating (M = 3.6457, SD =.73684), which was interpreted as "high," which evidently reflected the way parents influence their children's career development by offering their support and counsel regarding particular career or educational choices they

may choose in their future endeavor. Moreover, the "socioeconomic status of the family" got the second-highest mean rating (M = 3.5642, SD = .67604), which was interpreted as "high." This means that students' strand selection is also affected by their parents' salary, particularly when considering the strand's possible financial requirements. The lowest mean rating (M = 3.0191, SD = .86927) was obtained by "parents' educational background," which was interpreted as "moderately high." This means that parents' educational background may influence their strand selection as it posits the pressure of parents' ideal academic learning outcomes and the student's future profession, which are critical factors affecting the strand selection. Combining all three (3) indicators generated a "High" level of parental influence on grade 10 students as justified by the overall mean rating (M = 3.4097, SD = .61995), which indicates a high level of parental influence on strand selection of Grade 10 students.

Moreover, Magnuson and Star (2000) supported these findings when they emphasized that parents can influence how children think about work and careers, for example, by being role models, and that how parents feel about different jobs is a big part of how children think about those jobs. Jungen (2008) emphasized that parental values and expectations significantly influence a child's career choice, as students pay close attention to their parents' expectations when selecting a career path.

Likewise, Onocha's (1985) research shows that a child from a well-educated, high-socioeconomic-status family is more likely to do well than a child from a family where no one can read or write. Different family situations were found to affect how well children did in school. Schunk, Pintrich, and Meece (2008) agreed that motivation is always linked to behaviors that lead to success. It cannot ignore how the parent's socioeconomic status and education level affect their children's education. So, socioeconomic factors are also crucial for getting students to choose a career path (Sukovieff,1991).

Students with higher socioeconomic status and education levels tend to have a more positive attitude toward learning, a stronger work ethic, and more effective learning strategies than those with lower socioeconomic status and education levels. Students with educated parents who completed senior four, senior six, or university perform better than those who did not or only completed primary school. This suggests that socioeconomic status and parents' education levels affect students' academic performance and career choices through interactions between status and process variables (Nannyonjo,2007; Joan, 2009).

Table 18. The level of Environmental factors of Grade 10 students

Indicators	**Mean**	**Std. Deviation**	**Descriptive Level**
1. Teachers, Peers, and Siblings	3.2821	.80050	Moderately High
2. Curriculum	3.6457	.73684	High
3. Guidance and Counseling	3.7827	.65440	High
Overall Mean	**3.5702**	**.57592**	**High**

Legend: 4.20 – 5.00 = Very High; 3.40 – 4.19 = High; 2.60 – 3.39 = Moderately High;

1.80 – 2.59 = Low; 1.00 – 1.79 = Very Low

Table 18 presents the level of environmental factors of Grade 10 students. Based on the table, the highest-mean rating (M = 3.7827, SD = .65440) was obtained by the indicator "Guidance and Counseling," which was interpreted as "high," which means that guidance school program evidently contributes a greater impact on the career aspiration of students. The indicator "Curriculum" got the second-highest mean rating (M = 3.6457, SD = .73684), which was interpreted as "high." This means that school has evidently influenced students' career decisions in choosing the strand at the senior high school level based on the quality of curriculum offered, which can benefit their career aspirations in college. The lowest mean rating was

obtained by "teachers, peers, and siblings," interpreted as "moderately high." This indicates that the students often chose their strand based on their group and environment, affecting their decision-making, particularly strands with which most of their friends have chosen. Combining all three (3) indicators generated a "high" level of environmental factors (M = 3.5702, SD = .57592) in the strand selection of Grade 10 students.

This finding is confirmed by Olamide and Olawaiye (2013), who mentioned that the environment played a pivotal role in determining a student's career decision that the outside factors that help shape a person's career are also affected by the social support of peers. People around you are a big part of deciding what to do. Friends can affect how a person chooses a job. Peers can affect a person's interest if they want to follow their dreams or work in the same field as their friends. Thus, the best way for students to be successful in their careers is to choose a path that fits their natural abilities, intelligence, and personality (Pascual, 2014).

Table 19. The level of Personality Factors of Grade 10 students

Indicators	**Mean**	**Std. Deviation**	**Descriptive Level**
1. Believes and Attitudes	3.8284	.67511	High
2. Ability to adapt	3.8031	.64639	High
3. Assertiveness	3.8525	.61556	High
Overall Mean	**3.8280**	**.55962**	**High**

Legend: 4.20 – 5.00 = Very High; 3.40 – 4.19 = High; 2.60 – 3.39 = Moderately High;

1.80 – 2.59 = Low; 1.00 – 1.79 = Very Low

Table 19 shows the level of personality factors of grade 10 students. As observed in the table, the highest mean rating (M = 3.8525, SD = .61556) was obtained by the indicator "assertiveness," which was interpreted as "high," which means that assertiveness in choosing the strand is essential for students in aligning their knowledge and skills in their senior high school level career to select the appropriate strand which caters their interest. Likewise, the indicator that obtained the second-highest mean value (M = 3.82.84, SD = .67511) was "believes and attitudes," interpreted as "high," which means that students' perception of the relevance of academic benefits that they can get from a particular strand can shape their attitudes in their strand selection in senior high school. Hence, students choose what they are good at and what they are interested in. In the same way, the indicator "ability to adapt" obtained the lowest mean rating (M = 3.8031, SD = .64639), interpreted as "high," which indicates that student's ability to adopt to certain situations relative to their academic preparations is an evident factor which influences their strand selection, since students are adaptive enough that they can easily assess the transitions from education to work. Combining all three (3) indicators generated a "high" level of personality factors as justified by the overall mean rating (M = 3.8280, SD = .55962). This implies that personality factors play a critical role in the strand selection in the senior high school level of Grade 10 students.

This finding is supported by Alberti and Emmons (1990), who emphasize that a student's career choice is a crucial decision. A balance must be struck between allowing students to make their own choices and providing guidance from parents and teachers. Over-pressure can lead to decreased motivation and performance. To avoid issues, students should discuss suitable jobs democratically. Assertive behavior promotes equality in human relationships, allowing individuals to act in their best interest, stand up for themselves without anxiety, express honest feelings comfortably, and exercise personal rights without

denying others' rights.

Table 20. The level of Strand Selection of Grade 10 students

Indicators	Mean	Std. Deviation	Descriptive Level
1. Interests	3.9543	.64651	High
2. Aptitude	3.5321	.60358	High
3. Skills-related factors	3.8827	.62164	High
Overall Mean	**3.7897**	**.53641**	**High**

Legend: 4.20 – 5.00 = Very High; 3.40 – 4.19 = High; 2.60 – 3.39 = Moderately High;

1.80 – 2.59 = Low; 1.00 – 1.79 = Very Low

As shown in Table 20 is the level of strand selection of grade 10 students. As observed, the highest mean rating (M = 3.9543, SD = .64651) was obtained by the indicator "interests," which was interpreted as "high," which indicates that students' interests are essential aspects of aligning their skills and strand in senior high school. This further suggests that Grade 10 students will likely choose the strand based on their passions, interests, and abilities. Moreover, the indicator "skills-related factors" got the second-highest mean rating (M = 3.8827, SD = .60358), which was interpreted as "high." This implies that strand selection of the Grade 10 is also affected by their skills and talents. It is more beneficial to them if they align these skills and talents to a strand where they can maximize their learning acquisition and discover new skills. Furthermore, the lowest mean rating (M = 3.5321, SD = .60358) was obtained by "aptitude," also interpreted as "high." This means that students' aptitudes, such as their skills, interests, and strengths, would be a great factor in strand selection particularly in senior high school. Having considered their strengths and weaknesses, this factor affected the way students perceived their learning outcomes when choosing the strand, making it critical to them the way they perceived how this strand could be helpful to their overall academic success. Combining all three (3) indicators generated a "high" level of strand selection as justified by the overall mean rating (M = 3.7897, SD = .53641). This implies that Grade 10 students know the importance of selecting an appropriate strand aligned with their skills and interests to maximize their learning outcomes in the senior high school level.

This finding is supported by Hussain (2012), who accentuated that when choosing a strand for high school, students must consider various factors to ensure high involvement and enjoyment in the chosen subjects. They should plan their future high school courses and goals with their parents, teachers, and school counselors. Interest in a job is crucial, as forced career choices can negatively impact academic performance. A clear link between school learning and future goals helps students feel more confident in their chosen path. Interest and personality are essential, and aptitude and intellectual ability are equally important factors in selecting a future career.

Table 21. Test of a significant relationship between the strand selection and (a) parental influence; (b) Environment; and (c) Personality Factors

Variables	Strand Selection		
	r	*p*-value	Remarks
1. Parental Influence	.441**	.000	Significant
2. Environment	.545**	.000	Significant

3. Personality Factors	.726**	.000	Significant

**. Correlation is significant at the 0.01 level (2-tailed).

Table 21 shows the test of a significant relationship between the strand selection, parental influence, environment, and personality factors. As can be seen from the table, there is a significant relationship between the strand selection and parental influence, environment, and personality factors. In particular, a moderate and positive relationship exists between the strand selection and parental influence ($r = .441$, $p = 0.00$). This means that as parental influence increases, there is also a moderate increase in the strand selection of the respondents. Likewise, in terms of environment and strand selection, a moderate and positive relationship ($r = .545$, $p = 0.00$) exists between the two variables. This indicates that as the influence of the environment increases, there is a moderate increase in the strand selection of the respondents. Similarly, a strong and positive relationship exists between the personality factors and strand selection ($r = .726$, $p = 0.00$). This means that as the personality factors increase, there is a high increase in the strand selection of the respondents.

Thus, based on the data presented in the table, how parents perceived their children's academic careers greatly influenced the strand selection of the Grade 10 students. Moreover, the peer-related factors would also contribute to how Grade 10 students perceived their strand selection in their senior high school career. Similarly, students' self-perception relative to their knowledge, skills, talents, and abilities strongly contributed to their overall strand selection.

This finding conformed with Ferry (2006), who underscores parent's critical role in planning their children's career choices, regardless of gender or race. Their expectations and perceptions of their children's vocational fit are the most significant factors shaping their career choices. Additionally, Keller (2004) also emphasized that parents' attitudes, behaviors, expectations, examples, values, opportunities for learning, and relationships with their children significantly influence their children's future life choices and personalities. Schools, peers, and the student community influence young adults' self-identity and career choices. Parents' influence extends to their children's growth and future life choices, defining their personality. Likewise, Achankeng (2020) found a strong positive relationship between students' job choices and educational environment. Students desire to emulate their teachers, pursue careers that align with their interests, receive advice from teachers to pursue careers that better suit their preferences, and school counselors significantly impact their career decisions.

Consequently, Pascual (2004) emphasizes the importance of Personality factors, which play a crucial role in career choices, influencing self-motivation and decision-making. Students are more likely to succeed if their chosen career aligns with their natural skills, intelligence, and personality. In fact, Addeco (2015) emphasizes the importance of understanding a person's personality traits and characteristics as more employers use personality and psychometric testing to understand employees beyond their qualifications. Understanding a person's personality is more important than passion for job satisfaction and success.

Structural Model Testing

Three hypothesized models were tested to obtain the best-fit grade 10 strand selection model. The three hypothesized models were tested and modified based on their frameworks, which can be decomposed into two sub-models: measurement and structural models. The measurement model represented the measure loads on each of the three hypothesized models' factors to their latent constructs. At the same time, the relations among the latent variables were explained by the structural model. Moreover, the assessment of model fit was done to determine whether to accept or reject the model.

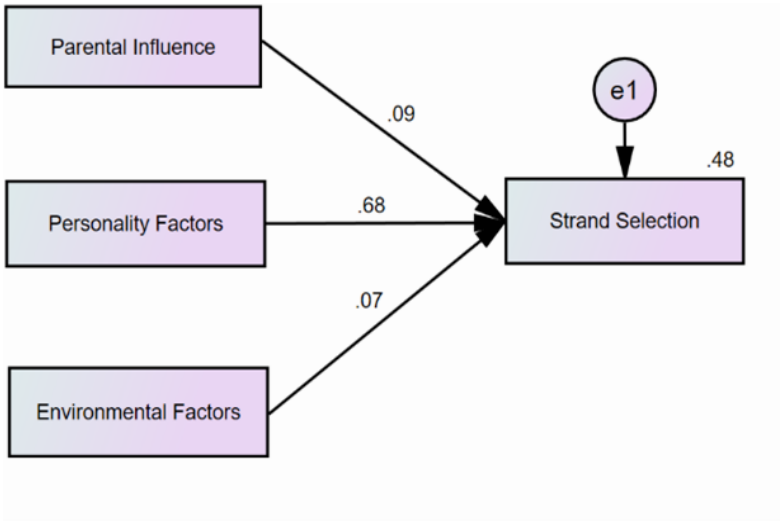

Figure 1. Test of Hypothesized Model 1

As can be gleaned from Figure 1, the test of hypothesized Model 1 shows a direct relationship to the strand selection. The amount of variance of the combined parental influence, environmental factors, and personality factors on strand selection is explained by 48%. It can also be observed in the model that parental influence, personality factors, and environmental factors are represented by their respective factors with beta values of 0.09, 0.68, and 0.07. Although personality factors are represented by a strong factor greater than the baseline of 0.60, the parental influence and environmental factors registered low factor loadings.

Table 22. Model Testing of Strand Selection

Index	Criterion	Model Fit Value
a. CMIN/DF	< 3.0	124.022
b. P-value	>.05	.000
c. NFI	>.95	.359
d. TLI	>.95	-.285
e. CFI	>.95	.357
f. GFI	>.95	.621
g. RMSEA	<.08	.676
h. PCLOSE	>.05	.000

Table 22 shows the model testing of the strand selection, with given parameters for the good fit model assessment. As can be observed, the goodness of fit revealed that the obtained values from the given data are not within the acceptable range of indices as indicated by the following values: CMIN/DF > 3.0, $p < 0.05$, (NFI, TLI, and CFI < 0.95), GFI < 0.95, and RMSEA > 0.08 with a PCLOSE < 0.05. Although it was emphasized in Pascual's (2014) study that parental influence, environmental factors, and personality factors are significantly associated with the strand selection of the students, students' career success is maximized when they choose a course that aligns with their personality, abilities, and intellectual capabilities. By integrating career plans with the curriculum, students can gain valuable experience in fields that best suit them, enabling them to make informed choices about their future careers. While elective courses can assist students in selecting their career paths, it is crucial to also provide them with an understanding of important factors, such as the economic significance of their chosen career in the present and future. To enhance career

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planning for each student, it is essential to foster collaboration among school administrations, guidance counselors, and parents. However, the hypothesized model 1 is not a good fit model for the strand selection of grade 10 students, as justified by the goodness of fit values.

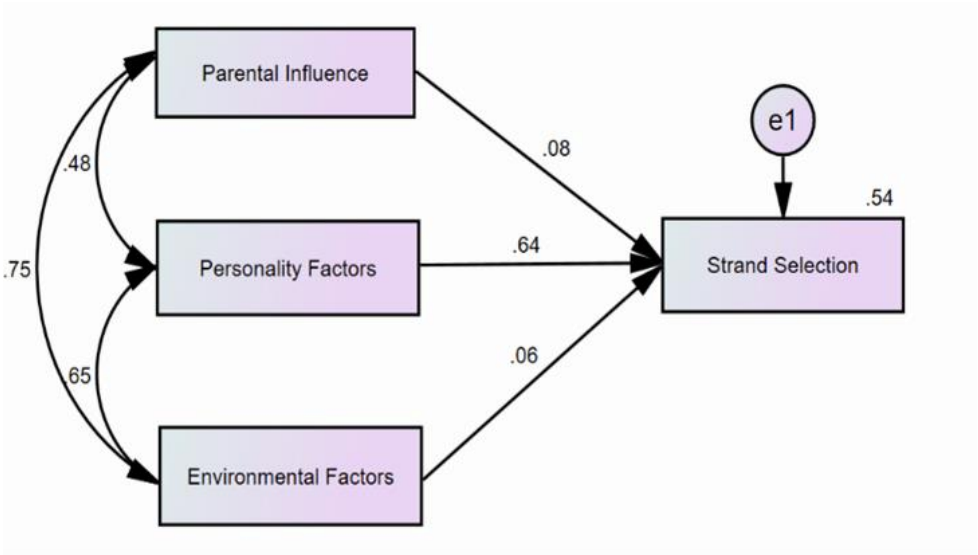

Figure 2. Test of Hypothesized Model 2

Figure 2 shows the test of hypothesized model 2 of the strand selection. The model is a modification of model 1, which shows the relationship between the model's exogenous variables and endogenous variables. As observed, 54% of variations in the strand selection can be explained by the combined influence of parental influence, personality factors, and environmental factors. In particular, their factor loadings (0.08, 0.64, and 0.06) represent the parental influence, personality, and environmental factors. Moreover, there is a positive correlation between parental influence and personality factors (r = 0.48) and personality factors and environmental factors (r = 0.65). Likewise, a strong positive correlation between parental influence and environmental factors (r = 0.75) was registered as significant with $p < 0.05$.

Table 23. Good Fit Model Indices of Hypothesized Model 2

Index	Criterion	Model Fit Value
a. CMIN/DF	< 3.0	No value
b. P-value	>.05	No value
c. NFI	>.95	1.00
d. TLI	>.95	No value
e. CFI	>.95	1.00
f. GFI	>.95	1.00
g. RMSEA	<.08	.596
h. PCLOSE	>.05	.000

Table 23 shows the good fit model indices of hypothesized model 2. As can be gleaned from the table, the goodness of fit is problematic where the CMIN/DF, P-value, and TLI have no registered values. Moreover, the NFI, CFI, and GFI are greater than the baseline, indicating a good fit, but the RMSEA is less than 0.08 with a PCLOSE value of less than 0.05, denoting those values are not within the acceptable range of the goodness of fit. Although Sahid (2017) found in his study the inter relatedness between parental influence, personality factors, environmental factors, and strand selection. The analysis reveals that the school counselor's role is minimal in guiding youth in making informed career choices, as they are influenced by

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peers, media, and impressionable factors when choosing a career. It also highlights the role of the teachers who motivate and inspire their students. The work environment is also a factor that attracts students toward a career. The study shows that students from these institutions were not influenced by their parents' profession or pressured by them. Thus, this model does not fit the data.

The Best Fit Model of the Strand Selection of Grade 10 Students

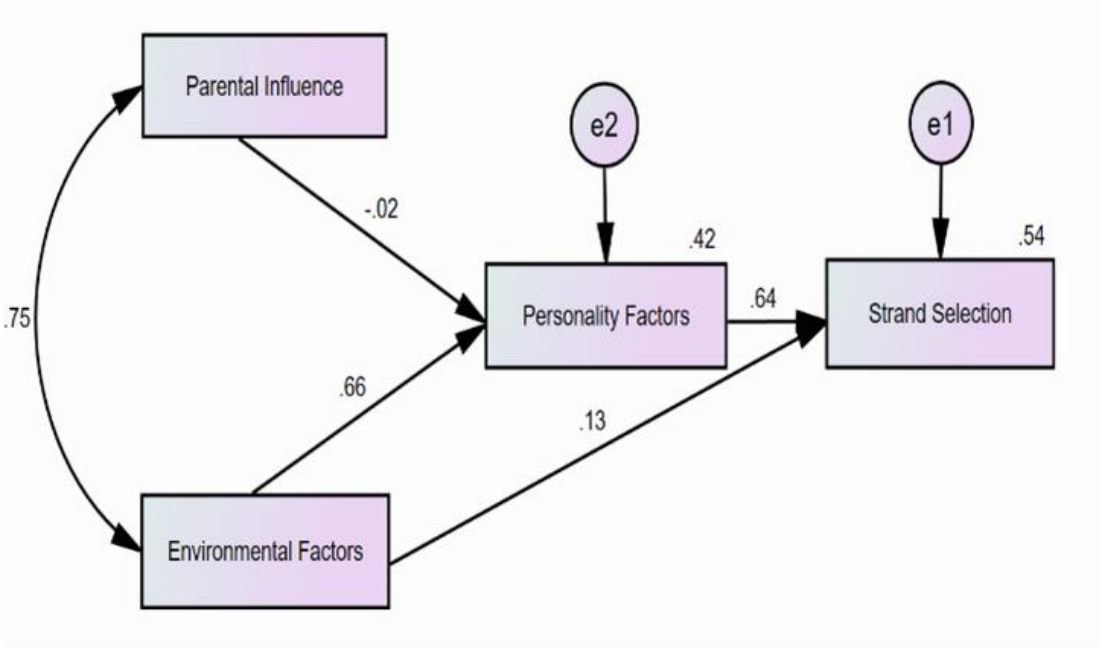

Figure 3. Test of Hypothesized Model 3

Figure 3 shows the standard estimates of the hypothesized model 3. As can be observed from the previous model, the goodness of fit values do not fall within the acceptable range, leading to the rejection of the models. This model modified the previous models to obtain a goodness of fit within the acceptable range. This method is supported by Kline (1998) and Chavez, Jr. (2012) as they mentioned that the model specification involves trimming, adding, or remodeling to attain the best good fit. As can be gleaned from the model, 42% of the variations in personality factors can be attributed to environmental factors and parental influence. This means that 58 percent of the variations can be addressed to other factors not included in the model. Meanwhile, looking closer at the model, the parental influence reduces personality factors in the strand selection, emphasizing that for every unit increase in the parental influence, personality factors in the strand selection will decrease. Moreover, 54% of the variance of strand selection can be linked to the combined influence of personality factors and environmental factors, making the remaining 46% of the variations attributed to the other factors not included in the model. Furthermore, the latent constructs of personality and environmental factors are represented by their factors, with beta values greater than the baseline of 0.60. These factor loadings are supported by Kline (1994), who mentioned that factor loadings greater than 0.60 are considered high.

Table 32. Good Fit Model of Strand Selection

Index	Criterion	Model Fit Value
a. CMIN/DF	< 3.0	1.723
b. P-value	>.05	.189
c. NFI	>.95	.997
d. TLI	>.95	.992

e.	CFI	>.95	.999
f.	GFI	>.95	.997
g.	RMSEA	<.08	.052
h.	PCLOSE	>.05	.328

As shown in Table 6, all the model fit computed values have successfully met the criteria set by each index (CMIN/DF = 1.723 with its p-value > 0.05, (NFI, TLI, CFI, and GFI > .95), and RMSEA < 0.08 with a PCLOSE > 0.05. This means the model fits well with the data, which can best explain the strand selection of the Grade 10 students. The CMIN/DF parameter is supported by Arbuckle and Wothke (1999) as they emphasized that it should be less than 3.0, while the Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and NFI should be at least close to 0.90. Likewise, McCallum, Browne, and Sugawara (1996) highlighted that the RMSEA and PCLOSE values should be at 0.01, 0.05, and 0.08 as excellent, good, and mediocre fit, respectively, with greater than 0.05 P of close fit (PCLOSE) value.

Moreover, model 3 specifies the existing literature findings by introducing a new model for strand selection. In particular, the strong association between parental influence and environmental factors influenced the students' personality factors, which predicts the strand selection of the students, as can be seen from the model. In the same way, there is also a direct influence of environmental factors on the strand selection of the students. Likewise, the current model validates Pascual's (2014) findings that parental influence, environmental factors, and personality significantly influence students' strand selection. Career success is attained when students choose a course that aligns with their abilities and interests. Integrating career plans with the curriculum facilitates informed decision-making. In addition, collaboration among school administrations, counselors, and parents enhances career planning.

However, it is essential to note that the previous model used for Grade 10 strand selection did not fit well. Sahid (2017) identified the interplay of parental influence, personality, and environmental factors in strand selection. The study emphasizes the limited role of school counselors in career decision-making, with peers, media, teachers, and work environments exerting significant influence. Remarkably, students were found to be unaffected by their parents' professions, and the original model did not align well with the data. Thus, a new and improved model is introduced for strand selection model.

CONCLUSIONS

Based on the significant findings generated from the study, the following conclusions were drawn:

1. The level of parental influence, environmental factors, personality factors, and strand selection was high, giving Grade 10 students a greater chance to make sound decisions in their strand selection process in their senior high school journey.
2. There is an interplay between parental influence, environment, and personality factors on the strand selection of Grade 10 students.
3. The hypothesized Model 3 is the best-fit model and represents the inter relatedness of parental influence and environmental factors to the personality factors as predictors of the strand selection. Likewise, the model also notices a direct impact of environmental factors on the strand selection of the Grade 10 students in Esperanza National High School.

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