Multinomial Logistic Regression for The Analysis of Career Decision Style in Teacher Education

by Widiyanto Fe

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Abstract: This study aims to identify students' styles of career choices. The second aim is to investigate what factors influence career choice style. The third aim is to determine whether all students of education programs want to become teachers one day. This research model is a relational model that uses multinomial logistic regression. The research population was Universitas Negeri Semarang (UNNES) students of education programs from five faculties in 2018. The number of people in the population was 4,531, and the participants were 220 students. The data analysis consisted of the multinomial logistic regression method. The results showed that the model met the requirements for use. Factors affecting career decisions are gathering information, locus of control, decision-making speed, and aspiration of an ideal career. Career choice has five styles: rational, intuitive, spontaneous, dependent, and avoidant. Accordingly, the spontaneous style is most commonly used by students. The other result shows that the factor that most influences students in choosing a style is pursuing an ideal career.

Keywords: *Aspiration for career, decision style for career selection, multinomial logistics regression, spontaneous style.*

Introduction

Students in the educational study program are expected to work as teachers. Many graduates of educational study programs prefer careers outside of education. The first survey found that 43 out of 100 students in the education major do not want to become teachers. Similarly, in India, more than 49% switched from teaching to other professions (Modan, 2021). In Ghana, many teachers changed professions to seek other jobs (Adjei & Amofa, 2014). While other countries in Scotland are looking to increase the number of teachers (Robertson, 2021), there is a mismatch with the study findings (Rowan & Townend, 2016) when education program graduates feel more confident and ready to pursue a career as a teacher. The career choice process is dynamic, interesting, and often confusing for students (Cheema et al., 2017; Ghulati, 2021). According to Krumboltz et al. (1976), career choice confusion is caused by student errors in the process of career generalization.

The issue of career choice outside of teaching for students in education programs is an interesting study. It refutes the opinion that choosing majors or specialized programs in education increases interest in a career in the chosen department or program. According to some opinions, the career choice process could be traditional and sequential (Gati et al., 2010), so individuals often argue that educational background will show a career choice. This finding is in contrast with another opinion (Bhattacharya, 2013). According to him, career choice changes with modernization and paradigm shift, and individuals will prefer a career that gives them better status.

The novelty of this study is to examine the career choice process of students who decide to pursue a career outside of teaching, which has not often been studied concerning teachers' careers in Indonesia. Another novelty is using the multinomial logistic regression method for data processing. This study aims to identify the factors that influence students' career choice styles and the variations in the style that students use in choosing a career.

The career choice process is unique and strongly depends on the individual decision-making style. Career decision-making style is rarely revealed when discussing the career choice decision-making process (Harren, 1979). Career

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decision-making style is the way a person chooses a career. Typically, traditional career decision-making is a sequential process (Gati et al., 2012). Research on career decision style generally uses only one or two approaches; many styles are used by individuals (Maldonato & Orco, 2011).

The criticism of a single dominant approach to career decision-making is that individuals have more than one style (Maldonato & Orco, 2011). To answer this criticism, Gati provides a pattern for career choice, the Career Decision-Making Profile (CD MP), which includes 11 dimensions (Gati et al., 2012). The dimensions are information gathering, information processing, locus of control, effort invested in the process, procrastination, speed of making the final decision, consulting with others, dependence on others, desire to please others, aspiration for an ideal occupation, willingness to compromise. According to Whitehead (2002), there are five styles when individuals decide on a career: the rational style, the intuitive style, the dependent style, the avoidant style, and the spontaneous style (Baiocco et al., 2009).

In several studies, career choice style was influenced by information gathering, locus of control, speed of making the final decision, and aspiration (Gati & Tal, 2008; Krumboltz, 1992; Raza et al., 2012; Watts, 2001; Watts et al., 1996; Xu et al., 2014). Gathering information would mean gathering information about something that interests a person. Complete career information includes information about practice resources, career news, career policies, career evaluation information, etc. (Cai, 2020). The availability of career information will positively impact individuals, such as providing information for support when needed. Good career information can provide a broad and comprehensive picture, including the type of work and perspectives (Salimah et al., 2019). There are two types of user information, namely analytical thinking style and other holistic thinking styles (Datar & Ahmad, 2019). Characteristics of people who think analytically include focusing on single objects and classifying objects based on their properties. On the other hand, holistic thinkers consider the overall context and focus on the relationships between objects (Lux, 2021). These two thinking styles affect individuals when processing information because information processing is guided by an overarching mental process, such as building perception by filtering information based on our experiences and expectations.

The locus of control can be defined as controlling the source of reinforcement in a person's life. Internal locus of control mainly refers to the behaviors and vocational attitudes that individuals perceive as more effective than other behaviors and attitudes (Ulas & Yildirim, 2019), such as perception, competence, self-efficacy, and hope. External locus of control is the belief that an event has no direct relationship with one individual's actions and is beyond control (Munawir et al., 2018). Namely, the existence of external influences such as fate, luck, superiors, and the environment can control one's life (London, 1997). The Locus of Control influences the style of career decision-making because it can promote or become a barrier to making decisions (Takndare & Yulita, 2019).

The speed at which the final decision is made is the time it takes individuals to make the final decision after the information has been gathered and compiled (Gati et al., 1996). Individuals often take a very long time, while others take quite a short time to decide. This result is influenced by several considerations that are considered beneficial (Al Shra'ah, 2015; Takndare & Yulita, 2019). These considerations include picking up blindness quickly or later related to an urgent need, encouragement from others, excessive expectations, and a person's level of emotion (Lent & Brown, 2020). Some individuals who have just completed their education often make career decisions that are encouraged to earn income immediately and are concerned about becoming unemployed (Whitehead, 2002).

Pursuing an ideal career and career aspirations have been conceptualized as a career development task in career development theory, especially for adolescents searching for a career through their self-concept (Defant, 2018). The view of career is always related to the future life and quality of life (Dias, 2011), and adolescents are always associated with income and prestige (Chukwu et al., 2022; Tonetto et al., 2012). At the beginning of a career choice, individuals always idolize careers under the educational background taken (Rowan & Townend, 2016). However, some others are encouraged by the aspirations of their friends and parents (Chukwu et al., 2022).

Methodology

Research Design

In a quantitative approach with multinomial logistic regression, mathematical models, namely regression models, can be used if the regression variable is qualitative. The purpose of this method is to obtain a good and simple model that illustrates the relationship between the dichotomous or polychotomous response variables and a set of predictor variables that are continuous or categorical. Since the response variable has more than two categories, multinomial logistic regression is used in this study.

Sample and Data Collection

The research population is UNNES students in five faculties, namely the Faculty of Language and Arts, the Faculty of Social Sciences, the Faculty of Mathematics and Natural Sciences, the Faculty of Economics, and the Faculty of Education. The population number is 4,531. Using Slovin's formula (Sugiyono, 2016), samples of 226.55 rounded down to 220 students were obtained. Table 1 shows the distribution of the research sample. Data were collected using a

questionnaire and distributed through an online Google form. The link to the Google form was emailed to the students in the sample. Student email data was obtained from the Academic Bureau of Student Affairs and Cooperation, UNNES.

Table 1. Sample Distribution

No.	Faculty	Number of Students	5%	Sample
1	Faculty of Language and Art	1045	52.25	52
2	Faculty of Social Science	728	36.40	36
3	Faculty of Mathematic and Natural Science	925	46.25	46
4	Faculty of Education	822	41.10	41
5	Faculty of Economics	1011	50.55	51
	Total	**4531**	**226.55**	**226**

Research Variables

The research variables used in research are as follows. The predictor variables are information gathering, locus of control, speed of making final decisions, and aspiration for an ideal occupation. The response variable, or the style of decision making, is divided to be the rational style, the intuitive style, the dependent style, the avoidant style, and the spontaneous style. Table 2 and Table 3 show the predictor and response variables of this research.

Table 2. Predictor Variable

Variable	Description	Scale	Category 0	Category 1
X1	Information Gathering	Nominal	Analytic	Holistic
X2	Locus of control	Nominal	Internal	External
X3	Speed of making final decision	Nominal	Fast	Slow
X4	Aspiration for an ideal occupation	Nominal	High	Low

Table 3. Response of Variable (Style)

Category	Description
0	The Rational style
1	The Intuitive style
2	The Dependent style
3	The Avoidant style
4	The Spontaneous style

Table 4. Response of Variable (Career)

Category	Description
0	Teacher
1	Government Official/Non-Teacher

Analyzing of Data

Quantitative descriptive analysis with a multinomial logistics regression tool was used to analyze the data. Multinomial logistics regression is a data analysis method used to find the relationship between the response variable (Y) that is polychotomous or multinomial. The response variable Y consists of more than two categories, usually denoted by 0.1 or 2. Hosmer and Lemeshow (2000) explain that the models used in multinomial logistics regression are as follows:

$$\pi(x) = \frac{exp(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_b x_b)}{1 + exp\,(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_b x_b)}$$

The steps taken to analyze this study are as follows:

1. Describe the characteristics of student patterns or styles in choosing a career by compiling diagrams for categorical variables.

2. Analyze the CDMP model and the factors that influence it. The analysis steps are as follows.

3. Test the independence of all predictor variables to the response variable.

4. Conduct multinomial logistics regression analysis.

5. Conduct simultaneous tests on predictor variables that have a relationship with response variables and partial tests on predictor variables that have a relationship with the response variable.

6. Conduct a model suitability test.

7. Calculate the accuracy of the model classification.

8. Form logit functions in each response category in each model and interpret binary logistics regression models and odds ratios obtained.

Findings / Results

The results of the data obtained from the distribution of the questionnaire through Google Form obtained the following results of the total career selection to remain a teacher of 142 (64.55 %), which is divided into the selected style of the rational style (13 = 5.91 %), the intuitive style (8 = 3.54%), the dependent style (33 = 15%), the avoidant style (42 = 19.09%), and the spontaneous style (46 = 20.91%). Career choices are not as many as 78 teachers (35.45%) with the selected style of the rational style (11 = 5%), the intuitive style (4 = 1.82%), the dependent style (22 = 10%), the avoidant style (17 = 7.73%), and the spontaneous style (24 = 10.91%).

Table 5. Career Choice and The Career Decision-Making Profile

Observed and Predicted Frequencies						
Y		**Frequency**			**Percentage**	
		Observed	**Predicted**	**Pearson Residual**	**Observed**	**Predicted**
The Intuitive style	Teacher	8	8.000	.000	66.7%	66.7%
	Non-Teacher	4	4.000	.000	33.3%	33.3%
The Dependent style	Teacher	33	33.000	.000	60.0%	60.0%
	Non-Teacher	22	22.000	.000	40.0%	40.0%
The Avoidant style	Teacher	42	42.000	.000	71.2%	71.2%
	Non-Teacher	17	17.000	.000	28.8%	28.8%
The Spontaneous style	Teacher	46	46.000	.000	65.7%	65.7%
	Non-Teacher	24	24.000	.000	34.3%	34.3%
The Rational style	Teacher	13	13.000	.000	54.2%	54.2%
	Non-Teacher	11	11.000	.000	45.8%	45.8%
The percentages are based on total observed frequencies in each subpopulation.						

Independence Test

The results of the independence test to test the relationship between predictor variables such as information gathering (X1), locus of control (X2), speed of making decisions (X3), and aspiration for ideal occupation (X4) with 2 response variables, namely career decision making profile (CDMP/Y1) and career choice (Y). Testing by comparing the value of Chi-Square (X2) count with Chi-Square (X2) table, assuming x2 count < x2table if h0 is received. Then, the predictor variable has no relationship with the response variable.

The table results show only 1 variable received, namely information gathering (X1). In contrast, the three other predictor variables, such as locus of control (X2), speed of making a decision (X3), and aspiration for ideal occupation (X4) were rejected. Thus, it can be known if the last three variables are related to the two response variables, career decision-making profile/CDMP (Y1) and career choice (Y).

Table 6. Result of the Independence Test

No.	Variable	df	X2 count	X2 table	P value	Hypotheses
1	X1 (Information)	4	.545	.815	.969	Accepted
2	X2 (Locus)	4	1.272	.815	.866	Rejected
3	X3 (Speed)	4	2.241	.815	.692	Rejected
4	X4 (Aspiration)	4	1.982	.815	.739	Rejected

Career Choice Career Selection Style Modeling Results

These results are based on the calculation of likelihood for accepted modeling using only three variables, namely locus of control (X2), speed of making a decision (X3), and aspiration for ideal occupation (X4). In contrast, the variable information gathering (X1) is expelled from the model because it has no relationship. Both results, the Response career decision-making profile (CDMP/Y1) variable and the final response career choice (Y) variable, have a higher value than the Intercept. It can be said if at least one predictor variable has a simultaneous effect on the career choice force (CDMP/ Y1) or against career choice (Y).

Table 7. Likelihood CDMP & Career Choice

Model	Likelihood Ratio Tests			
	Chi-Square	df	Sig.	
Intercept	34.108a	.000	0	
Final (CDMP)	36.927	2.819	4	0.589
Intercept	19.885a	.000	0	
Final (Career Choice)	22.704	2.819	4	0.589

Goodness of Fit Test

Testing goodness of fit can be seen in Table 8. The Chi-square of Pearson is 77.294, and the chi-square of Deviance is 87.733. Both Pearson and Deviance stated that Sig. value > α (0.864 > 0.05), then the model passed the test; thus, the model is said to be fit or good.

Table 8. Goodness of Fit Test

	Goodness-of-Fit		
	Chi-Square	df	Sig.
Pearson	77.294	92	.864
Deviance	87.733	92	.606

The testing determinant coefficient in the regression logistics model can be seen from the Pseudo R Square test indicated by Cox and Snell, Nagelkerke, and MC Fadden. The results obtained are Nagelkerke of 0.55. Thus, it can be said that the response variable for career choice style (CDMP/Y1) and career choice (Y) is influenced by the variable predictor locus of control (X2), speed of deciding (X3), and aspiration for ideal occupation (X4) is 55%. In comparison, other factors influence the remaining 45%.

Table 9. Pseudo R Square

Pseudo R-Square	
Cox and Snell	.40
Nagelkerke	.55
McFadden	.32

Modeling of Teacher Career Selection with The Intuitive Style Model

$gl(X) = .783 - .204X1 + .276X2 - .321X3 - 1.016X4$

The choice to become a teacher through career decision-making with the intuitive style using the variable information gathering in the analytic category of 989 is greater than using the holistic category. Locus of control internal category 1.382 is greater than external, and the speed of making the final decision variable categorized as Fast 138 is greater than the slow category. Variable aspiration for an ideal occupation with a high 362 higher category compared to the low category.

Table 10. Parameter Estimates 1

Parameter Estimates									
Y[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
The Intuitive style	Intercept	-.387	.536	.522	1	.470			
	[X1=0]	-.204	.823	.061	1	.804	.816	.163	4.089
	[X1=1]	0b	.	.	0	.	.	.	.
	[X2=0]	.276	.792	.121	1	.728	1.318	.279	6.221
	[X2=1]	0b	.	.	0	.	.	.	.
	[X3=0]	-.321	.925	.120	1	.729	.726	.118	4.445
	[X3=1]	0b	.	.	0	.	.	.	.
	[X4=0]	-1.016	.896	1.285	1	.257	.362	.063	2.097
	[X4=1]	0b	.	.	0	.	.	.	.

Table 10. Continued

Parameter Estimates

Y[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
The Dependent style	Intercept	.783	.394	3.955	1	.047			
	[X1=0]	-.011	.551	.000	1	.984	.989	.336	2.909
	[X1=1]	0[b]	.	.	0	.	.	.	.
	[X2=0]	.323	569	.323	1	.570	1.382	.453	4.212
	[X2=1]	0[b]	.	.	0	.	.	.	.
	[X3=0]	.394	571	.474	1	.491	1.482	.484	4.542
	[X3=1]	0[b]	.	.	0	.	.	.	.
	[X4=0]	-.474	.533	.789	1	.374	.623	.219	1.770
	[X4=1]	0[b]	.	.	0	.	.	.	.
The Avoidant style	Intercept	.589	.399	2.178	1	.140			
	[X1=0]	.133	.541	.060	1	.806	1.142	.395	3.296
	[X1=1]	0[b]	.	.	0	.	.	.	.
	[X2=0]	.562	.561	1.007	1	.316	1.755	.585	5.264
	[X2=1]	0[b]	.	.	0	.	.	.	.
	[X3=0]	.565	.562	1.010	1	.315	1.759	.585	5.287
	[X3=1]	0[b]	.	.	0	.	.	.	.
	[X4=0]	-.220	.522	.178	1	.673	.802	.289	2.231
	[X4=1]	0[b]	.	.	0	.	.	.	.
The Spontaneous style	Intercept	.917	.383	5.732	1	.017			
	[X1=0]	.213	.528	.163	1	.686	1.238	.440	3.483
	[X1=1]	0[b]	.	.	0	.	.	.	.
	[X2=0]	.139	.557	.062	1	.803	1.149	.386	3.424
	[X2=1]	0[b]	.	.	0	.	.	.	.
	[X3=0]	.467	.551	.718	1	.397	1.595	.542	4.692
	[X3=1]	0[b]	.	.	0	.	.	.	.
	[X4=0]	-.258	.507	.260	1	.610	.772	.286	2.086
	[X4=1]	0[b]	.	.	0	.	.	.	.

a. The reference category is: 5.
b. This parameter is set to zero because it is redundant.

Modeling of Teacher Career Selection with the Dependent Style

Decision-making choosing to be a teacher with the dependent style using variable information gathering in the analytic category of 816 is greater than using the holistic category. Locus of control internal category 1,318 is greater than external, and the speed of making the final decision variable categorized as fast 1382 is greater than the slow category. Variable aspiration for an ideal occupation with a high 1482 category higher than the low category.

$$gl(X) = .387-.011X1+.323X2+.394X3-.474X4$$

Modeling of Teacher Career Selection with the Avoidant Style

$$gl(X) = .589+.133X1+.562X2+.565X3-.220X4$$

Decision-making chooses to become a teacher with the avoidant style using the variable information gathering in the analytic category of 395 is greater than the holistic category. Locus of control internal category 585 is greater than external, and the speed of making the final decision variable categorized as fast 585 is greater than the slow category. Variable aspiration for an ideal occupation with a high 289 category higher than the low category.

Modeling of Teacher Career Selection with the Spontaneous Style

$$gl(X) = .917+.213X1+.139X2+.467X3-.258X4$$

Decision-making chooses to become a teacher with the spontaneous style using the variable information gathering in the analytic category of 395 is greater than the holistic category. Locus of control internal category 585 is greater than external, and the speed of making the final decision variable categorized as fast 585 is greater than the slow category. Variable aspiration for an ideal occupation with a high 289 category higher than the low category.

Career decision-making as a teacher is seen from the variable information gathering in the analytic category of 1204 greater than using the holistic category. Locus of control internal category 989 is greater than external, and the speed of making the final decision variable categorized as fast 415 is greater than the slow category. Variable aspiration for an ideal occupation with the high 2171 category higher than the low category. The modeling of professional selection as a teacher is as follows.

$$gl(Y) = -.261+.186X1+.639X2-.251X3+.775X4+.627Y1+.287Y2+.755Y3+.517Y4$$

Table 11. Parameter Estimates 2

Parameter Estimates

CAREER[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	Interval for Exp(B)	
								Lower Bound	Upper Bound
Teacher	Intercept	-.261	.456	.327	1	.568			
	[INFOG=0]	.186	.319	.339	1	.560	1.204	.644	2.251
	[INFOG=1]	0[b]			0				
	[LOCUS=0]	.639	.332	.709	1	.054	1.895	.989	3.631
	[LOCUS=1]	0[b]			0				
	[SPEED=0]	-.251	.320	.616	1	.433	.778	.415	1.457
	[SPEED=1]	0[b]			0				
	[ASPIRATION=0]	.775	.340	.208	1	.022	2.171	1.116	4.223
	[ASPIRATION=1]	0[b]			0				
	[CDMP=1]	.627	.753	.694	1	.405	1.872	.428	8.187
	[CDMP=2]	.287	.508	.319	1	.572	1.332	.492	3.606
	[CDMP=3]	.755	.516	2.138	1	.144	2.127	.773	5.848
	[CDMP=4]	.517	.493	1.100	1	.294	1.678	.638	4.413
	[CDMP=5]	0[b]			0				

a. The reference category is non-Teacher.
b. This parameter is set to zero because it is redundant.

Judging from the style of choosing a teacher's career, the rational style 1872, the intuitive style 1332, the dependent style 2127, and the avoidant style 1678, more than the spontaneous style. The dependent style has the highest value, which means students want to be more independent in determining a career as a teacher.

Table 12. Parameter Estimates 3

Parameter Estimates

CAREER[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	Interval for Exp(S)	
								Lower Bound	Upper Bound
Teacher	Intercept	-.261	.456	.327	1	.568			
	[INFOG=0]	.186	.319	.339	1	.560	1.204	.644	2.251
	[INFOG=1]	0[b]			0				
	[LOCUS=0]	.639	.332	3.709	1	.054	1.895	.989	3.631
	[LOCUS-1]	0[b]			0				
	[SPEED=0]	-.251	.320	.616	1	.433	.778	.415	1.457
	[SPEED=1]	0[b]			0				
	[ASPIRATION=0]	.775	.340	5.208	1	.022	2.171	1.116	4.223
	[ASPIRATION=1]	0[b]			0				
	[CDMP=1]	.627	.753	.694	1	.405	1.872	.428	8.187
	[CDMP=2]	.287	.508	.319	1	.572	1.332	.492	3.606
	[CDMP=3]	.755	.516	2.138	1	.144	2.127	.773	5.848
	[CDMP=4]	.517	.493	1.100	1	.294	1.678	.638	4.413
	[CDMP=5]	0[b]			0				

a. The reference category is non-Teacher.
b. This parameter is set to zero because it is redundant.

Discussion

The CDMP by the Student

The above results show the following: the avoiding style was chosen by 59 students, the dependent style by 55 students, the intuitive style by 12 students, the spontaneous style by 70 students, and the rational style by 24 students. The most frequently chosen style was the avoidant style, in which students make quick decisions and do not like to delay with considerations that they consider unimportant (Baiocco et al., 2009). The reasons for making quick decisions are also due to insistence from other parties or other factors (Abotsi et al., 2020; Gambetti et al., 2008; Gati et al., 2012; Manodara et al., 2020).

The dependent style is also classified in the process of 107 students choosing this style; the dependent style refers to decision-making left to others (Baiocco et al., 2009). This decision shows the presence of selflessness and the desire to always be considered by others (Adjei & Amofa, 2014; Huang & Oga-Baldwin, 2015). During adolescence, these doubts and concerns may also be caused by paradigm shifts (Raduan & Na, 2020). There needs to be clarity in career recruitment (Isharyanti, 2021).

Eighty-nine students chose the intuitive style, individuals who tend to rely on intuition and feelings and are positively associated with the spontaneous style (Baiocco et al., 2009). Usually, this decision was made quickly (Gambetti et al., 2008; Gati et al., 2012; Tonetto et al., 2012). There are very few teacher vacancies and recruitment (Isharyanti, 2021). In addition, the existence of the opportunity principle will never be repeated because often, individuals must use their intuition to choose.

Career choice begins with the search for alternative logical information and evaluation, processing analytical information, and internal locus of internal control; more effort is invested (Gati et al., 2010); therefore, very few students use the rational style, only 15 students. Several studies on teaching careers also used the rational style (Abonyi et al., 2021; Huang & Oga-Baldwin, 2015; Robertson, 2021; Rowan & Townend, 2016). Using rational forces is the right way to choose a career, even if the time is quite long (Mellado-Moreno et al., 2022). Sometimes, career choice is determined more by opportunities, and time is too short (Isharyanti, 2021). In addition, it is quite difficult for students to obtain information (Rowan & Townend, 2016), especially about the ideal career.

Factors Affecting Career Selection Decision-Making Style

Information Gathering

Gathering and applying information build bridges for individuals, businesses, and communities (Cai, 2020). Information is essential for students in choosing a career, and it is comprehensive information, such as the types of jobs, the types of institutions that open vacancies, the types of institutions open vacancies, and other matters related to work and careers (Datar & Ahmad, 2019). The research findings highlight the importance of information for students' career development and strengthening career guidance. They argue that the importance of career information strengthens individuals' ability to make career decisions (Salimah et al., 2019).

The importance of career information strengthens an individual's ability to choose a career. Advances in information technology further enrich information sources and materials, and the amount of information will change individuals' perceptions of lifestyle and livelihood (Rashid & Asghar, 2016). Individuals will have more sources of information, more choices to satisfy their needs, and more diverse information and choices (Boyd et al., 1993). Technological advances in education also bring significant changes to educators and students. Students have more information about the world of careers and career choices outside of the educational programs they have gone through and are going through, and this result is changing the pattern and style of career choices (Dias, 2011; Giddens, 2008; Xu et al., 2014). A career as a teacher is also primarily determined by the availability of information about opportunities and workload, as well as prestige relative to other professions (Chukwu et al., 2022).

Individual information processing can be divided into analytical thought patterns focusing on individual objects and establishing categories based on attributes. Holistic thinkers consider the overall context and focus on the relationship between objects (Lux, 2021). A career choice study on data analysis found that 73 were analytical thinkers, and the remaining 147 were holistic thinkers. This finding is understandable when analytical thinking considers the attributes that underlie careers. At the same time, holistic thinking students connect career attributes and their relationships with others, such as competence, perception, motivation, and others.

Locus of Control

The locus of control can be divided into internal and external categories. The respondents' answers to the Locus of Control show that 70 students were influenced by the internal Locus of Control, while 150 students chose the external Locus of Control. The Locus of Control often becomes a career obstacle when it proves difficult in career development and becomes a barrier to obtaining a career opportunity (London, 1997). To determine which more robust dimensions, use two indicators to determine the internal and external Locus of Control (Ulas & Yildirim, 2019). The internal

indicator Locus of Control is individually able to control the success and achievement of goals. In contrast, the external Locus of Control if the external influence is more substantial and is related to the success and failure of individuals in achieving goals (Takndare & Yulita, 2019). Locus of Control is often interpreted as the ability to respond to events (Strauser et al., 2008).

Internal locus of control such as self-efficacy, esteem needs, competence, and perception greatly influence individual career choice decisions (Al-Bahrani et al., 2020; Bandura, 1971; Al Shra'ah, 2015; Shahzad et al., 2014; Tonetto et al., 2012). The influence of the external locus of control, such as performance, peer group, and culture, has a greater impact on career decision-making (Munawir et al., 2018; Salimah et al., 2019; Ulas & Yildirim, 2019). The most substantial influence of the peer group is a sense of belonging (Takndare & Yulita, 2019); a teenager is more influenced to act by his friends (Gajanova et al., 2020; Whitehead, 2002).

Speed of Making the Final Decision

The speed at which final decisions are made is primarily determined by available time considerations and needs (Haris, 2012). Other researchers (Maldonato & Orco, 2011) stated that a delay in a career choice is due to doubts and the influence of others and can also be caused by many choices. The results of a study of some students who chose the FAST option of 70 and students who chose the slow option of 150 students. students. The offer of a career is often of very short duration. Therefore, the job seeker is often under time pressure, so they have to make decisions quickly (Zhang, 2014).

On the other hand, there is often a push to ensure that the needs of employees and their families are met immediately. This result is the cause of individuals getting a job without compensation (Gajanova et al., 2020). Career choice in an economically consolidated society is usually wiser and more rational because the needs are not pure, and they use time more slowly to decide (Haris, 2012). The need to obtain a job to avoid unemployment tends to be quick, even if it does not match the educational background or ideal choice.

Aspiration for an Ideal Occupation

Aspiration for an ideal occupation is a career pilgrimage under ideal conditions. Examining aspirations for the ideal work will lead us to real career expectations (Lerdpornkulrat et al., 2010). The categories that recognize the ideal career are high and low (Gati et al., 2012; Manodara et al., 2020).

The study results showed that 68 students chose the "high" category for their career aspirations, while 152 chose "low." This result means that 68 students indicated that their chosen career must be ideal. At the same time, 152 students may also be ideal for their career choice. The results of modeling the career choice style (5 categories) say that the ideal conditions are much better than choosing a career that is not ideal (the excess is between 289 and 1482). This finding shows that people who pay attention to aspects of aspiration when choosing a career try to choose the ideal profession. Job seekers who get the ideal job are also very profitable for the recipients of the work (institutions) as they reduce turnover (Al Shra'ah, 2015). The ideal work will also affect comfort, security, and continued job satisfaction (Krumboltz, 1992).

Conclusion

The test results of the model's fit state that the career selection model, considering career decision style, can be accepted and is suitable for use. The choice of style in career decisions in the educational program includes 5, namely rational style (13 = 5.91%), intuitive style (8 = 3.54%), dependent style (33 = 15%), avoidant style (42 = 19.09%), and spontaneous style (46 = 20.91%). In career choice, there are less than 78 teachers (35.45%) with the chosen style of rational style (11 = 5%), intuitive style (4 = 1.82%), dependent style (22 = 10%), avoidant style (17 = 7.73%), and spontaneous style (24 = 10.91%). Factors influencing their choice style are information gathering ($X1$), locus of control ($X2$), speed of decision-making ($X3$), and aspiration for the ideal job ($X4$), although in modeling in the independence test variable information gathering has no relationship as a predictor variable.

Recommendations

The career choice for students of degree programs in education study programs is prioritized as teachers. However, graduates can choose non-teaching careers. In addition, it is a fact that many education graduates prefer a career that is not that of a teacher. Factors significantly determining students' career choices include locus of control, decision-making speed, and aspiration for an ideal occupation. Therefore, the management of educational programs in higher education should enhance the ability of students and graduates to understand future careers, both teacher and non-teacher. Graduates can identify the careers of teachers, including income, career paths, social life, etc. Graduates' management skills also need to be improved to manage their potential and develop them in the future to support the career they choose later.

Limitations

The limitation of this research is that the scope of the research object is limited to students of Universitas Negeri Semarang. The following researchers can explore more broadly by expanding the scope of respondents, including by comparing phenomena in other countries such as Malaysia and Thailand. The researchers will be able to uncover the phenomenon of career choice for education graduates more interestingly. The following limitation is the analysis of the determinants of students' career choices, which reveals only a few variables. The researcher focuses on the selected predictor variables to strengthen the previous findings.

Authorship Contribution Statement

Widiyanto: Conceptualization, design, data analysis/interpretation, drafting manuscript, critical revision of manuscript, statistical analysis, securing funding, supervision, final approval. Nurkhin: Concept and design, data acquisition, drafting manuscript, admin, supervision. Yulianto: Methodology, statistical analysis, technical or material support, final approval. Daud: Design, statistical analysis, data analysis/interpretation.

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