Jurnal Informatika: Jurnal pengembangan IT

Vol. 9, No. 2, (2024)
ISSN : 2477-5126, DOI:10.30591/jpit.v9i2.6521

Campus Market Segmentation Through the Binary Logistic Regression and GIS Technology

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Info Artikel

Riwayat Artikel:

Received 24-01-2024
Final Revision: 23-08-2024
Accepted: 24-08-2024

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Abstract *- Understanding and targeting specific consumer segments has become paramount in the evolving marketing landscape. Within the confines of a university campus, a unique characteristic of potential consumers with distinct preferences and behaviors exists. The aim of this research is to model of interest in choosing UIN Sulthan Thaha Saifuddin Jambi. This research uses primary data, data from high school students of XII students in Jambi Province. The sample used 1205 students from six districts/cities in Jambi Province. Binary Logistic Regression analysis is employed for the analysis. The findings indicate that the variables of gender, region of origin, and majors of high school students have a significant influence on the interest in choosing UIN Sulthan Thaha Saifuddin Jambi. The regional origin variables, Merangin Regency and East Tanjung Jabung Regency did not have a significant effect on the interest in choosing UIN Sulthan Thaha Saifuddin Jambi. Meanwhile, Jambi City, Kerinci Regency, Tebo Regency, and Bungo Regency influenced the interest in choosing UIN Sulthan Thaha Saifuddin Jambi. The variables from school majoring in science and social studies have a significant influence on the intention to choose UIN Sulthan Thaha Saifuddin Jambi.*

Keywords: *Binary Logistic Regression, Geographic Information System, Student's Interest*

Abstrak *- Memahami dan menargetkan segmen konsumen tertentu telah menjadi hal terpenting dalam pemasaran yang terus berkembang. Dalam lingkungan kampus universitas, terdapat karakteristik unik konsumen potensial dengan preferensi dan perilaku berbeda. Tujuan penelitian ini adalah untuk mengetahui model minat memilih UIN Sulthan Thaha Saifuddin Jambi. Penelitian ini menggunakan data primer yaitu data siswa SMA XII se-Provinsi Jambi. Sampel yang digunakan sebanyak 1.205 siswa yang berasal dari enam kabupaten/kota di Provinsi Jambi. Analisis Regresi Logistik Biner digunakan untuk analisis ini. Hasil penelitian menunjukkan bahwa variabel gender, daerah asal, dan jurusan siswa SMA mempunyai pengaruh yang signifikan terhadap minat memilih UIN Sulthan Thaha Saifuddin Jambi. Variabel asal daerah Kabupaten Merangin dan Kabupaten Tanjung Jabung Timur tidak berpengaruh signifikan terhadap minat memilih UIN Sulthan Thaha Saifuddin Jambi. Sedangkan Kota Jambi, Kabupaten Kerinci, Kabupaten Tebo, dan Kabupaten Bungo berpengaruh terhadap minat memilih UIN Sulthan Thaha Saifuddin Jambi. Variabel sekolah jurusan IPA dan IPS mempunyai pengaruh yang signifikan terhadap niat memilih UIN Sulthan Thaha Saifuddin Jambi.*

Kata Kunci*: Minat Siswa, Regresi Logistik Biner, Sistem Informasi Geografi*

I. INTRODUCTION

The education sector has its own competition, especially in tertiary institutions, both State Universities, and Private Universities, in gaining market share, namely the number of students. The current pandemic era is the hardest thing for universities to increase new student admissions with one of the reasons being family economic problems. Selection of a tertiary institution is not as easy as selecting goods or services for high school students because the decision to select a campus must consider future values. Several selection preferences will pass through a person's decision level with many factors. Various factors can influence the preferences of high school students in selecting study programs at tertiary institutions. In general, these factors are the cost of education, facilities and infrastructure, location, accreditation, and others. Therefore, a strategy is needed that is in accordance with the position of each tertiary institution compared to its competing tertiary institutions.

Market segmentation has been a cornerstone of marketing research and strategy, allowing businesses to target specific groups of consumers based on shared characteristics [1]. University campuses, with their diverse populations of students, faculty, and staff, present a unique environment for market segmentation [2]. Given the intricacies of campus demographics and spatial factors, traditional segmentation methods may not always be effective. Recent advances in statistical modelling, particularly binary logistic regression, offer enhanced capabilities to predict market behaviors based on predictor variables [3]. Moreover, incorporating Geographic Information System (GIS) technology allows for a spatial understanding of these segments, providing a more comprehensive view of the campus market [4].

This synergy between binary logistic regression and GIS technology has the potential to revolutionize campus market segmentation, yet there is a paucity of literature that fully explores this integration [5]. This study delves into the confluence of these methodologies, aiming to elucidate their combined potential for campus marketing strategies.

Even though there are several studies on market segmentation of the desire to study at a university, there is a research gap in terms of variables that influence students' interest in choosing a university. This research creates a new collaboration between statistical calculations and GIS. This research difference provides added value and differentiates it from another research.

Higher education is an institution that prepares students (students) to become students to develop the identity of future national leaders and acquire knowledge and moral strength to become agents of change for the development of national civilization, one of which is UIN Sulthan Thaha Saifuddin Jambi. UIN Sulthan Thaha Saifuddin Jambi as a state Islamic university, developing from IAIN to UIN, of course, must be accompanied by changes in character, mental attitude, leadership, and management strategies to make a reliable difference, and the award for UIN Sulthan Thaha Saifuddin Jambi is Islamic Entrepreneurship. This must be known regarding students' interest in continuing their studies at UIN Sulthan Thaha Saifuddin Jambi seen from several factors. The method that is often used to determine the relationship between two or more variables is called regression. If the response variable is categorical, logistic regression is used.

The importance of effective market segmentation cannot be overstated. Understanding the nuances of various segments on university campuses can mean the difference between successful marketing campaigns and missed opportunities [6]. University campuses are not just educational institutions but bustling ecosystems with many activities, interests, and consumer behaviours [7]. This complexity necessitates advanced tools and methodologies.

Binary Logistic Regression stands out as a powerful tool in this regard. Its capacity to handle multiple predictor variables and produce probabilistic outcomes makes it ideal for dissecting the intricate patterns of campus markets [8]. For instance, predicting a student's likelihood of purchasing a specific product based on variables like age, major, and extracurricular activities can provide invaluable insights for marketers [9].

On the other hand, the spatial aspect of market segmentation, often overlooked, plays a crucial role, especially in environments like campuses where location can significantly influence consumer behaviours [10]. Enter GIS technology: its ability to visualize and analyse data in a spatial context provides a layer of understanding that's hard to achieve through traditional methods alone [11].

By merging the predictive power of binary logistic regression with the spatial insights from GIS, marketers can craft effective and highly tailored strategies for university campuses' unique environments. This study seeks to push the boundaries of this integration, offering a roadmap for future research and practical applications in campus marketing.

GIS contains a distribution map containing the number of students but also other supporting information in the form of tables and bar charts. The application significantly helps in considering target areas for socialization and promotional purposes [12]. The research on mapping the inventory of educational facilities in the district was evaluated spatially based on the background of the road network, analysis of the area distribution of educational facilities, and evaluation of accessibility [13].

Furthermore, Binary Logistic Regression is a data analysis method used to find the relationship between the response variable which is binary or dichotomous and the predictor variable which is a polychotomous [3]. So, the modelling analysis of student interest at UIN Sulthan Thaha Saifuddin Jambi can be developed through Binary Logistic Regression analysis. This analysis can test the hypothesis of testing students' interest in entering higher education both from the academic side at school, the economic side of the family, or the student characteristics side. Therefore, the collaboration of GIS analysis and statistics can be a reference so that the segment of new students to be targeted becomes clearer and more focused.

II. METHODS

The data used in this research are primary data and secondary data. Primary data sources are divided into two categories according to the research objectives. The mapping of student segmentation uses respondents, namely all of students of UIN Sulthan Thaha Saifuddin Jambi. The modelling of interest in choosing UIN Sulthan Thaha Saifuddin Jambi uses primary data, namely data from high school students of XII students in Jambi Province, and the sample used was 1205 students from six districts/cities in Jambi province. While the main secondary data source is the

Geospatial Information Agency for the purposes of GIS analysis. Following is the research data used in this study Table 1.

Binary logistic regression is a data analysis method used to find the relationship between the response variable (Y) which is binary or dichotomous and the predictor variable (X) which is polychotomous. The logistic regression function can be written as follows [3]: $\pi(x) = \frac{e^{\beta_0+\beta_1 x_1+\cdots+\beta_p x_p}}{1+\beta_0+\beta_1 x_1+\cdots+\beta_p x_p}$

$$\pi(x) = \frac{e^{\beta_0+\beta_1 x_1+\cdots+\beta_p x_p}}{1+\beta_0+\beta_1 x_1+\cdots+\beta_p x_p} \text{ …….(1)}$$

where p = the number of predictor variables.

The accuracy of the logistic regression model is built by a simplified view of reality, but it is necessary to observe their quality (Hosmer et al., 2013, Rogerson, 2012). The p-value allows us to evaluate the importance and adjustment of the variable to the model. The significance level is 0.05, as this allows variables to be fit to the model. The most important independent variable.

TABLE 1
DATA SOURCE

Type	Variable	Source
Primary data	Faculty and Study Program	College Student
	Admission to Campus	
	Origin	
	Economy	
	School	
	Interest	Student
	Gender	
	Origin	
	Major	
Secondary Data	Jambi Boundary Shapefile	Geospatial Information office

Source: Analysis 2024

The simultaneous test is worked to find out the significance of β parameter to the response variable. The significance of the parameters use G test statistic with the distribution of Chi-Square (Hosmer and Lemeshow, 2000). Hypothesis used:

H0 : βj = 0

H1 : βj ≠ 0, with i = 1, 2, ...,p.

The test statistics used in the Likelihood Ratio Test (Agresti, 1996) :

$$G = -2\log\left(\frac{l_0}{l_1}\right) = -2[logl_0 - \log l_1] \text{ …….(2)}$$

Variable selection uses individual test results, whether a predictor variable is eligible to enter the model. Hypothesis used:

H0 : β1 = β2 = ... = βp

H1 : at least one βj ≠ 0, with i = 1, 2, ...,p.

The test statistics used in the Wald Test :

$$W = [\frac{\hat{\beta}_i}{ASE}]^2 \text{ …….(3)}$$

Parameter testing is carried out to test whether the predictor variable has an effect or not on the response variable. The parameter test carried out is a simultaneous significance test and an individual significance test. One of the measures used to interpret the coefficients of the predictor variable is called the Odds Ratio (OR). The OR is the ratio of the probability that an event will occur to the probability that the event will not occur [3].

Interest is a continuous tendency to re-engage over time as well as a psychological condition of attention and influence on a particular item or topic [14]. Interest is a persistent tendency in a subject to feel interested in a particular field and feel happy being involved in that field.

Several existing studies discuss logistic regression analysis and the factors that influence students' interest in continuing their studies, including research about binary logistic regression modelling, and variables that affect the status of new student admissions are obtained. in ITS are among others domicile, verbal scores, numerical scores, figural scores, basic math scores, Indonesian language scores, English grades, Mathematics scores, and Science scores [15].

The researcher applies the Binary logistic regression analysis technique to know if there is any sign of the two independent variables that is Gender and Jamb scores of the students on the dichotomous dependent variable (admitted/not admitted) for the student. And the analysis indicated that gender is not significant in predicting the dependent variable [9]. The results of testing the effect of gender on the interest in continuing their studies to tertiary institutions in the mathematics education department at UNSIKA using linear regression analysis showed that gender only affected interest in continuing their studies by 3.3% [16].

Currently, Geographic Information System (GIS) has been widely used in various fields, such as corporate, health, government, politics, education, natural resources, and other fields. For example, Dayton Hudson and Belks Company use GIS to conduct company research and planning, including site location, trading area analysis, and competitive analysis [17]. GIS is a new technology based on spatial database. With the support of computer hardware and software, GIS data processing, including collecting, storing, managing, operating, analysing, generating, and displaying, use the geographic model analysis method.

GIS provides a variety of spatial and dynamic geographic information to serve for relevant research and decision-making [18]. The application of GIS has also extended to many other fields, such as resources, environment, land, property housing, urban construction, fire protection, transportation, finance, telecommunications, weather, geology, agriculture, forestry, electric power, government official's work and so on [19] .

The basic functions of a GIS include three parts: acquisition and management of spatial data; spatial data visualization (map view and mapping); and spatial analysis. These functions are of high practical value because they can help scholars deal with the effective management and spatial mapping of complex statistical data, and assist scholars in analysis, interpretation, and relevant mining [10]. GIS also helps to show exactly where the location of the distribution of students, the distribution of schools, and competitors is through database management and data queries [20].

The Geographic Information System for mapping students' areas of origin (Case Study: Islamic University of Majapahit) shows a GIS application that outputs not only a distribution map containing the number of students but also other supporting information in the form of tables and bar charts. Applications can significantly assist in considering target areas for socialization and promotional purposes [12]. Another study in the education sector in Kenya with GIS as a method of addressing educational planning issues is through case studies of educational facilities. This study involved mapping an inventory of all educational facilities in the district against the background of the existing road network, analyzing the area distribution of educational facilities, and evaluating the spatial accessibility of these facilities [13].

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III. RESULT AND DISCUSSIN

The influence of factors that are thought to influence high school students' interest in choosing UIN Sulthan Thaha Saifuddin Jambi individually was carried out by using Binary Logistic Regression analysis with the Wald test. This analysis uses the response variable, namely the interest of high school students (Y), and the predictor variable (X) shown in Table 2.

TABLE 2.
DATA

Variable	Categorical
Gender (G) (X_1)	0 = Man 1 = Woman
Region of origin (R) (X_2)	0 = Kota Jambi 1 = Kerinci 2 = Bungo 3 = Merangin 4 = Muaro Jambi

	5 = Tanjung Jabung Timur
Major (M) (X_3)	0 = Science 1 = Social 2 = Others
Interest (Y)	0 = Yes 1 = No

A parameter significance test was carried out to determine whether the parameter estimates obtained had a significant effect on the model. The parameter significance test was carried out simultaneously and partially. Simultaneous Logistic Regression Parameter Significance Test.

$\beta_1 = \beta_2 = \cdots = \beta_k$ (all parameters are meaningless to the model)

H_1 : At least one sign equals does not apply (at least one parameter is significant to the model)

Test statistics to see the level of data variation can use the Cox & Snell R-Square. These results are shown in Table 3.

TABLE 3.
SUMMARY RESULTS OF PARAMETER TESTS

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
780.850	0.147	0.799

From the table above, the probability ratio value is 780,850 ≥ 5.99, so the decision is Ho is rejected. This means that there is at least one predictor variable that has a simultaneous effect on the variable response at α = 0.05. Table 3 shows the value of the coefficient of determination (R Square) from the Binary Logistic Regression analysis of 0.799. It can be said that the contribution of the predictor variable to the response variable is 79.9%.

With 95% confidence, it turns out that the data supports that the predictor variable (X) plays a significant role in the response variable (Y). This shows that gender, area of origin, and student majors during high school affect the probability of predicting interest in choosing UIN Sulthan Thaha Saifuddin Jambi.

TABLE 4.
CLASSIFICATION RESULTS

		Interest (Prediction)		Correct Percentage
		Choosing	Not Choosing	
Interest (Observation)	Choosing	290	105	73.4
	Not Choosing	124	139	52.9
Truth Percentage				65.2

Table 4 shows that the prediction determination in this study is 59.1%. From the table above, the predicted value was obtained for choosing UIN Sulthan Thaha Saifuddin Jambi, namely 414 students, the observation line was predicted by the model 290 students choosing UIN Sulthan Thaha Saifuddin Jambi and 124 students not choosing UIN Sulthan Thaha Saifuddin Jambi. The predicted value did not choose UIN Sulthan Thaha Saifuddin Jambi, namely 244 students, the observation line was predicted by the model, 105 students chose UIN Sulthan Thaha Saifuddin Jambi, and 139 students did not choose UIN Sulthan Thaha Saifuddin Jambi.

The simultaneous significance test can also be seen in the significant value of Table 18. The simultaneous test results in Table 18 state that Ho is rejected because the significant value in the test statistic is <α = 0.05. In the table above it can be seen that a significance value of 0.0 is obtained which is smaller than the value α = 0.05. Therefore, the conclusion of Ho's research is rejected, which means that there is at least one independent variable that jointly influences the model.

Partial testing by testing the hypothesis is:

H0 : βi = 0 (parameters don't matter to the model)
H1 : βi ≠ 0 (parameter means to the model)

With α = 0.05 in Table 19, the p-value of the Wald test per category can be concluded that gender, region of origin, and high school major have a significant influence (p-value <5%). This means that the variables of gender, region of origin, and majors of high school students have a significant effect on the interest in choosing UIN Sulthan Thaha Saifuddin Jambi.

To test the feasibility of the model, you can use the Hosmer-Lemeshow method.
H0 : The model fits the observational data
H1: The model does not match the observational data

TABLE 5.
HOSME-LEMESHOW TEST RESULTS

Chi-square	df	p-value
0	4	1

With 95% confidence, it can be concluded that the binary logit model is feasible to use. This means that there is no difference between observation and prediction, in other words, the model is fit or feasible to use.

TABLE 6.
WALD TEST RESULTS

	B	S.E.	Wald	df	Sig.	Exp(B)
G (1)	0.24	0.28	1.74	1	0.02*	1.27
R			23.3	5	0	
R (1)	0.54	0.27	3.84	1	0.05*	1.71
R (2)	-0.5	0.27	3.52	1	0.04*	0.59
R (3)	-20.9	4784.57	0	1	0.997	0
R (4)	0.42	0.28	2.28	1	0.01*	1.52
R (5)	-0.2	0.31	0.83	1	0.362	0.75
M			4.10	2	0.029	
M (1)	0.39	0.25	2.48	1	0.015*	1.48
M (2)	0.04	0.27	0.02	1	0.885	1.04
Constant	-0.5	0.24	5.43	1	0.02	0.57

* Significant 5%

Based on Table 6, gender, regional origin, and majors of high school students have a significant effect on the interest in choosing UIN Sulthan Thaha Saifuddin Jambi. The gender variable has a significant effect on the interest in choosing UIN Sulthan Thaha Saifuddin Jambi. In contrast to the regional origin, Merangin Regency and East Tanjung Jabung Regency did not have a significant effect on the interest in choosing UIN Sulthan Thaha Saifuddin Jambi. Meanwhile, Jambi City, Kerinci Regency, Tebo Regency, and Bungo Regency influenced the interest in choosing UIN Sulthan Thaha Saifuddin Jambi. The origin of the school majoring in Science and Social Sciences has a significant influence on the interest in choosing UIN Sulthan Thaha Saifuddin Jambi. This significance is indicated by the presence of a p-value <0.05.

The Binary Logistics model can be written as follows:

$$\log = -0.57+0.54\ X_{11} - 0.52\ X_{21} + 3.506\ X_{22} - 20.942\ X_{23} + 0.424\ X_{24} - 0.281\ X_{25} + 0.397\ X_{31} + 0.04\ X_{32}$$

Based on Table 6, the odds value for each explanatory variable. So, it can be interpreted as follows. When the student's gender is male, the area of origin is Jambi City, and the science major, the chances of students being interested in choosing UIN Sulthan Thaha Saifuddin Jambi are 1.273 times greater than female students and come from other regions and majors other than science, provided that other influences are constant.

When the gender of the student is male, the region of origin is Kerinci Regency and is majoring in Natural Sciences, the chances of students being interested in choosing UIN Sulthan Thaha Saifuddin Jambi are 1.716 times greater than female students and coming from other regions and majors other than Science provided that other influences are constant.

When the gender of the student is male, the region of origin is Bungo Regency and is majoring in science, the chances of students being interested in choosing UIN Sulthan Thaha Saifuddin Jambi are 0.594 times greater than female students and coming from other regions and majors other than Science provided that other influences are constant.

When the gender of the student is male, the region of origin is Merangin Regency and the Science major, the chances of students being interested in choosing UIN Sulthan Thaha Saifuddin Jambi are the same as that of female students and coming from other regions and majors other than Science, provided that other influences are constant.

When the gender of the student is male, the region of origin is Muaro Jambi Regency, and is majoring in Natural Sciences, the chances of students being interested in choosing UIN Sulthan Thaha Saifuddin Jambi are 1.528 times greater than female students and coming from other regions and majors other than Science provided that other influences are constant.

When the sex of the student is male, the region of origin is East Tanjung Jabung Regency, and is majoring in Natural Sciences, the chances of students being interested in choosing UIN Sulthan Thaha Saifuddin Jambi are 0.755 times greater than female students and coming from other regions and majors other than Science, provided that other influences are constant.

When the sex of the student is male, the region of origin is East Tanjung Jabung Regency and is majoring in Social Sciences, the chances of students being interested in choosing UIN Sulthan Thaha Saifuddin Jambi are 1.488 times greater than female students and coming from other areas and majors other than Social Studies provided that other influences are constant.

When the gender of the student is male, the area of origin of Jambi City, and majors other than science and social studies, the chance that students are interested in choosing UIN Sulthan Thaha Saifuddin Jambi is 1.041 times greater than female students and come from other regions and majors in science and social studies, provided that other influences are constant.

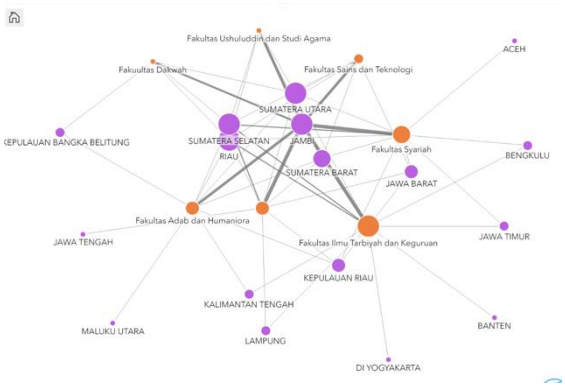

Figure 1. GIS Visualization of UIN Sulthan Thaha Saifuddin Jambi Students in 2020

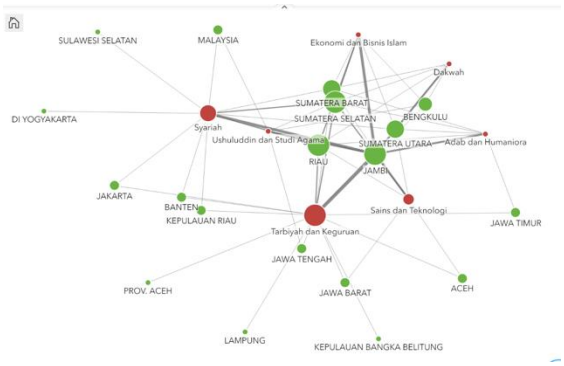

Figure 2. GIS Visualization of UIN Sulthan Thaha Saifuddin Jambi Students in 2021

Based on the results of the GIS, the target of socialization for prospective new students must be carried out outside Jambi Province. This is considering that approximately 90% of UIN Sulthan Thaha Saifuddin Jambi students come from Jambi Province. Provinces that are close to Jambi Province have a relatively large number of students compared to provinces that are far from Jambi Province, such as provinces on Java Island. This can be based on various factors, such as economic factors, distance, quality of education, and others. Visually, the level of student distribution in 2020-2021 from various provinces can be seen in Figure 1 and Figure 2.

Figure 3 shows some of the distribution of interests of students who wish to continue to UIN Sulthan Thaha Saifuddin Jambi. In schools in Bungo Regency, the interest of the students is very high. This can be shown in the number of students whom all stated that they wanted to continue to UIN Sulthan Thaha Saifuddin Jambi. However, this is inversely proportional to the two regions, namely the City of Jambi and Merangin, where the majority stated that they were not interested in continuing to UIN Sulthan Thaha Saifuddin Jambi. This indicates that there is a need to increase the number of outreaches to schools in Jambi City.

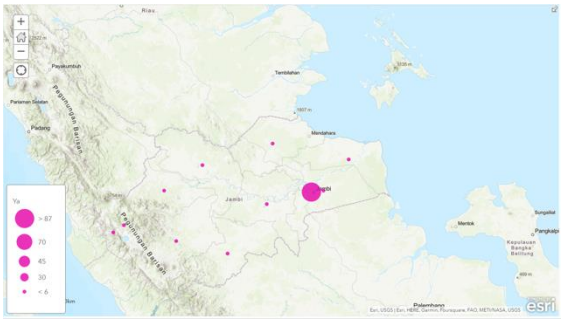

Figure 3. GIS Analysis of Interest Level Map of High School Students for Interest in Choosing UIN Sulthan Thaha Saifuddin Jambi

The three regions whose students are interested in continuing to UIN Sulthan Thaha Saifuddin Jambi are Tanjung Jabung Timur, Muaro Jambi, and Kerinci Regency. This indicates that there is a need to transfer socialization budget allocations to areas where students have a low interest in continuing to UIN Sulthan Thaha Saifuddin Jambi. If we look at all schools (MA, MAN, Ponpes, SMA, SMAN, SMAS, SMK, and SMKN), on average, all the students' schools expressed interest in continuing to UIN Sulthan Thaha Saifuddin Jambi.

Future research can develop an understanding of the factors that influence students' interest in continuing their studies at UIN Sulthan Thaha Saifuddin Jambi. Potential areas of research include exploration of environmental and cultural factors, comparisons with other educational institutions, as well as analysis of marketing and communication programs that are effective in attracting prospective students. Additionally, unanswered questions, such as changes in factors influencing student interests over time and the impact of students' experiences on their views of the institution, could be the focus of future research to deepen understanding in campus marketing.

IV. CONCLUSSION

College selection is very important by considering future values. Various factors can influence the preferences of high school students in selecting study programs at tertiary institutions. Therefore, mapping analysis and modelling of new student admission targets for UIN Sulthan Thaha in Jambi Province are important tools to ensure tertiary institutions remain competitive in the present era or in the future. The mapping analysis of new student admission targets at UIN Sulthan Thaha Saifuddin Jambi can be described by an analysis of the Geographic Information System (GIS). Analysis of student interest modelling can be developed through binary logistic regression analysis. This analysis can test the hypothesis of testing students' interest in entering higher education both from the academic side at school, the economic side of the family, or the student characteristics side.

The results show that most Faculty students at UIN Sulthan Thaha Saifuddin Jambi are students from Jambi Province. This indicates that there is a need to expand the reach of socialization or promotions direct or online such as on websites and social media which have a wider reach. This alternative can be a better solution because it can target which areas you want to target more specifically overseas.

The Binary Logistic Regression model shows that the variables of gender, region of origin, and majors of high school students have a significant influence on the interest in choosing UIN Sulthan Thaha Saifuddin Jambi. The regional origin variables, Merangin Regency and East Tanjung Jabung Regency did not have a significant effect on the interest in choosing UIN Sulthan Thaha Saifuddin Jambi. Meanwhile, Jambi City, Kerinci Regency, Tebo Regency, and Bungo Regency influenced the interest in choosing UIN Sulthan Thaha Saifuddin Jambi. The variables from school majoring in science and social studies have a significant influence on the intention to choose UIN Sulthan Thaha Saifuddin Jambi.

ACKNOWLEDGEMENTS

We thank UIN Sulthan Thaha Saifuddin Jambi through LITAPDIMAS for granting the funding, which allowed us to develop this research.

REFRENCES

[1] R. Śliwiński and Ł. Puślecki, *Competition, Strategy, and Innovation : : the impact of trends in business and the consumer world*. New York, NY: New York, NY : Routledge, 2022. doi: 10.4324/9781003204343-101.

[2] C. M. Anthony, “Higher Education Marketing: Opportunities and Challenges in the Digital Era,” *ACADEMIA*, vol. 17, no. 16, 2019.

[3] D. W. Hosmer and S. Lemeshow, *Applied Logistic Regression Second Edition*. USA: John Wiley & Sons., 2000.

[4] T. Turk, O. Kitapci, and I. T. Dortyol, “The Usage of Geographical Information Systems (GIS) in the Marketing Decision Making Process: A Case Study for Determining Supermarket Locations,” *Procedia - Soc. Behav. Sci.*, vol. 148, pp. 227–235, 2014, doi: 10.1016/j.sbspro.2014.07.038.

[5] R. Q. Al-balqa, “Using GIS in University campus Design Using GIS in Universities Campus Design , University of Jordan as a Case Study,” no. March, 2019.

[6] A. D. C, G. S, H. K, S. S, P. K. E, and K. P. C, “Consumer Behaviour Analysis: Critical Perspectives,” *Int. J. Res. Appl. Technol.*, vol. 2, no. 1, pp. 82–90, 2022, [Online]. Available: https://ojs.unikom.ac.id/index.php/injuratech/article/download/6536/2915/

[7] D. Qu, T. Shevchenko, Z. S. Esfandabadi, and M. Ranjbari, “College Students’ Attitude towards Waste Separation and Recovery on Campus,” *Sustain.*, vol. 15, no. 2, pp. 1–17, 2023, doi: 10.3390/su15021620.

[8] C. Brewis, S. Dibb, and M. Meadows, “Leveraging big data for strategic marketing: A dynamic capabilities model for incumbent firms,” *Technol. Forecast. Soc. Change*, vol. 190, no. December 2022, p. 122402, 2023, doi: 10.1016/j.techfore.2023.122402.

[9] K. Tukur and Usman Abdullahi Ubale, “Binary Logistic Regression Analysis on Addmiting Students using

Jamb Score," *Int. J. Curr. Res.*, vol. 8, no. 01, pp. 25235–25239, 2016.

[10] R. B. Castilhos, P. Y. Dolbec, and E. Veresiu, "Introducing a spatial perspective to analyze market dynamics," *Mark. Theory*, vol. 17, no. 1, pp. 9–29, 2017, doi: 10.1177/1470593116657915.

[11] ESRI, "What is ArcGIS ?," *Environ. Syst. Res. Inst.*, p. 119, 2004.

[12] A. Rohman, M. R. Akbar, and N. Yanuarini, "Sistem Informasi Geografis Pemetaan Daerah Asal Mahasiswa (Studi Kasus: Universitas Islam Majapahit)," Universitas Islam Majapahit, 2020.

[13] M. Murimi Ngigi, D. Musiega, and F. O. Mulefu, "Planning and analysis of educational facilities using GIS : A case study of Busia County, Kenya," *Appl. Geoinformatics Soc. Environ.*, no. April, pp. 261–269, 2010, [Online]. Available: file:///C:/Users/BPSR-Ariana/Downloads/AGSE2012_2nd_edition_2012_08_17_Mulefu (1).pdf

[14] J. M. Harackiewicz, J. L. Smith, and S. J. Priniski, "Interest Matters: The Importance of Promoting Interest in Education," *Policy Insights from Behav. Brain Sci.*, vol. 3, no. 2, pp. 220–227, 2016, doi: 10.1177/2372732216655542.

[15] Y. Anggraeni and I. Zain, "Pemodelan Regresi Logistik Biner terhadap Peminat ITS di Seleksi Bersama Masuk Perguruan Tinggi Negeri (SBMPTN) 2014," *J. Sains dan Seni ITS*, vol. 4, no. 1, pp. 115–120, 2015.

[16] A. G. Adirakasiwi and A. Warmi, "Pengaruh Jenis Kelamin Terhadap Minat Melanjutkan Studi Ke Perguruan Tinggi," *J. THEOREMS*, vol. 3, no. 2, pp. 16–25, 2019.

[17] P. Belsis, S. Gritzalis, A. Malatras, C. Skourlas, and I. Chalaris, "Enhancing knowledge management through the use of GIS and multimedia," *Lect. Notes Artif. Intell. (Subseries Lect. Notes Comput. Sci.*, vol. 3336, no. December 2004, pp. 319–329, 2004, doi: 10.1007/978-3-540-30545-3_30.

[18] C. R. Howell, W. Su, A. F. Nassel, A. A. Agne, and A. L. Cherrington, "Area based stratified random sampling using geospatial technology in a community-based survey," *BMC Public Health*, vol. 20, no. 1, pp. 1–10, 2020, doi: 10.1186/s12889-020-09793-0.

[19] S. Kosiba and R. A. Hunter, "Fields of conflict: A political ecology approach to land and social transformation in the colonial Andes (Cuzco, Peru)," *J. Archaeol. Sci.*, vol. 84, pp. 40–53, 2017, doi: 10.1016/j.jas.2017.06.001.

[20] Y. Fu, "Managing Customer Services Using GIS in Banks : A Case in Chinese Competitive Environment," p. 72, 2007.