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ANALYSIS OF DISCRIMINANT USING SOCIAL MEDIA BY STUDENTS IN UINSU

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Abstract:
The purpose of this study is a). Knowing significant differences between active students using social media and those who are not active using social media in the UINSU faculty of science and technology, b). Knowing the variables that distinguish between the behavior of students who are active and those who are not active in using social media, c). Knowing the two-factor discriminant model in the case, d). Knowing the test of the accuracy of the model (function) discriminant. This research was carried out in the UINSU faculty of science and technology. This type of research is descriptive with a qualitative approach. The population in this research were all UINSU faculty of science and technology students totaling 1800 people with a sample of 100 students from study programs. Data collection is giving questionnaires to students, where before the questionnaire is given it must be tested for validity and reliability of the instrument. The data collected in this study were analyzed by discriminant analysis. This grouping is mutually exclucive, in the sense that if object A is in group 1, then it is not possible to be a member of group 2. The analysis can then be developed on which variables make group 1 different from group 2, what percentage goes into the group 1 and what percentage enter group 2. Because there are a number of independent variables, there will be one dependent variable, the characteristic of discriminant analysis is the type of data from the dependent variable of nominal type. To facilitate the calculation process, a tool is used using SPSS. The results of this research are the differrences in students who use social media actively with those who are not active using social media are very significant.

Keywords: Analysis discriminant, social media, facebook

1. INTRODUCTION

One facility for individuals or cyberspace communities in socializing online can be done through online social media. Online social media is a medium designed to facilitate interactive social interaction based on internet technology that changes the pattern of information dissemination which was previously a media broadcast monologue to dialogue or to many audiences. Online social media also supports the creation of democratization of information and science that changes the behavior of audiences from those who previously consumed content to switch to content production. In this internet era, the types of online social media are very diverse, namely Facebook, Instagram, Twitter, Path, BBM, LINE, WhatsApp, and others. The most popular is Facebook. In this study the social media discussed is Facebook. Facebook or this social networking site was born in Cambridge, Massachusetts on February 14, 2004 by Harvard students Mark Zuckerberg. According to data on Alexa, Facebook is the number one social networking machine. In the order of the whole site in the Facebook world ranked 5th after Yahoo, Google, YouTube, and Windows Live. Basically, Facebook is made with good intentions and really carries the values of friendship. This can be seen in features and capabilities such as making friendships and continuing to be able to connect with friends or relations, walls, create groups, join them, events, send e-mail messages, upload and share images, campus advertising, make status statement In this paper, research will be conducted to find out the use of social media for students. The use of social media is devoted to Facebook and Instagram, to find out whether students are more dominant using social media Facebook to increase friends, status updates, chat, share information, channel hobbies, upload photos or videos, share links and as a

promotional tool compared to Instagram. Because in this millennium, young people / students preferred the use of social media in communicating and searching for various information.

Following are some studies on social media, Risna (2014) examines the influence of Facebook social media among MTs students in Bekasi who say social media Facebook influences laborers for adolescents when used excessively, which disrupts study hours while Astrid and Nur Aini (2016) reveal that the development of global social media indirectly has a major influence on the use of the internet for adolescents where students can use the internet as a means of learning and entertainment functions such as social media but its use must be balanced and in accordance with its portion. In contrast to Astrid and Nur Aini, Tri Y. Evelina et al (2014) examined the behavior of users (users) on the use of Facebook and Twitter where statistical tests were used using discriminant analysis. Based on some of the above studies, the authors want to examine social media especially Facebook among UIN students using discriminant analysis.

Based on the background of the problem above, the formulation of the problem is inside this research is analyzing discriminant to know:

a. Are there significant differences between students actively using Facebook and those who are not actively using Facebook?
b. What variables distinguish behavior from students who are active and who are not active in using Facebook?
c. How to make a two-factor discriminant model in that case?
d. How to test the accuracy of the discriminant function (function)?

2. LITERATURE REVIEW

2.1 Analysis discriminant

Discriminant analysis is a multivariate technique that is included in the dependence method, with the characteristics of dependent and independent variables. Thus, there are variables whose results depend on the independent variable data. A special feature of discriminant analysis is the dependent variable data in the form of category data, while the data for the independent variable is in the form of data ratios. Discriminant analysis techniques are divided into two, namely two-group discriminant analysis and multiple discriminant analysis. For the two group discriminant analysis, if the dependent variable (Y) is grouped into two, then a discriminant function is needed. For multiple discriminant analysis, if the dependent variable (Y) is grouped into more than two groups, a discriminant function is needed (k-1) for k categories. The basic process of discriminant analysis is:

1. Separating variables into dependent variables and independent variables
2. Determine the method to create a discriminant function. In principle, there are two basic methods, namely simultaneous estimation, where all variables are entered together then discriminant processes are carried out, and step wise wise estimation, where variables are entered one by one into the discriminant model. In this process, of course there are variables that remain in the model and there is the possibility of one or more independent variables being removed from the model.
3. Test the significance of the discriminant function that has been formed, using Wilk's Lambda, Pilai, F test and others.
4. Test the classification accuracy of the discriminant function, including knowing the classification accuracy individually with Casewise diagnostic.
5. Interpret the discriminant function.
6. Test the validation of the discriminant function.

Discriminant analysis is included in the multivariate dependence method, with the model:

$$Y_1 = X_1 + X_2 + \ldots + X_3$$

where:

Y_1 = the dependent variable is categorical data or nominal data. X_1 and so on = data metrics, which are data of intervals or ratios such as a person's age, height of a tree, iron content in the body and so on.

2.2 Social Media

Social media is an online media with users who can easily participate, share and create content including blogs, social networks, wikis, forums and the virtual world. Blogs, social networks and wikis are the most common forms of social media used by people throughout the world. Another opinion says that social media is an online media that supports social interaction and social media using web-based technology that converts communication into an interactive dialogue. Gamble, Teri, and Michael in the Communication Works, in Wikipedia, say that social media has the following characteristics:

a. The message delivered is not just for one person but can be for many people, for example SMS or internet messages
b. Messages delivered freely, without having to go through a Gatekeeper

c. The messages delivered tend to be faster than other media
d. The recipient of the message that determines the time of interaction
Social media has roles and functions, including: Simplicity, Building relationships, Global reach, Measured.
Social media technology takes various forms including magazines, internet forums, weblogs, social blogs, microblogging, wikis, podcasts, photos or images, videos, rankings and social bookmarking. By applying a set of theories in the field of media research and social processes Kaplan and Haenlein created a classification scheme for various types of social media in their Horizons Business article published in 2010. They determined there were six types of social media: Collaboration project, Blog and microblog, Content, Social networking site, Virtual game world, Virtual social world.

Facebook is a social networking service launched in February 2004, owned and operated by Facebook, Inc. In September 2012, Facebook had more than one billion active users (Dow Jones, 2012), more than half of them using cellphones. After that users can create a personal profile, add other users as friends, and exchange messages, including automatic notifications when they update their profile. In addition, users can join groups of users with the same interests, sorted by workplace, school or college, or other distinctive features, and group their friends like work colleagues or close friends. Since the emergence of Facebook in 2004, members have continued to grow rapidly. Percentage of increase exceeded senior frienster. Facebook also has positive and negative impacts.

3. DISCRIMINANT ANALYSIS RESULTS

This type of research is analytical research. The variable used in this study is the dependent variable which is the type of student who uses Facebook, while the independent variables are several, namely frequency / duration of access using Facebook, frequency of uploading photos / videos, frequency of status updates, frequency of sharing links, frequency of live stories. From the data, the variable will be tested using SPSS.
The output of the variable test process is as follows:

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Freq. Access	.652	52.215	1	98	.000
Freq. Uploading photos/video	.931	7.270	1	98	.008
Freq. Status updates	.891	12.019	1	98	.001
Freq. of sharing links	.978	2.253	1	98	.137
Freq. of Live Stories	.881	13.299	1	98	.000

Analysis:
The table above is the test results for each independent variable that exists.
• With the figure of Wilk's Lambda
The Wilk's Lambda number ranges from 0 to 1. If the number approaches 0, the data for each group tends to be different, while if the number approaches data 1, the data for each group tends to be the same. From the table, the figure of Wilk's Lambda ranges from 0.652 to 0.978. This means that sharing links between active students and those who are not active is not significantly different. Whereas to access between active students and those who are not active differ significantly.
• With F test
Access variable, significant number is 0,000 <0.05 means there are differences between groups
Variables upload photos, a significant number is 0.008 <0.05 means there are differences between groups
Variable status update, significant number is 0.001 <0.05 means there are differences between groups
Variables share links, significant numbers 0.137 <0.05 means there are differences between groups
Variable live stories, significant numbers 0,000 <0.05 means there are differences between groups
The five variables differ significantly for the two discriminant groups, namely frequency / duration of access, frequency of uploading photos / videos, frequency of status updates, frequency of sharing links, and frequency of live stories. Thus, active or not students using social media are influenced by the five variables.

Log Determinants

Student Type	Rank	Log Determinant
0	5	8.715
1	5	9.091
Pooled within-groups	5	8.963

The ranks and natural logarithms of determinants printed are those of the group covariance matrices.

Analysis:

It can be seen that Log Determinants for category 0 (types of inactive students) are 8,715 and 1 (type of active student) is 9,091 not much different, so group covariance matrices will be relatively the same for both groups.

2-factor discriminant output

Group Statistics

Student Type		Mean	Std. Deviation	Valid N (listwise)	
				Unweighted	Weighted
0	Freq. Acces	17.8553	3.16945	76	76.000
	Freq. Uploading photos/video	7.2105	1.59429	76	76.000
	Freq. Status updates	18.1316	3.54905	76	76.000
	Freq. of sharing links	15.5658	3.09122	76	76.000
	Freq. of Live Stories	14.8553	2.62655	76	76.000
1	Freq. Acces	23.5833	4.00995	24	24.000
	Freq. Uploading photos/video	8.3333	2.27781	24	24.000
	Freq. Status updates	21.1667	4.30032	24	24.000
	Freq. of sharing links	16.7083	3.72394	24	24.000
	Freq. of Live Stories	17.0833	2.55235	24	24.000
Total	Freq. Acces	19.2300	4.17025	100	100.000
	Freq. Uploading photos/video	7.4800	1.83391	100	100.000
	Freq. Status updates	18.8600	3.94154	100	100.000
	Freq. of sharing links	15.8400	3.27130	100	100.000
	Freq. of Live Stories	15.3900	2.76667	100	100.000

Variables Entered/Removed[a,b,c,d]

Step	Entered	Min. D Squared					
		Statistic	Between Groups	Exact F			
				Statistic	df1	df2	Sig.
1	Acces	2.863	,00 and 1,00	52.215	1	98.000	1.091E-10

At each step, the variable that maximizes the Mahalanobis distance between the two closest groups is entered.

a. Maximum number of steps is 10.

b. Maximum significance of F to enter is .05.

c. Minimum significance of F to remove is .10.

d. F level, tolerance, or VIN insufficient for further computation.

Variables in the Analysis

Step		Tolerance	Sig. of F to Remove
1	Acces	1.000	.000

Based on the table that the variable to be analyzed is the Access variable.

Variables Not in the Analysis

Step		Tolerance	Min. Tolerance	Sig. of F to Enter	Min. D Squared	Between Groups
0	Freq. Acces	1.000	1.000	.000	2.863	,00 and 1,00
	Freq. Uploading photos/video	1.000	1.000	.008	.399	,00 and 1,00
	Freq. Status updates	1.000	1.000	.001	.659	,00 and 1,00
	Freq. of sharing links	1.000	1.000	.137	.124	,00 and 1,00
	Freq. of Live Stories	1.000	1.000	.000	.729	,00 and 1,00
1	Freq. Uploading photos/video	.883	.883	.847	2.866	,00 and 1,00
	Freq. Status updates	.807	.807	.795	2.868	,00 and 1,00
	Freq. of sharing links	.941	.941	.832	2.866	,00 and 1,00
	Freq. of Live Stories	.774	.774	.845	2.866	,00 and 1,00

Structure Matrix

	Function
	1
Freq. Acces	1.000
Freq. Live Stories[a]	.475
Freq. Status Updates[a]	.439
Freq. Upload photo/Video[a]	.342
Freq. of sharing links[a]	.243

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

a. This variable not used in the analysis.

Canonical Discriminant Function Coefficients

	Function
	1
Freq. Acces	.295
(Constant)	-5.680

Unstandardized coefficients

From the table it can be stated the discriminant function :
Z score = 0.295freq.access – 5.680

Functions at Group Centroids

Student Type	Function 1
0	-.406
1	1.286

Unstandardized canonical discriminant functions evaluated at group means

Because there are two types of students, it is called the Two-group Discriminant, where one group has a Centroid (group means) is negative, and one group has a positive Centroid. The numbers in the table show the amount of Z that separates the two groups.

Prior Probabilities for Groups

Student Type	Prior	Cases Used in Analysis	
		Unweighted	Weighted
0	.500	76	76.000
1	.500	24	24.000
Total	1.000	100	100.000

The table above shows the composition to 100 respondens which with the discriminant model produce 24 in groups 1 and 76 in group 0.

Classification Function Coefficients

	Student type	
	0	1
Freq, Access	1.558	2.058
(Constant)	-14.601	-24.956

Fisher's linear discriminant functions

The table above states that the discriminant function of fisher in principle makes a kind of regression equation with a division based on group code.

Types of students who are not actively using social media =

Score = 2.058 freq. access – 24.956

So,

Z score = 3.616 freq.access – 39.557

Classification Results[b,c]

		student type	Predicted Group Membership		Total
			0	1	
Original	Count	0	59	17	76
		1	6	18	24
	%	0	77.6	22.4	100.0
		1	25.0	75.0	100.0
Cross-validated[a]	Count	0	59	17	76
		1	6	18	24
	%	0	77.6	22.4	100.0
		1	25.0	75.0	100.0

a. Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

b. 77,0% of original grouped cases correctly classified.

c. 77,0% of cross-validated grouped cases correctly classified.

Based on the discriminant process starting from the variable test to output analysis, it can be said that there is a significant difference between students who actively use social media and those who are not actively using social media. This can be seen in Wilk's Lambda's analysis ranging from 0.652 to 0.978. This means that sharing links between active students and those who are not active is not significantly different. Whereas to access between active students and those who are not active differ significantly. The variable that makes the type of student active and inactive is the Access frequency. This can be seen from the initial analysis step, both in the variable analysis section and the not in analysis variable. Based on the results of discriminant analysis, the prediction accuracy of the model is high, which means that the bias model is used to classify students who are actively using social media and who are not actively using social media.

4. CONCLUSION

From the discriminatory process, ranging from variable testing to output analysis, came the conclusions associated with goals in the initial case

1. There is a significant difference between students who actively use social media and those who actively use social media. This is proved in wilk's lambda analysis
2. The variable that makes a type of student behavior is the access frequency. This is seen in the initial analysis step, both in variable analysis and in variable not in analysis.
3. Model or discriminatory function for the case is: Z score = 3,616 access. 39,557
4. The models (function) of the discriminatory above have a definite classification case by 77.0%. Because above 50%, model accuracy is considered high, and the above model is used to classify a case on a particular type of student.

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