ANALYSIS OF EXTERNAL TRIP ATTRACTION FOR PROVING GROUND AT ITS

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ABSTRACT

The development of research in the automotive field is characterized by an increasing number of automotive competitions involving college students. The results of this research have been tested around the campus environment without specialized testing facilities such as a Proving Ground, thus prompting ITS to initiated to build a Proving Ground. The construction of a Proving Ground at ITS will also be utilized as a go-kart activity. The purpose of this research is to develop a trip attraction model and to determine the factors that influence trip atrraction decisions to the Proving Ground to be built at ITS. The method used is Multiple Linier Regression Analysis. The independent variables used in this research are Circuit Length (X1), Travel Distance (X2), Travel Time (X3) and Cost (X4). And the independent variables used to determine the gokart sport are Travel Distance (X1), Travel Time (X2) and Cost (X3). Meanwhile, the dependent variable is the trip attraction to visit the ITS Proving ground, which can be used as an exercise for automotive researchers or visitor to gokart sports. The results of the regression equation model of trip attraction to the Proving Ground are Y = 36,589 + 6,412 X1 - 0,584 X3. In this study, the most influential variables are Circuit Length and Travel Time with R^2 value in the calculation obtained at 0,297. Furthermore, the results of the regression equation model of trip attraction for gokart sport visitors are Y = 20,569 – 0,08X1 – 0,011X2 – 0,00009X3. In this study, the most influential variables are Travel Distance and Travel Time with the R^2 value in the calculation obtained at 0,161.

Keywords: go-kart; linier regression analysis; proving ground; trip attraction

INTRODUCTION

Institut Teknologi Sepuluh Nopember (ITS) is a university located in Surabaya City, precisely on Jalan Raya ITS, Sukolilo, Surabaya. The university has a total land area of 180 hectares with a total building area of ± 150,000 m^2 (ITS, 2021). The land area is still available as vacant land, so it can be utilized for other purposes. One of the plans to use the vacant land is to build a Proving Ground. The development of research in the automotive field in Indonesia has shown a growing interest in the field. One example is the Shell Eco Marathon competition. The Shell Eco Marathon was first held in Asia in 2010, with nine teams from four universities in Indonesia participating (Republic of Indonesia, 2010). Subsequently, in 2023, the number of participants in the competition increased to 47 teams from 36 universities in Indonesia (Ikhsan, 2023). Previous research results have been tested around campus without specialized testing facilities such as proving grounds. Currently, the only proving ground in Indonesia is located in Bekasi and is under construction. Therefore, ITS University initiates the construction of a proving ground to support research activities. Changes in land use and economic activities are the main causes of movement (Rodrigue, 2024). In addition, according to Tamin (2000), each land use will generate an activity that causes the distribution of travel. The proving ground at ITS is designed for vehicle speeds below 48 km/h. The proving ground is a highly efficient facility for meeting the reliability requirements of vehicle components (Halfpenny & Pompetzki, 2011). Another definition, the Proving Ground is a testing facility for vehicles, including crash tests or collision tests, which is crucial for enhancing road safety (Pustralnews, 2020). The proving ground is often used to determine whether a vehicle is roadworthy or not. The development of the proving ground at ITS is expected to enhance activities that support the growth of the automotive industry in Indonesia. The construction of the proving ground not only benefits

Institut Teknologi Sepuluh Nopember (ITS) but also other universities. By providing facilities available for use, the proving ground at ITS offers opportunities for other universities to utilize these resources to support their research needs. The development of the proving ground at ITS is expected to enhance activities that support the growth of the automotive industry in Indonesia. The construction of the proving ground not only benefits at Institut Teknologi Sepuluh Nopember (ITS) but also other universities. By providing facilities available for use, the proving ground at ITS offers opportunities for other universities to utilize these resources to support their research needs. The development plan for the Proving Ground at ITS does not solely focus on vehicle research activities. This is because the utilization of the proving ground for research activities is not carried out continuously. Therefore, the Proving Ground has the potential to be optimized as a sports venue such as go-karting. The sport of gokarting was first recognized in Indonesia in 1967 through Hengky Iriawan (Yuniharto, 2020). Go-kart racing is often considered a stepping stone for higher and more expensive motor sports. The speed of go-karts for the general public typically does not exceed 24 km/h. The strategy provides benefits for universities because it can increase the source of income from the Proving Ground which can help in maintaining the facility. With the variety of activities planned for the proving ground, it is necessary to investigate the factors that influence travel decisions to the location.

Previous studies have conducted several researches related to trip attraction models. Specifically, previous studies have focused on trip attraction to School (Fajrinia, 2017), shopping centers (Das & Ray, 2024), tourist destinations (Yanti, 2021), commercial zones in medium-sized town in Kerala (George & Gymmy Joseph Kattor, 2013), educational land use (Muthmainnah, 2016) and workplaces (Saraswati, 2017). These studies have shown that each trip attraction model has distinct characteristics.Based on the problems and previous research that has been done, the research entitled “Analysis of External Trip Attraction for Proving Ground at ITS” needs to be carried out. This study aims to determine the factors that influence trip attraction or a person's interest in traveling to the proving ground. In addition, this study also aims to describe the decision model of trip attraction to the ITS Proving Ground.

METHOD

Determining Research Variables

Determination of research variables is carried out by first selecting several clear identifications so that later they are in accordance with the research objectives to be achieved. The independent variables and dependent variables in this study include:

Table 1.
Research Variables

No.	Objectives	Types of Variables	Research Variables
1	Analysis of factors influencing trip attraction to the Proving Ground for automotive researchers to conduct research.	Independent Variables	1. Circuit Length
			2. Distance Traveled by Researcher to the Vehicle Training Site
			3. Researches’s Travel Time to the Vehicle Training Site
			4. Cost
		Dependent Variable	Number of researchers interested in conducting vehicle exercises at the Proving Ground ITS
2	Analysis of factors influencing trip attraction decisions for visitors to Proving Ground if provided with a go-kart sport facility.	Independent Variable	1. Distance from the Visitor’s Home Location to get to BNS
			2. Travel Time for Visitors to BNS
			3. Cost
		Dependent Variable	Number of visitors attracted to the Proving Ground ITS, if Gokart Sport are Provided.

Determining Population and Sample

The population is the entire collection of research objects that consist of people, objects, or events as sources of data that have certain characteristics within a research (Sugiyono, 2019). While the sample is a part of the population taken using sampling techniques (Husain & Purnomo, 2001 in Andriani et al. (2020)). The sampling technique used is simple random sampling, where every element of the entire population has an equal chance of being selected (Sugiyono, 2013).

Automotive Research Population and Sample

In this study, the term researchers refers to students and lecturers who have conducted research related to automotive. Since the population of researchers is unknown, the sample size will be calculated using Cochran's formula, with a desired level of accuracy of 90%, resulting in a tolerance error (e) of 10% (Sugiyono, 2019). For further details, please see the following formula:

$n = \frac{z^2pq}{e^2} = \frac{1{,}95^2(0{,}5)(0{,}5)}{(0{,}10)^2}$ = 95,06 people = 96 people

Note:

n : Number of samples required
z : The price in the normal curve for a 5% deviation, with a value of 1.95
p : 50% chance of being correct (0.5)
q : 50% chance of being wrong (0.5)
e : Sampling error (10%)

Therefore, the minimum sample size required for this study is 96 people. However, the sample size used in this study is 100 people. To find the number of samples, 80 people were obtained online and 20 people offline.

Gokart Sport Population and Sample

The population in this study are visitors who come to the Batu Night Spectacular (BNS) go-kart game. Therefore, the first step in determining the sample size is to know the number of visitors (population) at the BNS entertainment location. Based on data obtained from BNS for 7 days, starting from Monday (October 23, 2023) to Sunday (October 29, 2023), the number of visitors participating in the go-kart game is 406 people over one week. To calculate the number of samples required for the go-kart activity with the desired accuracy level of 90% and a tolerance error (e) of 10% (Sugiyono, 2019). For further details, please see the following formula:

$n = \frac{N}{1+N(e^2)} = \frac{406}{1+406(0{,}1^2)}$ = 80,237 people = 81 people

Note:

n : Number of samples required
N (Population size) : 406 people (within one week)
E (Sampling error) : 10%

Therefore, the minimum sample size required for this study is 81 people. However, the sample size used in this study is 100 people. To find the number of samples, 30 people were obtained online and 70 people offline.

Analysis Method

The questionnaire used for data collection needs to be tested for validity and reliability beforehand. This testing aims to determine whether the questionnaire is suitable for use as a data source or not. After conducting the validity and reliability tests, the questionnaire can be distributed to automotive researchers and go-kart visitors at BNS. The analysis used is the

Multiple Linear Regression Analysis Model through the help of SPSS software. The steps involved in the testing include:

1. **Normality Test**
   The normality test aims to determine whether both the independent variable and the dependent variable in the regression model have a normal distribution or not. If the Significance Value or Probability Value is greater than 0.05, then the data is normally distributed. A good regression model is one that has a normal distribution or is close to normal (Ghozali, 2018).
2. **Heteroskedasticity Test**
   The The heteroskedasticity test aims to determine whether there is a disparity in the variable of residuals from one observation to another within the regression model (Ghozali, 2018).
3. **Multicollinearity Test**
   The multicollinearity test aims to determine whether there is a strong correlation (relationship) among the independent variables in the regression model (Ghozali, 2018). A good regression model should not exhibit correlation among independent variables or multicollinearity.
4. **Autocorrelation Test**
   The autocorrelation test aims to determine whether there is a correlation between the error terms at period t−1 (previous period) in a linear regression model. A good regression model is one that is free from autocorrelation.
5. **Multiple Linear Regression Analysis**
   The Multiple Linear Regression Analysis method is an analysis carried out by correlating one dependent variable with two or more independent variables.
6. **Hypothesis Testing**
   F-Test
   The F-test is used to determine whether all the independent variables included in the research model have a simultaneous or joint effect on the dependent variable (Ghozali, 2018).
   T-Test
   The T-test is used to determine the extent to which the effect of a single independent variable (individual) contributes to explaining the dependent variable (Ghozali, 2018).
7. **Coefficient of Determination**
   The coefficient of determination (R^2) essentially measures how well the model explains the variation in the dependent variable. The value of the coefficient of determination ranges from zero to one. A value close to one means that the independent variables almost provide all the necessary information to predict the variations in the dependent variable (Ghozali, 2016).

RESULTS AND DISCUSSIONS

Research Result for Automotive Researchers

Overview of the ITS Proving Ground Development Plan

Institut Teknologi Sepuluh Nopember (ITS) will be constructing a Proving Ground. The development of the Proving Ground aims to support research on vehicles, including cars, motorcycles, electric vehicles, and others. The Proving Ground has a total area of 23,751 m^2, a track length of 1,402.4 m, and a track area of 11,958.2 m^2. For more details, can be seen in Figure 1:

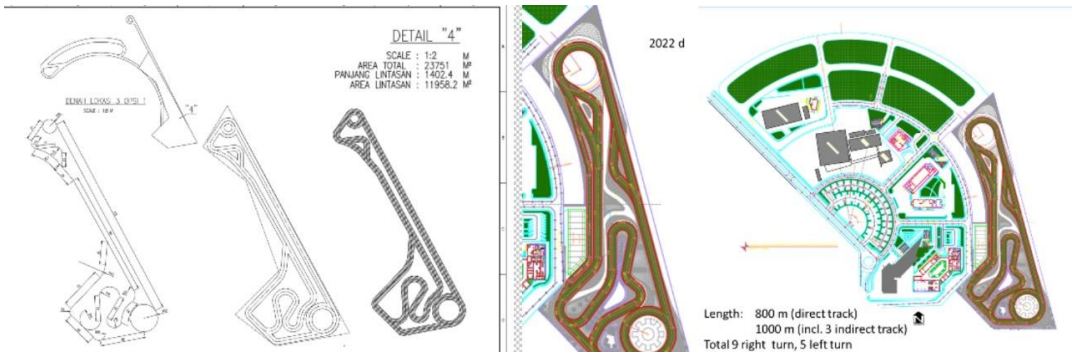

Figure 1. ITS Proving Ground Development Plan (Science Techno Park Otomotif ITS, 2023)

Automotive Research Data Sources

To obtain data on the analysis of this attraction model, questionnaires were distributed at several universities located in East Jawa. Some of these universities can be seen in Table 2:

Table 2.
Source of Automotive Research Data

No.	University Name	Team Name
1	Institut Teknologi Sepuluh Nopember	Antasena ITS Team
		Sapuangin ITS Team
		Anargya ITS Team
		Nogogeni ITS Team
2	University of Jember	Tawang Alun Unej Team
3	Muhammadiyah University of Sidoarjo	IMEI Team
4	State University of Malang	Semeru Team
5	Malang State Polytechnic	Tunas Autron Team
6	Surabaya State University	Bima Cakrawangsa Team
		Garnesa Racing Team
7	Brawijaya University	Apatte62 Brawijaya Team

Based on Table 2, the location selection was adjusted to the focus of the research topic related to automotive researchers.

Data Recapitulation for Automotive Researcher

Secondary data is obtained through google earth and googke maps, while primary data such as costs incurred to conduct vehicle training is obtained from interviews. This data will be used as Independent Variables in the calculation of Trip Attraction. The data recapitulation can be seen in Table 3, as follows:

Table 3.
Data Recapitulation for Automotive Researcher

Universities Location		Independent Variables				Dependent Variable
		X1 (km)	**X2 (km)**	**X3 (mnt)**	**X4 (Rp)**	**Y (%)**
Brawijaya University	Jl. Taman Kunang-Kunang, Malang	0.28	1.70	4	Rp 100,000.00	30
	Jl. Jakarta, Kec. Klojen, Malang	0.85	2	4	Rp -	30
	Sirkuit Gelora Bung Tomo	12	115	117	Rp 450,000.00	30
	Stadion Kanjuruhan	0.90	27	53	Rp 200,000.00	10
Malang State Polytechnic	Jl. Taman Kunang-Kunang, Malang	0.28	1.70	4	Rp 100,000.00	100
State University of Malang	Sirkuit Gelora Bung Tomo	12	115	122	Rp 450,000.00	61.54
	Jl. Jakarta, Kec.	0.85	2	4	Rp -	30.77

Universities Location		Independent Variables				Dependent Variable
		X1 (km)	**X2 (km)**	**X3 (mnt)**	**X4 (Rp)**	**Y (%)**
	Klojen, Malang					
	In the area around the campus	1.15	1	3	Rp -	0.00
ITS	Sirkuit Kenjeran Park	1.1	3.5	9	Rp 750,000.00	13.33
	Sirkuit Gelora Bung Tomo	12	30.8	54	Rp 450,000.00	66.67
	Jalan Masuk PPNS	0.23	2	3	Rp -	13.33
	Jalan perumahan Pondok Tjandra	1.14	9.4	20	Rp 150,000.00	6.67
Surabaya State University	Sirkuit Gelora Bung Tomo	12	29	43	Rp 450,000.00	100
Muhammadiyah University of Sidoarjo	Mall pelayanan publik (MPP)	0.57	5.4	12	Rp 250,000.00	75
University of Jember	In the area around the campus	2.34	2	3	Rp -	85.71

Note:

X1 : Circuit Length (km)

X2 : Distance Traveled by Researcher to the Vehicle Training Site (km)

X3 : Researches's Travel Time to the Vehicle Training Site (minute)

X4 : Cost (rupiah)

Y : Persentage of Total Visitors Interested in doing Vehicle Training, if a Proving Ground is avalilable at ITS (%)

Automotive Researcher Trip Attraction Analysis

The calculation of Automotive Researcher Trip Attraction with the most influencing variables are Circuit Length and Travel Time. Recapitulation of the results of Simple Linear Regression Analysis and Multiple Linear Regression Analysis for Automotive Researcher Trip Attraction can be seen in the Tabel 4, as follows:

Table 4.
Recapitulation of Linier Regression Analysis Results Y (Automotive Researcher)

Model Y Automotive Researcher	Independet Variables	R^2
Y = 33,530 + 2,601 X1	X1	0.146
Y = 41,097 + 0,080 X3	X3	0.009
Y = 36,589 + 6,412 X1 – 0,584 X3	X1,X3	0.297

The results of the calculation of the R^2 value on the Automotive Researcher's Trip Attraction were found to be 0.297. For more details can be seen in Table 4.5, as follows:

Table 5.
R^2 Value for X1 and X3 on Y (Automotive Researchers).

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.545[a]	.297	.180	31.48353	.940

a. Predictors: (Constant), Waktu Tempuh, Panjang Sirkuit

b. Dependent Variable: Persentase Total yang Tertarik malakukan Latihan Kendaraan, jika di ITS tersedia Proving Ground

While the constant value of the test results of the Independent Variables on Trip Attraction (Y) for automotive researchers, can be seen in Table 6, as follows:

Table 6.
Constan Value of X1 and X3 on Y (Automotive Researcher)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	36.589	10.477		3.492	.004		
	Panjang Sirkuit	6.412	2.891	.943	2.218	.047	.324	3.087
	Waktu Tempuh	-.584	.364	-.682	-1.603	.135	.324	3.087

a. Dependent Variable: Persentase Total Responden yang Tertarik malakukan Latihan Kendaraan, jika di ITS tersedia Proving Ground

Based on the data in Table 6, the resulting trip attraction model equation for automotive researchers is:

Y : 36,589 + 6,412 X1 – 0,584 X3

R^2 : 0,297

Note:

X1 : Circuit Length (km)

X3 : Researches's Travel Time to the Vehicle Training Site (minute)

Y : Persentage of Total Visitors Interested in doing Vehicle Training, if a Proving Ground is avalilable at ITS (%)

Based on the results of the calculation of Trip Attraction for Automotive Researchers with several Independent Variables, the best model used as a Trip Attraction Model for Automotive Researchers is influenced by 2 Independent Variables, namely the Circuit Length Variable (X1) and Travel Time (X3) with the R^2 value obtained of 0.297.

The equation for the trip attraction model for automotive researchers can explained as follows:

1. The value of the constant is 36,589, indicates that if the values of Circuit Length (X1) and Travel Time (X3) are both zero, then the trip attraction (Y) to the ITS Testing Field is 36,589.
2. The obtained coefficient for Circuit Length (PS) is 6,412, indicating a positive effect. This result can be summarized as follows: as the circuit length increases, the percentage of trip attraction generated also increases.
3. The obtained coefficient for Travel Time (X3) is (-) 0,584, indicating a negative effect. The negative sign indicates an inverse relationship between trip attraction and the time to reach variable. This can be summarized as follows: as the time to reach increases, the trip attraction generated decreases. Conversely, as the time to reach decreases, the trip attraction generated increases.

Calculating the Percentage of Trip Attraction from Universities

The example for calculating the percentage of trip attraction is taken from Universitas Negeri Surabaya. For a clearer understanding, please refer to the following calculation:

Y = 36,589 + 6.412 X1 (Circuit Length) – 0,584 X3 (Travel Time)
= 36,589 + 3,277 (1,402) – 0,584 (55)
= 13% per tahun

The results of the calculations show that the percentage of respondents from Surabaya State University interested in visiting the ITS Proving Ground is 13% for a year. To calculate the percentage of attraction of travel from other universities, it can be seen in Table 7 as follows:

Table 7.
The Percentage of Trip Attraction from other Universities

Location of Universities	Independent Variables		Dependent Variable
	X1	X3	Y
	Circuit Length ITS	Travel Time to Circuit ITS	Persentage of Total Visitors Interested in doing Vehicle Training, if a Proving Ground is avalilable at ITS (%)
	(km)	(mnt)	(%)
Brawijaya University	1,402	118	-23,331
Malang State Polytechnic	1,402	121	-25,083
ITS	1,402	5	42,661
Surabaya State University	1,402	55	13,461
Muhammadiyah University of Sidoarjo	1,402	67	6,453
University of Jember	1,402	92	-8,147

Table 7 indicates the results of the percentage of trip attraction for automotive researchers at several universities to the Proving Ground ITS. The results show that the trip attraction generated by automotive researchers from UB, POLINEMA, UM, and UNEJ to the ITS Proving Ground is 0%. Furthermore, the trip attraction generated by automotive researchers from ITS is 42,6%, from UNESA is 13,4% and from UMSIDA is 6,45%.

Calculating the Number of Trip Attraction from Universities

Based on the percentage of trip attractions to the ITS Proving Ground, the next step is to calculate the number of attractions generated by each university. To calculate the number of trip attractions, the following data are required: the percentage of trip attraction, the number of automotive researchers from each university, and the total number of researchers visiting the vehicle testing site. The following steps will be outlined to calculate the number of trip attractions from respondents at Surabaya State Universities. For further details, please refer to the following:

Total UNESA Trip Attraction/year = Percentage interested x Total Researchers Automotive x Average Number Visit/year
= 13,4% x 85 x 6
= 63,65 person/year
= 64 person/year

$$\text{Total UNESA Trip Attraction/week} = \frac{\text{Total UNESA Trip Attraction/year}}{52}$$

= 2 person/week

The calculation results indicate that the number of respondents from Surabaya State Universities (UNESA) interested in visiting the ITS Proving Ground is 2 per week. To calculate the trip attractions from other universities, refer to Table 4.8 as follows:

Table 8.
Number of Trip Attractions per Week From Universities

Location of Universities	Persentage of Total Visitors Interested in doing Vehicle Training, if a Proving Ground is avalilable at ITS (%)	Number of Otomotive Researchers	Average Number of Visits/year	Number of Trip Attraction/week
Institut Teknologi Sepuluh Nopember	42,661%	204	7	12 person/week
Surabaya State University	13,461%	85	6	2 person/week
Muhammadiyah University of Sidoarjo	6,453%	35	4	1 person/week

The results in Table 8 can be summarized as follows: the predicted tripl attraction to the ITS Proving Ground is 12 people per week from Institut Teknologi Sepuluh Nopember, 2 people per week from Universitas Negeri Surabaya, and 1 person per week from Universitas Muhammadiyah Sidoarjo.

Research Results for Gokart Sports Visitors

Data Recapitulation

The secondary data was obtained through Google Earth and Google Maps, while the primary data such as the cost incurred for go-karting was collected from interviews. This data will be used as the Independent Variable in the calculation of Travel Attractions for go-karting visitors. The summary of the data can be seen in Table 4.9, as follows:

Tabel 9.
Recapitulation of Gokart Sports Data

Regional Distribution of BNS Visitors	Independent Variables			Dependent Variable
	X1	X2	X3	Y
	(km)	(menit)	(Rp)	(Orang/2hari)
Malang	17,08	34,18	Rp 98,214.29	26
Pasuruan	69,53	78	Rp 95,000.00	4
Mojokerto	63,10	114	Rp 190,000.00	2
Kediri	72,42	145,60	Rp 112,000.00	3
Sidoarjo	82,66	89,64	Rp 120,000.00	14
Tulungagung	106	184	Rp 100,000.00	1
Surabaya	106,69	115,63	Rp 106,250.00	16
Jember	157.25	184.5	Rp 101,250.00	4
Tuban	203	244	Rp 145,000.00	2
Banyuwangi	310	362.5	Rp 140,000.00	4
Outside East Jawa Region	624.50	917	Rp 112,812.50	8

Note:
X1 : Average distance traveled to BNS (km)
X2 : Average traveled time to BNS (minutes)
X3 : Costs incurred (rupiah)
Y : The number of visitors attracted to the ITS Proving Ground, if the Gokart Sports Provided.

Gokart Sports Trip Attraction Analysis

The calculation of Trip Attraction for Go-Karting with the most influential variables are Travel Distance (X1), Travel Time (X2) and Cost (X3). For more details can be seen in Table 10.

Tabel 10.
Recapitulation of Linier Regression Analysis Results Y (Gokart Sports)

Model Y of Gokart Sports	Independent Variables	R^2
Y = 9,040 – 0,009 X1	Distance Traveled (X1)	0,035
Y = 8,997 – 0,006 X2	Time Traveled (X2)	0.036
Y = 20,569 – 0,00009 X3	Cost (X3)	0,127
Y = 20,569 – 0,08 X1 – 0,011 X2 – 0,00009 X3	X1, X2, X3	0,161

The results of the R^2 value calculation for the Trip Attraction of Go-Karting can be seen in Table 11, as follows:

Table 11.
The R^2 Values for X1, X2 and X3 with Respect to Y (Go-Karting)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.401[a]	.161	-.199	8.59779	2.548

a. Predictors: (Constant), Biaya, Waktu Tempuh, Jarak Tempuh

b. Dependent Variable: Jumlah yang tertarik menuju ke Lapangan Uji ITS, jika disediakan olahraga gokart

The value of the constant from the terting of the Independent Variables against the Trip Attraction for go-karting can be seen in Table 12, as follows:

Table 12.
Constant Value of X1, X2 and X3 on Y (Gokart Sport)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	20.569	11.967		1.719	.129		
	Jarak Tempuh	.008	.099	.176	.081	.938	.025	39.314
	Waktu Tempuh	-.011	.069	-.354	-.163	.875	.025	39.288
	Biaya	-9.766E-5	.000	-.354	-1.019	.342	.995	1.005

a. Dependent Variable: Jumlah yang tertarik menuju ke Lapangan Uji ITS, jika disediakan olahraga gokart

Based on the data in Table 12, the resulting equation for the Trip Attractions Model for the Trip Attraction Model for Go-Karting Researchers is:

Y : 20,569 – 0,08 X1 – 0,011 X2 – 0,00009 X3

R^2 : 0,161

Note:

Y : The number of people interested in visiting the ITS Proving Ground if go-karting is provided.

X1 : Distance Traveled (km)

X2 : Time Traveled (km)

X3 : Cost (rupiah)

Based on the results of the Trip Attractions calculation for go-karting visitors with several independents variables, the best model used as the Trip Attraction Model for go-karting is the Distance, Time and Cost Variables with an R^2 value of 0,161. The Trip Attraction Model for Go-karting can be explained as follows:

1. The constant value of 20,569 indicates that if the Distance, Time and Cost are both zero, the trip attraction (Y) to gokarting is 20,569.

2. The coefficient for Distance is (-) 0.08, indicating a negative effect. The negative sign shows an inverse relationship between trip attraction and the distance variable. This result can be summarized as follows: the travel attraction decreases as the distance increases, and it increases as the distance decreases.
3. The coefficient for Time is (-) 0.011, indicating a negative effect. The negative sign shows an inverse relationship between travel attraction and the time variable. This result can be summarized as follows: the travel attraction decreases as the time increases, and it increases as the time decreases.
4. The coefficient for Cost (B) is (-) 0.00009, indicating a negative effect. The negative sign shows an inverse relationship between travel attraction and the cost variable. This result can be summarized as follows: the travel attraction decreases as the cost increases, and it increases as the cost decreases.

Calculating the Number of Trip Attractions to Gokart Sport

Based on the obtained model equation, the next step is to calculate the number of travel attractions to go-karting. One example is calculating the number of travel attractions from Malang City. The steps for the calculation can be seen in Table 13, as follows:

Table 13.
Number of Trip Attractions per day for Gokart Sport

Regional Distribution of BNS Visitors	Travel Distance to ITS Gokart Sports	Travel Time to ITS Gokart Sports	Cost Incurred		Total Trip Attractions/day
Malang City	93	171	Rp	98.214,29	1
Pasuruan	66	129	Rp	95.000,00	3
Mojokerto	54	99	Rp	190.000,00	0
Kediri	131	204	Rp	112.000,00	0
Sidoarjo	30	72	Rp	120.000,00	4
Tulungagung	160	251	Rp	100.000,00	0
Surabaya	9,8	27	Rp	106.250,00	5
Jombang	83	316	Rp	101.250,00	1
Tuban	112	171	Rp	145.000,00	0
Banyuwangi	296	433	Rp	140.000,00	0
Outside East Jawa Region	414	582	Rp	112.812,50	0

Table 13 shows the number of travel attractions for go-karting visitors in various regions. It can be concluded that the travel attraction to the ITS Go-Kart from Malang and Jombang is 1 person per day, from Pasuruan is 3 people per day, from Sidoarjo is 4 people per day, and from Surabaya is 5 people per day.

CONCLUTION

Based on the results of data analysis and discussion of the results, it can be concluded as follows: Based on the results obtained using the Multiple Linear Regression method, the factors influencing the trip attractions of automotive researchers to the proving ground to be built at ITS are Circuit Length and Travel Time. The best model for the trip attractions of automotive researchers to the ITS Proving Ground is given by the following equation: $Y = 36,589 + 6,412\ X1 – 0,584\ X3$The R^2 value for the travel attractions calculation is 0.297. Based on the resulting model equation, it can be concluded that the predicted number of travel attractions to the ITS Proving Ground is 12 people per week from ITS, 2 people per week from UNESA, and 4 people per week from UMSIDA.Based on the results obtained using the Multiple Linear Regression method, the factors influencing the travel attractions of visitors to the Proving Ground at ITS, which will also be used for go-karting, are Distance, Time, and Cost. The best model for the

trip attractions of go-karting visitors, obtained as follows: Y = 20,569 – 0,08 X1 – 0,011 X2 – 0,00009 B The R^2 value for the go-karting trip attractions calculation is 0.161. Based on the resulting model equation, it can be concluded that the predicted number of trip attractions to the ITS Proving Ground is 1 person per day from Malang and Jombang, 3 people per day from Pasuruan, 4 people per day from Sidoarjo, and 5 people per day from Surabaya.

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