

## Transportation Expenditure Differences on Weekdays and Weekend

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**ABSTRACT:** This study examines the differences for transportation expenditure between weekdays and weekend consumption. The purpose of this study to find out whether the use transportation on weekdays or what commonly called a workday is different from weekend or what commonly called holiday. The data collection is used by delivering questionnaires to 100 respondents randomly. The independent t-test is used in this study to analyze the data. The results of the analysis obtained shows that there is mean difference between transportation expenditure on Weekdays and Weekend. The  $t_{test}$  value shows positive (+) sign to justify that weekday group (first group) has higher mean value than weekend group (second group). This study implies the policy of public transportation in increasing its quality and the habitual or culture of the community.

**KEYWORDS:** Time, Expenditure, Transportation, Independent Sample t-test.

### 1 INTRODUCTION

Transportation online is one of the newest service innovation in m-commerce. Online transportation service or ride-sharing is an individual transportation services where a customer can order a ride [1]. Transportation industry is the largest sector of the global economy and it changes rapidly according to the innovations of technology [2]. The concept of transportation is based on the destination of travel between origin and destination. Travel is the movement of people and goods between two separate places of activity to carry out individual or group activities in the community. The trip is carried out through certain paths that connect the origin and destination using a conveyance or vehicle with a certain speed.

Motorcycle for example, this iron horse is the most needed transportation by the people of Indonesia. In fact, almost every family member must have at least one motorcycle for their transportation needs. But many things must be a concern in motorbike riding in Indonesia. Like speeding on the road and not obeying traffic. Motorcycle driver behavior is influenced by many factors, including personal characteristics [3]. Many factors cause motorbikes to be very in demand in Indonesia, for example, prices that are affordable, practical, fuel efficient, affordable, congestion, flexible, etc. Motorcycles are the main contributor to traffic accidents and fatalities due to their popularity as an effective vehicle to jump traffic jams [4].

Looking at this phenomenon, it is used by some people who are starting to build startups like the current CEO of Gojek, Nadiem Makarim. Graduated from Harvard Business School located at Soldiers Field Road, Boston, Massachusetts and was one of Harvard University's undergraduate programs in 2011. After graduating, in 2011 Nadiem Makarim launched an application called Gojek. The Gojek business has actually been started since 2011, but it was only in early 2015 that the Nadiem Company launched a motorcycle taxi booking application for Android and iPhone smartphones. This application connects every motorcycle taxi partner online for customers who want to quickly be able to buy from home. Gojek is an Indonesian application that helps its costumer to book motorcycle taxi within their driver to move to one place to other, charging reasonably low fare compared to the conventional bike [5]. In other side Uber left from Indonesia also Southeast Asia and merger with Grab. But in the global, Uber is a highly profitable company and revenues [6]. Uber has been successful in defying the norms associated with the transportation segment using innovative practices and extensive data mining algorithms [7]. The reasons why Uber is fail in Indonesia and Southeast Asia and merger with grab. This is because excellent customer experience relates to the positive functional experience of using Grab, including the almost immediate arrival of a Grab car with an estimated time of arrival, a real-time geo-location, and driver ratings as well as value for money [8].

Since the emergence of online motorcycle transportation modes or commonly called "Ojek Online", the needs of most urban people have been helped. Online transportation services have unique characteristics among other m-commerce services in term of the nature of its services [1]. Emergence of mobile transportation app-based has increased the demand on ride services such new entrants like Uber, and Grab services have revamped in the taxi industry which increase competition among local taxi industry and public transportation [9]. Factors that significantly influence the use of online transportation are price, income, service quality and distance. For example, people now find it easier to get transportation directly from home, they don't need to walk to "ojek" pool beforehand, the price is quite competitive compared to conventional motorcycle taxi making people prefer to use online motorcycle transportation, there is a "go-food" service that makes people can buy the food he wants without leaving the house. But the government must pay attention to this. The government is expected to be more careful in conventional transportation price settings so that the price inequality that occurs between online transportation and conventional transportation is not too high. Because not all consumers use online transportation and able to use the internet [10]. Also, the presence of online-based transportation causes conflicts in many areas with conventional transportation. The problem that often arises in the controversy over the emergence of online transportation and conventional transitions is the occurrence of unfair competition between online transportation and conventional transportation [11].

Then in daily life, workers will usually order a motorcycle taxi online, they want to go or go home from the office or where they work. Public transportation helps everyone in meeting their personal and career needs, fulfilling daily needs, and maintaining a level of independence drive [12]. In this conversation explained about the average difference for special transportation in the online motorcycle mode on Monday-Thursday and Friday-Saturday.

## 2 LITERATURE REVIEW

### 2.1 TIME

Time or period is the whole set of times when a process, act, or situation is or take place. In this case, the time scale is the interval between two states / events, or it can be the length of time an event lasts. In the modern world, time is seen as an indefinitely divisible and usable commodity [13]. The time scale can be measured in units of days.

- Weekdays are days that refer to any day in which normal business operations are conducted. This is generally considered Monday to Friday from 9 am to 5 pm local time and does not include weekends and national holidays.
- Weekend is a marker of one or two days a week where the number of people is not working. Usually three days after weekdays.

### 2.2 EXPENDITURE

Expenditures are payments currently made for future obligations in order to obtain several benefits. If done for operating costs, those costs are called operational costs; cash costs for getting goods, services, or operating results. The empirical estimates of the impact of public spending on economic growth vary depending on the country [14].

### 2.3 TRANSPORTATION

Transportation is the movement of people or goods using a vehicle driven by humans, animals or machines. Transportation is used to facilitate humans in carrying out daily activities. Transportation itself is divided into 3 namely land, sea and air transportation. One type of transportation is motorcycle. A motorcycle is a two-wheeled vehicle driven by an engine. There are three things, there are loads being transported, the availability of vehicles as means of transport, and there are roads that can be traversed.

- The online-based transportation companies are firms that connect prospective passengers with drivers via the smartphones' applications [15]. Online transportation services are already well-known and well accepted in developed countries such as USA and Europe countries. In Indonesia, this type of service is now getting popular and many international companies were already started to expand their market in Indonesia [1].
- Conventional transportation is public transportation that we usually use, which is already available on conventional roads. so far conventional transportation in Indonesia, not all is good and comfortable for passengers or users of conventional transportation services.

## 2.4 CONCEPTUAL FRAMEWORK

Conceptual framework explains the path of a research and grounds it firmly in theoretical constructs [16]. Based on the description above, Monday-Thursday will be used as weekday and Friday-Sunday as weekend. This study will measure the differences between both groups (weekday and weekend) in the transportation expenditure.

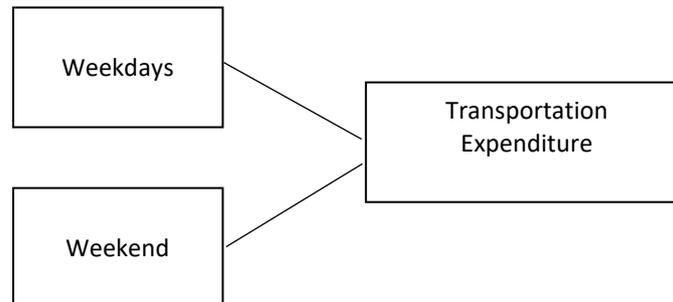


Fig. 1. Conceptual framework

## 3 METHODOLOGY

### 3.1 DATA COLLECTION

This data was obtained from giving several questions to the intended correspondent. From the correspondents answers, 100 data have been classified based on transportation consumption expenditure between working days and weekends. The data also informs whether the average consumption expenditure for transportation on weekdays and weekends is different.

### 3.2 MEASUREMENT TECHNIQUE

The "Statistical Package for the Social Sciences" (SPSS) is a package of programs for manipulating, analyzing, and presenting data; the package is widely used in the social and behavioral sciences [17]. In measuring and analyzing the data that has been obtained, this study used the Independent Sample T-Test method and a Levene test. Independent Sample T-Test means that the Sample T Test is unpaired or unrelated [18]. As said above the Independent Sample T-Test Test aims to compare two samples which are not in pairs. A statistical conclusion of a large or small difference between two groups is not based on an absolute standard but is rather an evaluation of the probability of an event [19].

## 4 RESULTS AND DISCUSSION

Below is a table of Consumer Transportation Behavior based on weekdays or weekends. The table below contains averages for all transportation data consumption. The table below will be processed using the Independent Sample T-Test Method at SPSS as follows.

Table 1. Average Consumer Transportation Cost (in Rupiah)

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
30,180	26,920	31,640	27,080	28,390	28,150	16,760

From the data above, the author then processes and gets the following results:

In statistics it is important to know the method of analyzing data [20]. To find out whether there is an average difference for transportation consumption expenditure on Weekdays with Weekend, it is necessary to make a hypothesis formulation (presumption) of the following research.

$H_0$  = There is no mean difference in transportation consumption expenditure between Weekdays and Weekend.

$H_1$  = There is mean difference in transportation consumption expenditure between Weekdays and Weekend.

Table 2. Group Statistics

	DAY	N	Mean	Std. Deviation	Std. Error Mean
TRANSPORTATION EXPENDITURE	WEEKDAY	100	28955.00	15777.548	1577.755
	WEEKEND	100	24433.29	17897.763	1789.776

Based on the output table "Group Statistics" above it is known that the amount of transportation data for Weekdays and weekends are the same, 100 data because this study used 100 respondents. The mean of transportation expenditure on Weekdays is 28955.00 and on Weekend is 24433.29. Thus, in descriptive statistics it can be concluded the mean differences for transportation expenditure between Weekdays and Weekend. Furthermore, to prove whether the difference is significant (real) or not, the "Independent Samples Test" is used to interpret the output as shown in

Table 3. Independent Samples Test

		TRANSPORTATION EXPENDITURE		
		Equal variances assumed	Equal variances not assumed	
Levene's Test for Equality of Variances	F	.059		
	Sig.	.808		
t-test for Equality of Means	t	1.895	1.895	
	df	198	194.933	
	Sig. (2-tailed)	.060	.060	
	Mean Difference	4521.710	4521.710	
	Std. Error Difference	2385.919	2385.919	
	95% Confidence Interval of the Difference	Lower	-183.364	-183.819
		Upper	9226.784	9227.239

The homogeneity test should be run before t-test itself. Based on the above output, Sig. Levene's Test for Equality of Variance is 0.059 > 0.05, which means that the data variance between Weekdays and Weekend is homogeneous or the same. So that the interpretation of the Independent Samples Test output table above is based on the values contained in the "Equal Variances Assumed" table.

Based on the "Independent Samples Test" output table in the "Equal Variances Assumed" section, using the sig. level 0.05 or 5%,  $t_{test}$  is 1.895 as shown in table. The  $t_{table}$  counted by excel program is 1.984, so  $t_{test} < t_{table}$ . Sig. (2-tailed) value as one of the test criteria is 0.060 > 0.05, then it can be concluded that  $H_0$  is rejected and  $H_1$  is accepted. The area of  $H_1$  acceptance will be  $t_{test} < -1.984$  and  $t_{test} > 1.984$ . Thus, it can be concluded that there is mean difference between transportation expenditure on Weekdays and Weekend.

Furthermore, the difference is seen from  $t_{test}$  value, as this value has positive (+) sign, then it shows the weekday group (first group) has higher mean value than weekend group (second group). Back to group statistic table, the mean of transportation expenditure on Weekdays is 28,955.00 and on weekend is 24,433.29. The output table above known "Mean Difference" value is 4,521.710. The range of the difference is from 1183.364 to 9,226.784.

In fact, most respondents use their own vehicles, either motorcycles or cars because it is easier for them to mobile from one place to another without having to wait to be commuted. Most of the transportation mode used in Surabaya city, Indonesia are motorcycles because riding motorcycle is cheaper and faster to get the destination even though in the traffic jam. During the weekdays, most respondents used vehicles not only to work but also to go for casual meetings with friends or relatives. So, the mean of the expenditure during weekdays is higher than weekends. On the weekends, in this study counts from Fridays to Sundays, most of respondents stay at home to take some rest or quality time with families. Although they may have to go out with families on weekend, the transportation cost is not as high as on weekday because going out such as going for picnic, having lunch or dinner out, etc. will not be too frequent, it may be only once a month. The rest of days of the month, they still have to pay the transportation cost for going to offices, schools or else.

## 5 CONCLUSION AND SUGGESTION

This study found during weekday (Monday-Thursday) the expenditure of transportation is different than on weekend (Friday-Sunday). It means that time may bring effect to the cost of transporting transportation, in other words the transportation cost depends by the consumers depends on consumption time. During weekday, the cost of transportation is higher than the weekend. This study implies two issues, such as the government policy to increase public transportation quality so that the community can save their weekday transportation costs. The second issue is about the macro culture of the community about how they go to work, schools or else during weekday and how they spend time with families during weekends that intend to affect the transportation expenditures.

So, in the future, the further research is suggested to have more respondents, more cities to study and raise the issues of public transportation policy and how the culture influences the transportation expenditure of a family or an individual.

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