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## ECONOMIC ADAPTATION STRATEGY FOR RICKSHAW RIDERS FACING MODERN COMPETITION IN THE CITY OF SOLO

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### *Abstract*

*This study aims to 1) determine the characteristics of pedicab drivers in Solo and 2) find out the economic adaptation strategies undertaken by pedicab drivers in Solo. The data processed in this study are primary data obtained by the author through the distribution of questionnaires, interviews, and direct observations of respondent's pedicab drivers in Solo. The analysis technique used is univariate analysis, bivariate analysis, and descriptive analysis. The results showed that: 1) the characteristics of age, level of education, and address of respondents had a statistically significant effect on the decision of the respondents to have side jobs, while the characteristics of the number of dependents and average income per month had an insignificant effect on the decision of the respondents to have side jobs, 2) the economic adaptation strategies that pedicab drivers in Solo do is by having a part-time job beside pulling pedicabs, besides that they make savings and there are family members who are already working who can help meet their daily needs.*

**Keywords:** *Modernization; Pedicab; Economic Adaptation Strategy*

**JEL classification:** *O18*

## 1. INTRODUCTION

Modernization is a life process that cannot be avoided and will always develop along with human life processes. Modernization can be interpreted as a human effort to facilitate his work (Rizal et al., 2021). Modernization has touched all aspects of people's lives, including in the field of transportation. Along with the continued development of technology and the human desire to create convenience, innovation in the field of transport continues to be developed. In Indonesia, young Indonesians compete to create innovations that are not inferior to foreign countries in transportation. What is currently booming is emergency start-ups such as Go-Jek and Grab, which use gadget media and the internet as the main instruments in running a business.

Emergence starts such as Go-Jek and Grab bring changes in people's social lives, especially in the field of transportation in Indonesia. The presence of start-ups provides opportunities and convenience for humans to carry out their work in the area of transportation (Hardiansyah & Tricahyono, 2019).

However, this technological development also has a negative impact, especially on conventional vehicles, and rickshaws are one of them. The existence of pedicabs is increasingly being eroded by other, more advanced means of transportation, such as motorbike taxis and

taxis, and now online-based transportation has emerged, which provides more alternative conveniences for humans.

Solo City is one of the cities with the most pedicabs in Indonesia. Along with the increasing emergence of online motorcycle taxis, the number of pedicabs in Solo continues to decrease (Sari et al., 2017). Based on information obtained from the Chairman of the Pedicab Association in Solo, Mr. Rusdi (51), the number of pedicabs in the city of Solo has decreased yearly. In the 1980s, the number of pedicabs in Solo reached 17,000 units, then decreased when the tragedy occurred from 98 to 10,000 units, and continued to decrease as taxis became more widespread in 2010 to 7,000 units. The emergence of online motorcycle taxis such as GoJek and Grab in Solo increasingly squeezes the existence of pedicabs. In 2018, the number of pedicabs remaining was 3,000 units.

The development of increasingly advanced and modern means of transportation has made pedicabs the number one means of transportation and not the first choice for humans. Today's humans demand fast and efficient jobs, whereas by using a rickshaw, the travel time required is clearly longer compared to other means of transportation. This makes the pedicab increasingly eliminated by itself. The loneliness of passengers is not the only problem faced by pedicab drivers. The increasing price of basic necessities is another problem that adds to the burden on pedicab drivers in the city of Solo.

## **2. RESEARCH METHOD**

This research examines the phenomenon of modernization and its impact on people's lives, in this case, especially pedicab drivers in the city of Solo.

The research was conducted by extracting information about the characteristics and life of pedicab drivers in the city of Solo from an economic perspective by looking at the realities that occur in the field.

Sources of data processed in this study are primary data. Primary data is obtained directly by the author through field research. The data used is in the form of pedicab driver characteristics in Solo which were obtained through questionnaires, interviews, and field observations.

The variables used in this study are the characteristics of pedicab drivers, namely age, education level, address, number of dependents, and average income per month from pulling pedicabs. These five characteristics will become independent variables, influencing other variables (Sugiyono, 2012). In contrast, the variable that is affected (dependent variable) used in this study is a part-time job done by pedicab drivers.

The analytical tool used in this study was the SPSS 21 application. Meanwhile, data analysis was performed using three types of analysis: univariate, bivariate, and descriptive.

1. The univariate analysis aims to explain the characteristics of each variable, both the independent variable and the dependent variable, by looking at their respective distributions.
2. The bivariate analysis aims to determine whether there is a relationship between the independent variables and the dependent variable. The statistical test used in this study is the Chi-Square test.
3. Descriptive analysis is an analysis used to describe data that has been collected as it is without the aim of making general conclusions or generalizations (Sugiyono, 2009).

### 3. RESULTS AND DISCUSSION

#### 3.1 Results

##### Univariate analysis

The following will explain the results of the univariate analysis in this study.

**Table 1.**  
**Distribution of Pedicab Driver Respondent's Characteristics in Solo**

Variable	Frekuensi	Proporsi
<b>Age</b>		
30 - 45 year	34	11%
46 - 60 year	192	62%
61 - 75 year	83	27%
Total	309	100%
<b>Study</b>		
tidak sekolah	10	3%
tidak tamat SD	26	8%
SD	195	63%
tidak tamat SMP	24	8%
SMP	43	14%
tidak tamat SMA	9	3%
SMA	2	1%
Total	309	100%
<b>Address</b>		
Solo	84	27%
Luar Solo	225	73%
Total	309	100%
<b>The number of dependents</b>		
0	109	35%
1-3	198	64%
>3	2	1%
Total	309	100%
<b>Average income of being a pedicab driver</b>		
<500rb	80	26%
500rb-1jt/bln	188	61%
1-2jt/bln	41	13%
Total	309	100%

Source: pedicab driver data, processed in 2020

Based on the analysis results in table 1, the distribution of respondents based on age, education level, address, number of dependents, and average income per month can be seen. The age of respondents was categorized into three groups, namely the group of respondents aged 30-45 years, 46-60 years, and 61-75 years. Of the 309 respondents, it was found that 34 respondents (11%) were aged 30-45 years, 192 respondents (62%) were aged 46-60 years, and 83 respondents (27%) were aged 61-75 years.

The level of education was categorized into six groups, including not attending school, not completing elementary school, elementary school, not completing junior high school, junior high school, not completing high school, and high school. Of the 309 respondents, there were ten pedicab drivers (3%) who had no education at all, 26 pedicab drivers (8%) who only attended elementary school but did not graduate, 195 pedicab drivers (63%) graduated from elementary school, 24 pedicab drivers (8%) did not finish junior high school, 43 pedicab drivers (14%) graduated from junior high school, nine pedicab drivers (3%) did not finish high school, and only two pedicab drivers (1%) graduated from high school.

Respondents' residences were categorized into two groups, namely groups living in Solo and outside Solo. Of the 309 respondents, 84 pedicab drivers (27%) lived in Solo, and the remaining 225 respondents (73%) were pedicab drivers from outside Solo.

The number of dependents of respondents was categorized into three groups, namely the first group had no dependents, as many as 109 respondents (35%). The second group had 1-3 dependents, as many as 198 respondents (64%), and the third group had more than three dependents, as many as two respondents (1%).

The average monthly income is categorized into three groups: the group with income. In this study, respondents were divided into two groups: those with part-time jobs to support their lives and those who did not have a side job other than driving pedicabs.

Based on the analysis results in table 2, it can be seen that out of 309 respondents, 192 respondents (62) had part-time jobs, and the remaining 117 respondents (38%) did not have part-time jobs.

**Table 2.**  
**Frequency Distribution of Pedicab Drivers Who Have Part-time Jobs**

Variable	Frequency	Proportion
Respondents who have part-time jobs		
Got a sideline (Yeah)	192	62%
Don't have a sideline (No)	117	38%
Total	309	100%

Source: pedicab driver data, processed in 2020

### **Bivariate Analysis**

Bivariate analysis is an analysis conducted to see if there is a relationship between two variables, namely the dependent variable, which consists of part-time, and the independent variable, which consists of age, education level, address, number of

dependents, and average income per month which are the characteristics of the respondents.

The statistical test carried out in this study is TestChi-Square. The degree of confidence used is 95% ( $\alpha=0.05$ ). If the P-value is greater than  $\alpha$  ( $p > 0.05$ ), it means that there is no significant relationship between the independent variables and the dependent variable. If the P-value is less than  $\alpha$  ( $p < 0.05$ ), it means that there is a significant relationship between the independent variable and the dependent variable.

**Table 3.**  
**Bivariate Results of Age, Education Level, Address, Number of Dependents, and Level of Income for Pedicab Driver Part-time Jobs**

Variable	Part-time		No		Total		PValue	OR
	Of n	%	n	%	n	%		
Age								
≤45 years old	28	82%	6	18%	34	100%	0,010	3,159
46 years - 75 years	164	60%	111	40%	275	100%		
Total	192	62%	117	38%	309	100%		
Level of education								
low	147	58%	108	42%	255	100%	0,000	0,272
secondary	45	83%	9	17%	54	100%		
Total	192	62%	117	38%	309	100%		
Address								
Alone	40	48%	44	52%	84	100%	0,001	0,437
Outside Solo	152	68%	73	32%	225	100%		
Total	192	62%	117	38%	309	100%		
The number of dependents								
have no responsibility	69	63%	40	37%	109	100%	0,755	1,080
have dependents	123	61,5%	77	38,5%	200	100%		
Total	192	62%	117	38%	309	100%		
Average income to be a pedicab driver								
low	172	64%	96	36%	268	100%	0,058	1,881
currently	20	49%	21	51%	41	100%		

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Total	192	62%	117	38%	309	100%
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Source: pedicab driver data, processed in 2020

The results of the analysis of the relationship between age and part-time jobs carried out by pedicab drivers in table 3 show that of the 34 respondents aged 45 and under, there were 28 respondents (82%) who had a part-time job, and the remaining six respondents (18%) did not have a part-time job other than rickshaw pull. While of the 275 respondents aged over 45 years (46-75 years), there were 192 respondents (60%) had part-time jobs, and the remaining 111 respondents (40%) did not have part-time jobs.

Based on the results of statistical tests obtained Pvalue of 0.010, which means that at  $\alpha$  5%, there is a significant relationship between age and part-time work. The results of the analysis also obtained an OR value of 3.159, meaning that pedicab drivers aged  $\leq 45$  years have the possibility of doing a part-time job 3.159 times compared to pedicab drivers aged 46-75 years.

The results of the analysis of the relationship between education level and part-time work show that out of 255 respondents with low levels of education, that is, those who did not graduate from junior high school and below, there were 147 pedicab drivers (58%) who had a part-time job and 108 pedicab drivers (42%) who did not have a part-time job. Meanwhile, of the 54 respondents with secondary education, namely pedicab drivers who graduated from junior high school to high school, 45 respondents (83%) had part-time jobs, and the remaining nine respondents (17%) did not have part-time jobs.

Based on the results of statistical tests obtained Pvalue of 0.000 at  $\alpha=5\%$ , meaning that there is a significant relationship between education level and part-time jobs. The results of the analysis also obtained an OR value of 0.272, meaning that pedicab drivers with a low level of education have the possibility of doing part-time jobs 0.272 times compared to pedicab drivers with middle-level education.

The analysis of the relationship between address and part-time work shows that of the 84 respondents whose address is Solo City, 40 respondents (48%) have part-time jobs, and 44 respondents (52%) do not have part-time jobs. Meanwhile, of the 225 respondents who came from outside the city of Solo, 152 respondents (68%) had part-time jobs and 73 respondents (32%) did not.

Statistical test results obtained Pvalue of 0.001, meaning that at  $\alpha=5\%$ , there is a significant relationship between address and part-time jobs. From the results of the analysis, the OR value was also 0.437, which means that pedicab drivers from Solo City have a 0.437 times chance compared to pedicab drivers from outside Solo City to have a part-time job.

The analysis of the relationship between the number of dependents and part-time jobs shows that of the 109 respondents who did not have dependents, 69 respondents (63%) had part-time jobs, and 40 respondents (37%) did not have part-time jobs. While of the 200 respondents who have dependents, 123 respondents (61.5%) have part-time jobs, and the remaining 77 respondents (38.5%) do not.

Statistical test results obtained Pvalue 0.755, means that at  $\alpha = 5\%$  there is no significant relationship between the number of dependents and part time jobs. The analysis results also obtained an OR value of 1.080, meaning that pedicab drivers who do not have

dependents are 1.080 times more likely to have a part-time job than pedicab drivers who have dependents.

The analysis of the relationship between average monthly income and part-time jobs shows that out of 268 pedicab drivers with low incomes, 172 respondents (64%) have part-time jobs, and 96 respondents (36%) do not. Meanwhile, of the 41 pedicab drivers who have moderate income, there are 20 respondents (49%) who have part-time jobs, and the remaining 21 respondents (51%) do not have part-time jobs.

Statistical test results obtained Pvalue 0.058, which means that at  $\alpha = 5\%$  there is no significant relationship between the average monthly income and part time jobs. The results of the analysis also obtained an OR value of 1.881, which means that a pedicab driver with a low income is 1.881 times more likely than a pedicab driver with a moderate income to have a part-time job.

### Descriptive Analysis

Based on the results of research using field observation methods and interviews with selected respondents who were conducted at each pedicab base, it is known that one base with another base has more or less the same characteristics, where respondents are heterogeneous in almost all bases.

**Table 4.**  
**Number of pedicab drivers in Solo based on starting point**

NO	BASE PLACE	NUMBER OF WORKSHOPS INFORMATION	NUMBER OF WORKERS THE rickshaw REGISTERED AT FIELD
1	East Entrance Tirtonadi Terminal	15	9
2	West Entrance Tirtonadi Terminal	3	1
3	St. Balapan	150	103
4	St. Purwosari	15	6
5	Grand Mall	4	2
6	District Court	3	3
7	Hotel Novotel, Ibis, Orchid	20	13
8	Hotel Sahid Kusuma	6	2
9	Bangjo Keprabon	6	6
10	Sami Luwes		11

11	Timuran	5	5
12	Royal Surakarta Heritage Hotel	6	5
13	Gladag, PGS	20	16
14	Pasar Gede	40	33
15	Keraton	30	26
16	Klewer	100	63
17	yellow hotel	5	5

Source: pedicab driver data, processed in 2020

During the research, it was found that there were 17 pedicab driver bases that have survived to this day, including the East Terminal starting point, as many as nine pedicab drivers, the West Door Terminal starting point, only one respondent who could be recorded, St. Racing as many as 103 pedicab drivers, St. Purwosari with six pedicab drivers, Grand Mall with two pedicab drivers, District Court with three pedicab drivers, Hotel Novotel, Hotel Ibis, and Hotel Orchid with 13 pedicab drivers, Hotel Sahid Kusuma with two pedicab drivers, Bangjo Keprabon with six pedicab drivers, Sami Luwes with 11 pedicab drivers, Timuran with five pedicab drivers, Royal Surakarta Heritage Hotel with five pedicab drivers, Gladag and PGS with 16 pedicab drivers, Pasar Gedhe with 33 pedicab drivers, Keraton with 26 pedicab drivers, Klewer with 63 pedicab drivers, and the Hotel Amarelo as many as five pedicab drivers. The total number of pedicab drivers recorded from 17 starting points was 309 respondents, all of whom were men aged 30 years and over.

### 3.2 Discussion

#### Pedicab Driver Characteristics Based on Starting Place

The characteristics of pedicab drivers according to their place of origin are grouped into five categories, namely age, last education, address, number of family dependents, and average income. Age is divided into three categories: the young age group, 30-45 years. The medium age group, namely 46-60 years, and the old age group is 61-75 years.

The last education group was grouped into the non-educated group, i.e., the pedicab driver who had not received any education at all, the group who had not completed elementary school, namely the pedicab driver who attended elementary school but did not finish, the elementary group namely those who graduated from elementary school, the group who did not complete junior high school, namely those who graduated Elementary school and continued junior high school but did not finish, the junior group consisted of pedicab drivers who received education up to junior high school and graduated, did not finish high school, namely those who graduated from junior high school and then continued to senior high school but did not graduate, and the high school group namely pedicab drivers who graduated from high school. None of the pedicab drivers have higher education.

The addresses of pedicab drivers are categorized into pedicab drivers who have Solo and Outside Solo residence status. The number of dependents is categorized as pedicab



drivers who no longer have dependents, those who have 1-3 dependents, and those who have more than three dependents. The number of dependents is a burden that is still borne by the pedicab driver as the head of the family, including children, wife, and parents who do not work or have not worked. The average income is the accumulation of average income obtained from the results of pulling a pedicab for one month, which is grouped into three groups, namely the income group of less than IDR 500,000 per month, IDR 500,000- IDR 1,000,000 per month, IDR 1,000,000 IDR 2,000,000 per month.

### **Pedicab Driver Economic Adaptation Strategy**

In fulfilling their daily needs, pedicab drivers use several strategies, including:

#### **1. Doing odd jobs**

The part-time job done by the majority of pedicab drivers in Solo is a farmer. This is because many beakers come from outside Solo, such as Sragen, Klaten, and Boyolali, which are areas with available paddy fields. Usually, they will return to their hometown to work on their fields during harvest and planting seasons. Apart from being a farmer, the part-time jobs that are mostly done are construction and odd jobs. Pedicab drivers mostly do these two jobs with a younger age group. Meanwhile, selling and guarding the parking lot are other jobs that a small number of other pedicab drivers also do.

#### **2. Make savings**

Savings are made by reducing the number of expenses. Not infrequently, their children only attend school up to the SMA/SMK level so they can work immediately to help meet the needs of the family. The existence of assistance from the government and the community can also help them to save on expenses.

#### **3. Cooperate with family members in earning a living**

The existence of family members, such as children and wives who work can help relieve family needs.

Overall, the respondents who still survive as pedicab drivers are those with old age and low education. They feel they do not have the capital and other abilities to work in other fields, so they decide to stay in this profession even though the results are not much. Apart from fulfilling their needs, the respondents are still in this field because pulling rickshaws is used as a means of exercise for them.

## **4. CONCLUSIONS**

Based on the results of research on the economic adaptation strategy of pedicab drivers facing modern competition in the city of Solo, it can be concluded that: 1) the characteristics of the age, education level, and address of the respondent significantly influence the respondent's decision to have a part-time job, while the characteristics of the number of dependents and average income average per month do not significantly influence the respondent's decision to have a part-time job, 2) The economic adaptation strategy carried out by pedicab drivers in Solo is to have a part-time job outside of pulling pedicabs, apart from that they make savings and have working family members who can help meet daily needs.

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