

## INTERGROUP BIAS AMONG JAKARTA'S ROAD USERS

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### Abstract

The goal of this study is to examine intergroup bias among people who use roads in Jakarta. Intergroup bias refers to the tendency to prioritize, treat and perceive in-group members more favorable than out-groups. Three different groups of road users participated in this study: private drivers, motor riders, and public transportation drivers. Intergroup bias is measured as perception bias and attribution bias. The findings show that both forms of bias occur among the road users. Intergroup attribution bias that is found among the three groups are more in-group than out-group attribution bias. The private car drivers, motor riders, and public transportation drivers tend to attribute positive behavior of in-group to internal factor and negative behavior of in-group to external factors. Index of effect size in perception bias indicates substantive levels and represents large effect in the population.

### Kecenderungan Bias Antar Kelompok pada Pengguna Jalan di Jakarta

#### Abstrak

Penelitian ini bertujuan untuk mengkaji fenomena persepsi antar kelompok, khususnya fenomena bias antar kelompok pada pengguna jalan di Jakarta. Bias antar kelompok adalah kecenderungan untuk mempersepsi, mengutamakan dan memperlakukan kelompok sendiri (*ingroup*) secara lebih baik dibandingkan kelompok lain (*outgroup*). Partisipan penelitian ini adalah 360 pengguna jalan, terdiri dari pengemudi kendaraan pribadi (N= 45), pengemudi motor (N= 51), pengemudi kendaraan umum (N= 50), polisi lalu lintas (N= 54), pejalan kaki (N= 49), pedagang kaki lima (N= 58) dan satuan pengaman pasar atau satpol PP (N= 58). Pengambilan data dilakukan dengan menggunakan kuesioner (tujuh versi kuesioner), dan bias antar kelompok yang terjadi digali melalui tiga macam cara, yaitu bias persepsi antar kelompok, bias atribusi, dan alokasi sumber daya antar kelompok. Temuan studi menunjukkan adanya kecenderungan bias persepsi yang bervariasi antar kelompok pengguna jalan raya, baik dalam bentuk bias persepsi, bias atribusi maupun alokasi sumber daya. Bias yang sangat kuat untuk atribusi terhadap tingkah laku yang positif terlihat pada pengendara motor, pengendara kendaraan umum, dan pedagang kaki lima. Untuk tingkah laku negatif terdapat bias pada semua kelompok penelitian. Bias persepsi juga terdapat pada semua kelompok penelitian, demikian pula dengan alokasi sumber daya.

*Keywords: attribution bias, intergroup bias, perception bias, social identity, road users*

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### 1. Introduction

When a motor rider slips his vehicle because a car almost hit him, how would both parties react in such accident? Both parties might be shocked, angry, or blame each other. In Jakarta, many road users blame or shout at each other, attack other drivers, push or honk other car to drive faster, stare or use verbal aggression to other road users. What cause people to involve in such negative interactions? Some factors might contribute to these conditions such as too many vehicles on the road, weak law enforcement on traffic cases,

unplanned mass transport systems or the traffic conditions that increase the tendency. This categorizing process may lead to perceptual bias and cognitive distortion which then will develop to intergroup bias, inability to see own behavior as the cause, but blame other road users for the incidents. Furthermore, they also will not see in-group members' behavior as the cause of any incidents, but will blame out-group members.

Intergroup bias refers to the tendency to evaluate one's own group and in-group members more favorable than other group or out-group members. The bias involve

behavior, attitude or cognition that indicates unfairness, taking side or favoring a certain side (Hewstone, Rubin, & Willis, 2002) and occur in various level of analysis, either at micro, meso or macro level. Many studies have been conducted in social psychology to understand the nature of intergroup bias, the antecedents, processes and dynamics of intergroup bias. The bias can occur in various forms, such as in-group favoritism, out-group derogation, attribution bias, perception bias, cognitive bias, stereotype, prejudice or discrimination. Most of the explanations of intergroup bias emphasize the role of normal human mental processes which involve tendency to categorize objects and people into groups, tendency to simplify the complex worlds, preference to join with people or things similar to ourselves, and the need to rationalize inequalities (Seger, Smith, Kinias, & Mackie, 2008).

The aetiology of intergroup bias is the process of categorization; a process where people sort different objects, events or people into smaller number of categories (Gaertner & Dovidio, 2000). The tendency to categorize was first found by Tajfel, Billig, Bundy, and Flament (1971) in the *minimal group paradigm* study. They found that even in a minimal condition— such as where the foundation of categorization is quite trivial, when the groups have no previous history or when the members have no personal interest; people have a tendency to categorize themselves. People categorize self and others into different social categories. As people tend to focus on themselves as the central rather than other people, they make distinction between themselves and other people. They make a distinction between in-group and out-group. The categorization, then, results in the process of identification where people identify themselves as part of certain social identity. Social identity is a part of self-concept that is derived from one's affiliation with social groups. Tajfel (1981: 255) defines social identity as “that *part* of the individuals' self-concept which derives from their knowledge of their membership of a social group (or groups) together with the value and emotional significance of that membership”. This includes membership of both large (e.g, nation, race, religion, or gender) and small (e.g, profession, clubs, or family) social groups.

A theory that provides explanation for intergroup bias phenomena is Social Identity theory. According to this theory, when people or objects are categorized into groups, the actual differences between members of the same category tend to be minimized. The similarities within groups tend to be exaggerated and the differences with the out-group tend to be emphasized. This kind of distinction then leads to perceptual distortions and evaluation biases. As a theory of intergroup relation that put emphasis on the cognitive processes, this theory suggests that people have a strong tendency to have a

positive self esteem, and to enhance their self esteem, people identify to certain groups that have positive qualities (Hogg & Turner, 1985; Brown & Abrams, 1986). Intergroup relations begin when people in different groups think that they are members of certain groups, and not as a distinct individual. In conditions where people identify to a certain group, they sometimes show that they favor their own group than their out-group, a tendency known as intergroup bias. As an effort to maintain positive image of their own group or to increase their own group's self evaluation, people then perceive their traits, attitudes, behavior or their own group more positively, while perceive their out-group negatively (Rubin & Hewstone, 1998; Hornsey, 2008). This tendency to perceive their own group more favorable than out-groups has been found in various social settings, such as in relation to ethnicity, gender and intergroup contact (Judd, Park, Yzerbyt, Gordijn, & Muller, 2005), in relation to policy attitude (Glaser, 2005), interpersonal contact (Smith, Seger, & Mackie, 2007), between minority versus majority groups (Gonzales & Brown, 2006), in immigrant children (Pfeifer, Ruble, Bachman, Alvarez, & Cameron, 2007) and even in macaques, which like humans, automatically evaluate in-group members positively and out-group members negatively (Mahajan, Martinez, Gutierrez, Diesendruck, Banaji & Santos, 2006).

The strong tendency to be biased, to favor in-group than out-group, have also been found in various forms of behaviors, such as a tendency to estimate that out-groups experience more negative and less positive emotions compared to what the out-groups actually report (Seger, Smith, Kinias, Mackie, 2008), allocating more rewards for in-group than out-group members (Brewer, 1979), perceive more similarity with other people in the same groups compared to members of out-groups (Hogg & Turner, 1985; Brown & Abrams, 1986), and more easy being influenced by an in-group than an out-group member (Mackie & Queller, 2000; Turner, 1991). The positive attitude toward similar in-group members also lead to less willingness to cooperate with out-group members (Kramer & Brewer, 1984) or to help out-group members compared to in-group members (Levine, Cassidy, Brazier, & Reicher, 2002), and less able to trust other group members (Brewer, 1981). In relation to anger, Dunham (2011) find that bias toward out-groups is not specific to race relations. The tendency to associate racial out-groups with anger also occurs to general out-groups.

The tendency of bias is even found in the media reports, such as in ‘naming bias’. It is a bias where both Christian and Muslim newspapers are more likely to explicitly name the religious out-group as perpetrators of intergroup conflict than they are to attribute responsibility to their own group (Ariyanto, Hornsey, Morton, & Gallois, 2008). The bias also occurs in

relation to group directed criticism where criticism of the in-group aroused more negativity when the similar critics came from an out-group member than from an in-group member (Ariyanto, Hornsey, & Gallois, 2008).

Some people maintain positive self esteem by showing specific form of bias, attribution bias (Hewstone, 1989). This is a tendency to attribute positive own group's behavior to internal factors, and to attribute own group's negative behavior to external factors. For out-group, they attribute out-groups' positive behavior to external factors, and out-groups' negative behavior to internal factors. Taylor and Jaggi (1974) conducted a study about attribution bias between two groups in South India that have Muslim and Hindu religion background. Hindu participants were asked to imagine another Hindu (in-group) or Muslim (out-group) do something bad to them, something that is not socially acceptable. Then they were asked to evaluate whether the behavior is caused by internal or external factors. Their findings are consistent with the intergroup attribution bias; Hindu participants attribute Hindu's positive behavior to internal factors and not to Muslims who do similar positive behavior. On the other hand, they show external attribution to their in-group's negative behavior and out-group's positive behavior. Another study about attribution bias in relation to a high level conflict in Ambon find consistent results with Taylor and Jaggi (1974), where Muslims are more likely than Christians to attribute the conflict to factors internal to Christians, and Christians are more likely than Muslims to attribute the conflict to factors internal to Muslims, a result that support the tendency of attribution bias. Participants make stronger situational attributions for the events when the actors of the violence are in-group than when they are out group members. However, this attributional bias only exists within Christian participants. Muslim participants do not differ in the extent to which they made situational attributions, regardless of whether it is Christians or other Muslims involve in the violent behavior (Ariyanto, Hornsey, & Gallois, 2009).

The present study aims to examine intergroup bias among Jakarta road users. We observe that many groups of road users engage in everyday traffic behavior in Jakarta. There are at least seven groups of road users (private car drivers, public transportation drivers, motor riders, pedestrians, police officers, informal vendors, and council security guards) interact on the road everyday. We assume that the first three groups (private car drivers, public transportation drivers and motor riders) are the most salient groups of road users, who involve and interact intensively when they use the road.

In our main study, we examine whether intergroup bias can be found among these seven road users. However, in this article we only report the result of three groups—private car drivers, motor riders, and public

transportation drivers. We observe that the three groups interact a lot on the roads, but tend to interact in negative ways. In this study, we examine whether they favor their own group than other road user groups, or in other words do they really show intergroup attribution bias. Do they attribute positive behavior of their own group to internal explanation and negative behavior of their own groups to external aspects, while at the same time attribute positive behavior of other groups to external factors and negative behavior to internal factors. We also examine their perception bias toward other groups. Will private car drivers, motor riders, and public transportation drivers perceive their in-group more favorable than out-groups? Findings about intergroup bias among these groups will give accurate informations about the road user's behavior in Jakarta. This study may also give supportive findings to explain the intergroup bias phenomena in a large urban setting like Jakarta.

The main hypothesis in this study is that there will be intergroup bias among the road users. To test the hypothesis, we examine whether they will show attribution bias and perception bias. In the intergroup attribution, we predict that each road user group will show attribution bias toward their in-group and out-group behavior. They will attribute positive in-group's behavior to internal factors, and attribute in-group's negative behavior to external factors. In contrast, they will attribute out-group' positive behavior to external factors and out-group' negative behavior to internal factors. In the intergroup perception, we predict that the road users will perceive their own group more favorable than their out-groups. Specifically, private car drivers will perceive motor riders and public transport drivers more negatively compared to themselves, motor riders will perceive themselves as more favorable than private and public transport drivers, and public transport drivers will perceive their group as more favorable than private drivers and motor riders.

## 2. Methods

There were 150 participants involve in this study, consist of private drivers (n= 45), motor riders (n = 55), and public transportation drivers (n= 50). Due to response missing in attribution measure, we only analyse 51 motor riders. The participants have to be on the road minimum 4 hours a day for at least four days a week. The car, motor or public transportation have to be their main vehicle every day. The participants are recruited from five areas in Jakarta by accidental sampling method.

In this study we use two ways of data collection techniques: questionnaires and focus group discussions. We develop three versions of questionnaire. Each questionnaire measures attribution bias, perception bias

and, group identification. Additionally, we also was ask demographic information. Attribution bias measured using adapted measurement from Taylor and Jaggi's (1974) who use scenarios about positive and negative behavior. We develop two scenarios of positive and negative behavior that are usually shown by the road users. In positive behavior scenarios, participants were asked to attribute a helping behavior performed by an in-group and out-group. In negative behavior scenarios, participants were asked to attribute a scolding behavior performed by an in group and out group. Participants chose an answer from 3 choices that indicate whether the behavior is caused by an internal factor, external situation or other cause. Other cause will then be recategorize to internal or external factor as well.

**The scenario for the positive behavior is:** Imagine that you are riding on your motorcycle to your office after having lunch. Suddenly a vehicle hit you down and then left you on the road. A private car driver then approaches you and helps you stand. According to you, why did the car driver help you? a) *The car driver is a person that like to help other people*, b) *The car driver knows you personally*, c) *Other cause. Please explain.*

**The scenario for negative behavior is:** *You are driving on your car to your office. The traffic at that time is very crowded. A motor come close to you and you hear the sound of his motors' horn. The rider then shout at you and say several impolite words. You are very shocked and upset with his behaviors. According to you, why did the rider do something like that?* a) *The traffic jam makes him rude*, b) *The motor riders are people with no manners*, c) *Other cause. Please explain.*

Both scenarios are varied in terms of the actor performing positive/negative behavior, whether it is in-group member (e.g: private car drivers) or outgroup members (e.g: motor riders and public transportation drivers). Thus, each participant will read 6 scenarios; 3 for in-group and outgroup member performing same positive behavior and 3 for these groups performing same negative behavior. In analysis, we counted the evaluation frequency of each scenario which then is examined using non-parametric test (chi-square). As in Taylor and Jaggi's study, we do not test the reliability of attribution measurement. We also examine the relative risk (RR) as an effect size index of attribution bias. Effect size is an estimation of magnitude of the result as it occurs, or would be found, in the population (Ellis, 2010). By examining the relative risk, we can compared the probability of an outcome occurring in one group with the probability of it in another. In this study, for example, we report the probability of private car drivers attributed internally when doing positive behavior compared to the probability of motor riders attributed internally when doing same positive behavior, as it would be found in the population.

Perception bias scale is measured by asking the participant to evaluate 10 traits of road users, including their in-group and out-groups' traits. Some of the traits are orderly or not orderly, discipline or not discipline, creating traffic jam or not creating traffic jam, causing trouble or give ways. Participants evaluate these traits in 5 points scale. The closer their evaluation to a certain trait means that he/she evaluate the target group as having that specific trait. In data analysis, we compare these traits and examine the mean difference among each road user toward their in-group and out groups with repeated analysis of variance. The reliability of the sets of 10 items,  $\alpha = .86$  is good. We examine the omega square ( $\omega^2$ ) as an effect size index of perception bias to estimate the magnitude of the result in the population.

We also conducted focus group discussions involving these three groups to understand the nature of intergroup bias among them. The focus group discussion gather qualitative information to explain the result of the field study. In the FGD we ask questions such as "how do you perceive the motor rider/public transportation drivers/private car drivers?", "Why do you perceive them like that?", Each focus group discussion consists of 8–10 participants.

### 3. Results and Discussion

Both attribution and perception bias among private car drivers, motor riders, and public transportation drivers.

**Attribution Bias.** To analyze intergroup attribution bias, we measured differentiate between in-group attribution and out-group attribution bias. We predict that each road user group will attribute positive in-group's behavior to internal factors, and in-group's negative behavior to external factors. We also predict that they will attribute positive out-group's behavior to external factors, and negative out-group's behavior to internal ones. We found a strong indication of in-group attribution bias among private car drivers (Table 1). Eighty two percent of 45 private car drivers attribute positive behavior of other private car drivers (in-group) to internal factor ( $\chi^2 = 18.68, p < .005$ ). Moreover, 75.6% of private car drivers attribute negative behavior of in-group to external factor ( $\chi^2 = 11.75, p < .005$ ). These results confirm that private car drivers experience in-group attribution bias, as they attribute both positive and negative behavior in different direction as is expected as a group-serving bias.

However, private car drivers seem to show attribution bias toward their out-groups. No significant differences found in how private car drivers attribute positive, neither negative behavior of motor riders. There is also no significant difference found in how they attribute negative behavior of public transportation drivers. Note that there is a significant difference found in how they attribute positive behavior of public transportation

drivers. As it shown in Table 1, 69% of private car drivers attribute positive behavior of public transportation driver to internal factor ( $\chi^2 = 6.42, p < .05$ ). Rather than attributing positive behavior to external factor—which indicates that attribution bias happens, most private car drivers tend to attribute it to internal one. These results mean that the private car drivers do not show out-group attribution bias toward the public transportation, as well as to motor riders.

In accordance with the significance of the testing, further analyses of effect size index with relative risk indicate substantive findings in the population of private car drivers (Table 2). From the perspective of private car drivers, the relative risk of a private car driver being attributed internally when helping other private car driver was 1.28 times greater than a motor rider being attributed internally in helping a private car driver. Similarly, the relative risk of a private car driver being attributed internally when helping other private car driver was 1.19 times greater than a public transportation driver being attributed internally in doing such positive behavior. In short, the probability of a private car driver as in-group member to be attributed internally when doing positive behavior is greater than the probability of an out-group member.

While in negative behavior, the relative risk of a private car driver being attributed externally when shouts at other private car driver is 1.23 times greater than a

motor rider being attributed externally. It is almost twice higher compared to public transportation drivers, as the relative risk of a private car driver being attributed externally when shouts at other private car drivers is 2.1 times greater than a public transportation driver being attributed externally. Here, the probability of a private car as in-group to be attributed externally when doing negative behavior is also greater than the probability of an out-group member. These relative risk indexes of attribution in positive and negative behavior show us a pattern of how private car drivers attribute positive and negative behavior of in-group and out-group. They tend to attribute in-group much better than their out-groups. Interestingly, when compared to their in-group, the private car drivers perceive public transportation driver a little bit better than motor riders in positive behavior on the road, but in negative behavior, public transportation driver is perceived worse and ruder than motor rider.

Motor riders also show in-group attribution bias; 82.4% of 51 motor riders attribute positive behavior of their in-group to internal factor (Table 3). A chi-square analysis of the difference between internal and external attributions of in-group positive behavior is significant ( $\chi^2 = 21.35, p < .005$ ). Moreover, 72.5% of motor riders attribute negative behavior of in-group to external factors. A chi-square analysis of the difference between internal and external attributions of in-group negative

**Table 1. Attribution of Positive and Negative Behavior in Private Car Drivers (N= 45) toward In-group and Out-groups**

Road users evaluated	Attribution of positive behavior				$\chi^2(1)$	Attribution of negative behavior				$\chi^2(1)$
	Internal		External			Internal		External		
	n	%	n	%		n	%	n	%	
Private car drivers (IG)	37	82.2	8	17.8	18.68**	11	24.4	34	75.6	11.75**
Motor rider (OG)	29	64.4	16	35.6	3.74	17	37.8	28	62.2	2.68
Public transp. drivers (OG)	31	68.9	14	31.1	6.42*	29	64.4	16	35.6	3.74

\* $p < .05$ . \*\* $p < .01$ . OG is out-group, IG is in-group

**Table 2. Relative Risk Index of In-Group Attribution Bias**

IG : OG	Probability to attribute	
	Positive behavior to internal factor	Negative behavior of external factor
- Private car driver : motor rider	1.28	1.23
- Private car driver : public transportation driver	1.19	2.11
- Motor rider : private car driver	1.30	0.96
- Motor rider : public transportation driver	1.82	1.87
- Public transportation driver : private car driver	1.46	1.17
- Public transportation driver : motor rider	1.36	1.04

Note. IG: OG means in-group compared to out-group. An index of one would mean there is an equal risk of attributing to both in-group and out-group. An index greater than one means it is less likely to be attributed in out-group or in other words, it more likely to be attributed in-group.

behavior is significant ( $\chi^2 = 10.37, p < .005$ ). These results confirm the prediction that motor riders experience in-group attribution bias.

Motor riders do not experience out-group attribution. No significant differences is found in motor riders' attribution to private car drivers' positive behavior whether to internal or external factor. But, there are 76.5% of motor riders who attribute private car drivers' negative behavior to external factor (Table 3). A chi-square analysis of the difference between internal and external attribution of private car drivers' negative behavior is significant ( $\chi^2 = 14.29, p < .005$ ). These results suggest the tendency of motor riders to evaluate private car drivers more positively, rather than in bias ways. Whenever a private car driver do a negative behavior such as shouting aggressive words, motor riders will attribute the negative behavior of external factor (for example, crowded traffic), than blaming the car driver personally. Different pattern is found when motor riders attribute public transportation drivers' behavior. Motor riders seem to show out-group attribution bias toward public transportation drivers, although statistical test fail to show the significance.

Further analyses of effect size index with relative risk indicate substantive findings in the population of motor riders (Table 2). From the perspective of motor riders, the relative risk of a motor rider being attributed internally when helping other motor riders is 1.3 times greater than a private car driver being attributed internally in doing such positive behavior. It goes higher when motor rider compared to public transportation driver. In the eyes of motor riders, the relative risk of a motor rider attributed internally is 1.82 times greater than a public transportation driver attributed internally when helping a motor rider. In negative behavior, the relative risk of a motor rider attributed externally when shouts at other motor rider is equal to the relative risk of a private car driver attributed externally when doing the same negative behavior. But, the relative risk increases almost twice higher when motor riders compared to public transportation drivers. The relative risk of a motor rider attributed externally when doing same

negative behavior is 1.87 times greater than a public transportation driver attributed externally.

These indexes show a pattern of how motor riders attribute positive and negative behavior of in-group and out-group. They tend to attribute in-group much better than their out-group, particularly in positive behavior. Interestingly, they seem to see private car drivers as equal to themselves, as they attribute negative behavior of private car drivers quite the same way as they attribute it to their in-group member. But, they tend see public transportation drivers negatively, as they less likely to externally attribute negative behavior of public transportations drivers compared to their in-group. In shorts, public transportation drivers are perceived rude—behave with no manners on the road, in the eyes of motor riders.

We found that to public transportation drivers experience in-group attribution bias seventy six percent of public transportation drivers attribute positive behavior of in-group to internal factor (Table 4). A chi-square analysis of the difference between internal and external attribution of positive behavior is significant ( $\chi^2 = 13.52, p < .005$ ). However, only 56% of public transportation drivers attribute negative behavior of in-group to external factor ( $\chi^2 = 0.72, ns$ ), which indicate that they do not show out-group attribution bias. There are no significant differences found in their attribution of positive behavior, nor negative behavior of their out-groups (private car drivers and motor riders, whether to internal or external factor).

Further analyses of effect size index with relative risk indicate substantive findings in the population of public transportation drivers (Table 2). From the perspective of public transportation drivers, the relative risk of in-group being attributed internally when help other in-group member is 1.5 times greater than a private car driver being attributed internally in doing such positive behavior. Similarly, the relative risk of in-group attributed internally when help other in-group member is also 1.4 times greater than a motor rider attributed internally. While in negative behavior, the relative risk

**Table 3. Attribution of Positive and Negative Behavior in Motor Riders (N= 51) toward In-group and Out-groups**

Road users evaluated	Attribution of positive behavior				$\chi^2(1)$	Attribution of negative behavior				$\chi^2(1)$
	Internal		External			Internal		External		
	<i>n</i>	%	<i>n</i>	%		<i>n</i>	%	<i>n</i>	%	
Private car drivers (OG)	32	62.7	19	37.3	3.31	12	23.5	39	76.5	14.29**
Motor rider (IG)	42	82.4	9	17.6	21.35**	14	27.5	37	72.5	10.37**
Public transp. drivers (OG)	23	45.1	28	54.9	0.49	31	60.8	20	39.2	2.37

\*\* $p < .01$ . OG is out-group, IG is in-group

**Table 4. Attribution of Positive and Negative Behavior in Public Transportation Drivers (N= 50) toward In-group and Out-groups**

Road users evaluated	Attribution of positive behavior				$\chi^2(1)$	Attribution of negative behavior				$\chi^2(1)$
	Internal		External			Internal		External		
	<i>n</i>	%	<i>n</i>	%		<i>n</i>	%	<i>n</i>	%	
Private car drivers (OG)	26	52	24	48	0.08	26	52	24	48	0.08
Motor rider (OG)	28	56	22	44	0.72	23	46	27	54	0.32
Public transp. driver (IG)	38	76	12	24	13.52**	22	44	28	56	0.72

\*\**p* < .01. OG is out-group, IG is in-group

of a public transportation driver attributed externally when shout at other in-group member is 1.17 times greater than a private car driver being attributed externally. But the relative risk of a public transportation driver attributed externally in such negative behavior is equal to the relative risk of a motor rider performing that negative behavior. These indexes show that public transportation drivers tend to attribute in-group as better than their out-group, particularly in positive behavior. Furthermore, they seem to see motor riders as equal to themselves, as they attribute negative behavior of motor riders quite the same way as they attribute it to their in-group member. But they tend to see private car drivers negatively, as they less likely to externally attribute negative behavior of public transportations drivers compared to their in-group.

In sum, all these findings indicate that the pattern of intergroup attribution bias that occur among private car drivers, motor riders, and public transportation drivers are more in-group attribution bias than out-group attribution bias. The private car drivers, motor riders, and public transportation drivers tend to attribute their in-group as better than out-groups. In positive behavior, each group has more chances to be attributed internally compared to their out-groups. In negative behavior, only private car drivers are more likely to attribute the cause of in-group behavior to external factor compared to their out-groups. In other words, a motor rider and a public transportation driver have more chances to be attributed internally when doing negative behavior than an in-group member (another private car driver). Different pattern of perception bias found in motor riders and public transportation drivers. Motor riders are more likely to externally attribute negative behavior to in-group members than to public transportation drivers, not to private car drivers. While public transportation drivers are more likely to externally attribute negative behavior to in-group members than to private car drivers. Thus, a public transportation driver has more chances to be blamed internally by a motor rider, and private car driver has more chances to be blamed internally by a public transportation driver when doing

negative behavior on the road. This result is interesting, as in real traffic condition in Jakarta, negative in-group behavior on the road is seldom being attributed to internal factor, but is more likely to be attributed to external situation, such as crowded or frustrating traffic. A possible explanation of this in-group attribution bias result is that people know more about their own behavior and its variability across situations than others' behavior (Hewstone, 1989), so it is easier to evaluate their own behavior than other people's (Rubin & Hewstone, 1998; Hornsey, 2008). Another explanation of self-other differences in attribution arise from the amount information available to the actors or self-raters. People also tend to use themselves as the anchor in evaluating other people's behavior. This cognitive process serve as an effort to maintain positive image of in-group or to increase their own self evaluation processes (Fiske & Taylor, 2008). In this sense, it is a feeling of self-right and self-evaluation that may induce more negative interactions of road users.

Private car drivers, motor riders, and public transportation drivers show intergroup attribution bias in explaining their positive behavior. The significance test results show that each group are more likely to attribute positive behavior to internal factor, rather than external factor. The effect size indexes strongly support these results and reveal the magnitude of the findings in the population. Such attribution is absolutely considered a bias, as this kind of attribution can be categorized as a fundamental attribution error (FAO). Quoting Nisbett and Ross (1980, p.31), FAO is "the tendency to attribute behavior exclusively to the actor's dispositions and to ignore powerful situational determinants of the behavior".

Private car drivers, motor riders, and public transportation drivers also show intergroup attribution bias in explaining their negative behavior. Note that only among private car drivers and motor riders, the tendency to attribute negative behavior to external factor, rather than internal, are significant. Effect size indexes reveal substantive findings that the magnitude of this bias in the population of private car drivers

targeted to both out-groups, but targeted only to public transportation drivers in the population of motor riders. In public transportation drivers, the tendency to attribute negative behavior to external factor, rather than internal, is not significant. However, effect size indexes reveal substantive finding that this bias could be targeted to private car drivers, rather than to motor riders.

Despite the biases, focus group discussion results indicate that road users are aware of their negative behavior in traffic setting. Public transportation drivers, for example, aware the situations when they violate traffic regulations. However, they argue that they have 'justifiable reasons' for doing it, such as: other public transportation drivers also do the same violations, the passengers tend to stop them anywhere, not at the bus stop, or the police sometime stop them without 'reason'.

Other interesting findings show indication of out-group attribution bias expressed by motor riders toward public transportation drivers, although the statistical test failed to show its significance. However effect size index show that in the eyes of motor riders, a public transportation driver has more chances to be attributed externally in positive behavior and has more chances to be blamed internally in negative behavior. A similar result in effect size analysis of private car drivers also show that a public transportation drivers has more chances to be attributed and blamed internally in negative behavior. These results are confirmed in the focus group discussion in which both private car drivers and motor riders tend to see public transportation drivers as egoistic, careless and less patient drivers, create traffic jam, and endanger other road users.

The difference in these results is potentially contributed from one limited specific scenario. Using more scenarios will produce stronger effect as is shown by Taylor and Jaggi (1974) who apply three scenarios for each positive and negative behavior. Despite the limitation of attribution bias measure, we also distribute the perception bias measures that examine how each group of road users evaluate other road users.

**Perception Bias.** In the intergroup perception, we predict that the road users will perceive their own group more favorable than their out-groups. Specifically, private car drivers, motor riders, and public transportation drivers will perceive their own groups as more favorable. The results show that private car drivers experience intergroup perception bias. They tend to perceive all characteristics of in-group as more favorable than motor riders and public transportation drivers. The results in Table 5 show that the private car drivers' in-group and out-groups (motor riders, public transportation drivers) perception are significantly affected by the target group being evaluated. Perception of being 'careful' for example, is affected by whether private car drivers evaluate the in-group or out-groups,  $F(2, 88) = 75.78, p < .001, \omega^2 = .55$ . These results also show a substantive finding and large effect size. Further post-hoc tests indicate that the private car drivers (in-group) are significantly perceived as more careful compared to the motor riders and public transportation drivers (out-groups). The mean rating of private car drivers' orderliness is significantly higher than motor riders ( $p = .000$ ) and public transportations drivers ( $p = .000$ ).

**Table 5. Private Car Drivers' Perception of Positive and Negative Characteristic of In-group and Out-groups (N= 45)**

Characteristics	Private Car Drivers (IG)		Motor riders (OG)		Public Transp. Drivers (OG)		df	F	Effect size ( $\omega^2$ )
	M	SD	M	SD	M	SD			
Orderly	3.38	0.86	1.60	0.68	1.64	1.00	1.707, 75.09 <sup>a</sup>	55.88***	0.48
Careful	3.64	0.73	1.78	0.73	1.71	0.89	2, 88	75.78***	0.55
Patience	3.27	0.91	1.62	0.83	1.77	1.03	2, 88	42.52***	0.39
Discipline	3.27	0.96	1.76	0.77	1.64	0.77	1.66, 73.26 <sup>a</sup>	55.35***	0.43
Well regulated	3.40	0.96	1.84	0.92	1.69	0.95	1.76, 77.63 <sup>a</sup>	49.18***	0.39
Causing accidents	2.67	1.06	3.91	1.12	3.56	1.09	2, 88	13.75***	0.17
Creating traffic jam	3.36	1.13	4.13	0.81	4.58	0.62	1.74, 76.51 <sup>a</sup>	22.00***	0.25
Irritating	2.76	0.74	3.73	0.96	3.91	1.16	2, 88	18.29***	0.21
Imperiling	2.58	0.72	4.07	0.94	3.64	1.05	2, 88	37.81***	0.31
Egoistic	3.16	0.90	4.40	0.81	4.22	1.15	1.56, 68.45 <sup>a</sup>	23.43***	0.24

Note. IG is abbreviation of in-group, OG is abbreviation of out-group, and the characteristics were evaluated using 5 point-scale rating. <sup>a</sup> Mauchly's test indicated that the assumption of sphericity had been violated, therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity. \*\*\*  $p < .001$ . Based on Kirk (2003), the effect size is considered large when  $\omega^2 = .138$ , medium when  $\omega^2 = .059$ , and small when  $\omega^2 = .010$



In contrast, the mean rating of carefulness for motor riders and public transportation drivers are not significantly different ( $p > .05$ ). This finding indicates that both out-groups are perceived as less careful than the in-group. Similar findings are also found in how private car drivers perceive negative characteristics of in-group and out-groups (causing accidents, irritating, imperilling, and egoistic). The mean rating of private car drivers' trait as egoistic, for example, is significantly lower compared to motor riders and public transportation drivers (both  $ps = .000$ ). The mean rating for motor riders' and public transportation drivers' egoistic behavior is not significantly different ( $p > .05$ ). Only in whether the out-groups are perceived as creating traffic jam, the difference is significant. In this case, the mean rating of motor riders' trait as causing traffic jam is also significantly lower than public transportation drivers ( $p = .013$ ).

Similar findings are also found in how private car drivers perceive negative characteristics of in-group and out-groups (causing accidents, irritating, imperilling, and egoistic). The mean rating of private car drivers' trait as egoistic, for example, is significantly lower compared to motor riders and public transportation drivers ( $p = .000$ ). The mean rating for motor riders' and public transportation drivers' egoistic behavior is not significantly different ( $p > .05$ ). Only in whether the out-groups are perceived as creating traffic jam, the difference is significant. In this case, the mean rating of motor riders' trait as causing traffic jam is also significantly lower than public transportation drivers ( $p = .013$ ). In the eyes of private car drivers, public transportation drivers are perceived as a group that cause traffic jam more than all other road users, including motor riders.

While private car drivers show a strong perception bias, motor riders indicate different results. Table 6 shows that whether in-group (motor riders) and out- drivers) are perceived orderly was significantly affected by the target group being evaluated,  $F(1, 100) = 71.45, p < .001, \omega^2 = .62$ . The result gives a substantive finding and large effect size. Instead of making favorable evaluation toward in-group, motor riders evaluate private car driver more positively than their own in-group. This result indicates that motor riders do not show perception bias toward private car drivers, but they experience perception bias only toward public transportation drivers. *Post hoc* test show that the motor riders are significantly perceived as less orderly than private car drivers, but more orderly compared to public transportation drivers. The mean rating of motor riders' orderliness is significantly lower than private car drivers' ( $p = .000$ ), but significantly higher compared to public transportation drivers ( $p = .000$ ). *Post hoc* tests to the mean of motor riders' perception toward in-group and out-groups in other positive characteristics (being careful, patience, discipline, and well-regulated) also indicate the same trend. The mean rating of motor riders in those characteristics are significantly lower than private car drivers (all  $p = .000$ ), but significantly higher compared to public transportation drivers ( $p$  value are between .000-.009).

Further results in *post hoc* tests find that there are no significant differences in the mean rating of motor riders and private car drivers in causing accidents, creating traffic jam, imperilling, and egoistic behavior. These results indicate that private car drivers are perceived roughly similar as motor riders in those negative characteristics. Only in terms of irritating trait that *post hoc* test shows that motor riders perceive their own in-

**Table 6. Motor Riders' Perception of Positive and Negative Characteristic of In-group and Out-groups (N= 55)**

Characteristics	Private Car Drivers (OG)		Motor riders (IG)		Public Transp. Drivers (OG)		df	F	Effect size ( $\omega^2$ )
	M	SD	M	SD	M	SD			
	Orderly	3.75	0.89	2.39	1.04	1.61			
Careful	3.92	0.77	3.06	1.17	1.90	1.08	2, 100	55.76***	0.38
Patience	3.37	0.96	2.33	1.11	1.75	0.84	2, 100	33.71***	0.30
Discipline	3.69	0.97	2.67	1.03	1.73	0.85	2, 100	59.88***	0.40
Well regulated	3.76	0.84	2.55	1.15	1.57	0.73	2, 100	86.67***	0.47
Causing accidents	2.53	0.90	2.88	0.91	3.55	1.15	1.754, 87.72 <sup>a</sup>	14.78***	0.14
Creating traffic jam	3.61	1.08	3.31	1.22	4.57	0.67	1.755, 87.742 <sup>a</sup>	20.20***	0.19
Irritating	2.96	0.87	2.43	1.06	3.51	1.24	2, 100	15.08***	0.13
Imperiling	2.53	0.81	2.78	1.17	3.65	1.19	2, 100	17.21***	0.12
Egoistic	3.41	1.08	3.82	1.09	4.49	0.67	1711, 85.53 <sup>a</sup>	18.62***	0.16

Note. IG is abbreviation of in-group, OG is abbreviation of out-group, and the characteristics were evaluated using 5 point-scale rating. <sup>a</sup> Mauchly's test indicated that the assumption of sphericity had been violated, therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity. \*\*\*  $p < .001$ . Based on Kirk (2003), the effect size is considered large when  $\omega^2 = .138$ , medium when  $\omega^2 = .059$ , and small when  $\omega^2 = .010$

group as the least irritating group compared to private car drivers ( $p = .008$ ) and public transportation drivers ( $p = .000$ ). These results indicate that for motor riders, irritating behavior is considered as a critical point to differentiate certain groups as their in-group or out-groups. Only in this specific negative aspect, motor riders perceive their in-group more favorable than their out-groups, including private car drivers.

As motor riders experience perception bias toward public transportation drivers in almost all characteristics, public transportation drivers show perception bias toward motor riders in the same way. As shown in Table 7, public transportation drivers' perception toward the three groups—private car drivers, motor riders, and public transportation drivers—are significantly affected by the target group being evaluated (with varied  $F$  values and medium/large effect sizes). *Post hoc* tests show that mean rating of positive characteristics toward public transportation drivers are significantly higher than motor riders. In this case, the mean rating of public transportation drivers' orderliness was significantly higher compared to motor riders ( $p = .000$ ). *Post hoc* tests also show that mean rating of public transportation drivers as being careful, patience, discipline, and well-regulated are significantly higher than motor riders (all  $p = .000$ ). *Post hoc* test comparing mean rating of negative characteristics show the same trend. The mean rating of public transportation drivers' likelihood to cause accidents, create traffic jam, being irritating, imperiling, and egoistic is significantly lower than motor riders (all  $p = .000$ ). All these results clearly indicate that public transportation drivers favor their in-group than motor riders, both in positive and negative characteristics.

The results also indicate that public transportation drivers evaluate private car drivers more positively than their own in-group, or at least more or less similar as their in-group in almost all characteristics. *Post hoc* tests show the mean rating of public transportation drivers' orderliness and being well-regulated as significantly lower than private car drivers' ( $p = .000$  for both). The mean rating of public transportation drivers' discipline is also lower than private car drivers ( $p = .017$ ). While, the mean rating of public transportation drivers' carefulness, patience, creating traffic jam, and causing accidents are not significantly different than private drivers' (all  $ps > .05$ ). Only in irritating and egoistic trait that the mean difference of public transportation and private drivers are statistically significant ( $p < .05$  for both). In this aspect, private car drivers are perceived as more irritating and egoistic than public transportation drivers. Thus, only in these two specific negative aspects that public transportation drivers perceive their in-group more favorable than private car drivers.

Why do motor riders and public transportation drivers tend to favor private car drivers? This might be because most private car drivers are from higher social status out-group. Instead of making in-group favoritism and out-group derogation, motor riders show out-group favoritism. These findings show that low-status members tend to either show favoritism toward the higher status out-group or show no differential favoritism, while high status members tend to favor their own group over lower status groups. This kind of tendency is known as asymmetric ethnocentrism effects (for a review of the effects, see Mullen, Brown, & Smith, 1992).

**Table 7. Public Transportation Drivers' Perception of Positive and Negative Characteristics of In-group and Out-groups (N= 50)**

Characteristics	Private Car Drivers (OG)		Motor riders (OG)		Public Transp. Drivers (IG)		$df$	$F$	Effect size ( $\omega^2$ )
	$M$	$SD$	$M$	$SD$	$M$	$SD$			
Orderly	3.82	1.14	1.44	0.84	2.64	1.35	2, 98	61.74***	0.50
Careful	4.18	0.98	1.58	0.97	3.70	1.40	2, 98	72.94***	0.55
Patience	3.38	1.43	1.52	1.09	3.50	1.45	1.77, 87.09 <sup>a</sup>	39.02***	0.48
Discipline	4.02	1.09	1.50	0.99	3.32	1.39	2, 98	64.05***	0.50
Well regulated	3.90	1.09	1.60	1.01	2.72	1.35	2, 98	50.49***	0.43
Causing accidents	2.12	1.14	3.98	1.33	2.30	1.49	2, 98	33.04***	0.31
Creating traffic jam	3.46	1.33	4.24	1.06	3.14	1.37	1.72, 84.27 <sup>a</sup>	9.85***	0.13
Irritating	3.04	1.32	4.34	1.04	2.34	1.42	2, 98	37.57***	0.33
Imperiling	2.00	1.19	4.32	1.04	2.20	1.40	2, 98	75.88***	0.47
Egoistic	3.58	1.42	4.78	0.71	2.86	1.46	1.71, 83.96 <sup>a</sup>	33.92***	0.40

*Note.* IG is abbreviation of in-group, OG is abbreviation of out-group, and the characteristics were evaluated using 5 point-scale rating. <sup>a</sup> Mauchly's test indicated that the assumption of sphericity had been violated, therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity. \*\*\*  $p < .001$ . Based on Kirk (2003), the effect size is considered large when  $\omega^2 = .138$ , medium when  $\omega^2 = .059$ , and small when  $\omega^2 = .010$

Other possible explanation of why motor riders and public transportation drivers show favoritism toward private car drivers might relate to the meaning of a car for them. For most of them, do cars not only have instrumental functions, but also symbolic and affective functions (Steg, 2005). The instrumental factors relate to the speed, flexibility, safety, and conveniency of the car, while symbolic factors relate to feelings of sensation, power, superiority and arousal. Riding motor cycles in Jakarta roads particularly provide speed and flexibility, as are admitted by some motor riders in the focus group discussion. But they also admitted that drive a car is saver and more comfortable than ride a motor cycle. Public transportation drivers also admit that use a 'private' car is much more convenient than use public vehicles. As public transportations are limited and take a much longer travel time, private cars become a better choice of travel mode. The social norm also implies that having a private car is desirable as it serves as an indicator of one's achievement in life. Thus, in the eyes of motor riders and public transportation drivers, the symbolic meaning of car driving is very important and desirable which resulted in a tendency of out-group favouritism toward private car drivers.

#### 4. Conclusions

The findings indicate that both attribution and perception bias occur among the road users. Despite some weaknesses this study had, this study use real setting data which base their judgment on real interaction between the road users. The indexes of effect size in the three groups show that in-group attribution bias and intergroup perception bias really exist in the population and the magnitude of the bias are large. These large effects are particularly meaningful when we frame road use of traffic behavior as part of important features of urban life, which in the end contribute to people's happiness and quality of life. The more frequent in-group attribution bias and the higher the tendency to evaluate in-group as better than out-groups among road users, the more conflicts may arise among them. These conditions also create roads as a stressful public space for the urban people.

Intergroup bias is found when the road users evaluate positive and negative characteristics of in-group and out-group. All groups tend to perceive characteristics of in-group more favorable than the out-groups. This finding supports previous finding about the ethnocentric bias, although the bias occur in asymmetrically. Private car drivers are perceived as a higher status group and private car use is potentially desirable among motor riders and public transportation drivers. The last statement, of course, needed to be investigated in further research.

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