

## **Women Workers: Social Aspects and Accessibility in The Residential Neighborhood and Probability to Commuting**

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### **Abstract**

Women are often faced with considerations including the choice of mobility with or without commuting, which is inseparable from the role of social in the neighborhood. This study aims to analyze the probability of women workers commuting in Indonesia through social capital and accessibility from the neighborhood to the labor market. The logit model and marginal effect were applied in this research, using the 2018 microdata obtained from Indonesia National Labor Force Survey (Sakernas) and Indonesian Village Potential (Podes). These data are combined based on residence similarity at the district level of each individual. The results showed that trust and solidarity increase, the probability of women workers commuting declines by 3.9%. The group and networks level increases through women groups in the residential neighborhood area cause commuting probability to decline of 14.3% on women workers. The variable of facilities will increase with a rise in women workers' commuting probability by 2.5%. These results were controlled by sectoral variables, work, income, education, age, and

marital status of women workers in Indonesia. The findings in this study explain the social aspect in the social capital approach originating from the residential neighborhood causes a decreased probability of that decision. The indicates that the social ties of traditional society are still attached to women workers in Indonesia. However, the accessibility in this article is that public transportation gives a positive probability to the decision to commute to women workers in Indonesia..

## **Keywords**

Social Capital, Women Workers Commuting, Marginal Effect.

## **Introduction**

This article discusses about commuting, a work trip that starts from home to the workplace every day and focus on working women. For some women, commuting will be affected by the residential neighborhood, through other people, community groups, and the accessibility of transportation. Considering the residential neighborhood shows that women want to maintain their social ties when they do not change their residential neighborhood, socially and are familiar with the presence of friends, neighbors, and family (Sandow, 2011). The residential neighborhood impact on women's work trips has not received much attention, especially in Indonesia. Even though the contribution of women in the labor market has shown an increase in recent years. The world Bank 2021 shows that 51.86% of Indonesian women aged 15 years and over participated in the workforce (either working or looking for work) in 2017 and increased in 2018 to 52.96%, and there is a change in the role of women in Indonesian society could be seen from the similarity in work travel patterns between women and men (Indonesia Statistics, 2016).

Commuting is the movement towards job opportunities elsewhere. The implications of commuting activities can be seen in the field of labor market (David et al., 2010; Sandow, 2011). The labor market available to women is usually widely available in urban areas (Sandow, 2011). The occupation as professional, managerial, and clerical jobs are more suitable for women. Macdonald (1999) states that by estimating women's work trips will be shorter if they work in more feminist industrial sectors such as education, health, clerical, retail, and service jobs, and this is more related to the location of residence. Pazy et al. (1996) states that women are willing to increase their commute distance rather than their time. It should be noted that there is a strong link between death and injuries sustained in traffic accidents (Muhammed et al., 2021), so limiting time may not be the best option. Any increase in transportation can result in a longer commute. On the other hand, Sandow (2011) explains that differences in traditional and non-traditional society impact differences in

distance commuting, types of work, and women's income. Therefore, the decision to commute for women's work can be influenced by society or the residential neighborhood like views, and habits of the residential neighborhood. It provides a lot of information and other individual perspectives as a consideration to make decisions in any action including to work and commute.

The choice of commuting influenced by the residential neighborhood. The comfortable, and accessibility cause women to maintain their current residential neighborhood rather than having to move to the new neighborhood. Fujita & Thisse (2002) also mentions that the consumption burden of externalities is through the effects of one area is estimated, the population in that area will increase the potential for social aspect. The social aspect like social networks both in enabling access to cognitive and structural social capital, in creating opportunities for networks to commute Several studies have trying to observe the residential neighborhood and individual travel behavior (Kersting et al., 2020; Nisic & Kley, 2019). Kersting et al. (2020) mention that a suitable neighborhood should be considered when deciding to commute. (Nisic & Kley, 2019) mentioned that there are gender differences in social networks, where men obtain social contact through work while women's networks come from their involvement in family care.

The understanding of commute started from the individual decision, influenced by other people, group, and accessibility. Schwanen & Mokhtarian, (2005)) that the decision to do commuting starts from the physical neighborhood. David et al.(2010) state that the sourcing of social capital from the area of residence influences work mobility. The argument about the neighborhood can influence commuting at an individual level (Delmelle et al., 2013). Mota et al., (2016) reported women's decisions to enter the labor market are influenced by other women in their neighborhood. Nisic & Kley, (2019) state that women's networks stem from their involvement with neighbors. It shows that there is a social impact from the residential neighborhood on women's decisions to commute.

This study aims to analyze the probability of women workers commuting in Indonesia through social capital and accessibility from the residential neighborhood to the labor market. We analyze the residential neighborhood through social capital (trust and social networks) and accessibility (public transportation) on the probability of commuting or not commuting. The novelty of this article uses the specific subject of women workers commuting as a variable dependent, and residential neighborhood consist of trust and solidarity, groups and networks with similarities sex and accessibility as independent variable. Therefore, this article may contribute to the literature in improving the understanding of the residential neighborhood with social capital and accessibility and

decision to commute in economic studies, especially on the female labor supply in Indonesia.

The findings in this study explain that the social capital from residential neighborhoods will reduce the probability of women workers commuting. The social aspect in the social capital approach originating from the residential neighborhood causes a decreased probability of that decision. These findings are in line with the results of the study reported by David et al., (2010) and following Sandow, (2011) statement on women's work commuting in traditional societies. This finding indicates that the social ties of traditional society are still attached to women workers in Indonesia. However, the accessibility in this article is that public transportation gives a positive probability to the decision to commute to women workers in Indonesia.

This study is organized into several sections. The next sections, literature review, followed by method, data Indonesian and empirical study. The empirical-based discussion is conducted and selected a model to predict the probability of women workers choosing commuters. The final section discusses and conclusion of our research finding.

## **Literature Review**

This section reviews the existing literature on social neighborhood and women worker commuting. We use commuting as a commuter is referred to as someone who regularly commutes to work, thus covering all trips to work (Lyons & Chatterjee, 2008; Schwanen & Mokhtarian, 2005).

Commuting as a strategy to integrate home and work, including women workers to gain opportunities to enter the labor market, increase career and income (Mårtensson, 2015; Sandow, 2011). Commuting allows you to enter a greater workplace without having to leave the sense of belonging and family. Because the environment is a network of relationships between people who live close and consists of a shared understanding of what, and who, the environment and through the environment one will get success in the economy. (Payne, 2013). The support from the neighborhood is considered related to the presence of neighbors, groups (David et al., 2010), the mode of transportation to be used (Schwanen & Mokhtarian, 2005). Therefore, we assume that the neighborhood will be a consideration for women's travel to work, and with maintain the neighborhood, she will prefer to commute rather than having to change the new one.

We can see one of the roles of the neighborhood from the interaction of individuals in the residential. The residential environment is a space for socializing where individuals interact

with a group of individuals who are close to them (Payne, 2013). The residential neighborhood not only shows the relationships between individuals or groups but also the access to infrastructure. In the commuting context, the residential environment is considered capable of building social aspects through trust and networking between individuals, and accessibility that can affect this activity like public transportation (Bradbury, 2006; Mattisson et al., 2015; Schwanen & Mokhtarian, 2005).

The support obtained from the residential neighborhood can be used by women to enter the labor market. Franklin et al. (2005) wrote that the feminist social approach distinguished in terms of transformative power. In this feminist approach, social capital as a bottom-up process, the greater the external resources available, the continuity of a sense of identity and a sense of place, meaning, will always remain important. Shaw (2005) investing in society is also important for women. Investing in communities such as residential neighborhoods will provide comfort, and good relations created by their homes will make them reluctant to move, and protect their neighborhood, so they will choose to commute. Sandow (2011). The role of women in the labor market is also influenced by the conditions of society. The existence of gender roles in working women causes them to find jobs closer to home, shorter, and have less prestigious jobs. Meanwhile, non-traditional women, depending on employment status, she has a job away from home and long distances commute. When a woman travels long distances, she will also have a higher income than her partner and other women.

Trust is a subjective act of another individual that is difficult to observe but can be felt by other individuals. Payne, (2013) mentions that trust is a probability assessment of the trustee's motivation and likelihood of them behaving cooperatively and is based on the trustee's perception of the population, particularly on observable characteristics based on identity. Trust can be earned through the presence of neighbors. Payne (2013) repeated interactions can help to build cooperation and trust, as well as reduce uncertainty about neighbors. Relying on neighbors, even strangers, is a form of trust in understanding social relationships between individuals. Relying on neighbors, even strangers is a form of trust in understanding social relationships between individuals. Likewise, women who do commuting to work. She will rely on neighbors in maintaining the security of the environment where he lives as long as he works elsewhere. Therefore, all of the information received from neighbors usually be a consideration to take action. Mota et al.,(2016) state that women tend to imitate other women from their neighborhood to enter the job market, and women have social ties. However base on (Mattisson et al., 2015) reported that the general confidence in women traveling by 35% compared to men.

In addition, the interaction of groups and individuals in the residential neighborhood has different impacts depending on how they take advantage of each other in achieving their goals and expectations. Dudwick et al., (2006) state that understanding groups and networks allow people to access resources and collaborate to achieve common goals, such as kinship and friendship. Levine, (2020) states that the presence of groups can make women's social networks strong. Carley & Behrens, (1999) state that the existence of groups/organizations in society can make strong ties the social, cultural, and economic aspects of society. This statement is strengthened through the results of research by David et al., (2010) that the presence of a group reduces the probability of worker mobility in Europe.

Several studies on the relevance of accessibility and commuting activities. mentions that the availability of accessibility between the workplace and the worker's residence. Accessibility associated with this activity is the availability of public transportation. Sánchez & González, (2016) mention that there are differences in the choice of transportation in commuting mobility, where public transportation is the choice of women in Andalusia. Molin et al., (2008) also state the same thing, that women use public transportation more often than men. Pazy et al., (1996) reported in their research that women who depend on public transportation show greater sensitivity to the presence of small children in their tendency to increase commute time than those who use private cars. Transportation can influence the decision to commute and the potential to act as an intermediary agent in the formation of social capital (Bradbury, 2006; Delmelle et al., 2013). David et al. (2010) stated the individual does not make mobility if the neighborhood provides social ties. Therefore, we assume the provides public transportation will be a positive consequence of the probability of women deciding to commute.

Various factors can determine women workers commuting especially from individual characteristics such as income, occupation, education, age. (Artis et al., 2000; Sandow, 2011). In addition to individual characteristics, regional factors also affect individual behavior for commute, this is usually related to the use of transportation mode.

### **Women Worker Commuting and Labor Market**

Women in the labor market can also use the utilization of social capital obtained from a residence. Franklin et al. (2005) stated that social capital can be distinguished by the level of hegemony and transformative power in the feminist approach. It is also recognized as a bottom-up process. An increase in the availability of external resources in the market or through government policy leads to a rise in the continuity of a sense of identity and place, which always remains important. As gender is now an integral aspect of any economic

growth program (Amoding & Mwesigwa, 2021), the involvement of women in business growth has increased. It has a huge impact on the economic and social development of numerous nations throughout the world (Adiza et al., 2020). Shaw (2005) stated that it is important for women to invest in the community, therefore, the environment in which they live is a source of social capital formation. The comfort and good relations created by the place where they live make them reluctant to relocate. Therefore, they prefer commuting, although this tends to have consequences for social capital in other forms.

The concept of supply of labor describes individuals who offer resources to the labor market. Killingsworth & Heckman (1986) stated that the family labor supply model can be used to observe female workers in decision making. Because family membership and its obligations are a very important correlation of the level and development of the supply of female labor. For example, the level of labor supply is generally lower but positive trends in the supply of labor will usually be stronger for married women than for unmarried women. This model explicitly allows for the impact of family memberships on decisions about working hours and work participation. Therefore, this model is useful for analyzing the supply of female labor. Killingsworth argues that the conventional family-labour supply model provides flexibility in extending a single individual analysis by postulating a single decision-making unit that maximizes the quasiconcave preference function.

Base on this background, we analyze the neighborhood through social aspects (trust and solidarity, and social networks) and accessibility (public transportation) on the probability of commuting or not commuting. This article will make a contribution based on the literature in two steps. First, it provides an understanding of the effect of social capital on female workers' commuting decisions. This result allows us to find out whether social capital in the neighborhood influences women's travel-to-work decisions. Second, to find out the impact of social capital and accessibility, and women workers' decision to commuting.

## **Method**

This study aims to determine the social capital that dominates the reasons for women workers to prefer commuting or not commuting in Indonesia. Data used in this research was obtained from secondary data (microdata) National Labor Force Survey (Sakernas). The population of this study about 131,661 individuals, indicate women workers. Sakernas provided an individual survey at the district, which provided basic data of commuter workers. A commuter worker is measured as a variable that equals one if the individual answered “every day” to the following question “Does (Name) go and back to/from work



every day, every week or every month?’ and zero if others. It’s about 93,902 individuals of women workers indicate commuting. Meanwhile, Indonesian Village Potential (PODES) provided data on socio-cultural conditions obtained from the village head (lurah) about 83,931. These data are combined, based on residence similarity at the district /city level of each individual. As previously discusses, the function of women workers is to choose to commute or not. The logit model is estimated to examined the probabilistic. The data will analyze using statistic software.

The logistic analysis is a statistical technique used to measure the dependent and independent variable, which is further categorized into a metric or non-metric, respectively. It uses a maximum likelihood estimation method to maximize the probability of the observed value of the data. The model in this study was transformed into the following forms:

$$\text{Ln} \left( \frac{CW}{NCW} \right) = \beta_0 + \beta_1 trs + \beta_2 wgp + \beta_3 apt + \beta C \quad (1)$$

The dependent variable were analyzed is women workers calculated by a dummy variable (commuting (CW) =1, non-commuting (NCW) = 0). The main variable from PODES data, this article uses the same variables used by (David et al., 2010) neighbors and social groups based on the similarity sex and we add accessibility. Trust from neighbors proxy with activities to help other neighbors (*trs*) by dummy variable (yes =1, no=0) and group and network proxy with women’s group activity (*wgp*) by dummy variable (yes =1, no=0). The accessibility variable proxy with availability of public transportation in the neighborhood (*apt*) by dummy variable (yes =1, no=0). This article use individual and job characteristic of women worker as control variable ( $\beta C$ ), such as sectoral (sctoral *sector* denotes the sectoral of worker (0 = informal, 1 = formal), occupational (*occjob*) the position at work consisting of five types (1. Manager and professional; 2. Administrative Staff; 3 Skilled Workers and Craft Workers, 4. Blue-collar workers), incomes consist of low income (1.000.000, - Rp 2.500.000;) and High income more than Rp 2.500.000, and education consist of low education less than junior high school, and high education more than high school; and finally, the age (1. 15 – 30 year; 2. 31-45 year; 3. 46-60 year).

We performed the data analysis in two steps. First, we are doing regression logit models to three models to see how the interaction of all variables in various models is gradual (robustness check). The purpose of this robustness check is to see if there is a change in the estimation results by adding other variables. It means that the sample used does not contain defective samples, so it does not interfere with the estimates of the measured parameters, or it will be more consistent (Mattisson et al., 2015). Second, we analyze the probability of



women workers to work trips, using marginal effects analysis. The marginal effect in the logit model is measured to see the change in the regression mean and the unit change in the regression value. Where all other variables are considered constant (Gujarati, 2003).

## Results

The information on women worker commuting in Indonesia, based on Sakernas, 2018 – BPS Indonesia, indicated that 131,661 women were employed, with an average of 71.3% of the total number of workers. According to data, the East Java province has the highest women workers commuting at 8,785 people, followed by the Central Java and North Sumatra at 8,638 and 7500 people, respectively.

**Table 1 Descriptive Summary Women Worker and Control Variables**

| <b>Variable</b>                   | <b>Obs</b> | <b>Mean</b> | <b>Std. Dev.</b> | <b>Min</b> | <b>Max</b> |
|-----------------------------------|------------|-------------|------------------|------------|------------|
| Women Commuting                   | 131661     | 0,7132      | 0,4523           | 0          | 1          |
| Trust and Solidarity              | 131504     | 0,9887      | 0,1057           | 0          | 1          |
| Social Networks                   | 131504     | 0,9750      | 0,1563           | 0          | 1          |
| Accessibility                     | 131504     | 0,5134      | 0,4998           | 0          | 1          |
| <b>Work Status</b>                |            |             |                  |            |            |
| Sectoral                          | 131661     | 0,3092      | 0,4621           | 0          | 1          |
| <b>Occupation</b>                 |            |             |                  |            |            |
| manager and professional          | 131661     | 0,3591      | 0,4798           | 0          | 1          |
| Administrative Staff              | 131661     | 0,3761      | 0,4844           | 0          | 1          |
| Skilled Workers and Craft Workers | 131661     | 0,1248      | 0,3305           | 0          | 1          |
| Blue-collar workers               | 131661     | 0,3092      | 0,4621           | 0          | 1          |
| <b>Income</b>                     |            |             |                  |            |            |
| High                              | 131661     | 0,1081      | 0,3105           | 0          | 1          |
| Low                               | 131661     | 0,8453      | 0,3616           | 0          | 1          |
| <b>Education</b>                  |            |             |                  |            |            |
| High                              | 131661     | 0,3724      | 0,4834           | 0          | 1          |
| Low                               | 131661     | 0,6276      | 0,4834           | 0          | 1          |
| <b>Age</b>                        |            |             |                  |            |            |
| 15 – 30 year                      | 131661     | 0,2199      | 0,4142           | 0          | 1          |
| 31-45 year                        | 131661     | 0,3875      | 0,4872           | 0          | 1          |
| 46-60 year                        | 131661     | 0,3163      | 0,4650           | 0          | 1          |
| Marital Status                    | 131661     | 0,1306      | 0,3370           | 0          | 1          |

(Source: author's calculation Sakernas 2018 and Podes 2018)

Table 1 shows that 131,661 of the workers are women, as indicated by the descriptive statistics results on the number of different observations. When viewed from a detailed summary statistic, the number of female workers that commute is greater than those that do not commute.

Furthermore, to answer the question on the probability of social capital influencing the decision CW or NCW, this study uses a logistic analysis. The results of logit estimation values are shown in table 2 as follows:

**Table 2 Results Estimation Women Worker Commuting And Social Capital In Indonesia**

| <b>Variabel</b>                   | <b>Model 1</b> | <b>Model 2</b> | <b>Model 3</b> |
|-----------------------------------|----------------|----------------|----------------|
| Trust and Solidarity              | -0.192**       | -0.272***      | -0.265***      |
|                                   | (-3.05)        | (-4.02)        | (-3.90)        |
| Social Networks                   | -1.247***      | -1.307***      | -1.302***      |
|                                   | (-21.39)       | (-21.98)       | (-21.81)       |
| Accessibility                     | 0.0989***      | 0.146***       | 0.151***       |
|                                   | (8.05)         | (10.56)        | (10.89)        |
| <b>Work Status</b>                |                |                |                |
| Sectoral                          |                | 2.669***       | 2.215***       |
|                                   |                | (103.26)       | (74.74)        |
| <b>Occupation</b>                 |                |                |                |
| Manager and Professional          |                | 0.288***       | 0.352***       |
|                                   |                | (3.85)         | (4.50)         |
| Administrative Staff              |                | -0.507***      | -0.383***      |
|                                   |                | (-7.43)        | (-5.38)        |
| Skilled Workers and Craft Workers |                | 0.677***       | 0.764***       |
|                                   |                | (9.90)         | (10.73)        |
| Blue-collar workers               |                | 0.941***       | 1.049***       |
|                                   |                | (13.18)        | (14.15)        |
| <b>Income</b>                     |                |                |                |
| High                              |                |                | 0.893***       |
|                                   |                |                | (9.20)         |
| Low                               |                |                | -1.046***      |
|                                   |                |                | (-14.29)       |
| <b>Age</b>                        |                |                |                |
| 15 – 30 year;                     |                |                | 0.0423         |
|                                   |                |                | (1.42)         |
| 31-45 year                        |                |                | 0.0639*        |
|                                   |                |                | (2.56)         |
| 46-60 year                        |                |                | 0.145***       |
|                                   |                |                | (5.80)         |
| <b>High Education</b>             |                |                | -0.195***      |
|                                   |                |                | (-11.20)       |
| <b>Marital Status</b>             |                |                | -0.0377        |
|                                   |                |                | (-1.40)        |
| _cons                             | 2.276***       | 1.689***       | 2.582***       |
|                                   | (27.03)        | (15.18)        | (19.15)        |
| N                                 | 131504         | 131504         | 131504         |
| Pseudo R-sq                       | 0.005          | 0.182          | 0.190          |
| AIC                               | 156834.9       | 128993.7       | 127702.4       |
| BIC                               | 156874.1       | 129081.8       | 127858.9       |
| t statistics in parentheses       |                |                |                |
| * p<0.05, ** p<0.01, *** p<0.001  |                |                |                |

Table 2 shows that social capital *mcp* and *wgp* has a negative and significant effect and *fel* has a positive significant effect on the logit model analysis's overall results with the social capital variables consisting of mutual cooperation, the existence of networks in the local community, and trust individual to government on CW decisions. Furthermore, this study used a robustness check because logistic regression is insensitive to the misspecification of the disturbances (Cramer, 2006). The economic and socio-demographic variables on women workers are used to determine the stability of social capital variables towards CW decisions, which has a significant effect of  $\alpha < 0.05$  from models 1 to 3, as shown in table 2. According to (Gujarati, 2003), logistic analysis is the logit of directional signs and significance, which is more important to be analyzed, and observed. This means that the sectoral, occupation, income, and education variables in this model regression can control the main variable.

According to (Dziak et al., 2017), the AIC (Akaike Information Criterion) is one of the measurements often used to compare the maximum likelihood model. The best consideration is the model with the smallest AIC value from the information criteria. Therefore, this study refers to the 4th model with the following model equations:

$$\ln \left( \frac{CW}{NCW} \right) = 2.582 - 0.265mcp - 1.302wgp + 0.151 fcl + \beta C + \varepsilon$$

**Table 3 Sensitivity and Specitivity**

| Information          | Value   |
|----------------------|---------|
| Sensitivity          | 85.67%% |
| Specificity          | 52.76%  |
| Correctly classified | 76.23%  |

(Source: author's calculation Sakernas 2018 and Podes 2018)

Table 3 shows that this study conducts a sensitivity and specificity test, which is similar to the goodness of fit test, where the representative form acts as a substitute for  $R^2$ . This model is able to state the overall value of 76.23% correctly. The sensitivity test results show a value of 86.67% from the observation of positive results, with a negative specificity of 52.76%. Table 3 shows that the sensitivity probability of observations with a probability value of  $\geq 0.5$  about 76.23% female workers commuting from 131,504 women workers.

**Table 4 Marginal Effect of Women Worker Commute Decision**

| <b>Variable</b>                   | <b>Marginal Effect</b> | <b>SE</b> | <b>Significance</b> |
|-----------------------------------|------------------------|-----------|---------------------|
| Trust and Solidarity              | -0,0399                | 0,0094    | 0.000               |
| Women's Group                     | -0,1430                | 0,0040    | 0.000               |
| Accessibility                     | 0,0246                 | 0,0023    | 0.000               |
| Work Status                       |                        |           |                     |
| Sectoral                          | 0,2858                 | 0,0032    | 0.000               |
| Manager and Professional          | 0,0530                 | 0,0108    | 0.000               |
| Administrative Staff ;.           | -0,0644                | 0,0123    | 0.000               |
| Skilled Workers and Craft Workers | 0,1179                 | 0,0104    | 0.000               |
| Blue-collar workers               | 0,1340                 | 0,0072    | 0.000               |
| Income                            |                        |           |                     |
| highinc                           | 0,1171                 | 0,0097    | 0.000               |
| lowinc                            | -0,1365                | 0,0073    | 0.000               |
| High Education                    | -0,0322                | 0,0029    | 0.000               |
| Age                               |                        |           |                     |
| 15 – 30 year;                     | 0,0069                 | 0,0048    | 0.154               |
| 31-45 year                        | 0,0104                 | 0,0040    | 0.010               |
| 46-60 year                        | 0,0233                 | 0,0039    | 0.000               |
| Marital Status                    | -0,0062                | 0,0045    | 0.164               |

(Source: author's calculation Sakernas 2018 and Podes 2018)

(\*)  $dy/dx$  is for discrete change of dummy variable from 0 to 1

Marginal effects after logit = 0.7947

A calculation was carried out to determine the CW probability of the decision by looking at the logit model marginal effect, as shown in table 4. The indicates of this result show that the probability of women worker's commutation mobility in Indonesia is 79% compared to NCW. In terms of social capital, women worker's main observation variables can be partially determined to commute by 0.039 points or 3.9%. This means that on average when the level of trust increases to neighbors in the area of residence, the probability of CW declines by 3.9%. The variable women's group that shows the existence of networks in the local community effect on the decision to commute to mobility is 0.143. It means that on average when the social network level increases towards community groups in the residential neighborhood, and women worker's commuting probability declines by 14.3%. Differently, in facilities variable such as public transportation has a positive marginal effect of 0.025 points. It means that the variable of facilities provides by the government will increase with a rise in CM probability by 2.5%. These studies are controlled by sectoral, work, income, education, age, and marital status of women workers in Indonesia.

## **Discussion**

Table 2 provides information on women workers in Indonesia. Women workers dominated by working in the formal sector around 30% with the most work as Administrative Staff. In general, the income earned by women workers classified as low income of less than Rp. 2,500,000, as much as 80% and with low education. In this study, we assume that the environment in which they live has a positive effect on their decision to commute. We assume that the social capital of neighbors provides a sense of security, comfort, and the opportunity to have economic prosperity. However, after doing calculations and analysis, we found results that were contrary to our assumptions.

Our calculation and data analysis started by observing the variables regressed through a robustness check. The robustness checks were variables that formed social capital from the neighborhood with consistency and persistence in each model (tab.2). Next, we added a control variable to each model, and the results were significant and stable. It means that all control variables are accurate and can strengthen the results of the study. The control variables are formal and informal sectors, occupation, income, high education, age, and marital status, with a majority indicating the significant influence on women workers' decisions in commuting

Based on data processing, the total social capital that affects CW has a probability of 15.8%, as shown in table 4. The variable of trust and solidarity, and women's group have a negative and significant influence on the decision of women workers to commute, but not on facilities variable as a proxy the trust between individual and government. The results of this study indicate that social capital sourcing from the neighborhood will has an impact on reducing the probability of female workers commuting. Similar results have also been reported by (David et al., 2010) social ties in the area of residence inhibit the desire to carry out mobility. This is indicating that women workers can still take into consideration of their neighborhood. This is because women workers are more tied to the residential neighborhoods in which they live, so they will not be mobile to commute and leave the area for a long time and in a line to with Sandow, (2011) statement on women's work commuting in traditional societies

The existence of women's groups in the area where they live provides many activities and empowerment. It means that the existence of the social networks in the areas where they live is stronger to bind women so that women workers will be closer to the residential neighborhood. In this study, report that the existence of a women's group has a negative effect on the probability of women workers commuting. It shows strong ties as a result of

the existence of women's groups in the area where commuter workers live in Indonesia. This result is in line with Mota et al. (2016) reported the study on neighborhood effect and the decision of women to enter the labor market. Including the labor market elsewhere commuting with the aim of working elsewhere.

Other findings in this study indicate that the facilities provided by the government are positive and significant. The availability of public transportation provided by the government is also one reason women workers commute from one area to another. The availability of public transportation is one of the driving factors causing worker mobility, especially in commuting activities. The existence of transportation provides an opportunity for the creation of social capital. The transportation is not only a means of commuting but also as a means of supporting social networks (Bradbury, 2006). The findings are in line with the results of the research reported by Sánchez & González, (2016) state that there are differences in the choice of transportation in commuting mobility, where public transportation is the choice of women in Andalusia. Molin et al., (2008) stated the same thing too, that in general, women use public transportation more often than men. In addition, these results also show that the existence of public transportation is important for women workers to commute. Because more women workers commuter come from rural and suburban areas. Public transportation will provide broad opportunities for women to commute to urban areas where many jobs match the characteristics of female workers. This great opportunity to commute with public transportation also has an impact on social satisfaction. For example, female workers who use public transportation from the suburbs or rural areas will certainly meet other women in it. This condition has done every day will open the potential for social capital. So they will have a wider network as well.

Finally, this study emphasized the female labor supply and commuting in Indonesia can fill as managers, skilled workers, and blue-collar workers. However, it seems that increasing social ties will make women more submissive to existing social norms. The women will change their neighborhood to following their husbands to other neighborhoods or they will work in the area where they live and even work at home. Base on this study, two policies can be suggested to the government. The first, to decrease the traffic density in the city, recommend the government provide job opportunities following the character of women in the regions do equal employment opportunities for women in the area of residence, for example, vacancies for women according to their domicile. Second, to control the urbanization of population density in urban areas, infrastructure improvements such as the availability of public transportation tailored to the needs of women, road repairs, and security guarantees for women when they have to commute for those who live in rural and suburban areas.

## **Conclusion**

The conclusion, this study provides information on the influence of the neighborhood and its probabilities on women's work travel in Indonesia. This study shows that social influence is still strong in Indonesian society. The results of this study have two suggestions to the government. The first, on density traffic in the urban area as equal distribution of job opportunities for women in the areas where they live. Second, as controlling the urbanization, infrastructure improvements such as the availability of public transportation base on women's needs, road repairs, to guarantee security for women when they have to do commuting for those who live in rural and suburban areas

The findings in this study explain that the social capital from residential neighborhoods will reduce the probability of women workers commuting. The social aspect in the social capital approach originating from the residential neighborhood causes a decreased probability of that decision. These findings are in line with the results of the study reported by David et al., (2010) and following Sandow, (2011) statement on women's work commuting in traditional societies. This finding indicates that the social ties of traditional society are still attached to women workers in Indonesia. However, the accessibility in this article is that public transportation gives a positive probability to the decision to commute to women workers in Indonesia.

This study has contributed both operationally and theoretically. However, this research also has limitations, because we use secondary data. This can lead to unfulfilled data needs that are more specific than the research. Therefore, in the future, more comprehensive research will be needed using data that is more specific to other forms of social understanding and women worker's activity.

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