

## Womenomics and Migrant Workers Policy: Can They Solve Labor Shortage in Japan?

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### Abstract

Aging population threatens economic conditions in Japan which results in a condition of labor shortage, furthermore the government provides Womenomics' and accepting migrant workers policy to solve the issue. This research aims to give an understanding about Japan's labor shortage condition and how it can be solved by Womenomics and accepting migrant workers. Therefore, this research emphasized the labor shortage conditions and the failure factors of Womenomics' and accepting migrant workers in Japan. Essentially, this study applied the qualitative case study method by referring to the literature review conducted by previous studies. The findings of this research are meant providing suggestions to Japan's government about how important it is to enforce appropriate policies to tackle labor shortages and to minimize policy failure of policy implementation.

**Keywords:** aging population; labor shortage; womenomics; migrant workers; policy implementation

### Introduction

As regards Japan's population condition, Japan has experienced the phenomenon of aging population (Toru, 2013). Aging population happens when there are increasing number of unproductive ages or elderly who live in society compared to the productive ages or young generation in a country (Dallin, 2013). The Japanese population of elderly people is steadily increasing compared to the productive ages, thereby it can be categorized as an aging population condition (Dallin, 2013). There are two main reasons why Japan experiences an aging population, first technological advancement in medicine have led to Japanese people living longer;

also, economic constraint such as expensive living costs have become the reason for low birth rates (Roser, 2013). Japan has the longest life expectancy in the world, and at the same time Japan has the lowest birth level in the world (Fukuda, 2016). In Japan, the percentage of elderly people aged 65 years old above surpassed 10% of the total population in 1985. In 2020, the total of population aged 65 years old above reached 28,8% from the total of population (Statistics Bureau of Japan, 2021). Therefore, Japan's birth rate is declining and the country has to face the consequences of aging population (Konishi, Tamaki and Yoshinaga, 2018).

There are two types of consequences from an aging population: social and

economic. For social consequence, rural depopulation becomes the main issue by the existence of an aging population. It makes the majority of productive ages only want to live in big cities which ends human resources scarcity in rural areas (Sigurðsson, 2017). The other consequence is that aging population in Japan has bad impacts to the Japan's economy such as the decline in demand and a decrease in real GDP. It means an aging population causes a decreasing tax base, increasing government expenditure, and economic activity decelerates (Katagiri, 2012). The decline in demand and decrease in real GDP originated from shrinking population and labor shortage. Therefore, the Japanese government faces this crucial problem for economic development, which is plagued by the labor shortage due to an aging population (Morita, 2017).

The Prime Minister of Japan, Shinzo Abe, produced an alternative policy in order to solve the problem of the labor shortage. The policy was called "Womenomics" which empowers woman to take more participation in developing Japan's economy by taking up a career (Helen, 2015). Another alternative is that the implementation of accepting migrant workers to fill the productive-age scarcity (Masahiko, 2010) because the improvement of the productivity levels by taking advantage of human resources will definitely expand the Japanese economy. Both Womenomics and accepting migrant workers policy become important topic to be discussed since these two policies are what the Japanese government undoubtedly relies on (Sigurðsson, 2017)

Studies concerning implementation of Womenomics and accepting migrant workers to tackle labor shortage have also been conducted by several scholars. First, Serban (2012) analyzed the influence of demographic conditions on labour market. The aging and decreasing population prospects require special attention due to older labor force is less adaptable to the changing conditions

of Japan's economy. Then, Japanese labor shortage needs to be addressed by some convergent solution of birth stimulation and of increasing human capital (Serban, 2012). Another scholar analyzed the Womenomics can be one of alternative to tackle the labor shortage. It explained the historical context of current Womenomics policy, provides a critical analysis of implementation strategies discussing progress and socio-structural obstacles, and concludes with an assessment of the viability of Womenomics for Japan (Helen, 2015). Another scholar also analyzed that implementing Womenomics is the policy to tackle labor shortage while also addressing the gender equality issue. However, there were blind spots in Womenomics that focus on increasing work opportunities for an elite segment of women. While recognizing that the promise of promoting more women to higher-level positions does address long-standing frustrations about the institutionalized sexism of political and corporate culture in Japan (Schieder, 2014). Regarding the implementation of Womenomics, Yuiko (2014) explained on the importance of 'zero-waiting list daycare,' since it supports women who want to have children and participate in the workforce (Yuiko, 2015). On the other hand, Masahiko (2010) noticed the implementation of accepting migrant workers to fill the productive-age scarcity is an important project. This policy is to address the workforce shortage by implementing the Technical Intern Training Program (TITP) by maximum 3 years of contract (Masahiko, 2010).

There are still few studies that address on the policy implementation of government to tackle the labor shortage caused by the aging population since the previous studies do not elaborate two policy implementations in accepting more migrant workers and Womenomics to solve labor shortage in the context of an aging population. Therefore, this research focuses on both implementation of Womenomics and accepting migrant workers

to tackle labor shortage in the context of aging population.

This research addresses how the labor shortage conditions in Japan and how Japan's policy implementation solves the labor shortage which is caused by an aging population. This research expected brings ideas for Japanese government about the importance of appropriate policy implementation to give solutions to labor shortage matters and reduce the possibilities of policy failure. This article is divided into several parts. First, the views on literature are presented through compiling studies on the definitions and concepts of labor shortage and policy implementation by various authors and scholars. Second, the research methodology would be elaborated by qualitative method, starting from collecting secondary data. Third, the results from the findings would be reported, which illustrates Japan's labor shortage, the implementation of Womenomics, and the implementation of accepting more migrant workers. Fourth, the reviewed findings and generated dimensions of capability would be examined deeper by understanding the case studies to provide answers for the research questions. Finally, the paper is concluded with final remarks on the research, the limitations, and additional developments for future studies on the subject.

## **Literature Review**

### *Labor Shortage*

The definition of Labor shortage cannot be separated from the idea of Human Resources (HR). Advanced human resource (HR) planning needs to be carried out by a high caliber HR management team. Although the importance and role of the HR department is finally recognized by many business owners, the current labor shortage means support for HR is insufficient. Improving the capabilities of HR staff is the responsibility of business

owners, who should provide more support to HR staff (BSR, 2010).

Labor shortage happens when "there is a shortage of members of a specific profession if the number of available workers is less than the number needed, as established by some social criterion or goal" (Blank & Stigler, 1957). By the existence of this definition, other scholars defined labor shortage as "a circumstance existing over an extended period of time when the employers were not able to hire at going wages or salaries sufficient numbers of qualified persons to fill positions for which there were budgeted funds and for which personnel were required to satisfy existing demands for services" (Franke and Sobel, 1970). However, the recent condition the labor shortage itself occurs by many types of shortages, such conditions affect the demand and supply of labor (Boswell, Stiller, & Straubhaar, 2004). All organizations and companies need individual talent which is relevant to the objectives of the organizations or companies. If organization want to operate in the long term, they need to have talent workers who can adapt with change or even lead changes (Boxall and Purcell, 2011). Organizations which hire and maintain individual talent to create a 'human capital advantage' (Boxall, 1996). Many organizations in western countries face an aging population. As a consequence, there will be a labor shortage a few decades later (Cappelli, 2005). When the organizations experience the labor shortage, then they will face problems in finding individuals to benefit from human resources. Organizations proactively will try to find the solution on how to tackle the problems of the decrease in labor supply.

Dutch labor market research illustrates that there is a demand for replacing laborers in the next five years to address the retirement of laborers. This research predicted more than two million workers would be replaced, nevertheless the growing labor population will not be enough to replace all the labor

shortages (ROA, 2011). Companies looking for employees with economic/administrative or agricultural, pedagogical, care, and technical backgrounds will experience serious problems (ROA, 2011).

Boswell stated one of the many types of shortages is an aggregate labor shortage. This type of shortage exists when there is a shortage in aggregate supply of labor with full employment (Boswell, 2004). Thus, there are many literature studies that define this aggregate labor shortage as 'hard-to-fill vacancies' or quantitative shortage which caused by low number of productive ages (Zimmerman, 2005).

### *Policy Implementation*

According to Charles (1991), implementation is part of the public policy process which can be categorized as the next step after the agenda setting, formulation, adoption, and subsequent stages of the assessment. What is meant by policy implementation is the ability to form further relationships in a series of cause and effect linking actions with goals. It is an effort to establish a linkage between program actions with program goals/objectives to be achieved (Suparno, 2017).

Policy implementation has been characterized by numerous researchers from different points of view. The usage is the execution phase of the policy process. Implementation is an activity in a public regulation cycle applied so that a regulation can achieve its goal. Regulation implementation series can be observed clearly starting from the created programs up to the regulation implementation steps (Subarsono, 2011). Another definition of implementation are about Policy Implementation which is defined as what happens between the publication of an apparent initiation on the part of the government do something, or to stop doing something, and the ultimate impact in the

world of action (O, toole, 2000 in Fischer et al., 2007). Another scholar stated that it is enacting the law where different stakeholders, organizations, procedures, and techniques work together to place policies into practice with the end goal of accomplishing the policy objective (Stewart et al., 2008). The implementation can be explained as a process which focuses on the output and outcome, and thus, it includes various actors of organizations and techniques of control. It is about interaction processes between setting goals and the actions directed toward accomplishing them (Pressman & Wildavsky, 1973).

The most common definition of implementation positions it as the gap between policy's expectation and the results (Smith & Larimer, 2009). Therefore, it is obvious that if the outcomes of policy implementation are not up to the policy makers' expectation, it can be categorized as a failed policy. This is why in implementation studies, the comprehension about the success or failure of public policy elucidates factors which influence it.

Van Meter and Van Horn (1975) stated that the uncertainty of policy objectives and standards can make it difficult for the implementor to understand and at the same time give rise to the diverse dispositions of various actors involved in the implementation process which ultimately do not support the smooth and successful implementation of policies. Therefore, the objectives / targets and policy standards are crucial factors in the implementation process.

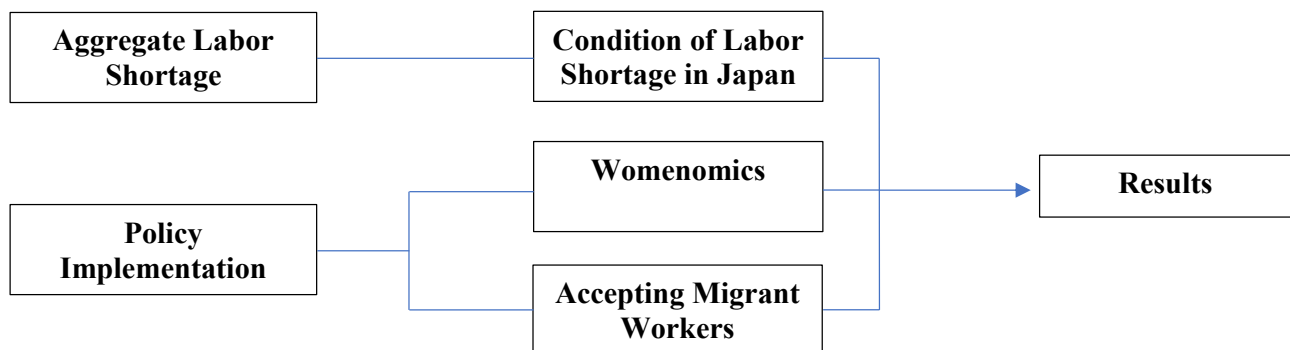
According to Mazmanian and Sabatier (1989) there are several things that affect the success or failure of implementation. First, the independent variable, namely whether or not the problem is easily controlled with regard to indicators of theoretical and technical problems of implementation, diversity of objects, and changes as desired, Second, intervening variables,

namely the ability variable to structure the implementation process with indicators of clarity and consistency of objectives, the use of causal theory, the accuracy of resource allocation, hierarchical cohesiveness among implementing agencies, implementing rules of implementing agencies, and recruitment of executing officials and openness to outsiders, Third, variables outside the policy that affect the implementation process with regard to indicators of socio-economic and technological conditions, public support, attitudes and resources from constituents, higher official support, and commitment and leadership qualities from implementing officials (Mazmanian & Sabatier, 1989).

Reviewing to Grindle (1980), the success of implementation depends very much on the content of the policy, that is how much interests are effected (i.e., the greater the interests are, the more difficult it is to implement). Likewise, the success of implementation depends very much on the type of benefits that the policy intends to produce. The more tangible the benefits generated the easier it is to implement. The degree of change also effects success in implementation. If the degree of change desired by the policy is large and broad, then its implementation is more difficult and vice versa. If the degree of change is small then the policy is easy to implement. Successful implementation is

influenced by the nature or type of interests to be achieved by the policy itself. Certain types of policies will have a certain impact on the activity of the implementation process (Grindle, 1980). The final outcome of policy implementation is important in defining whether the policy is successful or not due to it shows the linkage between expectation and result, then the strength of the policy's impact towards society also indicates the effectiveness of policy. In addition, it also can be measured by considering the influence of policy implementation at the national level, thereby the impact should be as policy makers expected (Grindle, 1980).

Regarding the concepts that be used in this research, it uses the concept of aggregate labor shortage (Zimmerman, 2005). It is the most suitable concept to explain about the condition of labor shortage in Japan since the previous concepts do not explain the labor shortage which caused by low number of productive ages. Moreover, this research also uses the concept of policy implementation by (Grindle, 1980). It is the most appropriate concept to analyze whether the policy is successful or not due to all the data that can be used in the indicators, such as the interest affected, the type of benefit, the degree of change and gap between expectation.



Researcher uses the concept of aggregate labor shortage to understand the condition of labor shortage in Japan. Then, the concept of policy implementation is also used to explain whether the implementation of Womenomics and accepting migrant workers are successful implemented to overcome the labor shortage in Japan. Finally, researcher finds the results.

### **Research Methodology**

As regards research methodology, there are many researchers use a qualitative case study method for the purpose of analyzing the policy implementation to tackle the issues (Brigitte, 2003). This study carried out by using qualitative research method. Qualitative research consists of several types. One qualitative method is a qualitative case studies (Creswell, J., & Creswell, J., 2018). Researcher used a qualitative case study method to give an understanding of Japanese policy implementation to solve labor shortage as the alternative to reduce the gap between expectation and result and possibilities of failure in policy implementation.

Regarding the data obtained, researcher used qualitative case study methodology by using secondary data analysis (Creswell, J., & Creswell, J., 2018). Secondary data are collected from certain resources which have primary data (Boslaugh, 2007; Johnston, 2014). There are different types of resource data obtained by the researcher in this analysis, the data can be found by books and journals to understand and analyze concepts of research and elaborating the research objectives in this case study (Martin, Cunha, and Serra, 2018). Evidence is taken from many discussions about this case study especially in books and journal articles. Therefore, the researcher conducts the analysis by using secondary data since it can be categorized as the most appropriate.

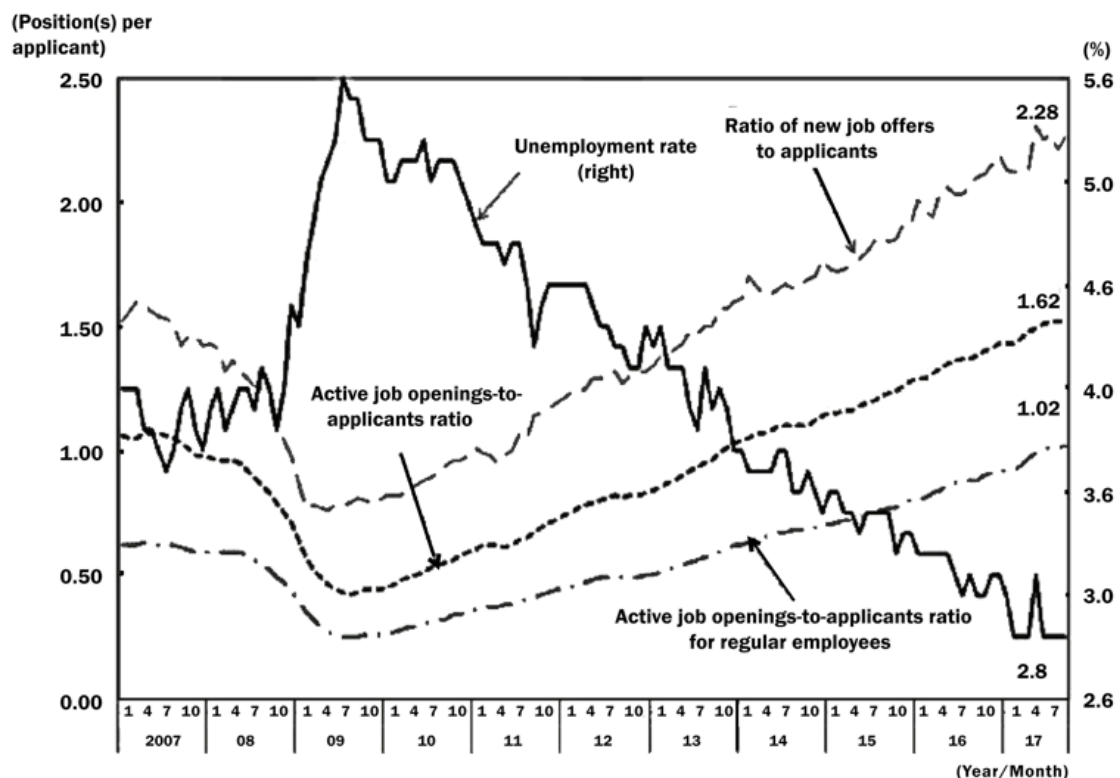
Analysis using secondary data is divided into four phases: developing the research question, identifying a secondary data set, evaluating a secondary data set, and preparing and analyzing secondary data (Johnston, 2014; Wallace Foundation). First, authors identified the general topic, then it consists of reading through existing papers to see whether there is a gap in the literature to fill. At this point, authors discovered that previous research has not investigated the Japanese labor shortage conditions after implementing policies to solve the issue and how Japan's policy implementation solves the labor shortage which is caused by an aging population. Second, after reviewing the literature and specifying research questions, authors decided to rely on secondary data. Authors discovered that there is past data that perfectly reusable in this research, those data include the unemployment rates and active jobs opening to applicant's ratio condition, implementation of Womenomics, and implementation of migrant workers. By the existence of those case studies, the research question can be answered more thoroughly. Third, checking the background of these organizations and research, authors concluded that the research is dependable and identified the aim of the original study by understanding the findings of secondary data to understand that this data relevant, Data has been collected by professionals, the actions taken are reliable and valid, and the methodology is adequate. Authors can be sure that new research questions to fill the gap can be answered adequately with existing data. Last, authors used secondary data analysis compilation to analyze the several findings using existing concepts in labor shortage and policy implementation (Johnston, 2014; Wallace Foundation).

## Findings

### General Overview of Labor Shortage Condition in Japan

As indicated by government projections, a “positive scenario” would be that real average growth of 2 percent and the labor participation rate increases to 60.1 percent by 2030, yet the workforce still declines to 62.9 million. In a “negative scenario,” the

employment workforce is projected to decline from 63.0 million in 2010 to 54.5 million in 2030 (Ganelli and Miake, 2015). The active number of job opportunities to applicants has been rising while the unemployment rates have declined after the global financial crisis in Japan in 2009. It reached the lowest level in 2017, at the same time the ratio for active job openings-to-applicants were 1.52 position per capita which is the highest level in the graphic (Yoshio, 2018).



Source: Prepared by Office of Counsellor for Labour Policy Planning of MHLW, based on MHLW’s Report on Employment Services and Statistics Bureau, MIC’s Labor Force Survey

According to the discussion that researcher conducted with Prof. Futoshi Kinoshita, University of Tsukuba of Humanities and Social Sciences Professor experts in demographic transition, demographic structure, fertility, mortality, and modernization, he explained that there is factor which brings on this current shrinking workforce which caused by the existence of population decline. Economic insecurity makes Japanese people do not want to have

a birth, this condition brought by Japanese government which focuses on improving their economy by taking advantages from human resources exaggeratedly compared to give positive birth rate stimulation policies to maintain the enough number of workforces in long term. There is a larger improvement in labor force condition for older employers, and companies often maximize older employees to maximize productivity. Furthermore, the number of labor force participants usually

decrease for women between the late 20s and the 30s because many Japanese women resign from their jobs to get married or raise children. However, many women also remain a part of the labor force from their late 20s through the 30s. One reason for this is that women delay marriage and childbearing. Also, many women choose not to get married (Ganelli and Miake, 2015).

Regarding the main reason why Japan faces lack of workforce, as it mentioned before about population aging, the category of productive ages is smaller compared to unproductive ages. This clearly has a strong impact on the ability to maintain the massive growth of retired citizens (Kolbeinn, 2011). Furthermore, many women resign from working to get married or raise children due to the long waiting list for the public daycares. Even though there are many private daycares which have short waiting lists, a middle-class Japanese family would struggle to afford it (Schieder, 2014). For those women who decide not to resign from their job will delay the marriage.

Hence, by the existence of disproportionate ages in Japan, the cost that the government can afford for the social security and retirement plans will continue to decrease (Kolbeinn, 2011). The lack of workforce has serious negative impacts on the Japanese economy due to the decreasing population. Thus, companies in Japan are not able to find workers that they need to carry out specific projects (Ganelli and Miake, 2015).

### *The implementation of Womenomics*

In 2012 the International Monetary Fund (IMF) discharged a working paper titled "Can Women Save Japan?" The paper examines and analyzes to what extent increased participation of women can tackle the trends of the elderly population and potential development. Japan's government is expected and advised to create policies

which help to improve women's participation and also reduce inequality between males and females. This is important for Japan since it is categorized at a very low level for gender equality among industrialized and developed countries (Steinberg and Nakane, 2012). Prime Minister Shinzo Abe was supporting the agenda of economic growth and reform which is known as Abenomics. This is a series of policies that originated by Abe's ideas to raise up Japan's economy with the headline "Japan is Back" and focused on three arrows: fiscal stimulus, monetary easing, and structural reform. Specializing in the involvement of women and targeting women as alternatives for human resources as a part of strategies for national structural reform in alleviating Japan's demographic crisis becomes both national and international policy. As a part of the structural reform of Abenomics, Shinzo Abe was adopting and implementing the policies of Kathy Matsui highlighted in her paper titled *Womenomics: Female buy the Female economy in 1999* (Yoshino and Taghizadeh Hesary 2014). Abe has promised success for Japanese women and the Japanese economy in the context of economics and politics (Linda, 2017).

There are several targets expected by Japan's government throughout Womenomics Hiroko (2018): First, increasing the percentage of women participation in labor force in the context of nation's development was unfamiliar, so the recruitment process in Womenomics should consider gender equality. Women make up more than 50 per cent of the total population in Japan, therefore it can be expected to fill the government's target. Targets set according to the age stage in Womenomics include increasing the workforce of women aged 25 – 44 becomes 77% in 2020, increase the workforce of women aged 20- 34 becomes 79% in 2020, increasing the workforce of women aged 20- 64 becomes 80% in 2020, increasing the workforce of women aged 60- 64 becomes 64% in 2020. Second, achieving 30 per



cent women's leadership roles in 2020. This program creates transparency for women leadership positions such as professors, heads of departments, managers, governors, ministers, vice mayors, etc. Both the public and private sectors are obligated to disclose the number of women in leadership positions due to this policy which will pressure companies to improve women's role in leadership positions. Third, Increasing the percentage of women to return to work after having their first child. The majority of career women who decide to quit their jobs are aged 20 to 34, which can be classified as productive ages. Therefore, the government effort will encourage women to return to work. Fourth, accelerating and increasing the daycare facilities and after school clubs. The point of this policy is to improve the capacity of daycares to achieve a 'zero childcare waiting-list.' Indirectly, this policy will open opportunities to achieve those three targets of Womenomics, thus women can return to work because childcare will be guaranteed. Fifth, increasing the percentage of males who take care of their children. This policy is expected to be achieved by the year of 2020. There are many stereotypes that Japanese husbands think it is not their responsibility to take care of their children. Married women play an important role in taking care of children instead of husbands (Helen, 2015). Last, Reducing the working hours of companies from more than 60 hours to less than 60 hours a week. There are many companies that have working hours of more than 60 hours per week in Japan, leaving limited time for personal life. The target of this policy is expected to be accomplished in at least 5 per cent of Japan (Hiroko, 2018).

According to Goldman Sachs Global Investment Research, there are several significant benefits of Womenomics. First, it boosted Japan's female labor participation rate from 63% in 2013 to 71% in 2019. Second, the maternity cost by both parents in 1999 changed so that two-thirds of salary

was replaced during the first six months. Third, it required both public and private organizations to remove gender diversity plans. Last, it introduced labor reforms to prevent overworking time (Matsui, Suzukui, & Kazunori, 2019).

Japan's government failed to achieve the target of the policy to improve women participation by 30 per cent in leadership positions, therefore the government has changed the target from 30 to 10 per cent in 2020 (Matsui, Suzukui, & Kazunori, 2019). Then, there were still a massive number of children on the waiting-list to enter authorized daycare centers in Japan which accounted for 16,772 (Kyodo, 2019). Furthermore, there are cultural impediments toward Womenomics, first, social norms tend to allow women to assume the family's main reproductive and caring tasks, with women assuming crucial responsibilities for housework, child care, and the care of parents. Contributing to this is the lack of early childcare facilities. A further constraint is the notion of *Sinaiji Shinwa*, a traditional belief that mothers will care for children until the age of three and continuing strain upon mothers for the growth and education of their children. Second, corporate culture promotes men not only to abandon their domestic and childcare duties for women, but also makes it incredibly difficult for women to reintroduce themselves into a competitive work culture after taking childcare abandon with their emphasis on permanent employment as a determinant of job and advancement opportunities. Employers also do not expect a working mother to be able to work as intensively and with the dedication level of their male counterparts (including working fathers) which is why women are side-lined from many career-enhancing roles and training. The returning women are urged to work as non-regular workers who face fewer demands for loyalty and time as non-core workers (Nañes, 2018).

### *The implementation of Accepting Migrant Workers*

The discussion about aging population becomes a serious topic among stakeholders each year with various kinds of debates and developments. The Japanese demand for the improvement of the workforce has improved due to the aging population in Japan (ADB, OECD, and ILO, 2015). With respect to immigration policy in Japan, the number of foreigners who live in Japan has rapidly grown in recent years from 850,000 in 1985 to 2.6 million in 2017. However, it did not reach the 2% total population goal. For comparison, Western European countries had between 8% to 25% foreign nationalities. Furthermore, one-fifth of migrant workers in Japan had a visa intended for labor immigration who were restricted to highly skilled labor. With the labor shortage, the Japanese government has shifted to opening the door to migrant workers even though foreign workers in Japan are still taboo (Yunchen, 2018). The Ministry of Justice has drastically extended the visa quotas and foreign workers for construction areas to prepare the 2020 Olympics in Tokyo. Moreover, the Cabinet office of the Prime Minister released an annual policy report which focuses on the improvement of foreign talent which includes unskilled labor and professional workers as a tool to recover the nation's economy. The Japanese government announced its intention to accept up to 500,000 workers especially in nursing, lodging, construction, shipbuilding, and agriculture (Rebekah & Vukovic, 2019).

The Japanese government still focuses on homogenous societal values. The agenda to open the doors for migrant workers has so many pros and cons from the public because they consider the possibility of immigrants who come to Japan a threat towards their country because they believe diversity might have negative influences to social stability and national security. Japan had experienced

a labor shortage in the 1960s the same as other industrialized countries at that time. Instead of accepting a massive number of migrant workers as America and European countries did, they were more focused on using alternative sources such as improving women's participation (Yunchen, 2018). Japan had experienced the second labor shortage in the middle of the 1980s (Imai and Mori, 1998).

Regarding this second labor shortage, the government amended the Immigration Control and Refugee Recognition Act for recruiting foreign workers with low salaries without violating the closed-door policies, thus they accepted a limited number of foreign professional workers that usually were from Western countries. Regarding this policy, there was a long-term visa for the second and third generation of the descendants of Japanese blood who migrated from Japan. They had special treatment from the Japanese government that allowed them to extend their visa easily, create permanent visas, and go through the naturalization process. Second, there was the Technical Intern Training Program (TITP) which usually originated from Asian countries for up to three years. On the other hand, they often threatened deportation if interns tried to stay longer than three years (Tsuda, 2003).

These different policies from the Japanese government came from the insecurity of Japanese politicians who suspect that workers from Asian countries would establish themselves in Japan the same way as Turkish and Yugoslav individuals who migrated to Germany after the war period. Japan believed workers who are descendants of Japanese blood would easily adapt to Japanese society (Tsuda, 2003). However, the program of TITP has been successful in directing migrant labor to work in small and medium sized businesses which are not attractive enough for native Japanese to work, especially in rural areas (Yunchen, 2018).

## **Discussion**

Regarding the labor shortage conditions, the unemployment rate in Japan was 2.8 per cent in September 2017 which is the lowest rate from the graphic shown. Furthermore, the ratio for active job openings-to-applicants were 1.52 position per capita. Therefore, the ratio for active job openings-to-applicants has been rising since 2009 to 2017 and the unemployment rate has been decreasing to the lowest level in 2017 (Yoshio, 2018). This condition shows there are shortages of productive aged individuals in the workforces. The main problem is found in the low birth rates, which result in labor shortages – as was mentioned about aggregate labor shortage (Zimmerman, 2005). It can be categorized as an aggregate labor shortage because companies find difficulties recruiting employees as an impact of aging population.

By the existence of labor shortage, Japan's government produced policies aimed at solving the issue. The Japanese government established Womenomics to fill the labor shortage with the participation of women in the workforce. Based on the findings above, the implementation of Womenomics have accomplished their several targets such as from 63 per cent in 2013 to 71 per cent in 2019, Japan's participation in women's work increased. Additionally, the maternity cost by both parents in 1999 changed so that two-thirds of salary was replaced during the first six months. Third, it included the elimination of proposals for gender diversity from both public and private organizations. Last, labor reforms were implemented to discourage overwork (Matsui, Suzukui, & Kazunori, 2019). However, Japan has failed to meet its policy goal to increase women's representation by 30% in leadership positions, from 30% to 10% in 2020 (Matsui, Suzukui and Kazunori, 2019). In addition, the waiting list for approved day care facilities for 16,772 children in Japan remained huge (Kyodo, 2019).

The success or failure of policy implementation according to Grindle (1980) depends on several factors. First, the interest affected should have positive impacts to the results of the policy implementation. However, the interest affected can't be solving the main problem that is labor shortage which caused by an aging population evidenced by the Japanese labor conditions that there are low number of unemployment and the high demand of workers which indicate there is aggregate labor shortage (Yoshio, 2018). Then, the type of benefit of Womenomics is not in line the main goal of solving labor shortage which caused by the aging population. There is massive number of waiting lists which makes the Japanese Women not want to participate in the workforces and have birth (Yuiko, 2015), while policy implementation should give birth stimulation and human capital in order to solve aggregate labor shortage (Serban, 2012). Furthermore, the degree of change is too large because there is no consistency of objective from the policy. Therefore, the main objective of Womenomics is to solve the issue of labor shortages which is caused by an aging population, however it changed to tackle the gender bias (Schieder, 2014), as a result there is massive gap between expectation and results of Womenomics' implementation. Therefore, this research finds the implementation of Womenomics a failed policy implementation because there is no capability to fulfill factors mentioned above.

Regarding another policy to tackle the issue, there is implementation of accepting migrant workers in Japan. This policy implementation aims to fill the labor shortage condition namely Technical Intern Training Program (TITP). It succeeded to fill the labor shortage in rural areas because Japanese natives want to work in urban areas (Yunchen, 2018). However, the Japanese government was not serious about this policy. It showed there is discrimination against TITP which

originated in Asian countries to prevent migrant workers from getting permanent visas since they have to go back to their home country after three years (Tsuda, 2003). The Japanese government still is not focusing on this policy due to evidence that Japan considers accepting more migrant workers as a threat to national security, it is because Japanese government maintained the homogenous value to prevent the possibilities of Japanese outsiders disrupting national security (Masahiko, 2010).

With respect to this policy, in general the interest affected does not have positive impacts toward the aggregate labor shortage in Japan since the unemployment rates are still low and the job openings-to-applicants ratio are high (Yoshio, 2018). However, it has tangible benefits toward the lack of workforces in rural areas, but it has no massive impact towards Japanese labor shortage as a whole due to certain reasons. The reason is strongly related with the cultural constraint which shows the Japanese government wants to maintain the homogenous society, then considers migrant workers as a threat for Japanese culture (Masahiko, 2010). Last, the degree of change of implementation is small which means this policy is easy to be implemented because the only focus of the objective is to solve the labor shortage, in fact it has no positive outcomes to tackle the labor shortage in Japan as a whole. Based on the factors above, it shows that the implementation of accepting migrant workers is not successfully implemented due to the government not focusing on improving the number of migrant workers. Whereas if the government focuses on supporting this implementation, it is very clear overcoming labor shortage caused by aging population. It showed that the government forced open the doors to migrant workers in massive number for the sake of the Tokyo Olympics 2020 (Rebekah & Vukovic, 2019). It indicates the only way to solve the labor shortage in Japan is taking advantage of workers from overseas.

## **Conclusion**

The case study of Japanese labor shortage illustrates the need for government to provide good policies to tackle the issue. The government should identify from various factors of the problem to improve the decision-making process. At least, the government can reduce the gap between expectation and the results of the policy implementation, then providing positive outcomes from the policy implementation on problems. By implementing proper policies according to the main problem that is aging population, it will establish advantages for Japan's labor conditions.

The results by implementing Womenomics and opening the door to migrant workers has no significant impact on the labor shortage condition in Japan. Therefore, this research finds that Japan should maximize policies by collaborating between those policies. First, the main point is that Japan should open the door to migrant workers in massive numbers because there is no other option to tackle the labor shortage. Migrant workers can be allocated in strategic areas where Japanese society has no interest to work. Moreover, the Womenomics implementation can be maximized by using migrant workers to improve infrastructure to build public daycares, and it may also be possible to allocate certain migrant workers in the daycares because of the limited number of workers in this area. It is very important to improve the capacities of public daycares to achieve the targeted policy called "zero-childcare" which means there is no waiting lists. Japanese women will not be afraid of having children which will improve the birth rates in Japan since the aggregate labor shortage in Japan should be solved by the stimulation of birth rates. This would have long term impacts.

This study was a case study conducted by analyzing two policies in solving the problem of labor shortage in Japan. Future research

may assess the potential of accepting massive number of migrant workers and how to prevent risk.

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## **Socioeconomic and Demographic Characteristics of Children Under Five Years of Age Suffering from Stunting in Magelang Regency, Indonesia**

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### **Abstract**

This study is set out to examine the socioeconomic and demographic characteristics of stunted children under five years of age in Magelang Regency, Central Java Province, Indonesia. It used questionnaire surveys (structured interviews) to collect data on 266 heads of households with stunted children under-five that had been selected using a tiered sampling method, then analyzed the data in the SPSS program. Also, in-depth interviews were conducted with informants from these households and staff of community health center, Health Office, Social Office, and Regional Development Planning Agency (*BAPPEDA*), and the resulting data were processed and analyzed through the stages of data reduction, data presentation, conclusion withdrawal, and verification. The quantitative data were tested for validity using the statistical procedures provided in the SPSS program, while the qualitative data were examined for their reliability by the triangulation method. The results showed that the majority of stunted children under-five in the regency had normal birth weight and length, received a complete series of immunization, and were breastfed. Furthermore, about one-third of the mothers were employed, showing that many of the families observed are less stable economically. This study also found that parents still lacked the knowledge to recognize stunting in their children, about 80 percent of which did not realize that their children experienced impaired growth and development. Another finding is that government programs have reached 50 percent of families with stunted children under-five.

**Keywords:** stunting; immunization; breastfeeding; children under-five; Magelang Regency

### **Introduction**

Health is an essential aspect of national development, especially the health of the children (TNP2K, 2017; TNP2K, 2018; WHO, 2018) in which the future of a nation lies (BAPPENAS, 2011). In Indonesia, one of the health problems that has long been under the spotlight is stunting (Ministry of Health,

2017; 2018a; 2018b). Stunting is chronic malnutrition caused by a lack of nutritional intake for a long time, causing growth problems that are manifested in shorter (stunted) physical feature than the standard height of children at the same age (Jahari & Abunain, 1986; De Onis & Branca, 2016; Aryastami and Tarigan, 2017).



Due to the shorter feature, it is often believed as a merely genetic or hereditary condition so that many people do not correlate it with health issues (Hidayati et al., 2010; Kurniawati, 2017; Lalo & Tahu, 2018). It is, however, attributed to low energy intake, infectious diseases, low maternal education, low protein intake, nonexclusive breastfeeding, low education of the father, and working mothers; also, it is even more prevalent in male children under-five than their female counterparts (Ni'mah & Nadhiroh, 2015; Rahayu, 2015; Nusa & Kupang, 2016; Rilyani & Trismiyana, 2016; Mugianti et al., 2018)infectious diseases of (80.6%.

Stunting is in need of an immediate solution, considering that Indonesia will soon enter a demographic bonus era (BAPPENAS, 2017). Demographic bonus occurs when the population of productive age is higher in number than the non-productive age. Countries must prepare themselves with quality human resources to be able to make use of this era optimally. If not handled immediately, poor quality of human resources will turn demographic bonus, which is predicted to increase economic growth, into a 'window of disaster' as the workforce will hamper rather than boost the development.

Data released by the United Nations Children's Fund (2006) shows that the prevalence of stunted children under-five in Indonesia was 36.4 percent in 2017, the second-highest in ASEAN. Basic Health Research (Riskesdas) confirms that this figure had dropped from 37.2 percent in 2013 to 30.8 percent in 2018 (Ministry of Health, 2018a). Nevertheless, it is still above the threshold set by the WHO, that is, 20 percent. WHO categorizes prevalence between 20 and less than 30 percent as high and  $\geq 30$  percent as very high (WHO, 2018).

In 2018, Jakarta (capital of Indonesia) was the only province in the country where stunting was found in less than 20 percent of the children under-five population (TNP2K, 2017; TNP2K, 2018). Central Java is among

one of the provinces that cannot achieve the target set by WHO. Although it is famous for its fairly good quality of human resources and large population size, it remains behind in solving stunting prevalence that is above the national percentage (Government of Central Java Province, 2019; 2020). For these reasons, stunting requires serious attention from the parties involved.

Magelang Regency has the second-highest prevalence of stunting in Central Java Province. The Nutritional Status Monitoring conducted by the Health Office of the regency revealed that stunting is common in 37.6 percent of the children population. In other words, one in three children suffers from impaired growth (Government of Magelang Regency, 2020).

The high prevalence of stunting in Magelang Regency is contrary to macro performance, such as economic growth and the human development index (HDI). Based on BPS data in 2019, the economy of Magelang Regency grew 5.30 percent, positioning it at 29<sup>th</sup> rank out of 35 regencies/cities in Central Java Province. In general, this growth is considered high because it is above the national economic growth which is at the level of 5.02 percent. The good economic growth performance of Magelang Regency is also supported by the fairly good performance of human development. Based on BPS data, the HDI level of Magelang Regency in 2019 was 69.87. This condition is ranked 24<sup>th</sup> out of 35 regencies/cities in Central Java Province.

The macro-socioeconomic performance of Magelang Regency is quite good in contrast to the condition of the prevalence of stunting. Several studies have stated that the socioeconomic characteristics of the families of children under-five significantly affect stunting. One of them is a study conducted by Ibrahim and Faramita (2015) who took the research location in Makassar City in 2014. The results showed that variables, such as parental education, income, and parental

occupation, significantly influenced the incidence of stunting.

The description of stunting prevalence and socioeconomic conditions in Magelang Regency at a macro-level proves that research to determine the socioeconomic and demographic characteristics of families of stunted children under-five in Magelang Regency is important to do. This research has benefits for policy-makers to determine in micro-terms the socioeconomic conditions of families of stunted children under-five in Magelang Regency. This information can be used in terms of quick response actions such as direct assistance to families of stunted children under-five.

## Research Methods

Data collection methods used in this study were structured interviews with a questionnaire guide and in-depth interviews. Structured interviews were conducted with the household heads of stunted children under-five. In-depth interviews were conducted with several informants from the households of stunted children under-five, integrated services post (*posyandu*) cadres, public health center (*puskesmas*), Health Office (*Dinas Kesehatan*), Social Office (*Dinas Sosial*), and Regional Development Planning Agency (*BAPPEDA*) in Magelang Regency who were selected by purposive sampling method.

The socioeconomic variables that will be studied include the physical condition of stunted children under-five, the economic condition of the stunted children under-five household, and the role of the government. The physical condition of stunted children under-five includes gender, age, height, and weight and length at birth. Household conditions for stunted children under-five include mother's education, mother's activities during pregnancy, parents' income, exclusive breastfeeding, immunization, and efforts to treat stunted children under-five.

The role of the government in this research is the attention given by the government to households with stunted children under-five.

In this study, the sample consisted of households with stunted children under-five. In addition, in-depth interviews were conducted with informants or related parties, namely *puskesmas* staff, Health Office staff, Social Office staff, and *BAPPEDA* staff. The selection of informants was based on the fact that these parties are directly related to the handling of stunting problems in the regions, so it is hoped that information about stunted children under-five can be obtained more widely and in-depth.

The number of samples used as respondents was 266 heads of households with stunted children under-five who were selected by the sequential sampling method, namely in the first stage the sub-district that had the highest number of stunted children under-five was selected in Magelang Regency so that Tegalrejo Sub-District was chosen. The second stage is to select seven of the 21 villages in Tegalrejo Sub-District based on the proportion of stunted children under-five. Furthermore, in each of these villages, a sample of stunted children under-five was taken.

The next step was to determine the sample size of households with stunted children under-five. According to Purnomo (2017), the adequate sample size for identifying the proportion of a particular population is as follows.

$$n = \frac{\left(\frac{Z_{\alpha/2}\sqrt{\pi_0(1-\pi_0)}}{\delta}\right)^2}{1 + \frac{\left(\frac{Z_{\alpha/2}\sqrt{\pi_0(1-\pi_0)}}{\delta}\right)^2 - 1}{N}}$$

where:

$Z_{\alpha/2} = 1.6$  (normal z value)

$\pi_0 = 0.336$  (proportion of households with stunted children under-five to households with children under-five)

N = 1.192 (total population of households with stunted children under-five)  
 $\delta$  = 0.05 (precision)

Based on this equation, the total sample was 266 households, and this sample size was distributed throughout the seven selected villages using proportional allocation.

Data derived from the questionnaire survey were processed in the SPSS program and analyzed using the descriptive statistical method. Before being used to the target group, the research tool, i.e., questionnaire, was first tested for its validity using a pilot group. The same case applied to the resulting data, which were examined for their statistical validity in the SPSS program.

As for the details collected by in-depth interviews with the selected informants, they were processed and analyzed through the following stages (i.e., data reduction, data presentation, conclusion withdrawal, and verification) and examined using a triangulation method to ensure their reliability.

## Results and Discussion

This study found that in Magelang Regency, children under-five suffering from stunting consisted of 49.9 percent male and 50.1 female, with only 0.2 percent difference between the two (see Table 1). In other terms, the amounts of male and female children in this category are nearly similar, thus contradicting Lalo and Tahu (2018), which found that female children are 0.8 times at risk of experiencing stunting than their male counterparts. Female children have more fat tissue but less muscle tissue than male children. When compared to fat, muscle is more metabolically active so that it will require proportionately higher energy than fat. Therefore, male and female children of the same height and age have different body compositions, and accordingly, their energy and nutritional needs also differ from each other (Riyadi, 2001; Proverawati & Wati, 2011, Reinhardt & Fanzo, 2014).

**Table 1. Percentage of Stunted Children Under-Five by Sex and Age Group in Magelang Regency in 2020**

Age Groups (months)	Sex (Percent)		Total (Percent)
	Male	Female	
(1)	(2)	(3)	(4)
0-12	64.95	35.05	8.94
13-24	51.46	48.54	22.03
25-36	40.40	59.60	27.83
> 36	52.35	47.65	41.20
Total	49.95	50.05	100.00

Source: Primary Data Analysis, 2020

Table 1 shows that most cases of stunting were found in children of 36 months old and above, while children at the age of 0-12 months had the least case of impaired growth and development. In general, there were more stunted male children under-five than their female counterparts, except

for the group of 25-36 months old in which there were more females than males. These findings are parallel with the results of previous studies, such as those of Uliyanti et al. (2017), Pradigdo (2018), and Setyawati & Vilda (2018).

**Table 2. Percentage of Stunted Children Under-Five by Sex and Height in Magelang Regency in 2020**

Height	Sex (%)		Total (%)
	Male	Female	
(1)	(2)	(3)	(4)
Shorter	48.90	51.10	62.89
Significantly Shorter	51.61	48.39	37.11
Total	49.91	50.09	100.00

Source: Primary Data Analysis, 2020

Another research finding is that in Magelang Regency, impaired physical growth and development differentiates children into two categories, shorter and significantly shorter height than expected for children of the same age. The former was more prevalent in females (50.09 percent) than males (49.61

percent), while the latter was more common in males (51.61 percent) than females (48.39 percent). Overall, stunting was manifested more in shorter (62.89 percent) rather than significantly shorter heights (37.11 percent) (see Table 2), which supports the study by Azriful et al. (2018).

**Table 3. Percentage of Stunted Children Under-Five by Sex and Birth Weight in Magelang Regency in 2020**

Birth Weight	Sex (%)		Total (%)
	Male	Female	
(1)	(2)	(3)	(4)
<2.5Kg	60.87	39.13	8.47
>=2.5 Kg	48.89	51.11	91.53
Total	49.91	50.09	100.00

Source: Primary Data Analysis, 2020

Table 3 shows the proportions of children under-five who suffered from stunting by sex and birth weight. In males, stunting coincided more with low birth weight, i.e., less than 2.5 kg, and this was 21.74% more prevalent than in females. Meanwhile, males and females constituted, respectively, 48.89 and 51.11 percent of stunted children with a birth weight of more than 2.5 kg. Overall, there were more

stunted children with a birth weight of equal to or more than 2.5 kg than the contrary. Although low birth weight is known to affect future linear growth process and normal birth weight is more likely to cause stunting, this is not necessarily true for this research and several previous studies, including Lalo & Tahu (2018), Aridiyah et al. (2015), and Winowatan et al. (2019).

**Table 4. Percentage of Stunted Children Under-Five by Sex and Birth Length in Magelang Regency in 2020**

Length	Sex (%)		Total (%)
	Male	Female	
(1)	(2)	(3)	(4)
<45 Cm	48.18	51.82	10.13
>=45 Cm	50.10	49.90	89.87
Total	49.91	50.09	100.00

Source: Primary Data Analysis, 2020

Table 4 shows that among the stunted children with a birth length of less than 45 cm (abnormal), there were 48.18 percent males and 51.82 percent females. Meanwhile, the proportions of male and female stunted children with a birth length of equal to or more than 45 cm (normal) were 50.10 and 49.90 percent, respectively. Overall, stunting was more prevalent in children under-five with normal than abnormal birth length. This finding does not contradict the results of Adianti (2010).

Table 5 presents the proportions of stunted children under-five by breastfeeding. Around 98.8 percent of them were breastfed, while only a small proportion of them (1.2 percent) were never breastfed. This finding is also in line with Paramashanti (2016), Kusumawardani et al. (2017), Kustiani & Misa

(2018), and Hanum (2019), thus creating an initial overview that the majority of stunted children in the regency were breastfed. However, a study conducted by Monica et al. (2020) showed different results. In their study, children who were not exclusively breastfed were 61 times more likely to be stunted. This shows that there is an anomaly in children under-five who experience stunting in Magelang, where most of the children under-five who experience stunting have actually been breastfed. According to WHO, exclusive breastfeeding is recommended for the first 6 months of life, continued for up to 24 months with additional complementary foods. It is possible that the duration of breastfeeding for stunted children under-five in Magelang is short so that nutritional needs are not met.

**Table 5. Percentage of Stunted Children Under-Five by Breastfeeding in Magelang Regency in 2020**

Breastfed	Percentage
(1)	(2)
Yes	98.8
No	1.2
Total	100.0

Source: Primary Data Analysis, 2020

Table 6 divides female and male stunted children based on basic immunization into two categories, receiving incomplete immunization and receiving complete immunization. In the first category, there were more females (52.99 percent) than males (47.01 percent), whereas, in the second category, there were fewer females

(49.74 percent) than males (50.26 percent). It can be postulated that children under-five who received an incomplete series of basic immunization were 12.33 percent fewer than those who were given the complete ones (87.67 percent). This finding is consistent with Sutarto et al. (2018) and Utomo (2018).

**Table 6. Percentage of Stunted Children Under-Five by Sex and Basic Immunization in Magelang Regency in 2020**

Basic Immunization	Sex (%)		Total (%)
	Male	Female	
(1)	(2)	(3)	(4)
Incomplete (<10 times)	47.01	52.99	12.33
Complete (>=10 times)	50.26	49.74	87.67
Total	49.86	50.14	100.00

Source: Primary Data Analysis, 2020

Based on Table 6, receiving complete basic immunization does not entirely guarantee that children will not suffer from stunting. In line with Aridiyah (2015), this study found that immunization or vaccination is not associated with cases of stunting in children under-five, both in rural and urban areas. Another aspect that determines the benefits and effectiveness of immunization is vaccine quality (i.e., whether or not the vaccines meet the standards). In other word, children under-five who have received complete and incomplete series of immunization have equal possibility to suffer from impaired growth and development

Apart from healthcare, the socioeconomic and demographic characteristics of the parents can lead to stunting. The characteristics in question are maternal education, maternal

activities during pregnancy, maternal age at pregnancy, and income of the parents. The following discussion will focus on these variables based on the survey findings in 2020.

Educational attainment is an indicator of a person's knowledge: the higher the educational level of the parents, the more comprehensive the knowledge they have. The education of mothers requires particular attention because they have an enormous influence on children's growth and development. Mugianti et al. (2018) have confirmed that low maternal education can indicate insufficient knowledge of how and to what extent impaired growth manifests in children and is thereby considered as a factor of stunting.

**Table 7. Percentage of Mothers with Stunted Children Under-Five by Educational Levels in Magelang Regency in 2020**

<b>Educational Levels</b>	<b>Percentage</b>
(1)	(2)
Did not complete elementary school	0.47
Elementary Schools (SD/equivalent)	25.19
Lower Secondary Education (SMP/equivalent)	35.07
Upper Secondary Education (SMA/equivalent)	29.29
Higher Education	9.98
<b>Total</b>	<b>100.00</b>

Source: Primary Data Analysis, 2020

Based on Table 7, the educational level of more than 60 percent of mothers with stunted children in the Magelang Regency was Lower Secondary Education and below. Only 39 percent of them completed their Upper Secondary Education and Higher Education. Overall, mothers with stunted children under-five had categorically low educational attainment and, therefore, had a rudimentary knowledge of child development. Kurniawati (2017) also found how maternal knowledge is closely related to feeding and parenting styles. Similarly, other studies by Sulatri (2012) and Lestari (2018) affirmed that the educational level of the mothers positively correlates with the nutritional status of children; mothers with low educational levels tend to have under-nourished children. Although breastfeeding and complete immunization have been carried out, it does not rule out the possibility of children experiencing stunting because

another factor that plays a role is the mother's knowledge. Children also need nutritional intake from other food sources. This is more likely to be fulfilled in children with high maternal education because the mother's knowledge about child growth is better.

According to birth order, up to 40 percent of stunted children under-five were second-born, one-third were first-born, and 19 percent were third-born. Furthermore, during pregnancies, just over half of their mothers were unemployed and stay-at-home (homemaker), while 37.45 percent of them were employed (Table 8). Mugiyanti et al. (2018) affirmed that working mothers are a contributing factor in stunting among children under-five. Mothers who work during pregnancy are more at risk of having less health care because of their activities while working in the public sector. Expectant women need adequate rest for healthier growth and development of the fetus.

**Table 8. Percentage of Mothers with Stunted Children Under-Five by Economic Activities during Pregnancy in Magelang Regency in 2020**

<b>Activities</b>	<b>Percentage</b>
(1)	(2)
Unemployed	4.87
Homemaker	57.02
Employed	37.45
Others	0.66
<b>Total</b>	<b>100.00</b>

*Source:* Primary Data Analysis, 2020

On the one hand, this finding supports Sulatri (2012), which asserted that stunting is more common in families with mothers who do not work. On the other hand, it contradicts the finding of Pradigdo et al. (2018) that there is no relationship between working mothers and child stunting. In other words, there is no guarantee that children with stay-at-home mothers are less at-risk of experiencing stunting than those with working mothers,

although other factors are contributing to this risk.

Table 9 shows the percentages of mothers by childbearing age. The majority of mothers with stunted children (79.76 percent) were pregnant at the age of 20-35 years. About 12.63 percent of them were pregnant at the age of more than 35 years old, and 7.61 percent of them were pregnant at the age of younger than 20 years.

**Table 9. Percentage of Mothers with Stunted Children by Childbearing Age in Magelang Regency in 2010**

<b>Age</b>	<b>Percentage</b>
(1)	(2)
< 20	7.61
20-35	79.76
> 35	12.63
<b>Total</b>	<b>100.00</b>

*Source:* Primary Data Analysis, 2020

According to Notoatmodjo (2013), pregnancy at younger (<20 years old) and older age (>35 years old) has substantial risks of obstetric complications compared with at the age of 20-35 years. In this context, younger women are not physically and mentally ready for pregnancy due to the tendency of unstable emotional nature and living conditions, as well as insufficient

knowledge of pregnancy or childbirth. Meanwhile, at an older age ( $\geq 35$  years old), women are no longer physically ideal for gestation.

Table 10 classifies the parents of stunted children under-five into either of the two categories: receiving income below or above the Minimum Wage of Magelang Regency, i.e., IDR1,742,000 (Government of Central



Java Province, 2017). The percentage of the parents who earned income above the Minimum Wage (55.10 percent) was higher than the opposite (44.90 percent). From an economic perspective, most parents with stunted children under-five were in a fairly good state. This finding, however, contradicts Hidayati et al. (2010), which associated

incomes of below the Minimum Wage with cases of stunted children under-five in Surakarta City (also a region in Central Java Province). It is because of differences in the physical and socioeconomic characteristics of the research areas. Furthermore, Ni'mah & Nadhiroh (2015) also found that low income contributes to stunting issues in children.

**Table 10. Percentage of Parents with Stunted Children by Incomes in Magelang Regency in 2020**

<b>Income</b>	<b>Percentage</b>
(1)	(2)
< minimum wage of the regency	44.90
≥ minimum wage of the regency	55.10
<b>Total</b>	<b>100.00</b>

Source: Primary Data Analysis, 2020

For self-sufficient families, parents are assumed to have the resources to meet their primary needs and more and fulfill the nutritional need of their children. In most countries, childbearing requires many funds because expectant women need adequate nutritional intake to prevent stunting issues as early as possible (Chopra, 2003; Wamani et al., 2006). When this is not fulfilled, it is highly likely that the low nutritional intake of the mothers harms the growth and development of the children in the future. However, the research data showed that parents of stunted children earned income that was higher than the Minimum Wage. For this reason, stunting must coincide with other factors other than the categorically self-sufficient parents.

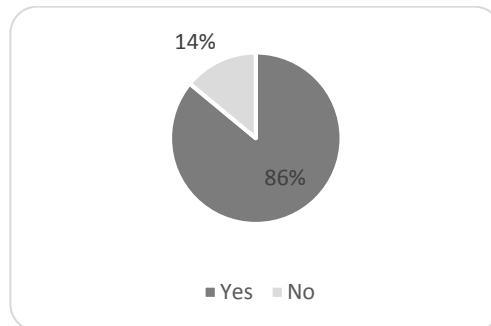
Chronic malnutrition in children is the leading factor of stunting (Kustiani and Misa, 2018). It refers to a condition where a child is malnourished for a long time due to, first, parent's rudimentary knowledge of nutrition and, second, eating difficulties, as evident from the interview excerpt below:

"My son doesn't want to eat, even [when I have provided him] with different types of food. That's why he is thin." (in-depth interview with Informant 3 on July 5, 2020)

Figure 1 demonstrates mothers' perception on child growth in the Magelang Regency. The majority of the respondents (86 percent) thought that their children had normal growth, while the minority (14 percent) admitted that their children did not grow up like other children of the same age. This illustrates that many parents of stunted children under-five in the study area are less attentive to the growth and development of their children. Meanwhile, two possibilities underlie the low percentage of mothers who admitted to their children's impaired growth, namely poor knowledge of stunting and fear of public shaming if their children were to be labeled as stunted. A mother of stunted children in Kebon Agung revealed that she was often the object of public shaming by the neighbors, as evident from the interview excerpt below:

“I sometimes feel embarrassed because my neighbors keep teasing me, saying that my child is so thin. They think that my child is malnourished, but he is actually healthy and eats a lot.” (in-depth interview with Informant 1 on July 5, 2020)

According to the public perception in Kebon Agung, stunting is a condition stemming from malnutrition, and it can be analogous to the inability of the parents to fulfill their children’s nutrition. This is the reason why many parents were reluctant to admit that their children fell into the category of stunted.



Source: Primary Data Analysis, 2020

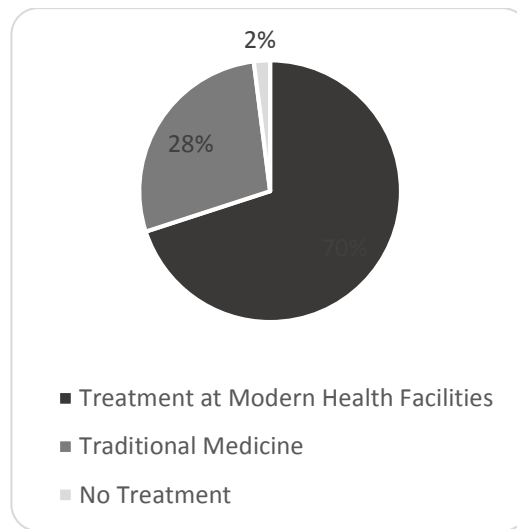
**Figure 1.** Percentage of Mothers with Stunted Children Under-Five by Perceptions of Child Growth in Magelang Regency in 2020

The handling of stunted children in the Magelang Regency is not optimal because the parents lack the knowledge of child growth. As seen in Figure 2, even about 28 percent of the 14 mothers who recognized the impaired growth of their children did not initiate any specific treatments. Meanwhile, the other 70 percent sought assistance from modern health services, and the remaining 2 percent administered traditional medicines (Figure 2).

The government, through the *posyandu*, routinely organizes public dissemination and discussion on stunting. Families with

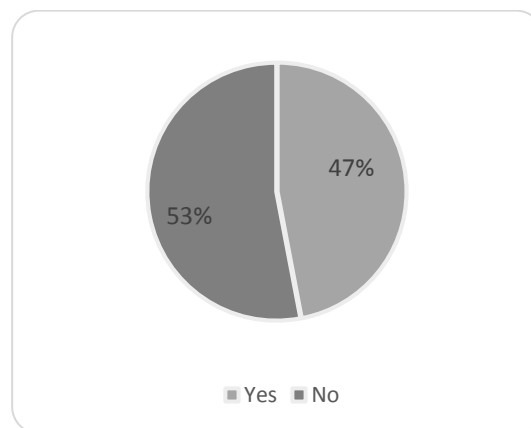
children under-five are invited to the house of the village head to receive counseling once a month. The government also provides nutritious food for children, such as bread and fruits, as confirmed by the interview excerpt below:

“The neighborhood health center organizes a monthly activity, on the tenth day of every month in this village. Yes, counseling is often held at the health center as well, and every time there is some food, such as cookies and fruits, for the children.” (in-depth interview Informant 2 on July 5, 2020)



Source: Primary Data Analysis, 2020

**Figure 2.** Percentage of Parents with Stunted Children by Curative Treatments in Magelang Regency in 2020



Source: Primary Data Analysis, 2020

**Figure 3.** Percentage of Households with Stunted Children Under-Five by Governmental Interventions in Magelang Regency in 2020

Figure 3 shows that 53 percent of households with stunted children under-five felt the assistance provided by the government. Meanwhile, the remaining 47 percent believed that no government programs were focusing on addressing stunting issues. These results indicate that nearly half of these households do not gain

adequate information from the dissemination of public information on stunting.

### **Conclusion**

The majority of children under-five suffering from stunting in Magelang Regency have normal birth weight and length and

have also received complete immunization; also, nearly all of them are breastfed. There is no tendency for stunting to occur in male or female children because the proportion of stunting by sex is almost the same, i.e., 49.95%:50.05%. However, in the 0-12 month age group, male children under-five have a higher stunting rate than female children under-five, i.e. 65%:35%. This gap continues to decrease with the increasing age of children. This shows that the majority of toddlers who have been fully immunized and received the majority of breast milk have an influence on the development of male babies.

The condition of parents, namely mothers of stunting toddlers in Magelang Regency, is not good enough. The majority of mothers are employed with Lower Secondary Education and below. Almost half of the parents of stunted children have incomes below the Minimum Wage. Awareness of modern medicine for parents of stunted children under-five is not yet 100 percent. There is still 30 percent of parents who have not prioritized modern medicine.

The current condition allows the local government to focus on improving the condition of parents of stunted children under-five. The improvements start from income, knowledge, and education so that stunted children under-five get additional proper nutrition. In addition, counseling to prioritize modern medicine is also important.

### Acknowledgment

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## International Migration and Aspirations among Young People: Who Desires to Migrate?

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### Abstract

The dispatch of migrant workers from Indonesia is still quite high. Efforts to improve socio-economic status are still motivated by high rates of migration. Children left by migrant parents experience a greater emotional burden due to parenting issues. This study attempts to examine the aspirations of children and adolescents left by migrant parents based on data from the Child Health and Migrant Parents in South East Asia (CHAMPSEA) study. Analytical descriptive was used to describe children's aspirations towards migrations on migrant and non-migrant households. This study found that children gave a bad perception when mothers had to migrate. Emotional closeness between children and mothers makes the children feel sad when being left by parents. However, once the children's desire to migrate, especially in the 'young adult' group of children is precisely high. Having seen by sex, boys have a higher desire to migrate than women.

**Keywords:** aspirations; youth migration; international migration

### Introduction

Based on BNP2TKI data in 2016 – 2018, the number of international migrations in Indonesia has increased. Data from BNP2TKI in 2018 recorded that 761,442 Indonesian migrant workers (PMI) worked abroad (<http://www.bnp2tki.go.id>). United Nations 2015 data shows that Indonesia is one of the top 10 countries in the Asia Pacific as a migrant sender. Migration is regarded as an effort to increase income which will be able to position oneself in a higher status in society (Sukamdi, 2007). Positioning oneself in a certain socio-economic environment is an important factor that encourages many people to go for working abroad. Some

efforts to improve socio-economic status are factors that encourage someone to migrate. Therefore, many people from low-income groups are interested in migrating. Low income and lack of work are the main reasons they leave their hometown (Elbadawy, 2011). Lam and Yeoh (2019) stated that for many families in Southeast Asia, migration is a strategy to get an important livelihood.

The absence of parents due to migration will bring changes to the pattern of parenting, as well as will have an impact on the children left. In fact, the left children are a vulnerable group (Bakker, et al., 2009). Supervision or parenting patterns for children left by migrant parents will be replaced by the presence of blended family or step family (Bryant, 2005;

Hugo, 2002). However, there is not much literature and research involving children, such as understanding the feelings and reactions of abandoned children although children are often a consideration in deciding whether the parents are going to migrate or not (Lam and Yeoh, 2019).

Purwatiningsih's (2016) study based on CHAMPSEA wave I data shows that the left children want to go abroad as their parents did. The environment where children live, which is dominated by many migration phenomena, has influenced children's mindset. Therefore, understanding the aspirations of children left by migrant parents is an interesting issue to observe. In the wave II study, children who were left by their migrant parents had turned into teenagers aged 17-19 years. Therefore, their aspirations regarding migration are likely to be more affected by many factors. This study will explore children's aspirations towards international migration based on data from CHAMPSEA (Child Health and Migrant Parents in South-East Asia) wave II. This study was focused on answering the following questions.

1. How do young people perceive international migration and work abroad?
2. What are the aspirations of young people towards international migration?

### **Migration in Indonesia**

Indonesia has an interesting case for the study of youth migration issues. Indonesia is currently facing challenges in its human development related to the unequal distribution of the skilled youth population across regions (Malamassam, 2016). Also, migration has become a long history in Indonesia. Sending migrant workers abroad has become one of the ways to overcome domestic unemployment and improve local living standards (Sukamdi, 2008).

The Indonesian government is increasingly promoting labor migration

as a development strategy to address national problems, such as poverty, unemployment, and underemployment, as well as encouraging capital flows from abroad through remittances (IOM 2010). The use of remittances as an emergency fund reserve for families can be seen as a migration benefit, as it allows families to have a social safety net (Hugo, 1995). Therefore, international migration and the remittances received by migrants are important aspects of the national economy. Remittances sent to areas of origin have also been able to improve household welfare.

In recent years, migration in Indonesia has also experienced the feminization of migration. Indonesia has become a major sender of women migrants to several countries (IOM, 2010). Data from BNP2TKI (2018) shows that in 2018, 68 percent of migrant workers were women, while 32 percent were men. The high number of female migrant workers is a response to the need for unskilled workers that is still high (Sukamdi, 2007). However, the high number of migrant workers does not rule out the possibility that it will have a negative impact, both for the workers themselves and their families at home country.

International migration is a quite complex issue and includes many issues, meaning that it does not solely refer to the concept of "push and pull" power (Sukamdi, 2007). Besides, migration has a big impact to the families who have been left. When the parents do the migration, the household should be reset. This will then affect the welfare of both the children and the caretaker (Graham, et al., 2014). Several studies noted the impacts of international migration by parents towards their children (Bryant, 2005; Mc. Kenzie and Rapoport, 2007; and Antman, 2012). However, children's education or future is always the underlying reason said by most of the parents who decide to do the international migration (Lam and Yeoh, 2019).



## **Motivation to Migrate among Young People**

Youth groups are an integral part of contemporary migration flows. What characterizes migrants in Indonesia is that of dominated by young people in which 64.9% of the migrant population aged between 15 and 34 years (Sukamdi and Mujahid, 2015). The United Nations data also show that the migrant population is becoming younger. In 2000-2017, the average age of international migrants declined in Asia (United Nations, 2017). The Global Migration Group (GMG) notes that 12 percent of the current migration flows are young people aged 15-24 years (UNICEF, 2014). The report also notes that young people's motivation to migrate is often linked to the search for a decent livelihood due to THE lack of job opportunities.

Migration can be considered as an alternative strategy to get out of the poverty trap. Migration, with the income earned from it, also has a role in poverty alleviation, at least for the migrants' origin. In general, people can migrate since there are opportunities to do so, such as job opportunities and how to migrate. Regarding labor migration on a large scale, Indonesia has shown an increase in the diversity of labor mobility in terms of space and duration (Choon Yen et al., 2014). Limited employment in rural areas has encouraged job seekers to leave their villages. Besides, in the Indonesian context, labor migration has become a household investment strategy to gain more economic benefits (Knerr, in Choon Yen, et al. 2014).

The issue of lack of employment as a motivation to migrate is also raised by Minza (2012), that for young people, employment may be a more relevant indicator of perceptions about mobility among them. Moreover, Minza (2012) also suggested that groups of young people from middle class and simpler backgrounds hope that a better level of education will be a ticket for them

from an informality in rural or urban areas to a better future through professional jobs.

Economic motivation is the main reason for moving (Malamassam, 2016). More specifically, migration is generally motivated by a desire to improve living standards, and migrants move to some places with better economic opportunities (Sukamdi and Mujahid, 2015). In general, the aspirations of young people for employment and living standards in the middle class are mitigated by their responsibilities towards their families and difficulties in making social connections needed to access jobs and opportunities (Naafs, 2017).

In addition to economic motivation, a person migrates since he has friends or family who are already working abroad. Migrant networks are also an important factor in influencing one's decision to migrate (Sukamdi, 2007). Social networking is a form of social capital that a person can use to access various types of financial capital, such as working abroad (Massey, et al, 1998 in Haug, 2008). Social networks and the people involved in them also have an influence on the decision to migrate since the network will provide access to migration routes and work security at the destination (Ananta and Arifin, 2004).

The social network factor is also emphasized by Elbadawy (2011) which indicates that having a migrant in a social network is a key factor in growing migration aspirations. Based on his study that was conducted in Egypt, 55 percent of the young people aspiring to migrate have friends or relatives who are migrants as well. Meanwhile, Choon Yen, et al (2014) explained that the impact of having a network at the destination is very high and significantly increases the possibility of migrating.

Migration networks may be defined as interpersonal relationships in which migrants interact with their families or friends. The social network will provide information as

well as provide protection or assistance if needed (Haug, 2008). In the context of the migration chain process model, the order of migration within a household or network is very crucial. The reciprocal influence caused by one family member who migrates shows that everyone contributes reciprocally to the other families.

Meanwhile, having a family with migration experience is also one of the socio-economic factors that influence young people to migrate (Elder et al, 1996). The migration experience among young people is largely part of the migration performed by families or parents. Furthermore, Elder, et al (1996) explained that the environment and cultural background of the people of origin can influence the decision of young people to migrate. For this reason, the phenomenon of intergenerational migration occurs in some areas of Indonesia since migration has become a long history.

## **Method**

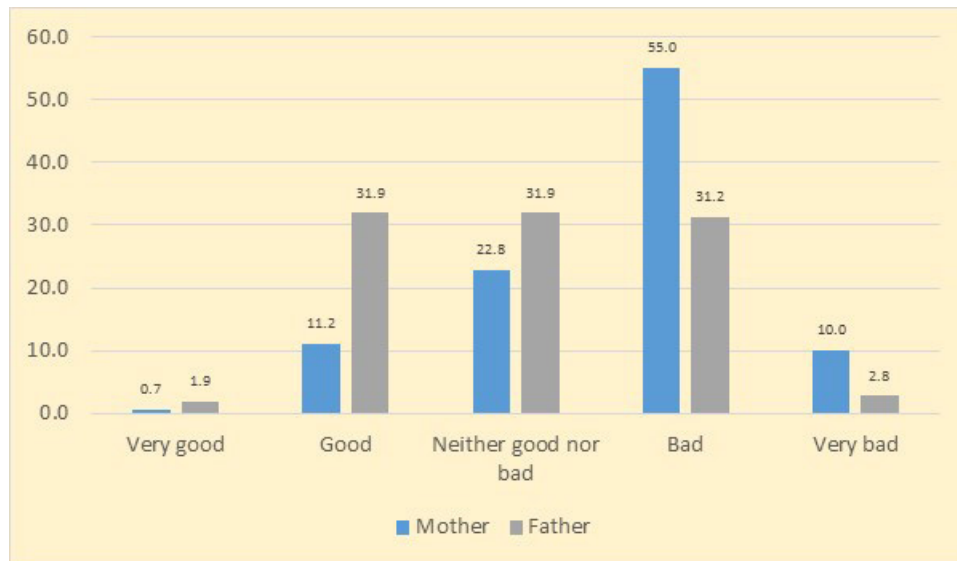
This study is the result of the CHAMPSEA wave I 2008 and the CHAMPSEA wave II 2016 studies which are longitudinal studies. This study was conducted in West Java (Sukabumi and Tasikmalaya districts) and East Java (Ponorogo and Tulungagung districts). This study was focused on data on children with a sample of 444 children in the young-adult category (aged 17 -19 years) and 470 children in the middle-child category (aged 11 – 13 years) from migrant and non-migrant households.

The analysis used in this study is descriptive analytic to describe the aspirations of children towards migration in migrant and non-migrant households. It was conducted on selected variables related to children's perceptions of migration. The variables used for analysis include children's perceptions about parents working abroad, children's feelings about parents leaving, and parents' desire to work abroad.

## **Results and Discussion**

### *Children's Perceptions on Parents Working Abroad*

International labor migration may have an impact on household welfare. Remittances generated by migrants have a contribution to household economic welfare. This is in line with Suyanto's study (2018) which revealed that remittances are used to meet daily needs, pay children's education costs, buy land and build houses, establish productive businesses and buy secondary goods. Although migration has a positive impact on the economy, children's perceptions about having parents working abroad are quite diverse. This may happen because children are not asked for their opinion when their parents are going to work abroad, yet children are only notified if their parents (either father or mother) are going to work abroad. CHAMPSEA data also shows that more than 80 percent of children said they were told if their father or mother would work abroad.



Source: CHAMPSEA Data, 2016

**Figure 1.** Children's Perceptions on Parents Working Abroad

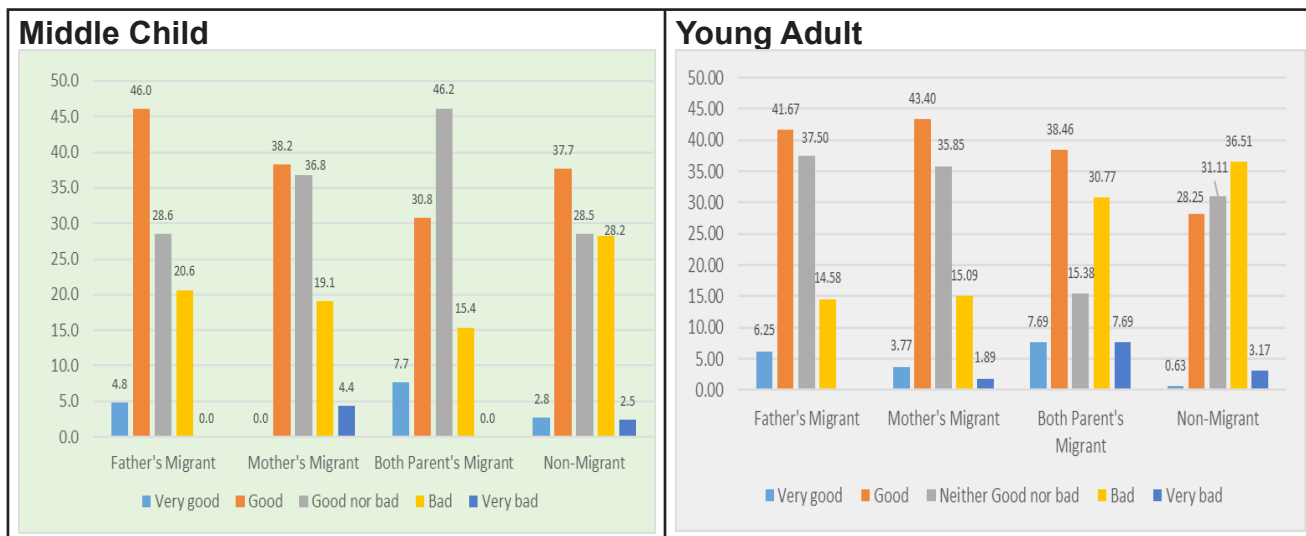
Most of the bad perceptions are given to mothers who work abroad (i.e., more than 55 percent of children who say their mothers work abroad are perceived as bad). Meanwhile, children's perceptions on having father working abroad shows almost the same assessment, either they have good perceptions (31.93%), moderate (31.93%), or bad perceptions (31.24%). Meanwhile, children's perception on having mother working abroad is perceived as very bad perceptions (i.e., 10.02 percent) and good perceptions (i.e., 11.19 percent). This shows that the children are as if unwilling to be left by their mothers who have to work abroad, because more than 55 percent of children think that this is not good for their children.

Hoang and Yeoh (2012), explained that the absence of mothers as a result of transnational migration brings about a huge emotional challenge in terms of child care. As a result, the children feel more lost if their mothers leave them for working abroad compared to fathers who go for working abroad. Also, psychologically, there is an emotional cost of women's migration which is

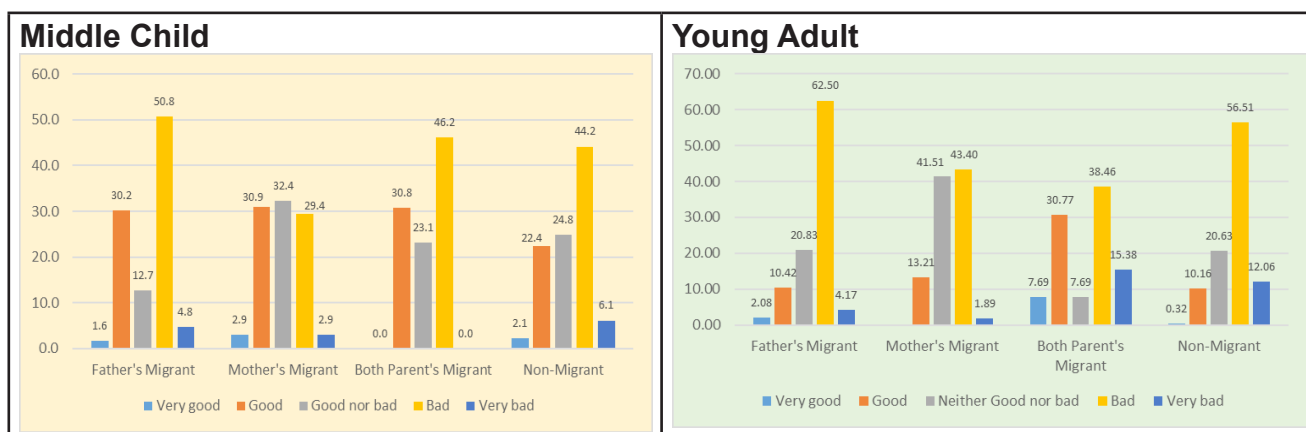
closely related to concerns about the dryness of care (Hochschild, 2002 in Hoang and Yeoh (2012)). This is as a result of the father who is unable to understand the emotional and psychological needs of the child, so he is unable to cope with the psychological burden of the child due to the abandonment of his working mother (BNP2TKI, 2014).

Furthermore, if the children's perceptions are broken down by migrant status of parents and category of child, there are also varying perceptions. Most of the middle-class children in various categories of migrant families showed good perceptions for having fathers working abroad. Many children from families of migrant fathers showed good perceptions as well (46%), while those from families whose mothers are migrants, showed good perceptions (38.2%) on having fathers working abroad. Many children from non-migrant families also showed good perceptions on having fathers working abroad. Meanwhile, those from families with both parents as migrants said that it is normal or not good or bad (46.2%), while those who said it is good were 30.8%.

### Migrant Fathers



### Migrant Mothers



Source: CHAMPSEA Data, 2016

**Figure 2.** Children’s Perceptions on Parents Working Abroad by Parents’ Migration Status

Meanwhile, in the “young-adult” group, good perceptions of fathers working abroad were said by children in the household category of migrant fathers (41.67%), migrant mothers (43.4%), and the category of both parents are migrants (34.46%). Meanwhile, children from the non-migrant household category are more likely to show bad perceptions on having fathers working abroad (36.51%). In the second

category of households, there are also many migrant parents who had bad perceptions (30.77%). This indicates that children from families exposed to migration have more favorable perceptions on having fathers working abroad.

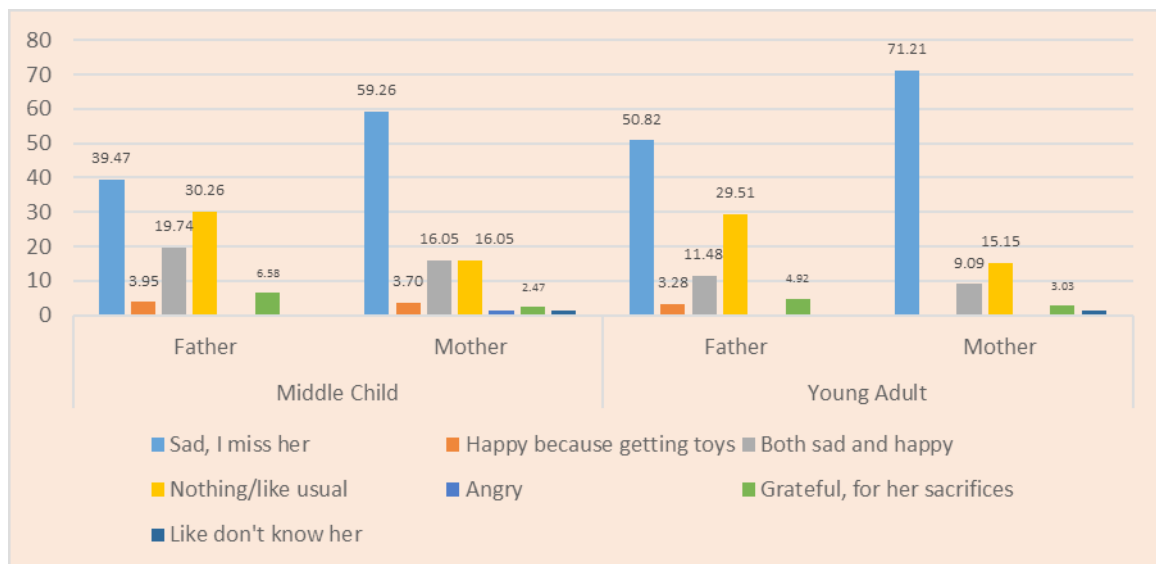
Meanwhile, a different perception was expressed by children towards their mothers who work abroad. Both ‘middle child’ and ‘young adult’ groups of children

were more likely to give a bad perception if their mothers had to work abroad. Also, if it is seen by category of migrant household, almost all household from all categories gave a bad perception for mothers who work abroad. It is only the middle child group of migrant mother households who gave a lower-bad perception (29.4%) and more gave moderate perceptions (32.4%). The results of this study show similarities with previous studies, that the children left by their parents due to migration said that their daily lives became more difficult when their mothers migrated. They preferred their fathers who migrate to their mothers or both parents migrate at the same time. This complete absence of parents may make the child feel heavy, but if there is still a mother at home, the child will still feel safe (Purwatiningsih, 2016). This is also in line with Lam and Yeoh (2019) that children feel stable when their father migrates to earn a living, while there is still a mother who plays a role in parenting.

However, it turns out that children in a family whose father migrate abroad while there is mother at home for child care is identified as having poor mental health (Graham et.al., 2014).

### *Respos to Parental Migration*

Most of the responses to the departure of their parents due to migration said they were sad because they missed them. However, most of those who said they were sad because they missed were from the 'young adult' group for the departure of their mother (71.2%), while the 'middle child' group of children expressed feelings of sadness because they missed their mother who went abroad were 59.76%. The sadness due to longing to be left by father was also widely expressed by children in the 'young adult' group (50.8%), while the rest (the 'middle child' category) were 39.47%.



Source: CHAMPSEA Data, 2016

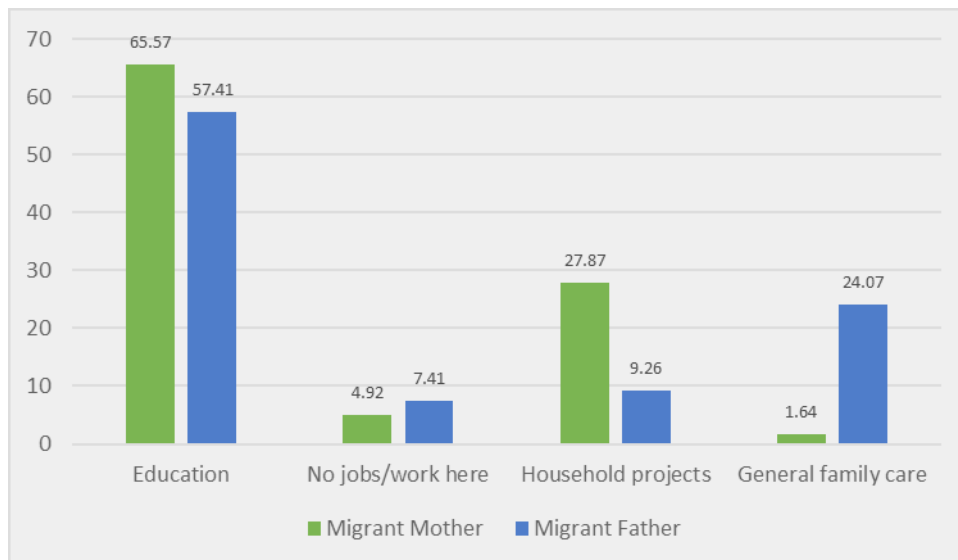
**Figure 3.** Children's Feeling about Parents' Migration

The ‘middle child’ group of children who expressed a sad and ordinary response were almost the same (i.e., 30.26% of them said that it is normal for their father to leave and migrate abroad). Also, those from the ‘young adult’ group were quite a lot who said it is normal if their father left them to migrate abroad for working (29.51%). They show less sadness when their father migrated due to the lack of emotional connection between father and children. This is because the migrant father tend to only communicate with their family, whereas the migrant mothers will keep an intimate relationship with their children by making regular communication (Hoang and Yeoh, 2012).

Children’s sadness when their mother is not at home is regarded as a psychological expression of children who are emotionally closer to their mothers. The care for children who has been left by migrant mother is taken over by their father or grandmother. Although the role of the father or grandmother is only a “supplement” in parenting. However, in the case of migration, they become a

substitute caregiver (Setiawan et al., 2018). Even children whose mother has left them for migration do not get enough attention to social and psychological aspects, even though they are financially fulfilled. There are several things that are often forgotten behind the overflow of money from the migrating parents. Children lose their right to get complete love from both parents (Napsiah, 2017).

Meanwhile, the reason for parents migrating to work abroad is mostly (more than 50%) due to education, both for migrant mothers and migrant fathers. It shows the same results as that of CHAMPSEA wave 1 which also confirm that most of the reasons for migrating are also for children’s education. The results are similar to the results of a study conducted by Wirastyani et al. (2016) that the use of remittances from international migration is used for children’s education. Children’s education is one of the investments for the success of children from migrant families.



Source: CHAMPSEA Data, 2016

Figure 4. Parents’ Reasons to Migrate

Another reason why parents migrate to work abroad is for household projects and family care. What is meant by household project is generally to repair the house, which is the reason for 27.87% of migrant mothers. The houses of migrants' families in the study area were better than those of non-migrant families. Meanwhile, among migrant fathers, another reason for going to migrate apart from children's education is for family care (24.07%). The result is in line with the results of Suyanto's study (2018), showing that remittances are used to meet daily needs, children's education costs, buy land, and build houses.

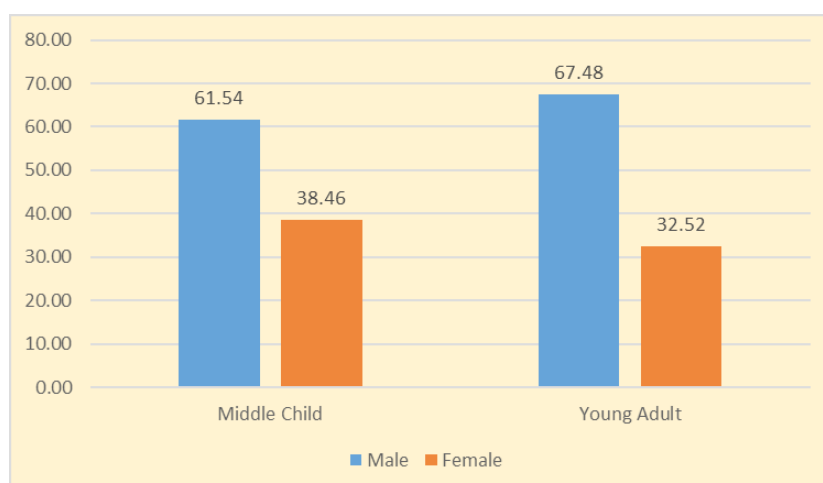
### *The Migrants are Aspired to Migrate*

Groups of young people want to migrate because of the motivation to improve their economy (Malamassam, 2016). CHAMPSEA wave 2 data shows that 44.26% of children in the 'middle child' category and 38% of children in the 'young adult' category intend to go abroad to work. However, if the data is broken down by gender, both the 'middle child' and 'young adult' groups are higher in men who have the desire to go abroad

to work. This is in contrast to the results of Malamassam (2016), which is that women's aspirations to migrate are higher.

Job opportunities for men are more varied compared to women, which are still more in the domestic sector. So that the opportunities for men to work abroad are greater. *National Agency for the Placement and Protection of Indonesian Workers (BNP2TKI)* shows that the opportunities for men to work abroad are quite varied and the data on male migrant workers is also more than that of women (BNP2TKI, 2017).

More job opportunities for men are also present due to restrictions on the dispatch of formal workers compared to non-formal since 2009, which were implemented to limit the dispatch of informal workers to Malaysia. Besides, the Decree of Minister of Manpower of the Republic of Indonesia Number 1/2015 concerning Positions that can be occupied by Indonesian Workers Abroad for Domestic Work. The restriction aims to provide protection for Indonesian migrant workers abroad. This has an impact on reducing the number of female migrant workers and reducing the number of migrant workers with low education.



Source: CHAMPSEA Data, 2016

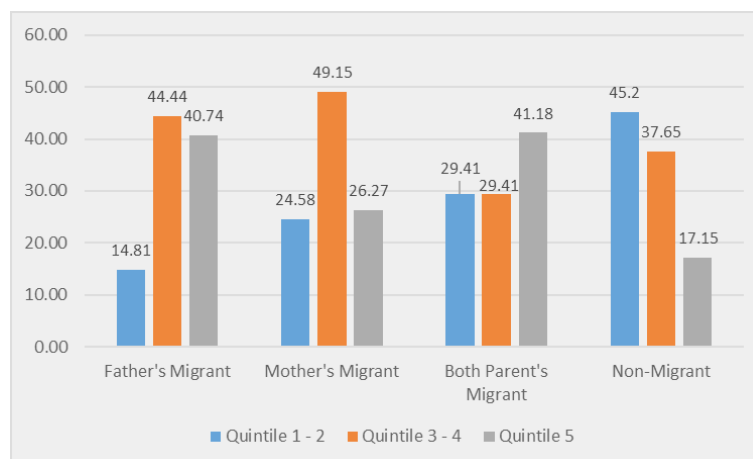
**Figure 5.** Children Aspiring to Migrate by Gender

Based on the migration status of parents, it turns out that the group of young adults from families with both parents as migrants is the group with the highest desire to migrate abroad (76.92%). The desire to migrate in this group is very high, even it tends to be the highest among other groups. In fact, this group is a group that had an experience of being left by both parents for migrating and they obtained parenting with other families. However, they had a high desire to migrate instead.

The finding is interesting since this group psychologically becomes the most affected by the absence of their parents in terms of care. Strong economic motivation has encouraged young people to migrate.

However, there is a desire for families to stay together regardless of the economic situation and this is emphasized a lot by parents when asking their children when they grow up and want to migrate (Lam and Yeoh, 2019).

This economic motivation cannot be separated from the welfare level experienced by migrant households, thus encouraging children to migrate as their parents have done. The welfare level of migrant households is presented in Figure. The most households with both migrant parents are shown in quintile 5, followed by households with migrant fathers. Meanwhile, non-migrant households have low welfare level and most of them are in quintile 1-2.



Source: CHAMPSEA Data, 2016

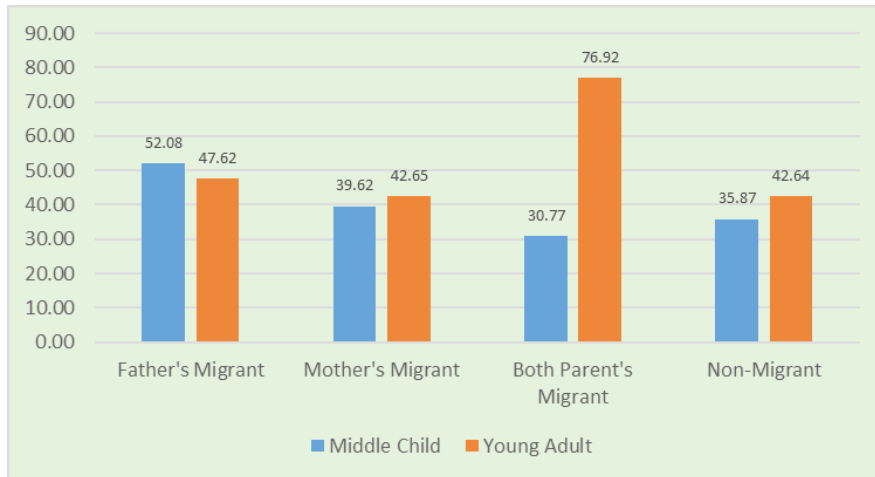
**Figure 6.** Migrant Household Welfare Index

Meanwhile, in the 'middle child' group from families whose both parents are migrants, it was only 30.77% who had the desire to migrate. This is probably due to the fact that children who are younger have a strong emotional bond with their parents, so the sadness of being left by their parents has an impact on the aspirations of the

children. Parental employment contracts in the destination country often force parents to determine the frequency of return visits to their homes due to contractual and financial reasons, and thus, it has negative consequences for the abandoned child (Graham et al., 2015).



*International Migration and Aspirations among Young People:  
Who Desires to Migrate?*

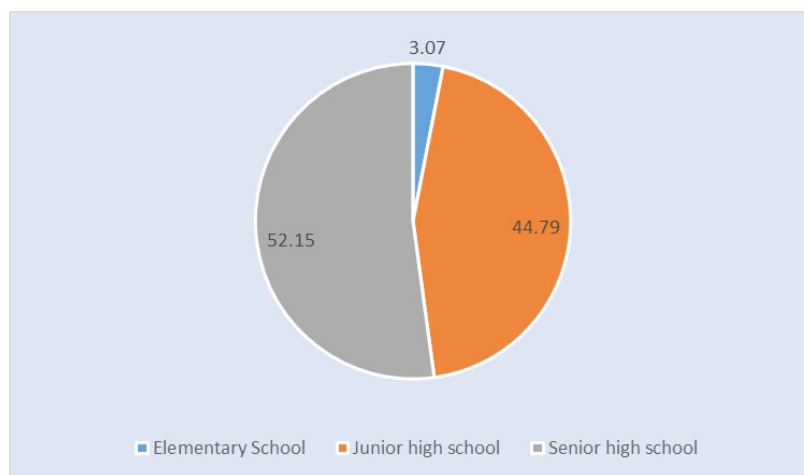


Source: CHAMPSEA Data, 2016

**Figure 7.** Children's Desire to Migrate by Parents' Migration Status

In children with family backgrounds with migrant fathers, the desire to migrate between the 'middle child' and 'young adult' groups was almost the same (i.e., 52.08% and 47.62%, respectively). This indicates that almost half of the respondents with a family background of having migrant father wished to become a migrant, but the sadness of being left by the migrant father is lower than

that of with the migrating mother. Therefore, this also has implications for the lower desire to migrate among children from the family background of migrant mothers. Children's desire to migrate in children with family backgrounds of migrant mothers is almost the same as the desire to migrate in children with non-migrant family background.



Source: CHAMPSEA Data, 2016

**Figure 8.** Children's Desire to Migrate by Educational Background

There is a higher desire to migrate in groups with higher educational background. Fewer children with lower educational background are willing to migrate. Cross tabulation of education achieved with the desire to migrate was performed in the 'young adults' group of children aged 17-19 years, so many of them have accomplished their study. Only 3.07% of teenagers with educational background of primary school have the desire to migrate. Meanwhile, 44.79% of the teenagers with educational background of junior high school have the desire to migrate, while those with educational background of high school are 52.15%. This is in line with the results of the Malamassam's study (2016) which reveals that the probability of migrating young people in Indonesia is higher in children with higher education.

The results of this study indicate an anomaly regarding the desire to migrate. However, based on Abdullah's elaboration (2002), this assumption arises because the understanding on migration tends so far to simplify the facts. Classical migration concepts seem unsuitable to be applied in international migration studies. Migration is not only seen because of the driving force and attraction of migration, which if quoting the Faturochman's opinion (2002), migration should be understood as an event that can be observed and measured. Migration should be understood as a behavior that emphasizes the presence of a process, not only seen as a response to certain conditions (Sukamdi, 2007).

In migration enclaves, in general, migration has a long history that is passed down from generation to generation so that the culture of migration has become daily life for the community. However, a change in the trend of migrant destination countries may occur. ILO data shows that until 2002, the trend of the destination countries for migrants was Malaysia and Saudi Arabia (Sukamdi, 2007). However, BP2MI data (2020) shows a shift in the destination country. Saudi Arabia

is no longer a destination for migrants, but it has shifted to Taiwan and Hong Kong. This cannot be separated from the moratorium on migrant workers dispatch to Middle Eastern countries since 2015. Also, there is a conversion of non-formal to formal workers, that conversion is carried out in several ways including by increasing the employment opportunities of Indonesian Migrant Workers (TKI) in the formal sector as well as restrictions and terminations (moratorium) on the TKI dispatch in the non-formal sector (Triyani, 2016). Young groups in migrant areas will try to improve their educational status with the restrictions and moratoriums, so they can work abroad and earn better incomes.

## **Conclusion**

This study aims to find out the aspirations of young people towards international migration. Based on CHAMPSEA Wave II data, the respondents were the 'middle child' group of children aged 11-13 years and young adults aged 17-19 years. This study was conducted in migrant enclaves in West Java and East Java. Migration has even been hereditary for several generations in Ponorogo, East Java. Migrants' environment will affect children's perception on migration.

The results of this study show that children mostly gave a bad perception for mothers who migrate to work abroad, while fathers who migrate were generally considered good. This is because the absence of the mother has a big emotional impact on child care.

Meanwhile, most of the children's responses to their parents' leaving due to migrating abroad show that they were sad because they missed them, and this response was mostly expressed by children when their mothers left for migration. Meanwhile, the children's responses to their father's migration show that it was normal for their father to leave them for migrating abroad.

The reason the parents migrated to work abroad is mostly due to education, both for migrant mothers and migrant fathers. Education is a crucial indicator in terms of the socio-economic community. Moreover, education is considered as one of the investments for the children's success, especially for migrants' families. Despite education, the parents decided to migrate for household projects, such as home renovation.

The results confirms that the aspirations of young people to migrate are quite high and it is the economic motivation that usually becomes the reason why they are still willing to go for working abroad. Meanwhile, if the aspirations to migrate is seen by gender, there are more groups of men who have a greater desire to migrate, both in the 'middle child' and 'young adult' group of children. Boys' aspiration to migrate is quite high since it is related to greater job opportunities for men working abroad than women due to policies that limit the departure of workers to work abroad.

If the aspirations towards migration are broken down based on household background, the 'young adult' group of children with migrant parents (both the father and the mother) have the greatest desire to migrate. Meanwhile, based on the level of education, the desire to migrate is higher in the group of young people with a higher educational background. This population group needs more attention due to the high number of aspirations of young people regarding the desire to migrate for working abroad. The attention that can be given is by improving their education and skills so that once they work abroad, they may get into the formal employment sector that requires certain skills.

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## The Impact of Fiscal Policy on Welfare Improvement in Indonesia: Study of Impact of Premium Assistance Beneficiaries on The National Health Insurance, Physical Special Allocation Fund for Health Sector, Education Sector, and Village Funds to Human Development Index

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### Abstract

One of the objectives of the fiscal policy is to improve public welfare. Still, there are funding constraints to improve welfare in some countries. Therefore, fiscal management to increase welfare must be implemented efficiently and effectively. In this research, to improve welfare, the fiscal policy will be focused on health, education and community empowerment which are the components of the HDI. This research used quantitative method with regression equation to explain the impact of fiscal and social policy, in the form of Recipients of Health Insurance Contribution Assistance (*Penerima Bantuan Iuran Jaminan Kesehatan Nasional/ PBI JKN*), physical special allocation fund (*Dana Alokasi Khusus/DAK*) for health and education sector, village fund, region's budget expenditure, locally generated revenue (*Pendapatan Asli Daerah/PAD*), and poverty level on human development index (HDI) improvement. The locus for this research is all regencies/cities in Indonesia that use panel data. The results of this research were divided into three findings. First, there were research variables with unidirectional results and significant improvement on HDI, which are physical DAK for the health and education sector, village funds, social expenditure, and PAD. Second, there were variables with unidirectional impact but it does not have a significant impact on the HDI improvement (i.e. PBI JKN). Third, there were variables with unidirectional and significant impact, such as personnel expenditure, material expenditure, capital expenditure, and poverty level.

**Keywords:** fiscal policy; welfare; human development index; premium assistance beneficiaries; physical special allocation fund for health and education sector; village funds

### Introduction

Welfare is the goal of all state (Abbas, 2000; Ali et al. 2012; Asghar et al., 2012, Arnold and Rodrigues, 2015), including Indonesia. Welfare in a state is often associated with

the distribution process of resources to the people, both in the form of cash or other benefits (Goodin et al., 2008). Distribution attempts conducted by a state aims to enable the poor to access opportunities and resources, so they can participate, compete,

and fulfill their needs properly (Arneson, 1989). To improve welfare, government role is needed by actively being involved in controlling the economy and demand at macro level, decrease unemployment as well as maintaining inflation (Keynes, 1936; Auerbach, 2012; Martinez–Vacquez et al., 2012; Muinelo-Gallo and Roca-Sagalas, 2013; Gaspar et al. 2019). For fiscal policy to perform as its function and objectives, it needs good and comprehensive planning, designing, implementation and budget accountability. Likewise, the budget to improve welfare, must be implemented thoroughly, starting from analyzing welfare problems to fulfillment of the budget.

In terms of budgeting in the Indonesian state budget, the practice of improving welfare policies is carried out through central government expenditure (BPP), transfers to regions and village funds (TKDD), and budget financing. The implementation of activities/programs from BPP and budget financing are conducted by ministries/institutions, while for TKDD are conducted by regional governments. This research seeks to analyse the gaps in the welfare sector and the limitation of fiscal capacity. The focus of fiscal policy in this research are social protection programs in education and health sector and several policies in TKDD in order to improve welfare. Some of the fiscal and social variables in this study are PBI JKN, physical DAK for education and health sector, village funds, region's budget expenditures (personnel, material, capital, and social expenditures), PAD, and poverty level.

This research is expected to contribute: (1) provide insights on policy-making to improve welfare; (2) develop of theoretical concepts regarding fiscal policy and fiscal decentralization toward HDI improvement; (3) provide information of analysis result regarding fiscal and social variables in affecting welfare improvement; and (4) from research methodology side, the research

is expected to give academic contribution relating to research design, which are quantitative method regression equation with panel data model to analyze the relation between fiscal and social policy toward welfare improvement. Meanwhile, this research aims to analyse how several fiscal and social variables affect HDI, as well as analyzing and explaining how said variables have impacts on the HDI or not.

## **Literature Review**

Welfare is a multidimensional concept which includes material and immaterial dimensions, both objective and subjective in terms of individual and group aspects (Goodin et al., 2008). Poverty, inequality, and welfare improvement are major issues for all countries (Celikay and Gumus, 2017). Many researchers have studied issues on effective policy to overcome welfare problems (Lewis and Ulph, 1988; Blackburn 1994; Caminada and Goudswaard, 2009; Kabubo-Mariara et al., 2013; Arnold and Rodrigues 2015; and Odusola, 2017). One of the policies in an attempt to improve welfare is fiscal policy in the social protection sector. The purpose of social protection expenditure, as an instrument of fiscal policy, is to improve welfare, through adequate distribution of income and assistance, such as direct cash transfers, assistance on food, education, health and capital as well as subsidies (Sinn, 1995).

Fiscal policy is part of public policy because the main objective of fiscal policy is to create healthy economic growth, employment, reduce unemployment, and create welfare for the people. In addition, fiscal policy is also needed to maintain price stability (Christiano and Fitzgerald, 2000, Wren–Lewis, 2011) in order to maintain the purchasing power of the poor. Meanwhile, regarding the policies in social protection sector to improve welfare, there are several programs that can be implemented by the

government. The social protection program can be in the form of cash transfers or in-kind transfers. The cash transfer program aims to improve welfare in short term by fulfilling basic needs and maintain purchase power. Meanwhile in-kind transfer in the form of education and health assistance are for long terms by improving human resource quality. According to the research results of Lustig et al. (2013), both cash and in-kind transfers can have an impact on reducing poverty and inequality if properly targeted. However, in-kind transfers (education and health) programs can have a more significant impact than cash transfers in reducing poverty and income inequality, because education and health are long-term investments that can improve the quality of human resources. This is also in line with the research result from Bourguignon (2004) which states that expenditures on education and health functions can effectively reduce inequality. An increase in expenditure on education and health will reduce inequality, the distribution of income increases for the poor due to the increase in the expenditure, which is a long-term and progressive investment in improving human resources (Chu, 2000).

In addition to social protection, education, and health programs, there are other fiscal policies which can improve welfare, one of which is through transfers to regions in the context of fiscal decentralization (Cavusglu and Dincer, 2015). Decentralization is a tool to achieve one of the goals of the state, primarily providing better public services and creating a more democratic public decision-making process (Jaya, 2021: 125). The background of decentralization is not only to lessen the authority of central government in controlling the regional government but it is more fundamental than that, which encourage regional government to respond quicker and better to problems on their region (Bardhan, 2002). According to Oates (1999) there are four reasons of decentralization policy implementation, which are economic

efficiency, cost efficiency, accountability, and funding sources mobilization. In this case, economic efficiency is the resource allocation efficiency, i.e., decisions made by a smaller scope of government results in the types and levels of public services that are more in line with local preferences, especially if the needs between regions are relatively different (Wallis and Oates, 1988; Oates, 1999).

There are several studies fiscal decentralization effect on economic growth, poverty reduction, and income inequality in various contexts, both in developed and developing countries (Oates, 1972; Prud'homme, 1995; Tanzi, 2000; Rodriguez-Pose and Gill, 2004; Arze et al., 2005; Ezcurra and Rodriguez-Pose, 2009; Sepulveda and Martinez-Vazquez, 2011; Tselios et al., 2011; Ali et al., 2012; Gadenne and Singhal, 2014; Cavusoglu and Dincer, 2015; Ostwald et al., 2016; Shahzad and Yasmin, 2016; Dwicaksono and Fox, 2018 ). Fiscal decentralization can improve welfare of the people in the regions through increasing regional income (both from transfer funds and PAD), improving services to the community, building facilities and infrastructure, and providing targeted assistance to the poor (Gadenne and Singhal, 2014). Fiscal decentralization can also have an effect on improving public health because decentralization can further improve health services in the regions (Dwicaksono and Fox, 2018). According to the research by Cavusoglu and Dincer (2015), the relationship between fiscal decentralization and poverty alleviation and inequality depends on the conditions or context of each country. Fiscal decentralization can reduce poverty and inequality, especially in developed countries (Cavusoglu and Dincer, 2015). Meanwhile, based on the research result from Shahzad and Yasmin (2016), it was stated that fiscal decentralization could actually increase poverty and income inequality in the regions. This is because the local government has not implemented a good governance system,



so there is no efficiency in the government management and public services.

According to Brosio and Ahmad (2006), there are several typologies of transfer to the regions, and each has different implications for incentives and distribution. Some of these typologies are listed as follows: 1) Transfers to fill local government deficits, which is performed since the revenues are smaller than the expenses (the example of general allocation fund); 2) Revenue sharing to ensure vertical fiscal balance between the central government and regional government (the example of sharing revenue fund); 3) Transfers for special purposes, transfers from the central government to local governments with a specific purpose, example special purpose allocation fund, regions incentive fund, and special autonomy fund; and 4) Transfers for balancing as a form of transfer based on regulations with balances depending on tax revenues and/or the expenditure needs, example sharing revenue fund.

Transfer expenditures to regions that are directed to improve development and community welfare in the regions can be made in the form of special allocation funds (DAK) and village funds. DAK is divided into physical DAK and non-physical DAK. It is directed to support national priorities which has turn into regional affairs. In order to support development in education and health sector regionally, physical DAK in education and health sectors is allocated. Meanwhile, village funds are directed at improving the welfare of rural communities and their quality of life as well as poverty alleviation.

### **Development of Welfare Policy in Indonesia**

Social protection policies in Indonesia have developed rapidly in recent years, and since 2002 the rights and access to social security have increased and developed formally (Kaasch, Sumarto, and Wilmsen,

2018). After the Asian economic crisis in 1997, Indonesia moved towards a social protection system from an exclusive system (only focusing on the formal worker sector) to a system that is universal for all Indonesians by the enactment of Act of the Republic of Indonesia Number 40/2004 concerning the National Security System (Kaasch et al., 2018, Sumarto, 2013, Suryahadi et al., 2017).

The history of social protection in Indonesia after independence began during the era of President Soekarno (1945–1967), with the enactment of: (1) Act of the Republic of Indonesia Number 33/1947 in conjunction with Act of the Republic of Indonesia Number 2/1951 concerning Labor Accidents; (2) Regulation of the Minister of Labor Number 48 of 1952 in conjunction with Regulation of the Minister of Labor Number 8 of 1956 concerning the Arrangements of Labor Workers Assistance; (3) Regulation of the Minister of Labor Number 15 of 1957 concerning the Establishment of the Labors' Social Foundation; (4) Regulation of the Minister of Labor Number 5 of 1964 concerning the Establishment of the Social Security Fund Foundation; and (5) Act of the Republic of Indonesia Number 14/1969 concerning the Labors Fundamental. Social protection in the Soekarno era was still limited to formal labors, while other than the group are not legally protected (juridically).

Meanwhile, during the reign of President Soeharto (1967–1998), the social security program prioritized the provision of social security for groups of state apparatus such as civil servants/national police/military and formal workers. Social protection programs for civil servants/national police/military are in the form of health insurance programs (Askes), armed forces insurance (Asabri), and pension programs, while for formal workers receive labors social insurance program (Astek) or workers social insurance (Jamsostek). The Jamsostek program which consisted of social security, labor accident insurance, death insurance, health care

insurance, and old-age insurance.

In the era of President B.J. Habibie (1998–1999), to overcome the impact of the economic crisis in Indonesia, the government implemented the social safety net (SSN) program within the framework of the structural adjustment program required by the World Bank. President B.J. Habibie also ratified 7 basic labor standards of the International Labor Organization which are the foundation for social protection for the working class. There are various SSN programs, such as education, health, special market operations–rice, regional empowerment program–impact of economic crisis, development program for supporting disadvantaged villages, district development program, and the urban poverty alleviation program.

During the era of President Abdurrahman Wahid (1999–2001), the government signed the international agreement on the Millennium Development Goals in September 2000. In addition, President Abdurrahman Wahid's contribution was to develop a national action plan to eliminate violence against women, which includes a social protection scheme for women. Moreover, during the reign of President Megawati (2001–2004), the government enacted Act of the Republic of Indonesia Number 40/2004 concerning the National Social Security System which commend every citizen to obtain health insurance, accident protection insurance, death insurance, old age insurance, and pension insurance.

During the era of President Susilo Bambang Yudhoyono or SBY (2004–2014), the government established the National Poverty Alleviation Strategy (NPAS). The NPAS document is prepared in a participatory manner with a human rights-based poverty approach in which guarantees the fulfillment of social protection as a human right. In 2005–2007 as compensation for the increase in fuel prices, the government

distributed various social assistance programs such as health care insurance for the poor, the national program for community empowerment, and direct cash assistance. In this era health insurance programs initiated by local governments began to develop. In 2008, a public health insurance system and childbirth insurance are implemented. Then in 2010, SBY established the formation of Acceleration of Poverty Alleviation National Team to coordinate policies to accelerate poverty alleviation related to social protection across sectors. Subsequently in 2011, the government enacted Act of the Republic of Indonesia Number 9/2011 concerning the Implementation of Social Welfare and Act of the Republic of Indonesia Number 13/2011 concerning Handling of the Poor and Needy. After being delayed for 10 years, finally President SBY at the end of his leadership, starting January 1, 2014 implemented the National Social Security System Law, which consists of the national health insurance program by BPJS Health and the employment guarantee program by BPJS Employment.

Moreover, in the era of President Joko Widodo, on his first period (2014–2019), at the beginning of his leadership, President Jokowi implemented several social protection programs known as the Sakti Card, which are the Healthy Indonesia Card, Smart Indonesia Card, and Family Welfare Card. In 2015, Jokowi issued a policy of reducing fuel subsidies and diverting the subsidies to finance infrastructure development, productive programs, and increasing the budget allocation for social assistance programs, particularly in education and health sector.

As a respond to the impact of the Covid-19 pandemic, the government provides regular social protection programs and non-regular social protection programs to protect the purchasing power of the poor (Sumarto and Ferdiansyah 2021). The regular social protection program has been implemented

previously but adjusted some of its attributes such as the amount of benefits, the coverage of target beneficiaries (KPM), the scope of the program area, and the proportions for its distribution. Meanwhile, the non-regular social protection program is a program that was just initiated in 2020 as a respond to the impact of the Covid-19 pandemic.

### **Indonesian Welfare Budget Management**

Indonesian social assistance programs vary in different sectors, such as programs

in food, education, health, energy, social and economics, housing, agriculture, marine and fisheries sectors. The diversity of the program becomes an advantage as well as a challenge in its implementation. The advantage of the programs is that there are many aspects of human development that are accommodated by these various programs. On the other hand, the complex program management and the databases used in the programs become a challenge in program implementation since they can affect the effectiveness of the program.

**Table 1. Government Assistance Program Summary, 2014–2019**

<b>No.</b>	<b>Programs</b>	<b>Account Type</b>
<b>Programs in Food Sector</b>		
1.	Rice Assistance Program	Social Assistance
2.	Noncash Food Assistance/Staple Food Card	Social Assistance
<b>Programs in Education Sector</b>		
1.	<i>Program Indonesia Pintar</i> (Smart Indonesia Program)	Social Assistance
2.	<i>Bidikmisi</i>	Social Assistance
<b>Programs in Health Sector</b>		
1.	<i>Program Indonesia Sehat</i> (Healthy Indonesia Program)	Social Assistance
<b>Programs in Energy Sector</b>		
1.	Electricity Subsidy	Subsidy
2.	3 kg LPG Subsidy	Subsidy
<b>Programs in Social and Economy Sector</b>		
1.	<i>Program Keluarga Harapan</i> (Family Hope Program)	Social Assistance
2.	Community-Based Economic Enterprises	Social Assistance
3.	Remote Indigenous Communities	Social Assistance
4.	The Strengthening Meetings between Children and Families	Social Assistance
5.	Social Assistance for Severe Disability	Social Assistance
6.	Social Assistane for Neglected Elderly	Social Assistance
<b>Programs in Housing Sector</b>		
1.	Renovation Program for Uninhabitable House	Social Assistance
2.	Independent Housing Stimulus Assistance	Social Assistance
3.	Housing Loan Liquidity Facilities	Budget Financing
4.	Interest Difference Subsidies	Subsidy
5.	Down Payment Subsidy	Subsidy

No.	Programs	Account Type
<b>Programs in Agriculture Sector</b>		
1.	Fertilizer Subsidy	Subsidy
2.	Insurance Premium Assistance For Rice Farmers	Social Assistance
3.	Insurance Premium Assistance For Cow Farmers	Social Assistance
<b>Programs in Marine and Fisheries Sectors</b>		
1.	Insurance Premium Assistance for Fisherman	Social Assistance
2.	Fisheries Insurance Premium Assistance for Small Fish Cultivators	Social Assistance

Source: Ministry of Finance of the Republic of Indonesia

Each social assistance program in each sector has a different goal. Their objectives are listed in the following table.

**Table 2. The Objectives of Social Assistance Programs in Different Sectors**

No.	Social Assistance Program	Objectives
1.	Food Sector	Reduce spending burden of the underprivileged to meet basic food needs, especially rice, protein and energy sources.
2.	Education Sector	Realizing the government's commitment in education sector by providing education services without discrimination for all citizens.
3.	Health Sector	Provide comprehensive health insurance for all Indonesian people so they can live healthy, productive, and prosperous.
4.	Energy Sector	Provide assistance for underprivileged people (targeted households) in the energy sector.
5.	Economic and Social Sector	Improve living standard and productivity of beneficiaries.
6.	Housing Sector	Provide assistance in the form of repairing uninhabitable housing, housing finance assistance, and stimulants for low-income households.
7.	Agriculture Sector	Provide fertilizer subsidy, as well as assistance for insurance premiums for farming and livestock.
8.	Fisheries and Maritime Sector	Provide fisherman and fishery insurance premium assistance for small fish cultivators.

Based on the evaluation of the above programs implementation, it can be conveyed that the framework of each program is quite varied, including the database used, criteria of the beneficiaries, and the distribution system. The main issue in the distribution is that the database has incomplete and

not updated information, thus affecting the accuracy of the targets. Also, the current social protection program system is still implemented per sector and has not been able to demonstrate synchronization between each programs and the continuity of poverty alleviation.

The current social protection policy in Indonesia refers to the Act of the Republic of Indonesia Number 11/2009 concerning Social Welfare. Having provided with this regulation, the government embodies several social protection programs as shown in Table 1. In addition, there are several welfare improvement programs through TKDD, such as village funds and DAK. Village funds in accordance with Act of the Republic of Indonesia Number 6/2014 concerning Villages, are aimed to improve the welfare of rural communities and the quality of human life as well as poverty alleviation through meeting basic needs, building village facilities and infrastructure, developing local economic potential, and utilizing natural and environmental resources sustainably. Regular physical DAK is directed to achieve minimum service standards and fulfilling basic service gaps in education, health, and connectivity. Meanwhile, the assigned physical DAK supports programs to achieve major project targets and certain priorities, which are reducing maternal mortality and stunting, poverty alleviation, food security, and sustainable economic infrastructure. For non-physical DAK, it is directed to increase and equitable distribution of health service capabilities regionally, and support the achievements of several other fields, such as food and agriculture security, increasing cooperatives and micro small and medium enterprises, and tourism services.

The challenge of implementing fiscal decentralization is that there are still gaps in development and the quality of public services. The development gap can be seen from several indicators, namely: (1) Java's contribution is still high in the economy; (2) the decline in stunting is still relatively slow, in 2018 by 30.80 percent to 27.67 percent in 2019; (3) correlation between funding and outcome is still weak; and (4) not yet synchronized between central and regional planning. Meanwhile, the gap in the quality of public services in 2019 is indicated by the

participation rate of the nation Junior High School of 79.40 percent, the highest at 86.75 percent (Bali) and the lowest at 57.19 percent (Papua). In addition, the gap in the quality of public services can also be seen from the level of basic immunization, nationally at 92.96 percent, the highest at 100 percent (West Nusa Tenggara) and the lowest at 49.64 percent (Aceh).

## **Research Method**

The analysis for this study uses a panel data with equation regression model with consideration of the short data series (2015-2018), but the cross section data is large (514 districts/cities) so that the data becomes more stable. In the panel data equation model, the stages of selecting the best model are conducted, whether to use the common effect model (CEM) or the fixed effect model (FEM) or the random effect model (REM). An explanation of the technique to estimate model parameters with panel data is as follows: first, the CEM, which is to estimate the parameters of the panel data model. The method is by combining cross section and time series data as a single unit without looking at the time and individual differences. Second, the FEM is to estimate panel data by using dummy variables to capture differences in intercepts between districts/cities, but the intercepts are the same over time. This model also assumes that the slope remains between districts/cities. Third, the REM is to estimate panel data in which the disturbance variables may be interrelated over time and between individuals. There are three tests to choose the panel data estimation technique, namely the Chow test, Hausman test, and the Lagrange Multiplier test.

In this study, the quantitative data used are districts/cities HDI, districts/cities physical DAK allocation for health and education, districts/cities PBI JKN, districts/cities village funds, region's budget allocation for personnel expenditure, region's budget

allocation for capital expenditures, region's budget allocation for material expenditures, region's budget allocation for social expenditure, poverty level in districts/cities, and districts/cities PAD. The secondary data sources used in this study are financial notes and state's budget documents, Ministry of Finance website, Indonesian Statistics Agency (BPS) website, and regulatory documents related to the research.

### **Analysis on Impact of PBI JKN, Physical DAK for Health Sector, Physical DAK for Education Sector and Village Funds toward Human's Development Index**

Theories and research which underlie the formulation of this research equation include the theory of Keynes (1936) which states that the government should intervene in controlling an economy. According to Barro (1989), fiscal policy in the form of government expenditure can encourage economic growth, which in turn will be able to improve welfare. Government assistance to the poor in small amounts will have an insignificant impact, but assistance in sufficient amounts can have a greater impact (Devereux et al., 2000). Another finding from Imide and Onokero's research (2019) states that the total government expenditure does not significantly affect the HDI, because the amount of expenditure is relatively small compared to the need to increase the HDI. Moreover, the low transparency and accountability towards the government expenditure great affect the success of budget implementation on welfare improvement. Investments in improving human resources such as education expenditure can increase HDI (Ali et al., 2012).

Meanwhile, the relationship between the impact of fiscal decentralization on economic growth and welfare was presented by

several researchers, such as Oates (1993) stated that fiscal centralization has negative and significant impact related to the level of income per capita. Meanwhile, Halder (2007) stated that fiscal decentralization in general has a positive correlation with economic outcomes (HDI, life expectancy, GDP, and infant mortality). Another study conducted by Mehmood and Sadiq (2010) regarding the effect of fiscal decentralization on the HDI, stated that fiscal decentralization both in terms of expenditure and revenue had a positive effect on HDI, and fiscal decentralization from expenditure side provide more effective impact.

The impact of state expenditure on distribution sector has an effect on material and services distribution to poor people. PBI JKN provided to the poor lead them to benefit from the free healthcare. State expenditure on education/vocational education for the poor can improve their education so it is expected they will have a better chance to access labor and eventually improve their living standard. Meanwhile, regarding the impact of fiscal decentralization on improving welfare, it confirms that fiscal decentralization has an important role in providing material that are not provided by the private sector, such as road infrastructure, dams, health, and education infrastructure which can improve the people's living standards. Fiscal decentralization is expected to increase efficiency, because local governments have better information on the needs of their communities compared to the central government.

Based on the above framework, a study was conducted on the impact of fiscal policy on welfare improvement in all district/city in Indonesia by using the following research variables and regression equations, as follows.

1. Impact of physical DAK for health & education sector and PBI JKN on HDI model:

$$\text{HDI} = f(\text{physical DAK for health sector, physical DAK for education sector, PBI JKN})$$

$$\ln(\text{hdi}) = c \ln(\text{dakhealth}) \ln(\text{dakeducation}) \ln(\text{pbi}) \ln(\text{res}) \dots \dots \dots (1)$$

2. Impact of physical DAK for health & education sector and village funds on HDI model:

$$\text{HDI} = f(\text{physical DAK for health sector, physical DAK for education sector, village funds})$$

$$\ln(\text{hdi}) = c \ln(\text{dakhealth}) \ln(\text{dakeducation}) \ln(\text{villagefunds}) \ln(\text{res}) \dots \dots \dots (2)$$

3. Impact of physical DAK for health & education sector, regional budget (APBD) expenditures, PAD, and poverty on HDI model:

$$\text{HDI} = f(\text{physical DAK for health sector, physical DAK for education sector, APBD's personnel expenditure, APBD's material expenditure, APBD's capital expenditure, APBD's social expenditure, PAD, poverty})$$

$$\ln(\text{hdi}) = c \ln(\text{dakhealth}) \ln(\text{dakeducation}) \ln(\text{personnelexp}) \ln(\text{materialexp}) \ln(\text{capitalexp}) \ln(\text{socialexp}) \ln(\text{pad}) \ln(\text{poverty}) \ln(\text{res}) \dots \dots \dots (3)$$

The model were divided into three because when it was combined into one model, there were independent variables which have a strong relationship with one another (multicollinearity), even though the variable transformation (first difference) had been carried out. Furthermore, the

model was divided into three based on the theory that the health and education budget, and fiscal decentralization affect the level of welfare. After the exercise, the three models were free from multicollinearity and were indicated by a high R-Square value. Meanwhile, the physical DAK for health and education sectors is always included in the model because the direction of the coefficient and its significance is always consistent and in line with the theory in supporting HDI improvement.

Before the regression and analysis of the results were performed, the model selection was done prior to obtain the best model. The stages tare listed as follows: (1) stationary test of research data, correlogram test, and unit root test to find out whether the data from research variables were stationary or not, as well as statistical descriptions to see the characteristics of the research data; (2) the stages of selecting the best model, CEM or FEM or REM; and (3) regression equation model.

Based on correlogram and unit root test, it is concluded that all the research data are stationary. Furthermore, the stationary research data was analyzed through various stages, starting from the selection of the best model, the regression model, and the analysis/interpretation of the regression results.

*The Impact of PBI JKN on HDI*

To discover the impact of PBI JKN on HDI, the regression progress was performed to equation model (1), which is the impact of physical DAK for health sector, physical DAK for education sector and PBI JKN on the HDI. Based on the finding of the best model, REM model is obtained.

**Table 3. Regression Result of the Relation between HDI on Physical DAKfor Health Sector, Physical DAK for Education Sector and PBI JKN Model**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
c	3.485758	0.022499	154.9279	0.0000
dakkhealth	0.028809	0.000411	70.09576	0.0000
dakeducation	0.000338	0.000195	1.733213	0.0832
Pbi	0.000982	0.000931	1.054788	0.2917
res	-0.028292	0.000388	-72.82512	0.0000

R<sup>2</sup> = 0.801399      F-Stat = 1645.359  
 Adj. R<sup>2</sup> = 0.800912      Prob. (F-Stat) = 0.000  
 D Watson Stat = 1.56399      <sup>)</sup> Significancy level at 5%  
 ln(hdi) = 3.486 + 0.029ln(dakhealth) + 0.0003ln(dakeducation) +  
 .001(lnpbi) – 0.28ln(res)

Based on the result of the regression of the model equation, PBI JKN gives a positive impact on the HDI improvement, but it is not statistically significant (probability of 0.29). The PBI JKN impact on HDI improvement is in accordance with the theory that health sector budget can improve people's health which then improve the quality of human development (Lustig et al., 2013; Bourguignon, 2004; Chu, 2000). The PBI JKN budget is a budget for JKN contribution assistance to the poor. The poor can access health facilities with JKN PBI assistance, so they are certain about health services. Health is one of the components of the HDI, thus if the quality of health increases, the HDI level will also increase.

Based on the regression, it shows that every 1 percent increase in the PBI JKN budget can increase the HDI by 0.001 percent. The insignificant and small PBI JKN coefficient on the increase in HDI is caused by several things, including: (1) health facilities that are not evenly distributed throughout Indonesia, so that it is difficult for people who receive JKN PBI in the regions to access health facilities and services; (2) the beneficiaries are still not on target (exclusion error), because based on data as of February 2020, from 98.6 million PBI participants,

there are still 30 million people who are not included in Data for Social Welfare (DTKS); and (3) preventive activities in health care have not been carried out optimally by the government.

*The Impact of Physical DAK for the Education Sector on HDI*

Based on the results of the regression of the model equations (1), (2), and (3), the increase in the physical DAK budget for education sector has a positive and significant impact on the improvement of HDI. In equation (1) the significance level is above 90 percent, while in equations (2) and (3) the significance level is in 99 percent. The impact of the physical DAK budget for education on HDI is in accordance with the theory that the education budget can increase the quality of human resources (Jaya, 2021; Cavusglu and Dincer, 2015; Gadenne and Singhal, 2014; Lustig et al., 2013; Bourguignon, 2004; Chu, 2000). The physical DAK budget for education is a transfer budget to the regions that is given to regional governments for the development and provision of educational facilities and infrastructure, thus the teaching and learning process is expected to be implemented better and is expected



to improve the quality of learning activities. Education is one of component on HDI, thus if the quality of education increases, the HDI level will also increase.

Based on the results of the regression of the model equations (1), (2), and (3), it shows that every 1 percent of budget increase in physical DAK in education sector can increase HDI level by 0.0003–0.002 percent. The range of coefficients was found due to differences in the components of the independent variables in each model. Based on the regression result above the impact of physical DAK for education sector on HDI improvement is relatively small. This is caused by the total budget for physical DAK in the education is relatively small, where in 2017 it was only 1.83 percent and in 2018 it was 2.05 percent from the total education budget. The total education budget in 2017 was IDR419.8 trillion and in 2018 was IDR442.2 trillion, while the physical DAK for education sector budget was IDR7.7 trillion and IDR9.1 trillion, consecutively (source: Financial Notes and State Budget, 2018). The small impact of physical DAK in education sector is in accordance with Devereux et al. (2000), Imide and Onokero (2014) research which state government budget/assistance to underprivileged citizens in small amount will give insignificant impact but assistance in sufficient amount will be more significant. Physical DAK for education sector is directed to conceptualize fulfillment in providing school facilities and infrastructure which is realized through the construction of educational facilities and infrastructure at the Early Childhood Education Centre (PAUD), Elementary School (SD), School for Disabled Children (SLB), Place for Learning Activities (SKB), Junior High School (SMP), Senior High School (SMA), and Vocational High School (SMK) levels.

Beside the relatively small proportion of the budget, the significance impact of physical DAK for the education sector on the HDI is also affected by the effectiveness

of the budget realization. Based on the evaluation results of the implementation of the physical DAK for the education sector in several regions, there is still a mismatch between the programs/activities provided by the central government and the actual need for facilities and infrastructure by each school. For the sake of future improvement, the physical DAK budget allocation for the education sector should be based on proposals from each school compiled by the regional education office, and then proposed to the central government. This mechanism is expected to minimize the inaccuracy of targets, and the budget allocation will be in accordance with the real needs of each school.

#### *The Impact of Physical DAK for the Health Sector on HDI*

Based on the results of the regression of the model equations (1), (2), and (3), the increase in the physical DAK budget for health sector has a positive and significant impact on the HDI improvement, as well as in all significant equations in 99 percent. The positive impact of physical DAK for health sector on the HDI is in accordance with the theory that the health budget can improve the quality of health of the people (Jaya, 2021; Dwicaksono and Fox, 2018; Cavusglu and Dincer, 2015; Gadenne and Singhal, 2014; Lustig et al., 2013; Bourguignon, 2004; Chu, 2000), which in turn can improve the quality of human resource development. The increase in the physical DAK for the health sector budget as part of the health budget component is in line with the increase in HDI.

Based on the results of the regression of the model equations (1), (2), and (3), every 1 percent increase on the physical DAK in health sector's budget can increase HDI by 0,02–0,03 percent. The range of coefficients is due to differences in the components of the independent variables in each model. Its impact on HDI is quite significant because

the proportion of the physical DAK budget in the health sector is relatively large to total of health budget, i.e. 15.44 percent in 2017 and 16.22 percent in 2018 (source: Financial Notes and State Budget, 2018).

In addition, the effectiveness of the physical DAK budget for health sector on the HDI improvement is also influenced by the explication of the program/activities. The activities of the physical DAK for health sector are clearly regulated in the Regulation of the Minister of Health regarding the operational instructions for the use of the physical DAK for health sector every year. In the said regulation, physical DAK for health sector is directed to activities, including: construction and rehabilitation of community health centre (Puskesmas)/hospitals; provision of health centre/hospital infrastructure; provision of health equipment for Puskesmas/hospitals; provision of facilities and infrastructure for pharmaceutical installations; supply of medicine; supply of consumables; increasing

the capacity of regional health laboratories; provision of early detection tools for non-communicable diseases; and the construction of primary hospitals. With the clarity of the operational procedure, it is very helpful for the management and effectiveness of the activities implementation of the physical DAK in the health sector.

#### *The Impact of Village Funds on HDI*

To discover the impact of village funds on the HDI, regression progress is done for the impact on physical DAK for health sector, physical DAK for education sector and village funds on the HDI. The stages of the selection process of selecting the best model are the same as the steps done in equation (1). Based on the results of the Chow test, Hausman test, and Lagrange Multiplier test, it was found that the best model was REM. Moreover, based on the REM model, the regression equation (2) is then performed.

**Table 4. Regression Result of the Relation between HDI on Physical DAK for Health Sector, Physical DAK for Education Sector, and Village Funds Model**

Variables	Coefficient	Std. Error	t-Statistic	Prob.
c	3.443550	0.010993	313.2368	0.0000
dakhealth	0.020237	0.000583	34.71112	0.0000
dakeducation	0.001836	0.000188	9.787122	0.0000
villagefunds	0.009229	0.000506	18.22942	0.0000
res	-0.021331	0.000508	-41.98195	0.0000
R <sup>2</sup>	= 0.84536	F-Stat	= 2229.018	
Adj. R <sup>2</sup>	= 0.84498	Prob. (F-Stat)	= 0.000	
D Watson Stat	= 1.6655	*) Significantly level at 1%		
ln(hdi)	= 3.444 + 0.0202ln(dakhealth) + 0.0018ln(dakeducation) + 0.0092ln(villagefunds) – 0.2133ln(res)			

Based on the results of the regression of model equation above, the increase in the village fund budget has a positive and significant impact on HDI improvement (probability equation of < 0.01). Based on

the results of the regression equation (2), it shows that every 1 percent increase in the village fund budget can increase the HDI by 0.01 percent. The positive impact is in accordance with the theoretical literature

that the village fund budget can stimulate the quality of human development in rural communities (Jaya, 2021; Cavusglu and Dincer, 2015; Gadenne and Singhal, 2014; Lustig et al., 2013; Bourguignon, 2004; Chu, 2000). This is in line with the purpose of using the village fund budget, which is prioritized to finance development and community empowerment aimed at welfare improvement of rural communities and life quality as well as poverty alleviation.

Community empowerment activities are non-instructive efforts to encourage knowledge and ability of the community to be able to identify problems, plan, and implement solutions by utilizing local potential and existing facilities, both from sectoral agencies and non-governmental organizations as well as community leaders. Some examples of community empowerment activities are training for farmers, training on irrigating rice fields, and distributing

agricultural products to small markets or cooperation. Meanwhile, to improve the quality of life, village funds are used to build integrated health centre (Posyandu), water drainage/irrigation, bathing/washing/toilet centre, PAUD buildings, reservoirs, wells, village birth centres, village roads, bridges, village markets and land holding. The fund also has a key role in decreasing poverty by infrastructure development which results in improved productivity by using local labor especially poor citizens (labor intensive).

#### *HDI Model and Other Variables*

The stage of selecting the best model for equation (3) is similar to the one done in equation (1) and equation (2). Based on the results of the Chow test, Hausman test, and Lagrange Multiplier test, it was found that the best model was FEM. Then, based of FEM model, equation regression (3) is done.

**Table 5. Regression Result of the Relation between HDI on Physical DAKfor Health Sector, Physical DAK for Education Sector, and Other Variables Model**

Variable	Coefficients	Std. Error	t-Statistic	Prob.
c	3.577680	0.013100	273.1108	0.0000
dakeducation	0.000514	3.33E-05	15.43878	0.0000
dakhealth	0.029649	0.000102	289.3074	0.0000
materialexp	-0.002181	0.000179	-12.17118	0.0000
capitalex	-0.001212	0.000101	-11.96354	0.0000
personnelexp	-0.014071	0.000351	-40.06537	0.0000
socialexp	7.57E-05	2.51E-05	3.010652	0.0027
pad	0.015851	0.000121	130.6578	0.0000
poverty	-0.009880	0.000572	-17.26750	0.0000
res	-0.030141	0.000105	-285.9304	0.0000

R<sup>2</sup> = 0.9999

Adj. R<sup>2</sup> = 0.9998

D Watson Stat = 2.2379

ln(hdi)

$$= 3.578 + 0.03\ln(\text{dakhealth}) + 0.0005\ln(\text{dakeducation}) - 0.01\ln(\text{personnelexp}) - 0.002\ln(\text{materialexp}) - 0.001\ln(\text{capitalex}) + 0.00008\ln(\text{socialexp}) + 0.02\ln(\text{pad}) - 0.01\ln(\text{poverty}) - 0.03\ln(\text{res})$$

F-Stat = 34267.11

Prob. (F-Stat) = 0.000

<sup>\*)</sup> Significancy level at 1%

Based on the results of the regression of equation model (3), an increase in the personnel expenditure has a significantly negative impact on HDI improvement (probability equation of  $< 0.01$ ), in line with the research of Shazad and Yasmin (2016). Based on the results of the regression equation (3), it shows that every 1 percent increase in the personnel expenditure budget can decrease the HDI by 0.01 percent. The negative impact occurs because the personnel expenditure is an operational expenditure used for salary payment of regional civil servants its allocation reduces the fiscal space of local governments in allocating the budget for welfare improvement.

The budget increase for material expenditure has a negative and significant impact on the HDI (probability of all equations of  $< 0.01$ ), in line with the research of Shazad and Yasmin (2016). Based on the results of the regression equation (3), it shows that every 1 percent increase in the material expenditure budget can decrease the HDI by 0.002 percent. The negative impact is because material expenditure is a government expenditure used for operational activities. Similar with personnel expenditure, material expenditure reduces the fiscal space of local governments in allocating the budget for welfare improvement.

The budget increase for capital expenditure has a negative and significant impact on the HDI (probability equations of  $< 0.01$ ), in line with the research of Shazad and Yasmin (2016). Based on the results of the regression equation (3), it shows that every 1 percent increase in the capital expenditure budget decreases the HDI by 0.001 percent. The presence of negative effect is caused by capital expenditure done by government investment expenditure, and the impact can only be felt in the medium and long term. Besides, capital budget allocation in short term reduces the fiscal space of local governments in allocating the budget for welfare improvement.

The budget increase for social expenditure has a positive and significant impact on the HDI improvement (probability equations of  $< 0.01$ ), in line with the research of Jaya (2021), Cavusglu and Dincer (2015), Gadenne and Singhal (2014), Lustig et al. (2013), Bourguignon (2004), Chu (2000). Based on the results of the regression equation (3), it shows that every 1 percent increase in the social expenditure budget can increase the HDI by 0.00008 percent. The small influence of social expenditure on the increasing in HDI because the proportion of the social expenditure to GDP in 2018 is small, at 0.6 percent. The small impact of social assistance, according to the research results of Devereux et al. (2000), Imide and Onokero (2019) states that a small amount of government budget/assistance to the poor will have an insignificant impact, but a sufficient amount of assistance can have a more significant impact. The positive impact occurs since the social expenditure is used for social assistance, social protection, and expenditure on poverty alleviation. Several programs included on the social assistance expenditure are *Program Keluarga Harapan* (family hope program), food assistance, PBI JKN assistance, *Program Indonesia Pintar* (smart Indonesia program), and other assistance such as assistance for the old-age and disabled. The social protection and assistance programs directly increase poor people's buying power and provide social security thus increase the development quality of the poor.

The increase on PAD has a positive and significant impact on the HDI improvement (probability equations of  $< 0.01$ ), in line with the research of Gadenne and Singhal (2014). Based on the results of the regression equation (3), it shows that every 1 percent increase in PAD can increase the HDI by 0.02 percent. The positive impact is because the increase in PAD can cause funding source in the regional budget to increase, thus will automatically increase the fiscal space in

allocating expenditure aimed for welfare development and improvement. PAD is a fiscal tool in the regions to carry out the function of distributing resources from the rich through taxes and is used as a source of funding for welfare development and improvement the poor in the regions.

The increase in the percentage of the number of poor people has a negative and significant impact on the HDI improvement (probability equation  $<0.01$ ). Based on the results of the regression equation (3), it shows that every 1 percent decrease of the total of poor citizens can increase the HDI by 0.01 percent. This impact is in accordance with the theoretical literature, in which every decrease in the poverty rate will improve the HDI, and vice versa (Martinez–Vaczquez et al., 2012; Muinelo-Gallo and Roca-Sagalas, 2013; Gaspar et al., 2019).

## Conclusion

Based on the results of the analysis and discussion of the impact of several fiscal variables on improving welfare, the conclusion of the study can be conveyed as follows. First, there are research variables which have are unidirectional results and they are significant to HDI improvement, which are physical DAK for education and health sector, village funds, social assistance expenditure, and PAD. Second, the research variable has unidirectional results and insignificant impact on the HDI improvement (i.e. PBI JKN). Third, the research variables have directional impact and they are significant to the HDI improvement, such as personnel, material, capital expenditure, and poverty level.

Due to the limited fiscal capacity of the government, while the need for funding for development is very high, the budget allocation must be made selectively and with the right priorities. For variables that have an unidirectional and significant effect on HDI improvement, the budget allocation should be increased, but there must be a consideration

for fiscal capacity, other development priorities, and fiscal sustainability. Meanwhile, for variables that have an unidirectional and insignificant effects on increasing HDI, such as the PBI JKN, there must be improvements to the implementation of the JKN PBI, such as equitable distribution of health facilities, socialization of healthy living, and validation of beneficiary data.

Furthermore, in terms of variables that have an unidirectional and significant effects, such as personnel and material expenditures, the budget must be streamlined. Personnel expenditures and material expenditures must be planned, budgeted, and implemented effectively and efficiently, and the portion of total APBD expenditures must also be reduced. Meanwhile, capital expenditures should be directed to productive capital expenditures, as well as reduced spending on office equipment and vehicles.

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## Methodological Reflections on Online Data Collection during the Covid-19 Pandemic

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### Abstract

The pandemic closed the door for the use of conventional, face-to-face data collection methods. At the same time, it built a momentum for the exploration and utilization of online data collection methods. However, the belief about superiority of the offline data collection persists. The literature review and the authors' research experience reveal that offline and online data collection methods yield similar result in terms of data completion and quality. All data collection methods contain weaknesses and strengths. Nonetheless, the online data collection methods are very versatile. They allow the researchers to choose the tools that best align with their research objectives.

**Keywords:** research amidst the pandemic; strengths and weaknesses of online data collection methods; research ethics

### Introduction

Curiosity and questions about why people think the way they do, or why people behave the way they do, among other issues, are the triggers of research. The purpose of all research is to answer research questions or prove a hypothesis by collecting and analyzing data through the use of a combination of methods. There are a variety of true and tested ways to complete the research steps. Qualitative researchers are in a unique position as they are the main instrument in data collection. Meanwhile, the relationship between quantitative researchers and their respondents is mediated by some validated and ideally objective questionnaires.

The days of "armchair researchers" are long gone. There is an expectation for quantitative and qualitative researchers alike to go to the field to understand the geographical, social, cultural, and political context of the research. "Being in the field" enables researchers to get to know the people they study, engage with them, and in the case of qualitative researchers, immerse in their culture and get an in-depth understanding of the phenomena under study. The development of computer and information technology opens the door for researchers to apply computer-mediated research. Researchers in social sciences have interviewed people by using phone, skype, and instant messaging software

for quite some time (Cater, 2011; Deakin and Wakefield, 2014; Jenner and Myers, 2019; Johnson et al., 2019; Sullivan, 2012). The computer-mediated research allows researchers to include informants from different parts of the country to participate in their research

The above-mentioned “non-conventional” data collection methods enable researchers to carry out research without actually going to the field. Before the Covid-19 pandemic, researchers chose computer-mediated research as one of the available methodological options. Teti et al. (2020) state that the pandemic is a social event that is disrupting our social order. The pandemic has thrust researchers back into the armchair, practically and metaphorically. Travel restriction, quarantine requirements imposed by local government for people who come from out of town, and physical distancing make it difficult for researchers to go to the actual geographical field and collect data based on face-to-face interaction with research participants. During the pandemic, conventional data collection methods such as participation observation and focus group discussion can turn into super spreader events. The pandemic closed the door to widely known and practiced conventional data collection. At the same time, it opened the possibility to use, and even maximize, computer-mediated data collection out of necessity.

When online research is compared with conventional research or offline research, some researchers discern the latter as superior due to the face-to-face interaction between researcher and research participants.<sup>1</sup> As a result, online research is seen as “the second-best thing” compared to offline research (Holt, 2010). Offline research does allow researchers to build rapport with research participants

more easily. Definition of rapport include “getting along with each other, a harmony with, a conformity to, and affinity for one another” (Seidman 2013: 98) and “conveying empathy and understanding without judgment” (Patton 2015: 458). Research participants can also ask researchers to clarify sentences in the questionnaire or questions posed by researchers. In addition, face-to-face research allows researchers to see nonverbal language in the form of body language and facial expressions of research participants. Due to the importance of intense face-to-face interaction with research participants in qualitative research, online research is deemed unsuitable for qualitative research (Holt, 2010). Despite the perceived weaknesses of online qualitative data collection, several researchers (for example, UNDP, 2018; Zhang & Watts, 2008) demonstrate that data quality from online research is on par with those collected offline.

As of now, nobody knows how long the pandemic is going to last. Meanwhile, researchers have to carry on with their work, with deadlines looming large in their timeline. Many research activities have to be conducted online. Even though discussions on the merits of online data collection are divergent, it is imperative that researchers consider the strengths and weaknesses of online data collection to provide them with knowledge before they choose which data collection methods they are going to utilize. The purpose of this paper is to outline the methodological reflection of online data collection based on literature review and personal research experience. This paper will cover discussions pertinent to the research field, various online data collection methods, and the ethical aspects of online data collection methods.

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<sup>1</sup> In this paper, research participants refer to respondents in quantitative research and informants in qualitative research

## **Redefining the Field**

During the course of the research, researchers will perform fielding activities. “Going to the field” and “leaving the field” are inherent activities in field research. Researchers have to leave one’s “home institution to acquire data, information, or insights that significantly inform one’s research” (Kapiszewski et al., 2015: 1). At the completion of the study, they will then leave the field. In pre-pandemic time, field refers to the actual geographical space. In the world of travel restriction and physical distancing, the field is cyberspace (Christia, 2021). For qualitative researchers, the migration to the virtual space is problematic. Research is “based on personal interaction with research [participants] in their own setting” for an extended period (Wood, 2007: 123). The setting provides context – cultural, social, political, economic - for the phenomena under study. The protracted timeline affords an opportunity for researchers to immerse themselves in the daily activities of the study participants as well as their culture. When researchers pivot towards online research, they are inclined to redefine the field. What is, or where is, the field when researchers stay at home or at the office while talking to research participants over the phone or staring at them from the researchers’ computer screen. Beaulieu (2010) states that the concept of location in cyberspace is vague, as researchers have to switch from offline “co-location” to online “co-presence”. Both researchers and participants of research are aware that they are not in the same location, although they can hear or see each other. The realization of the non-existence of “co-location” is emphasized by questions such as: “It’s raining here. Is it raining where you

live?” or “Today is extremely hot here. Is it also hot over there?”. In spite of the misgiving of the lack of the “actual field” in online data collection methods, Howlett (2021) found that she was able to be grounded on the research site even though she was in London and her research participants were in Ukraine. Similar earlier research (Beaulieu, 2004; Pink et al., 2016) back Howlett (2021)’s research experience.

## **Online Quantitative and Qualitative Data Collection Tools**

This part of the paper outlines different data collection tools, starting from the very simple one, such as Short Message Service (SMS) which does not require a smartphone to a more sophisticated tool such as Computer Assisted Web Interviewing (CAWI).<sup>2</sup> Since no data collection tool is perfect, this section constitutes the advantages and disadvantages of each tool. Before delving into details of various online data collections tools, it is important to understand the technological context in Indonesia. Table 1 shows the digital divide between rural and urban areas in Indonesia. Access to smartphones, computers, and stable internet connection is greater in urban areas. This means that it is easier for researchers to conduct online data collection in and from urban areas. However, with online data collection methods, researchers are able to cover much wider research area, which otherwise will be too expensive for offline data collection. Online data collection is more economical than offline data collection since it does not constitute funding for travel. Generally speaking, the biggest allocation in any research falls under the category of travel cost.

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<sup>2</sup> For a more complete description of various online data collection tools see Susilastuti, DH, Abritaningrum, YT & H Murti, SWUH (2020) *Penelitian di tengah Pandemi Covid-19: Petunjuk Praktis*. Pusat Studi Kependudukan UGM. Unpublished manuscript

**Table 1. Information Communication Technology Indicators**

	From Total (%)	Rural Area (%)		Urban Area (%)	
		Household Access	Individual Usage	Household Access	Individual Usage
Internet	36.0	26.3	32.5	48.5	41.7
Types of internet access	36.0	-	-	-	-
a. Mobile broadband	93.3	95.4	-	93.3	-
b. Fixed broadband	7.8	7.4	-	14.3	-
Handphone	84.4	79.5	70.1	90.7	76.4
a. Smartphone	-	-	59.2	-	70.7
b. Non-smartphone	-	-	61.5	-	49.4
c. Both	-	-	20.7	-	20.1
Computer	31.4	22.1	20.4	43.4	38.5
Fixed phone	4.5	1.4	-	8.5	-
TV	87.7	82.6	67	94.2	81.2
Radio	40.0	26.3	20.5	48.5	31.3

Source: MCIT, 2016, p. 5-43 in Hadi (2018)

Despite the regional restriction due to the digital divide, our research experience show that online data completion and data quality are on par with offline data collection. During the Covid-19 pandemic, many people have been conducting some of their activities online, acquiring technological competence and ease in the process. Many research participants are adept not only at using electronic gadgets but also at sharing their life and thoughts in virtually conducted research. Hence online data collection is proficient at generating good quality, complete and rich data.

Below is the outline and simple description of different data collection tools.

#### *Types of Online Qualitative and Quantitative Data Collection Tools*

##### 1. Short Message Service (SMS)

Advantage: cheap.

Disadvantages: determining the sampling frame is quite challenging, it cannot be used

for research with complex questions, there is no room to look for nonverbal cues, rapport development is not easy.

##### 2. WhatsApp messages

Advantages: cheap, it can be used to track respondents with high mobility.

Disadvantages: difficulty in determining sampling frame, researchers cannot observe nonverbal language, not everyone has a smartphone, it depends on mobile phone credit and a strong and stable internet network, rapport development is quite challenging.

##### 3. Telephone

Advantages: there is direct contact with research participants through voice, the researcher can probe, meaning ask for clarification and more detailed answers from research participation, research participants have less inhibition to talk about sensitive matters.

Disadvantages: determining sampling frame is challenging, researchers cannot see nonverbal cues, mobile phone credit cost is relatively high, it is dependent on a strong and stable telephone connection.

4. Online meeting applications (Skype, Zoom, Webex, Google Meet, etc.)

Advantages: researchers and research participants can see nonverbal language through facial expressions, rapport can be built more easily, probing can be done relatively smoothly.

Disadvantages: these applications require a reliable internet network, high cost, the research participants must have the skills to use the selected application, it depends on a reliable internet network.

5. WhatsApp videos

Advantages: researchers and research participants can see each other's faces so they can see nonverbal language through facial expressions, rapport can be built more easily, probing can be done relatively easily.

Disadvantages: not everyone has a smartphone, it requires a reliable internet network, research participants are charged with mobile phone credit

6. Computer-assisted Web Interviewing (CAWI): Internet-based interview technique.

Research participants filled out the questions prepared by the researcher on the website (for example google form).

Advantages: cheap, data is collected in a

data center so time to process data can be reduced.

Disadvantages: not everyone has a computer or internet access, many people are reluctant to fill out questions online, it is dependent on a reliable internet network.

7. Computer-assisted Telephone Interviewing (CATI): telephone-based interview technique.

The interviewer reads the questions that have been inputted by a programmer into the application, then he/she enters the research participants' answers into the program on the computer.

Advantages: there is direct contact through the voice of researcher and research participation, rapport can be built more easily, in the event that research participants do not understand particular questions, they can ask for explanations or clarifications from the researcher, data are more accurate because the interviewer directly enters the answers from research participants into the computer.

Disadvantages: expensive, research participants are charged with mobile phone credit fees if they use WA phone, sometimes research participants think that interviewers are telemarketers, so they are reluctant to participate in the study.

8. Computer-assisted Personal Interviewing (CAPI)

CAPI is very similar to CATI, but CAPI is usually used for offline research. A comparison of the advantages and disadvantages of CAPI, CATI, and CAWI can be seen in the following table.

**Table 2. CATI vs CAWI vs CAPI**

	CATI	CAWI	CAPI
Population coverage	★★★	★★	★★★★
Cost per interview	HIGH	LOW	MEDIUM-HIGH
Initial investment	HIGH	LOW	MEDIUM-HIGH
Reliability of collected data	★★★	★★	★★★★★
Accuracy of answers	★★★★	★★	★★★★★
Redemption	★★★	★★	★★★★
Fast survey completion	★★	★★★★★	★★★
Rate of dropout	MEDIUM-HIGH	HIGH	LOW
Good for long questionnaire	★★★★	★★	★★★★★
Good for complex questionnaire	★★★	★	★★★★★

Source: <https://www.idsurvey.com/en/cati-vs-cawi-vs-capi/>

Some research constitutes a pre-determined population, for example, a list of people who reside in specific regions, or who participate in particular government programs. In this case, sampling will be drawn by the researchers who work in the office or from home. The local research assistants who are recruited from the research areas will then contact the people who are selected to participate in the research.

When field assistants contact potential research participants, they will ask for their telephone numbers. At the same time, they will inform the prospective research participants that somebody from our office in Yogyakarta will contact them through the phone. The field assistant will emphasize that the person who will call from Yogyakarta is a research assistant and not a telemarketer.

Another challenge in computer-mediated research comprises of establishing cooperation from the research participants so that they will be willing to complete the interview process. In an attempt to secure the research participants' cooperation, some researchers provide compensation for them. The subject of compensation is elaborated further in the section of ethical considerations below.

#### 9. Netnography/cyber ethnography/virtual ethnography

Information in various platforms such as Facebook, Instagram, and Twitter, provides rich data for online ethnographic studies. Social scientists, particularly anthropologists, see social networking as a mirror of social life and believe that ethnography can be done online through what is eventually named netnography (Kozinets, 2015). Some researchers question the need for a new name for online ethnographic research. Is the conventional ethnographic study quite different from the online ethnographic research, so that it is deemed necessary to attach a new name to the latter? Lombardi (in Kozinets, 2015: 4) argues:

“The worlds of research and intellectual innovation are strewn with neologisms that might’ve sounded odd or wrong when brand-new: cybernetics, psycholinguistics, soft-ware. So yes, new mappings of reality sometimes call for new names, and sometimes the names take a while to settle in”.

Netnography highlights discussion on the fluidity of the concepts of culture and community. The availability of online archived communication that represents social life, combined with the opportunity to conduct interviews online, has changed the way people do ethnographic research online. Kozinets (2016) observes that ethnographic research constitutes the use of big data and discourse analysis.

Advantages: very diverse and rich data sources. This method can be applied by researchers from various scientific backgrounds.

Disadvantages: researchers must pay attention to relatively complex research ethics issues.

“While analyzing media content, policy documents, and other official public content is straightforward, ethically speaking, content generated online by the public (e.g. forums, blogs, vlogs, reader comments) can be more ethically controversial. The key consideration is what constitutes ‘public’ or ‘private’ online and how might such research be received by those individuals or communities whose content has been used. Researchers should also check if their professional bodies have any specific guidance regarding online data collection. For example, the British Psychological Society has ethical guidelines for internet-mediated research...” (Jowett, 2020)<sup>3</sup>

### **Ethical Considerations**

Conducting online research during the Covid-19 pandemic is not only related

to logistics but also to research ethics. Research ethics are applicable in all kinds of research, online research included, and they include respect for persons, anonymity-pseudonymity, risk or benefits for participants, nondisclosure, conflict of interest, justice, subject compensation (Ess & Ha’rd af Segerstad, 2019). Since online research is devoid of direct interaction with research participants, researchers have to be cognizant of the fact that there is always a “person” who may be affected by the research (Marcham and Buchanan, 2012).

Participation in research is voluntary. Consent from research participants to partake in research activity is very important. Ethically, researchers must explain the purpose of the research, the impacts of the research on the research participants, the non-compulsory nature of their participation, then ask for approval from the research participants to participate in the research. Technically researchers can send a written informed consent form through an e-mail and request a signature from research participants prior to data collection activity. However, this method of obtaining consent is often impractical because not all research participants are familiar with how e-mail works. The alternative to a written consent from research participants will be a verbal consent. Researchers can read from the written informed consent to research participants, ensure that they understand its content, and then ask the research participants: “Can I please start asking questions?”

When people agree to participate in research activity, they set aside some time to answer questions from a researcher. Compensation for their time is deemed appropriate. It should be noted that several studies on the relationship between incentives and increased collaboration with respondents did not show conclusive results (Ballivian, et.al., 2013; Demombynes, et.al., 2013; Hoogeven et.al., 2014; Leo et.al., al.,

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<sup>3</sup> Research ethics for internet-mediated research issued by the British Psychological Association can be viewed at this link <https://www.bps.org.uk/sites/www.bps.org.uk/files/Policy/Policy%20-%20Files/Ethics%20Guidelines%20for%20Internet-mediated%20Research%20%282017%29.pdf>

2015). Even so, compensation is a nice way for the researchers to show appreciation to the research participants. Researchers should select the type of compensation carefully to prevent undue influence, especially during the pandemic where economic insecurity is on the steep rise (MacKenzie et al., 2007; Head, 2009). What constitutes appropriate compensation is debatable, but Head (2009) suggests it should be useful for the research participants. Based on our research experience, IDR 50,000,- worth of mobile phone credit can be considered as a suitable compensation. Perhaps due to Covid-19 induced economic precarity, some research participants asked the researchers to transfer the IDR 50,000,- to their Ovo or GoPay account. The researchers politely declined the request as sending the money to their OVO or GoPay account will amount to undue influence.

Another ethical consideration that researchers have to adhere to is the commitment to protect the well-being of research participants. Research must not injure or harm the people being studied (Hugman et al., 2011; Kaplan et al., 2020; Vankley, 2013). Kaplan et al. (2020) argue that the no-harm principle should also apply to researchers, especially field assistants. Based on their research in various countries, Kaplan et al. (2000) find that many research assistants work in environments that do not support their physical and emotional well-being. Bisoka (2020) argues that the pandemic shines a light on the gap of privilege among researchers from developed countries as opposed to those from developing countries. The first cannot, or choose not to, travel to the field research amidst the pandemics. Yet, some of them still expect “people who are already there”, namely researchers from developing countries to carry out offline research in spite of the risk of contracting Covid-19. Some of these “local researchers” or assistant researchers are contract workers with insufficient insurance coverage. The

pandemic is an opportunity to reflect on the unequal position of researchers from developed and developing countries. The reflection can be a catalyst for the creation of collaborative agenda-setting that rectifies practical, structural, and labor inequalities (Marks and Zakayo, 2021)

## Conclusion

The Covid-19 pandemic has been wreaking havoc in many aspects of our life, both personal and professional. It upended the widely held conventions regarding basic aspects in research, such as the field and data collection methods. When the government implemented various measures, such as travel restriction, reduced mobility and physical distancing to curb the spread of the virus, many researchers were not sure on how to conduct their research activities. Some reluctantly visit, or revisit, online data collection methods. Even though online data collection is not novel, researchers in some quarters still perceive it as “second best” compared to the conventional, face to face, data collection methods. At the end, the reluctance, or sometimes hesitance, to try the online data collection methods was replaced with the curiosity to implement them. After all, as Indonesians, are not we all very familiar with the legendary saying *tidak ada rotan, akarpun jadi* (when there is no rattan, we can use roots)?

Literature review and our personal research experience have provided us with pleasant surprises. Data quality from online research are comparable to those collected offline. Online data collection increases the awareness among research participants that they have to use their time wisely to anticipate dropped call due to poor mobile phone signal. They tend to spend less time thinking about normative answers, hence the complete data from the interview. Moreover, during the Covid-19 pandemic people move some of their offline activities online. Some of them



use a very simple device, such as a non-smartphone to trade news with people in their circle. Other people use more sophisticated gadgets, such as smartphones, tablets, and computers. These groups have more liberty to migrate to the cyberspace and carry out a larger part of their daily activities there. In doing so, they develop ease and mastery in using different gadgets and platforms. These people form a pool of potential research participants. Some of them actually participate in research during the course of the pandemic. Their technological savviness and their ease in sharing their thoughts and feeling explain the quality and completeness of data collected online.

Research activities amidst the pandemic are unique, and they often lead to methodological reflection. The encouraging field results and the positive methodological reflection make the Covid-19 induced uncertainty less daunting. If and when Omicron, the newest Covid-19, enters Indonesia, many researchers are more equipped to carry out their online data collection than they were a couple of years ago.

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**Other source:**

<https://www.idsurvey.com/en/cati-vs-cawi-vs-capi/>.

## Determinants of Commuter Worker Income in South Sulawesi during the Covid-19 Pandemic

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### Abstract

The development and ease of access to transportation in South Sulawesi Province opens up opportunities for the workforce to work in areas that are administratively different from their residence as commuters. Commuter workers tend to increase every year. When Covid-19 hit the economy in Indonesia, the government issued various policies to suppress the spread of the Covid-19 virus. One of them is by implementing Large-Scale Social Restrictions (PSBB) which was also adapted by the South Sulawesi Provincial Government. The impact of the Covid-19 pandemic on commuter workers is still not a concern, especially even though the restrictions on economic and social activities have a significant impact on the working hours and income of commuter workers. This study determines the factors that affect the income of commuter workers during the Covid-19 pandemic. Based on the results of the August 2020 National Labor Force Survey (Sakernas) data processing, it shows that the income received by commuter workers during the Covid-19 pandemic is influenced by the variables of working hours, business fields, employment status, policies for implementing Work from Home, education level and gender.

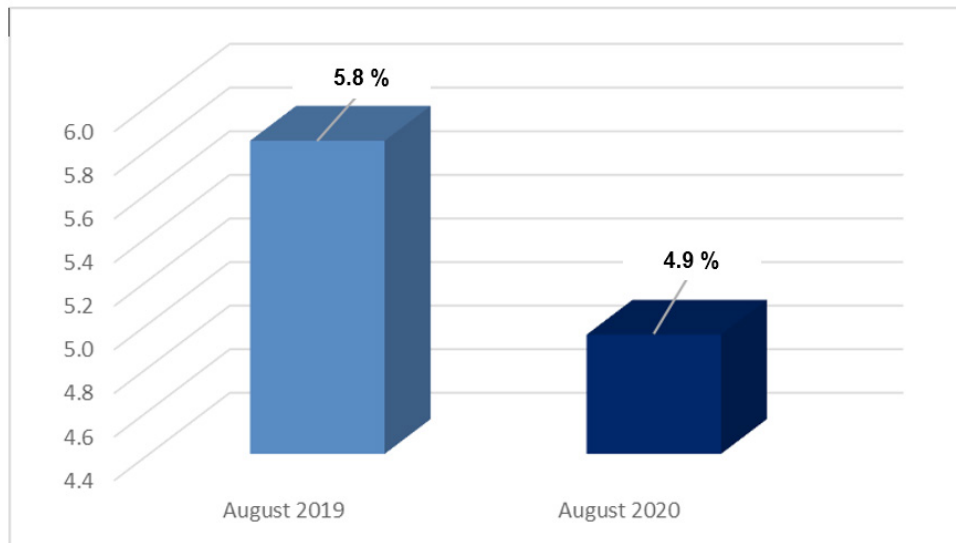
**Keywords:** covid-19; commuter worker; working hour; income

### Introduction

Regional conditions in Indonesia provide different mobility patterns among regions. The decrease in residential land in urban areas, accompanied by high house prices and the cost of living as well as improvements in transportation facilities, in turn are able to change the pattern of mobility that occurs. Coupled with the wider geographical boundaries of the distribution of employment, the easier ownership of motorized vehicles and the variety of transportation facilities have a relatively large contribution to the

process of worker mobility. This accessibility then changes the mobility pattern to be non-permanent, either circular or commuting (Tambunan et al., 2014).

In Indonesia, the number of commuter workers increases every year. The dense number of vehicles that occur in the morning around the time of starting work and in the afternoon until the evening around the time of returning illustrates the commuting phenomenon (BPS, 2019). This commuting also opens up opportunities for the workforce to work in areas that are administratively different from where they live (Frizalda, 2016).



Source: Sakernas 2020, processed data

**Figure 1.** Percentage of Commuting Workers in South Sulawesi

This convenience also encourages women who are generally second breadwinners in the household to work without forgetting their role as homemakers (Hong, Lee, & McDonald, 2018; Kawabata & Abe, 2018). This phenomenon of commuter workers occurs not only in Greater Jakarta (Jakarta, Bogor, Depok, Tangerang, and Bekasi) but also in several metropolitan areas such as in Medan (Medan, Binjai and Deliserdang), Sarbagita (Denpasar, Badung, Gianyar, and Tabanan) and Mamminasata. (Makassar, Maros, Gowa and Takalar). Even the Mamminasata metropolitan area is an area with a high commuting rate (BPS, 2020a).

When Covid-19 emerged at the end of 2019, which then spread to various parts of the world and hit the economy in all countries, including Indonesia. It carried various policies out to reduce the spread of the Covid-19 virus. One of them is by implementing Large-Scale Social Restrictions (PSBB) which are carried out per region according to the severity of the outbreak (Muhyiddin, 2020). The Indonesian government's strategy is to limit various activities in the workplace and

public places, limit transportation modes and other activities. The Provincial Government South Sulawesi also issued regulation on social restrictions.

Based on the Governor Regulation Number 22/2020 concerning Guidelines for Implementing Large-Scale Social Restrictions in Handling Corona Virus Disease 2019 in the Province of South Sulawesi, the community activities include the temporal suspension of activities at schools and workplaces, temporal suspension of religious activities in houses of worship or certain places, restrictions on activities in public places, temporal cessation of socio-cultural activities that cause crowds of people, and restrictions on transportation modes. The government also emphasized the difference between PSBB and regional quarantine, where people may not do activities outside their homes.

The magnitude of the unemployment rate measured the impact of Covid-19 on employment but also impacts reducing working hours and temporarily not working (Dewi, Magdalena, Ariska, Setiyawati, & Rumboirusi, 2020). The International Labor Organization estimates that with social

distancing adopted worldwide affecting nearly 2.7 billion workers or about 81 percent of the world's workforce, globally working hours will fall by 6.7 percent in the second quarter of 2020, which is equivalent to 195 million full-time workers. These restrictions directly affect the activities of workers, especially commuter workers, placing them at high risk of losing their jobs and income (ILO, 2020). In line with the ILO report, there has been a decline in the number of commuter workers in South Sulawesi. Figure 1 shows that commuter workers in 2019 reached 5.8 percent of total workers, while in 2020 there was a decline in the number of commuters to 4.9 percent of total workers in South Sulawesi.

Google records information about individual mobility based on individual data that activates location history on Google Maps. Google Mobility Index which describes the percentage change in the number or duration of visits in various categories of places relative to normal days (baseline days). Google noted a spike in decreased activity in the workplace environment. Figure 2 shows the decline in activity at work at around 40 percent below the baseline. Meanwhile, there was an increase in place duration of up to 20 percent above the baseline. In general, the WFH policy is quite effective in reducing the rate of mobility in the office or workplace. During the transition to the new normal stage, activity at work increased until it was in the range of 20 percent below the baseline. The decrease in activity in the workplace is very high only on holidays.

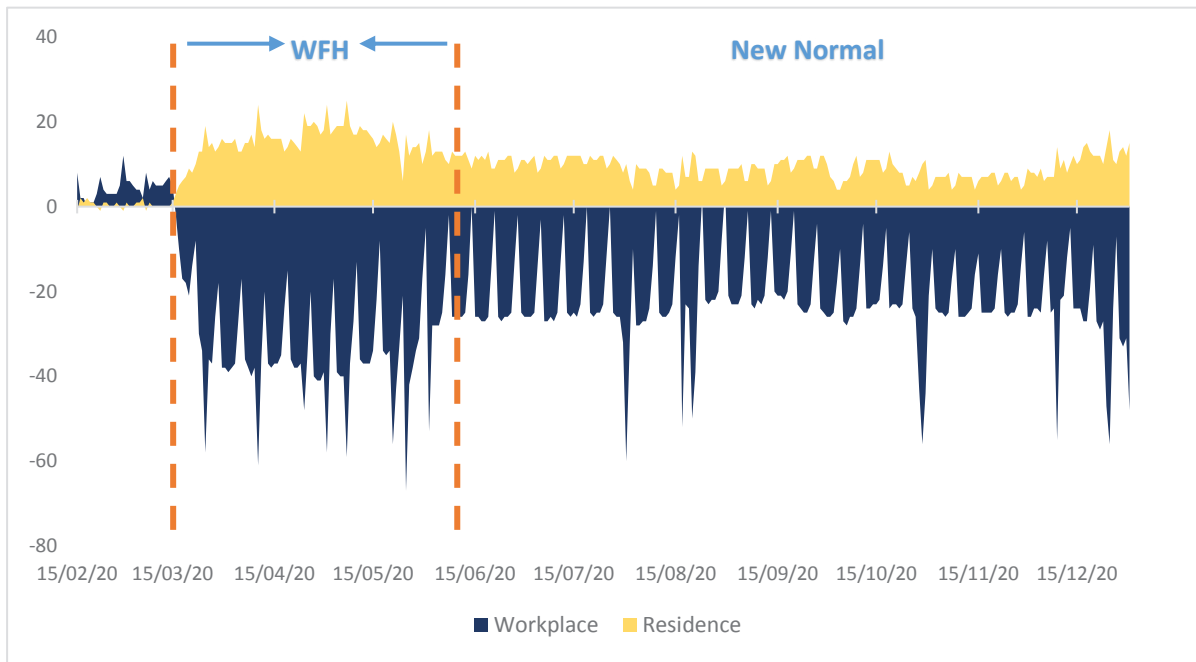
Restrictions on activities in the workplace encourage workplaces to implement a Work from Home (WFH) policy. Changes in mobility patterns also followed the implementation

of WFH. Mobility at work decreases while mobility at home increases (BPS, 2020b). The impact of the spread of Covid-19, one of which was the implementation of social restrictions and the Work from Home (WFH) policy in mid-March 2020, caused the trend of community mobility to change.

The ability to apply a work from home policy cannot be done in many work. Gottlieb, Grobovsek, Poschke and Saltiel (2020) in their research in several developing countries found that the application of work from home was very low in service and sales jobs, as well as in the manufacturing sector. They also found that workers with low levels of education and asset ownership were less likely to work from home. What is interesting in this study is that workers who can work from home earn an average income of almost double the amount received by the business sector that is closed because of restrictions on economic activity. Similar results are shown by research conducted by Adams-Prassl et al. (2020) in the United States, United Kingdom and Germany, showing that workers who are able to do more tasks from home have lower chances of losing their jobs.

Kedir and Mckay (2005) conducted a study in Ethiopia, stating that workers in the formal sector have a tendency to receive higher incomes and a higher probability of getting out of poverty when compared to workers in the informal sector. Workers in the formal sector in Indonesia receive more stable incomes and higher wages than informal workers. A Japanese study looking at the effects of COVID-19 on workers found that low-skilled and informal workers suffer more than highly skilled workers who receive regular incomes (Kikuchi, Kitao, & Mikoshiba, 2020).

*Determinants of Commuter Worker Income in South Sulawesi during the Covid-19 Pandemic*



Source: Google Mobility Index

**Figure 2.** Trade-Off Mobility at Work and Residence Period 15 February -31 December 2020 in South Sulawesi Province

The COVID-19 pandemic has widened the gap in labor market inequalities as a burden on vulnerable groups, including people of color, women, migrant workers, older employees and the less educated disproportionately (Yueping, Hantao, Xiaoyuan, & Zhili, 2021). Research on the impact of the Covid-19 pandemic in the United States, United Kingdom and Germany shows female workers are significantly more likely to lose their jobs than men, and when viewed from the level of education, workers who graduate from university are more likely to stay in their jobs (Adams-Prassl et al., 2020).

Stereotypes are recorded in people's minds that women are only identical to domestic or household activities. Most of the household responsibilities, such as time spent on house production and childcare, continue to be carried out by women. The existence of a "dual role" for women, namely as breadwinners and homemakers, causes women who work to be more sensitive to distance than men. Women's sensitivity

to distance from home to various work locations will play a role in occupational segregation of women (Hanson & Johnston, 1985). Women's lower incomes and their concentration in female-dominated jobs explain shorter distances to work than men (Iwata & Tamada, 2014).

Working hours also affect commuter mobility. Workers with longer commute times will increase their weekly working hours by increasing the daily labor supply (Gutiérrez-i-Puigarnau & van Ommeren, 2010). A similar study was conducted by Sultana and Weber (2014) which showed that working hours have a significant influence on working commuters. These commuter workers are at risk of experiencing a decrease in working hours, which will ultimately impact income. A similar study conducted in Australia in 2020 showed that there was a reduction in the number of hours worked and even commuters lost their jobs (Beck & Hensher, 2020; Hensher, Wei, Beck, & Balbontin, 2021).

This study aims to determine the factors that affect the income of commuter workers during the Covid-19 pandemic. Many studies have explored the impact of the Covid-19 pandemic on employment, especially for commuter workers, but they are still very limited in developing countries. This study also aims to contribute to adding references to commuter workers.

## **Research Methods**

The data used in this study is the 2020 National Labor Force Survey (Sakernas) of South Sulawesi Province, conducted by the Central Statistics Agency. The sample of Sakernas 2020 is population aged 15 years and over. The sample used in this study was workers who did round-trip mobility. Unit of analysis for commuter workers whose workplaces differ administratively at the district or city level. In the morning go to work, in the afternoon go home again. The boundaries of residence used in this study are districts or cities.

The concept of working uses the concept used in the 2020 Sakernas which has accommodated the 13th International Conference of Labor Statistician (ICLS). Work is doing work intending to earn or helping to earn income or profit for at least one hour (uninterrupted) or for one cumulative hour in the past week, including those who are temporarily not working.

Information related to work activities in the questionnaire can be found in question 9. a regarding the activities of the past week "In the last week, did you work?"; detail 9.b "In the past week, have you carried out any activities to earn income/income/money?" and details 9.c "In the past week, did you help with business activities or with family/ other people's work?" and details 10.a "Do you actually have a job/business activity, but in the last week you were not working/ not running the business?". To filter the unit of analysis that performs commuting,

information from question 19.b is used, namely "Where is your location/place of work in your primary job in the last week?" if you are in the same province as your place of residence but your district/city differs from your place of residence and question 19.c, namely "Do you travel back and forth from your home/place of residence to the office/workplace regularly?" if the answer is every day on the same day, then it is included in the research sample.

Descriptive analysis is used to summarize the variables used in this study based on the results of cross tabulation between variables and based on graphs. Inferential analysis is used to determine the effect of independent variables on the dependent variable. In this case, the inferential analysis method used is a linear regression model. Linear regression analysis method is an analytical method that describes the relationship between a response variable and one or more independent variables.

In this study, it included income as the dependent variable in the model. Income is income/wage/net salary as money received by commuter workers who worked for the past month from their primary job, both as money and goods. The independent variables used are gender, education level, number of hours worked from primary job, Work from Home policy at work, main job status, and main job field.

The gender variable is the sex of the commuter workers, which is defined as coded 0 is male and coded 1 is female. Variable Education level is the level of education completed by commuter workers, which is categorized as code 0 if the highest education is junior high school or the equivalent or below; coded 1 if the highest education completed is high school or equivalent; and coded 2 if the highest education completed is a diploma and above.

The number of hours worked is the length of work in hours used by commuter workers to work from their primary job, excluding rest hours during the past week.



It then defined the number of hours worked as follows, coded 0 if the number of hours worked is less than 35 hours a week; coded 1 if the number of working hours is at least 35 hours in a week.

The Work from Home (WFH) policy variable is the implementation of the work from a home policy that was carried out in the workplace during the past week. The WFH policy is defined as follows, coded 0 if the workplace does not implement WFH; and coded 1 if the workplace applies WFH.

The next independent variable used is the main job status. I grouped employment status into two categories, namely formal and informal. The formal category includes workers/employees/employees with permanent employers and trying to be assisted by permanent workers/paid workers. Meanwhile, informal includes those who work alone, those who work with the help of family members, and unpaid workers, trying to be assisted by non-permanent workers, casual workers in agriculture, free workers in non-agricultural activities. It then defined this variable as follows, coded 0 if the employment status is formal; and coded 1 if the employment status is informal.

Business field is a field of activity from the work/business/company/office where you work, or those produced by the company/office where you work. In this study, I categorized business fields into three groups, namely the agricultural sector, the manufacturing sector and the service sector. Code 0 if the business field is in the agricultural sector; code 1 if the business field is in the manufacturing sector; and code 2 if the business field is in the service sector.

The model used in this study is:

$$Y = \beta_{10} + \beta_{11} X_1 + \beta_{12} X_2 + \beta_{13} X_3 + \dots + \beta_{1k} X_k$$

Parameter testing uses two types of tests, namely the F test and t test. The F test statistic is also called the simultaneous

test, it is used to determine the effect of all independent variables in the model together (Basuki & Prawoto, 2015). The hypothesis used in the F test is:

$$H_0 = \beta_{11} = \beta_{12} = \beta_{13} = \dots = \beta_{jk} = 0$$

$$H_1 = \text{there is at least one } \beta_{jk} \neq 0$$

with F test statistics =  $\frac{ESS/(k-1)}{RSS/(n-k)}$

where n = number of observations and k = number of estimation parameters, including intercept or constant.

The second test is a partial test for each independent variable using the t test. The hypothesis used in the t test is:

$$H_0 = \beta_{jk} = 0$$

$$H_1 = \beta_{jk} \neq 0$$

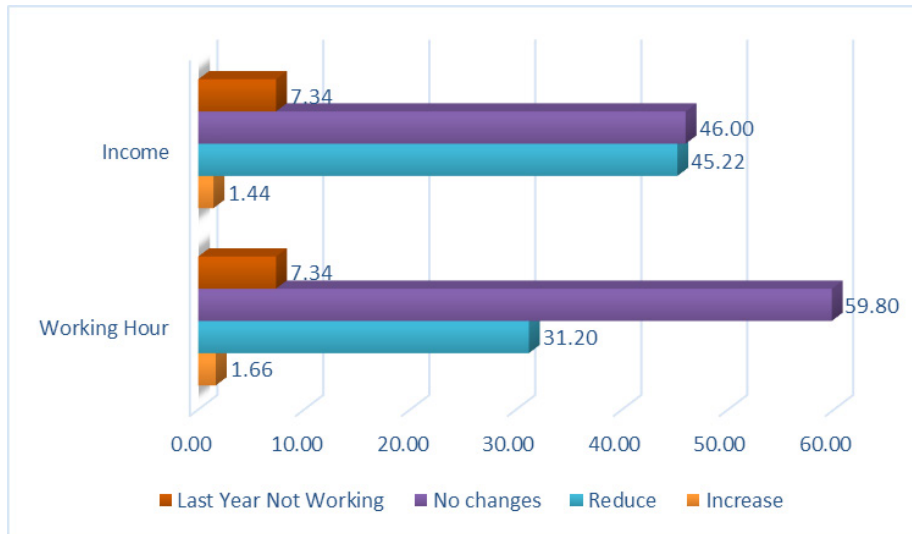
(there is an effect of the independent variable jk with the dependent variable)

with t test statistics =  $\frac{\hat{\beta}_k - \beta_k}{se \beta_k}$

## Discussion

### *Changes in Working Hours and Income of Commuter Workers*

The Mamminasata metropolitan area (Makassar-Maros-Sungguminasa-Takalar) is located in South Sulawesi Province, with Makassar City as the city center. Sungguminasa is the capital of Gowa Regency. The administrative areas covered by the Mamminasata metropolitan area are Takalar Regency, Gowa Regency, Maros Regency and Makassar City. Most of the commuter workers who commute to Makassar come from Gowa. The close distance may be the reason for the workers to commute from Gowa to Makassar. In addition, the price of houses in Gowa Regency, which is relatively cheaper than Makassar City, is also a consideration for households that prefer to live in Gowa and work in Makassar.



Source: Sakernas 2020, processed data

**Figure 3.** Changes in Working Hours and Income Experienced by Commuting Workers in South Sulawesi

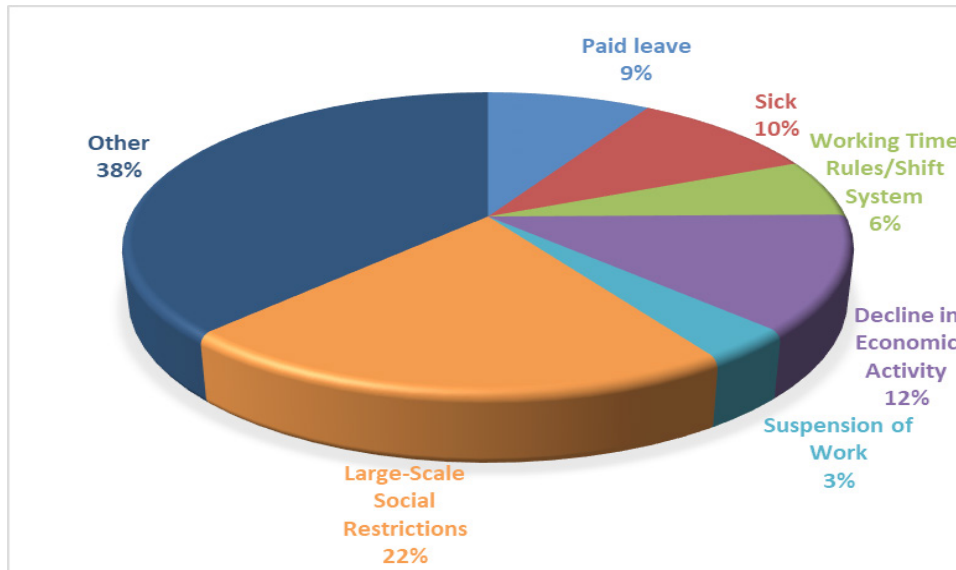
One disruption in employment due to the Covid-19 pandemic is workers who are temporarily out of work. The large-scale social restrictions imposed in South Sulawesi are the main reason commuter workers are temporarily out of work. Implementing restrictions on community mobility also reduces company productivity, which results in reduced company operations and reduced income received by workers.

Figure 3 shows 31.20 percent of commuter workers in South Sulawesi it reduced whose working hours in August 2020 when compared to February 2020 before the Covid-19 outbreak in Indonesia. This is in line with the ILO's prediction that the Covid-19 pandemic will reduce the

number of hours worked. Besides, in Figure 3 we can see that there are 45.67 percent of commuter workers whose income it reduced when compared to the period before the Covid-19 pandemic.

Based on Figure 4, 22 percent of commuter workers stated that large-scale social restrictions imposed by local governments were the main reason for temporal commuter workers not working. Also, there are 12 percent of the commuter workers who stated that the reason for the temporal absence of commuter workers is the decline in economic activity. This could happen due to restrictions on activities in the workplace and the center of the economy.

*Determinants of Commuter Worker Income in South Sulawesi during the Covid-19 Pandemic*



Source: Sakernas 2020, processed data

**Figure 4.** Main Reasons for Temporal Commuter Workers not Working in South Sulawesi Province

*Commuter Worker Income during the Covid-19 Pandemic in South Sulawesi*

To find out the variables that affect the income of commuter workers, the researchers used regression analysis. Before looking at the significant variables, the significance of all independent variables was tested together. It aims to determine whether all the independent variables can form a model. The results of the model significance test by including all independent variables into the regression model indicate

that the resulting model is significant. This means that all independent variables, namely gender, education level, working hours, work from home, main job status and business field, can simultaneously explain the income variable. The test results in Table 1 show the significance of the model, meaning that the independent variables are jointly significant in forming the model with a confidence level of 95 percent. Therefore, the income of commuter workers is influenced jointly by all the independent variables used in this study.

**Table 1. ANOVA Test Results**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	18215.001	6	3035.833	5969.506	.000
Residual	64732.171	127286	0.509		
Total	82947.172	127292			

Source: Sakernas 2020, processed data

Based on the results of the simultaneous test which shows that all the independent variables used affect the income of commuter workers, the researcher also finds that the regression model that is formed based on all variables shows that all independent variables are partially statistically significant in influencing the income of commuter workers. Based on Table 2, the significance value of each variable is less than 0.5, so that it has a significant effect. It also shows there are two variables from the six variables whose coefficient values are negative (i.e., the main job status variable and gender), meaning that the greater the category code of the two variables, the smaller the income received by commuter workers.

The coefficient for the gender variable in Table 2 (i.e., -0.191) shows that female commuter workers tend to have lower incomes than male workers. The result is in line with the results of research by Iwata and Tamada (2014) which states that female

commuter workers tend to receive lower incomes and shorter distances. It based this on the role of women, which are generally second breadwinners and the dual roles that are carried out, resulting in many women choosing to work in workplaces that are near to home even with lower incomes.

The education level variable shows a value of 0.238, which is positive, meaning that there is a positive relationship between the income received by commuter workers and the level of education. The higher the level of education completed by commuter workers, the greater the income received. Research conducted by Lee and McDonald (2003) in South Korea also shows that the level of education also influenced the travel time of shuttle mobility as a proxy for the level of wages. Commuter workers who completed diploma-equivalent education receive higher incomes than commuter workers with junior high school education levels and below.

**Table 2. The Significance Test Results of All Independent Variables on the Income of Commuter Workers in South Sulawesi**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	14.355	0.009		1515.792	0.000
Gender	-0.191	0.005	-0.097	-37.788	0.000
Education Level	0.238	0.003	0.228	80.258	0.000
Working Hour	0.257	0.005	0.134	52.654	0.000
Work From Home	0.640	0.008	0.200	75.659	0.000
Main Employment Status	-0.670	0.008	-0.232	-88.424	0.000
Business Field	0.027	0.004	0.019	6.811	0.000

Source: Sakernas 2020, processed data

The variable working hours has a positive value of 0.257, which means the greater the working hours of commuter workers, the greater the income received. Commuter workers who work at least 35 hours a week will receive a higher income when compared to commuter workers who work less than 35 hours a week. Research conducted by Gutiérrez-i-Puigarnau and van Ommeren (2010) in Germany and Sultana and Weber (2014) in the United States also shows the same result that the number of hours worked affects not only the income of commuter workers but also the time they travel for shuttle mobility.

The next variable that affects the income of commuter workers is the main employment status. The value of primary job variable is negative (i.e., -0.670), meaning that commuter workers who work in the formal sector will receive higher incomes compared to the informal workers. This is in line with the study conducted by Kediri and McKay (2005), showing that workers in the informal sector receive lower incomes than workers in the formal sector. This result is also in line with the study conducted by Gordon, Kumar, and Richardson (1989) which examines commuter workers who stated that commuter workers who work in the informal sector have more flexible hours but receive lower income than commuters who work in the formal sector.

The variable of implementing the work from home (WFH) policy in the office shows a positive value (i.e., 0.640), meaning that the workplaces where the WFH have been implemented, the income of received by the workers is also greater. A similar study conducted by Gottlieb et al. (2020) and Adams-Prassl et al. (2020) also indicates the same thing that workers who can work from home have higher incomes when compared to workers who cannot work from home. Although it cannot be denied that implementing the work from home policy also depends on the sector or business field that

does not require too much manufacturing equipment and does not need to meet many people.

The business field variable has a positive coefficient, showing that the income of workers will be greater if they work in the service sector. Based on the results of the study conducted by Adams-Prassl et al. (2020), similar results in Germany, and contrast results in the UK and the United States, workers working in the service sector had reduced income and even lost their jobs.

## **Conclusion**

The Covid-19 pandemic has had several impacts on several sectors, including employment. The magnitude of the unemployment rate does not only measure the impacts of Covid-19 on employment rate, but also the impacts that lead to the reduce in working hours and temporary working. Implementing the PSBB and the regional quarantine has forced several companies to lie off their workers due to the decline in economic activities. This study aims to determine the impacts of the Covid-19 pandemic, specifically on working hours and income of commuter workers. Based on the analysis results, it indicates that there is a shift in work activities from the workplace to the place of residence. The restriction to activities reduces the number of working hours of commuter workers compared to the number of working hours when the Covid-19 had not yet become the endemic in Indonesia. Beside the reduction in working hours, restrictions on activities in the workplaces has even resulted in commuter workers having to temporarily not work. The reduction in commuting working hours also has had several impacts on the reduced income received by the commuter workers in South Sulawesi.

Based on the results of the August 2020 Sakernas data processing, it can also be concluded that the income of commuter

workers will be greater if the commuter workers are male, work in the service sector, have formal employment status, accomplish the level of education in diploma/university, have and high working hours. For this reason, of the implementation of WFH policy does not reduce commuter workers' income.

Direct support is highly needed for the most affected sectors and population groups, especially for companies and workers operating in the sectors, in this case is the informal sector. Specific measures include implementing WFH policy to support commuter workers affected by social restrictions. This needs to be complemented by some effort to ensure an adequate supply for food and other basic needs. The limitation of this study relies on the coverage area, which only covers the area of South Sulawesi. Finally, the author expected that further research can cover the entire territory of Indonesia.

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