

POST-COVID-19 PANDEMIC RECOVERY OF HOUSEHOLD WELFARE

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ABSTRACT

This study aims to investigate the post-COVID-19 pandemic recovery on household welfare in the Greater Jakarta area a result of the government's policy of the enforcement of public activity restrictions (*Pemberlakuan Pembatasan Kegiatan Masyarakat*, PPKM). During the COVID-19 pandemic, there were numerous aspects of household affected, including household mobility, income, spending, and saving capability. There was a total of 400 respondents participated, who were the family breadwinners. The sampling methods employed were snowball and convenience sampling methods. The data was collected through a questionnaire distributed online using Google Forms. The results show that the PPKM implementation significantly affected the household welfare, and the recovery was proven in improved household mobility, income, spending, and saving capability following the COVID-19 pandemic. These findings suggest that the government must continue developing new and more effective policies while enhancing the anticipation and adoption of solution-oriented measures for the future.

JEL: H31, I31, I38, H12.

Keywords: *COVID-19, social restrictions, recovery of household expenditures, household income, household consumption.*

1. INTRODUCTION

The COVID-19 pandemic, a global phenomenon in 2020, had profoundly affected many aspects of human life. Its consequences have been far-reaching, despite initial doubt about how long it would take before life returned to normal. A study by Sumner, Hoy, & Ortiz-Juarez (2020) underscored the potential extent of its impact, claiming that a 20% loss in income or consumption might result in a considerable increase in the poorest population, potentially affecting millions around the world. Sumner *et al.* (2020) employed the comprehensive PovcalNet dataset to present new estimates of the pandemic's short-term effects on the global poverty. Moreover, Sabat, Neumann-Böhme, Varghese, Barros, Brouwer, van Exel, Schreyögg, & Stargardt (2020) highlighted the COVID-19 pandemic's role as a social stressor, causing health and financial concerns even in households that were not directly affected by the COVID-19 virus. Despite these challenges, experts widely believed that only vaccination could fully restore economic activities to pre-pandemic levels, leaving the infection harmless. Nevertheless, the COVID-19 pandemic has also provided valuable learning opportunities to study and analyze, allowing space for a better anticipation for solution-oriented steps in the future.

Globally, many countries have adopted common approaches, including school closures, travel restrictions, restrictions on public gatherings, and other measures aimed at enforcing social distancing and strengthening public healthcare services (Balmford, Annan, Hargreaves, Altoè, & Bateman, 2020; Chakraborty & Maity, 2020; Coccia, 2021; Hale, Angrist, Cameron-Blake, Hallas,

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Kira, Majumdar, Petherick, Phillips, Tatlow, & Webster, 2020). However, the government had also exhibited considerable range in their selected policies and the speed of policy implementation. In Indonesia, during the COVID-19 pandemic, the government promptly implemented strategic measures to mitigate the adverse impacts of the crisis. Notably, in the economic domain, the government urged local authorities to reduce non-priority spending budgets outlined in the Regional Revenue and Expenditure Budget (*Anggaran Pendapatan dan Belanja Daerah*, APBD) and reallocate resources to accelerate the responses to the COVID-19 pandemic's economic consequences. Additionally, the government was responsible for the payment of Withholding Income Tax (*Pajak Penghasilan*, PPh) Article 21, that would typically be borne by taxable employees in the manufacturing sector. The Financial Services Authority (*Otoritas Jasa Keuangan*, OJK) had also extended credit facilities to micro, small, and medium enterprises (MSMEs) with turnovers of less than ten billion. Furthermore, initiatives were introduced to facilitate mortgage assistance for low-income individuals, and subsidies on electricity were provided for the poor (Santika, 2020).

Despite the slow recovery of economic activities following the immediate aftermath of the COVID-19 pandemic, measures have been implemented to cap the economic activities to a certain extent. These measures include mobility restrictions, mandatory implementation of health protocols by businesses, limited capacity at restaurants, curbs on sport events, and other activities involving mass gatherings. Owing to lifestyle advancements – such as remote meetings, telecommuting, and flexible workspaces - many individuals may be hesitant to return to pre-pandemic norms.

Transitioning from the peak of the COVID-19 pandemic, attention has shifted towards economic recovery, as seen by significant increased vaccination coverage and the gradual reopening of economic sectors. Numerous studies have investigated the COVID-19 pandemic's multifaceted impact on people's lives. According to Ashari & Nugrahanti (2021), the COVID-19 pandemic had diverse effects on household welfare in Indonesia, resulting in significant disparities in total spending across various income brackets. Other research underscored the importance of consumers adapting their behaviors to mitigate infection risks, noting qualitative differences in epidemic outbreak effects compared to other macroeconomic factors (Jung, Park, Hong, & Hyun, 2016), as evidenced by the SARS outbreak in South Korea. Meanwhile, Liu, Pan, & Yin (2020) revealed a major decrease in household consumption throughout the COVID-19 pandemic period, predominantly affecting urban households while having lesser impact on rural counterparts. Notably, the urban household consumption experienced a surge in internet spending during the COVID-19 pandemic, whilst the rural households remained relatively unaffected.

According to the data from Statistics Indonesia (*Badan Pusat Statistik*, BPS), there had been a decrease in consumer demand and income as a result of the COVID-19 pandemic, which had caused a negative impact on the MSMEs. Notably, the COVID-19 pandemic was responsible for 62.21% of financial constraints related to employee welfare and operational challenges, resulting in a 78.35% decline in the demand from affected clients (BPS, 2021). Furthermore, many breadwinners also experienced severe setbacks, leading to reduced saving capability due to increased spending on basic household needs.

Table 1. Sectors Affected by the COVID-19 Pandemic

Sector	Decrease in Income (%)
Food, Beverage and Accommodation	87.00%
Other Services	85.00%
Transportation	85.00%
Others:	
a. MSMEs	84.20%
b. MSME Business Partners	56.80%

Source: BPS (2021)

The households have implemented various coping mechanisms to navigate the shocks induced by the COVID-19 pandemic. Several households reported resorting to depleting their savings and relying on the government assistance. However, low-income households and those grappling with job or income disruptions were more inclined to cut back on their household spending. Conversely, the households facing substantial deterioration in liquidity increased their savings, reduced their household consumption, adjusted their risk behaviors, and adopted risk-averse strategies (Li, Song, Peng, & Wu, 2020). For instance, the COVID-19 pandemic had heightened the risk of households restructuring their investment portfolios, resulting in a 9.15% decrease in their total investment (Yue, Korkmaz, & Zhou, 2020).

The COVID-19 pandemic's most severe impacts had hit individuals who were already marginalized before it began, exacerbating pre-existing inequalities and portending long-term adverse economic and social consequences. Projections suggested a significant surge in poverty levels, with an estimated 400 million individuals falling below the \$1.90 poverty line, and over 500 million individuals below the \$3.20 and \$5.50 thresholds. Moreover, the global income deficit below each poverty line could escalate by up to 60%, translating into daily income losses amounting to as much as \$350 million among individuals living below the \$1.90 threshold and nearly \$200 million among those recently fallen into extreme poverty (Sumner *et al.*, 2020).

This study aims to determine whether the COVID-19 pandemic's impact on the households continues or has subsided. Based on a previous study by Ashari & Nugrahanti (2021) which underscored the COVID-19 pandemic's adverse effects on the household economies, particularly in terms of mobility, income, spending, and saving capability, this present study extends on this topic to evaluate the extent of recovery from these impacts. An earlier research by Ashari & Nugrahanti (2021) was conducted during a period when the COVID-19 pandemic symptoms had subsided and the PPKM had been relaxed. In contrast, this present study was carried out several months following the relaxation of PPKM, particularly in the first semester of 2022.

This present study investigates several key inquiries regarding the ongoing effects of the COVID-19 pandemic and subsequent economic recovery on various aspects of household dynamics. These include understanding how the COVID-19 pandemic and the level of economic recovery influence the household mobility, income, spending habits, and saving capability. In alignment with this research question, this study also aims to assess the impact of the COVID-19 pandemic and recovery pace on the household mobility, evaluate how the COVID-19 pandemic and its recovery trajectory affect the household income, analyze the implications of the COVID-19 pandemic and recovery progress on the household spending patterns, and investigate how the COVID-19 pandemic has shaped the household saving practices. The anticipated contribution of this research is to provide insights, particularly to governmental bodies, regarding future actions

necessary to establish an efficient and timely system for the social and economic recovery based on the household categorizations explained earlier.

2. THEORETICAL FRAMEWORK AND EMPIRICAL STUDIES

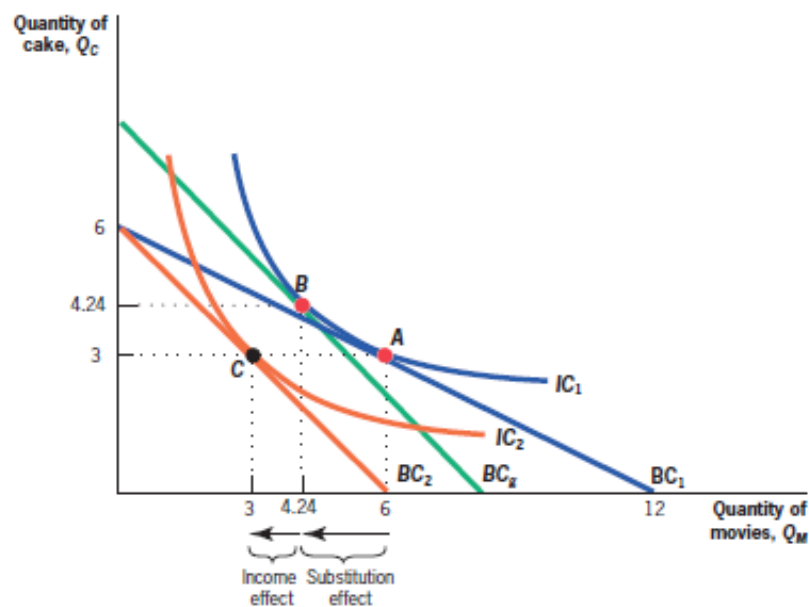
2.1. Welfare Theory

As discussed earlier, various aspects of human life have been affected by the COVID-19 pandemic. These declining aspects can be summarized into one overarching variable: the COVID-19 pandemic has diminished people's welfare. According to Sekabira, Tapa-Yotto, Kaweesa, Simbeko, Tamò, Agboton, Tahidu, & Abdoulaye (2023), the welfare encompasses diverse dimensions of life satisfaction, including both positive and negative evaluations, as well as feelings and reactions to life events, such as joy and grief. Additionally, it extends to notions of how people should live their lives. This concept is further grouped into individual, family, community, and societal welfare. The individual welfare includes factors, such as job satisfaction, economic well-being, and subjective experiences related to physical, mental, emotional, and spiritual realms - all influenced by personal circumstances. Further, the family welfare involves assessing the quality of relationships, access to resources, and developmental trajectories from infancy to adulthood within a family unit. Meanwhile, the community welfare refers to the social, cultural, and psychological needs of individuals, families, and communities, although its definitions may vary.

Theoretical analyses of utility value in the macroeconomic theory serve as the framework for understanding numerous microeconomic phenomena, such as the law of demand, taxation, price subsidies, and the welfare theory. According to Gruber (2016), utility-value analysis is premised on the notion that individuals possess a well-defined utility function, which mathematically maps a person's selection of commodities onto their level of well-being. Economists posit that individuals maximize utility within constraints, aiming to optimize their welfare given available resources, thereby resulting in diverse economic models. These models often include two components: individual preferences consisting of all conceivable goods choices, and a budget constraint delineating the resources available for purchasing said goods.

Illustrated in Figure 1 is an example of analysis depicting the impact of price increases on the individual welfare, assuming the consumption of two goods. In this scenario, Andrea, who earned \$96, is faced with movie tickets priced at \$16 and cakes at \$8. Consequently, her budget line, denoted as BC1, allows her to purchase either 6 cakes or 12 movie tickets. Initially, her consumption comprises 3 cakes and 6 movie tickets, as determined by the intersection of the budget line with her satisfaction curve (indifference curve) IC1, where the marginal utility of money (MUM) divided by the marginal utility of consumption (MUC), equals to the price ratio (PM/PC).

Upon a price increase in the movie tickets to \$16, Andrea's budget line shifts inward, becoming steeper as depicted by BC2. Consequently, her income is now allocated to purchase only 6 movie tickets while maintaining the previous 6 cakes due to their unchanged price. Her optimal consumption shifts to point C, where the slope of BC2 equals the slope of the indifference curve (IC2) and IC2 is lower. Consequently, she can only afford 3 movie tickets at this time, signaling a decrease in her welfare due to fewer options as a result of her decreased income. Further analysis reveals an additional impact—commodity substitution—resulting in her commodity combination shifting from point A to point B.



Source: Gruber (2016)

Figure 1. Microeconomic Analysis of the Impact of Price Increases on Commodity Options

2.2. The COVID-19 Pandemic and Implementation of Lockdown or Activity Restrictions

The mobility of society is key to understanding why other impacts of COVID-19 pandemic occurred. Reasons why the mobility restrictions are necessary and its implications for the community well-being, during the COVID-19 pandemic, have been a focus of several researchers. Previous significant findings are elaborated below. As one of the earliest studies on lockdowns, Nicoll & Coulombier (2009), reflecting on the A(H1N1)v influenza virus case, noted the World Health Organization's (WHO) provision of three guidelines: mitigation, containment, and delay. They highlighted differences in the actions taken between North American countries, which opted for reduction measures, and European countries, which favored containment measures. Additionally, Islam, Sharp, Chowell, Shabnam, Kawachi, Lacey, Massaro, D'Agostino, & White (2020) argued that any physical distancing intervention was effective in reducing the overall incidence of COVID-19 cases by 13%, while Flaxman, Mishra, Gandy, Unwin, Mellan, Coupland, Whitaker, Zhu, Berah, Eaton, Monod, Perez-Guzman, Schmit, Cilloni, Ainslie, Baguelin, Boonyasiri, Boyd, Cattarino, & Bhatt (2020) demonstrated the significant impact of non-pharmaceutical interventions, particularly the lockdowns, in reducing the COVID-19 transmission.

Balmford *et al.* (2020) advocated for the prompt implementation of lockdowns, estimating that even a week's delay could result in over half a million additional deaths. Verma, Verma, Verma, Abdullah, Nath, Khan, Verma, Vishwakarma, & Verma (2020) found that the delays and ineffective implementation of lockdowns contributed to the spread of COVID-19 infections in various countries. They emphasized the importance of implementing and enforcing lockdown policies to control the spread of virus.

Further, Andersen, Hansen, Johannesen, & Sheridan (2020) analyzed the effect of social distancing regulations on consumer spending using transaction data from a major Scandinavian bank. Their findings revealed that while Denmark and Sweden faced comparable exposure to the COVID-19 pandemic, Denmark's enforcement of significant limitations led to a notable decrease

in overall spending compared to Sweden. This suggests that the economic decline attributed to the COVID-19 pandemic itself would occur regardless of the social distancing regulations.

In addition, Tarrataca, Dias, Haddad, & De Arruda (2021) highlighted the persisting dynamics of COVID-19 consequences despite the gradual easing of lockdowns. They acknowledged the positive impact of lockdowns and activity restrictions in limiting the chain of transmission and outbreaks. Coccia (2021) discussed the negative effect of prolonged lockdowns on the economic growth, with countries investing more in the healthcare achieving lower COVID-19 death rates and implementing shorter lockdown periods to mitigate the economic contraction. Karnon (2020) emphasized three factors in determining the need for lockdowns in later stages of a health crisis: the number of confirmed COVID-19 cases, its economic impact, and the impact of quarantine on population well-being. Karnon (2020) suggested that a longer but less intense period of social distancing could alleviate the economic and isolation effects of the crisis.

2.3. Evaluation of the Economic Impact of Lockdown or Activity Restrictions

Among numerous studies on the lockdown and implementation of activity restrictions, only a few have looked into their economic consequences. Jung *et al.* (2016) conducted a pioneering analysis using scanner panel data from credit card transactions during the 2016 South Korean pandemic caused by the MERS virus. Their research explored the economic consequences of epidemic outbreaks and provided substantial empirical evidence on how such outbreaks influenced the consumer consumption and spending behavior. The study discovered that the epidemic outbreaks led to significant disruptions in the consumer spending, with notable heterogeneity observed across spending categories. Particularly, the consumers exhibited a stark reduction in the spending on traditional shopping channels but showcased significant increases in e-commerce spending. This finding was particularly relevant as consumer responses to the epidemic were primarily driven by psychological factors, such as fear of infection, rather than the financial constraints.

Unlike the epidemic outbreaks, the macroeconomic factors such as the business cycle or gasoline prices primarily affected the economy by impeding the consumer purchasing power, rather than their psychological willingness to spend. However, while this present study improves upon Jung *et al.* (2016) by utilizing primary data rather than secondary data from the credit card transaction records, its generalizability to the population is still limited due to the lack of random sampling. Nevertheless, in the absence of systematic research on this matter in the Indonesian context, this study is expected to provide valuable insights into the impact of the COVID-19 pandemic and its recovery progress.

On the other hand, other researchers have worked to enhance the approach pioneered by Jung *et al.* (2016). Liu *et al.* (2020), for instance, divided their research on the COVID-19 pandemic's impact on consumption into short-term and long-term impact studies. The short-term impact studies predominantly employed macro or micro-level data, albeit often struggled with small sample sizes or inadequate sample representation. In contrast, the long-term impact studies argued that the isolation fosters new demand and consumption patterns, with adaptive responses becoming increasingly resilient to the recovery as the pandemic threat persisted. However, these studies fail to address changing consumption patterns during the COVID-19 pandemic. Furthermore, Liu *et al.* (2020) attempted to address the limitations of Jung *et al.* (2016) by employing survey data from a nationally representative sample of households in China. Their study

revealed a significant suppression of household consumption due to the COVID-19 pandemic, with considerable heterogeneity observed in the consumption changes between urban and rural Chinese households. Specifically, the urban households experienced a decline, while the rural households were comparatively less affected by the COVID-19 pandemic.

Although this present study does not utilize a national survey like the one did by Liu *et al.* (2020), it employs a sample that meets the Slovin formula, albeit not determined randomly. Furthermore, this study categorizes the households into consumers-only and producer-consumer households, particularly MSME entrepreneur households. Examining these two categories is critical for determining the differences in the economic impact intensity between the households solely engaged in the consumption and those involved in production or other business processes, especially the MSMEs. Additionally, given previous findings suggesting an increase in the urban household consumption during the pandemic, particularly in the internet expenses, while the rural households remained unaffected, online-based MSME households are expected to benefit from a surge in overall household consumption. However, MSME respondent participation will only commence in the second phase of questionnaire distribution and has not been included in this report.

On a related note, Li *et al.* (2020) provided an analysis of the COVID-19 pandemic's impact on the household liquidity constraints in China using data from the China Household Finance Survey (CHFS). Their research revealed that the household liquidity constraints became exacerbated following the COVID-19 pandemic, with the likelihood of households facing the liquidity constraints increasing with the COVID-19 pandemic's severity, especially due to its shock on household employment and income. Moreover, the decline in the household liquidity significantly heightened the intention to save while decreasing the consumption.

The data utilized in Li *et al.* (2020) primarily originated from the CHFS, compiled by the Survey and Research Center for China's Household Finance. Following the COVID-19 pandemic, the CHFS conducted two specific surveys in March and May 2020 to assess its impact on the Chinese households. The first survey round, conducted online between February 12 and March 22, 2020, received responses from 3,143 households. Subsequently, the second survey round was conducted online in May 2020, yielding a total sample of 5,005 households. The majority of households were randomly selected from the 2019 CHFS sample and adjusted for sample weighting.

3. RESEARCH METHODS

This research represents a continuation of prior researches into the impact of COVID-19 pandemic on meeting the basic household needs (Ashari & Nugrahanti, 2021). The four focal points examined in this study—namely, the challenges encountered by the households in fulfilling their livelihood requirements during the COVID-19 pandemic, encompassing their mobility, income, spending, and savings capability—constitute components of the household welfare. This study aims to delve into similar realms as its predecessor, investigating the COVID-19 pandemic's impact on these four components while also determining whether any recovery has transpired compared to the initial investigation. Furthermore, it is anticipated that this research will pave the way for subsequent inquiries of a similar nature in the future, thereby elucidating any advancements in the recovery vis-à-vis the present study. Given that this research was conducted

amid the COVID-19 pandemic could solely scrutinize the COVID-19 pandemic's impact on individuals' lives, subsequent studies hold the promise of assessing the gradual progression of recovery until life returns to its pre- COVID-19 pandemic state.

3.1. Research Design

This study followed the methodology of survey research, akin to its predecessors. In this approach, the data was collected from respondents through the utilization of a questionnaire. As emphasized by Story & Tait (2019), this survey research was critical in the social science across multiple disciplines. The survey served as invaluable instrument for comprehending human behaviors, attitudes, and knowledge. However, conducting high-quality survey research posed notable challenges. Many scholarly journals exhibited caution in publishing survey studies due to concerns regarding their quality. To address such apprehensions, certain organizations had established protocols to ensure the survey quality and mitigate respondent fatigue. Historical instances of survey errors, such as the notorious *Literary Digest* survey of 1936, which inaccurately forecasted the U.S. presidential election outcome due to sampling biases and low response rates, underscored the significance of meticulous survey planning and vigilance against common pitfalls. Story & Tait (2023) offered practical guidance for both survey researchers and readers, along with delineating essential criteria for submitting the survey research to journals.

This study adopted a descriptive research approach with a quantitative orientation. The quantitative-descriptive research entailed obtaining the data from samples representative of the study population and subsequently analyzing it using statistical methods. In the context of this study, the descriptive method provided an overview of the impact experienced by the community during the COVID-19 pandemic and to identify possibilities for recovery. The Quantitative Descriptive Analysis (QDA) method, as expounded by Sidel, Bleibaum, & Tao (2018), underscored the importance of measurement and quantification in the descriptive analysis. Developed by Herbert Stone and Joel L. Sidel at Stanford Research Institute (now SRI International), the QDA prioritized minimizing bias in the descriptive process to ensure the validity and reliability of results. Key objectives of QDA included providing scientifically rigorous procedures with quantifiable outcomes, rendering the outputs directly applicable to the consumers, and fostering discussion among panel members rather than didactic instruction. The QDA stood as a robust, consumer-centric approach to the descriptive analysis, with applications spanning product development and marketing domains.

Further, the descriptive research, as defined by Arikunto (2013), entailed the investigation and presentation of findings in the form of a report. This study seeks quantitative and relatively precise insights into the frequency distribution of data. Following Wignjosoebroto (1983), the analysis of questionnaire data aimed to provide descriptions and identify potential relationships between variables. Accordingly, this study seeks to identify commonalities and unique characteristics within groups while also determining the extent of variation present in specific groups.

Before conducting this study, a research instrument was developed in the form of a questionnaire containing several statements regarding the impact of the COVID-19 pandemic and economic recovery on the household mobility, income, spending, and saving capability. In the initial stages, the questionnaire underwent testing (pilot study) with 20 respondents in Jakarta Province. Subsequently, the findings from the pilot study were utilized to refine the questionnaire's

structure and to gather preliminary data, serving as essential material for technical review and further refinement. Once the questionnaire was deemed sufficiently robust and yielded consistent interpretations from the respondents, the questionnaire was distributed to the respondents.

3.2. Population and Sampling

The population of this study were obtained from the Greater Jakarta area as of December 31, 2022, where there were 8.4 million households. Determining the required sample size for this research involved employing the Slovin method, as outlined by Tejada & Punzalan (2012). The Slovin formula is as follows:

$$n = N / (1 + Ne^2)$$

where N represents the population size and e signifies the margin of error.

A margin of error of 0.1 (10%) is considered acceptable for large population, while e = 0.2 (20%) is suitable for smaller population. For this study, a margin of error of 10% was chosen, and the resulting calculations was rounded for practicality. Subsequently, upon applying the formula, a minimum sample size of 400 was obtained.

The questionnaire was distributed to the households who were willing to be the respondents of this study in all regions of the Greater Jakarta area. The Greater Jakarta area was divided into three provinces, namely Jakarta Province (represented by Jakarta City and Kepulauan Seribu Regency), West Java Province (represented by Bogor City, Depok City, and Bekasi City) and Banten Province (represented by Tangerang City and South Tangerang City). For practicality purposes, the questionnaire was distributed online through Google Forms. The respondents were selected using snowball and convenience sampling methods.

The following Table 2 presents the details of total population and sample data along with the number of completed questionnaires received by September 31, 2022. As explained earlier, the Greater Jakarta area had 8.4 million households, accounting for approximately 26.5% of the total population for a total of 31.76 million individuals. The sample quota per region was determined based on the percentage of households in the region compared to the total number of households. All of the respondents of this study were the family breadwinners, which might consist of one or more individuals per household. Therefore, the reported value represents the total household income.

Table 2. Total Population and Research Data Samples

No.	City / Regency	Total Population (Million)	Total Household Estimated (Thousand)	Sample Plan
1.	Jakarta City and Kepulauan Seribu Regency	10.61	2.771	220
2.	Bogor City, Depok City, and Bekasi City	14.61	3.858	131
3.	Tangerang City and South Tangerang City	6.57	1.686	49
	Total	31.79	8.315	400

Source: BPS (2021) and Results of Questionnaire Distribution

In this study, the economic impact of the COVID-19 pandemic is divided into four dimensions or variables. They include the household mobility, income, spending, and saving capability. During the data collection, the respondents were asked to response to items describing

their conditions, both the impacts during and after the COVID-19 pandemic. Their responses reflected their perceptions toward the dimensions studied. The following Table 3 presents the dimensions of the COVID-19 pandemic impact on the households and their indicators.

Table 3. Dimensions of the Economic Impact of the COVID-19 Pandemic and Their Indicators

No.	Dimension	Indicator	Reference
1.	Mobility	Household mobility during the COVID-19 pandemic Household mobility after the COVID-19 pandemic	Liu <i>et al.</i> (2020)
2.	Income	Household income during the COVID-19 pandemic Household income after the COVID-19 pandemic Household income profile before and after the COVID-19 pandemic	Rozelle, Rahimi, Wang, & Dill (2020) Ashari & Nugrahanti (2021)
3.	Spending	Grocery items purchased after the COVID-19 pandemic Common grocery items after the COVID-19 pandemic	Ashari & Nugrahanti (2021)
4.	Saving Capability	The value of savings after the COVID-19 pandemic Profile of households with the fastest post-COVID-19 pandemic recovery	Coibion, Gorodnichenko, & Weber (2021)

For instance, in the mobility dimension, the respondents were asked to describe their extent of mobility intensity, ranging from highly immobile (no mobility) to highly mobile (cross-province mobility). In addition to the respondents' demographic profile, the questionnaire also presents the indicators' further information and several closed-ended questions. The questionnaire distributed through Google Forms could be accessed in <https://forms.gle/MH5h6tsFRRFDuJpe7>.

4. DATA ANALYSIS AND DISCUSSIONS

4.1. Results and Discussions

There was a total of 400 respondents participated. The results show that most of the respondents were female (50.5%), 35-45 years old (39%), had a bachelor degree (45%), married (66%) for 15-25 years (53%), and from Jakarta Province (55%). The following Table 1 presents the respondent profile as follows:

Table 4. Respondent Profile

Characteristic	Frequency	Percentage (%)
Gender		
Male	198	49.5%
Female	202	50.5%
Age		
≤ 25 years old	80	20%
25 – 35 years old	86	21%
35 – 45 years old	156	39%
45 – 55 years old	60	15%
≥ 55 years old	18	5%
Educational Background		
Elementary School	7	2%
Junior High School	7	2%
Senior / Vocational High School	130	32%
Diploma Degree	46	12%
Bachelor Degree	180	45%
Master's Degree	24	6%
Doctoral Degree	6	1%
Marital Status		
Not Married	107	27%
Married	264	66%
Widow / Widower	29	7%
Length of Marriage		
≤ 5 years	41	10%
5 – 10 years	45	11%
10 – 15 years	50	12%
15 – 25 years	210	53%
≥ 25 years	54	14%
Province of Origin		
Jakarta	220	55%
West Java	131	33%
Banten	49	12%

4.2. The Impact of COVID-19 Pandemic and Its Recovery on Mobility Dimension

The results of analysis on the mobility aspects conclude that the COVID-19 pandemic significantly affected the household mobility. Furthermore, following the COVID-19 pandemic, there were more people going more active, indicating higher level of mobility. The following Table 5 summarizes the impact of COVID-19 pandemic on mobility and the recovery.

Table 5. The Impact of COVID-19 Pandemic and Its Recovery on Mobility Dimension

No.	Mobility Mobile Category (Home and Livelihood)	During Pandemic		After Pandemic		Difference	Growth
		Total	%	Total	%		
1.	Actively mobile within the scope of district of origin	16	4%	28	7%	3%	81%
2.	Actively mobile within the scope of sub-district of origin	15	4%	15	4%	0%	0%
3.	Actively mobile within the scope of city of origin	76	19%	101	25%	6%	33%
4.	Actively mobile within the scope of province of origin	27	7%	32	8%	1%	14%
5.	Actively mobile across provinces	21	5%	35	9%	4%	67%
	Total	155	39%	211	53%	14%	
	Not Mobile Category						
6.	Staying at home – Being an entrepreneur	101	25%	89	22%	-3%	-12%
7.	Staying at home – Unemployed	26	6%	18	4%	-2%	-31%
8.	Working from home	118	29%	82	20%	-9%	-31%
	Total	245	61%	189	47%	-14%	

Table 5 shows that during the COVID-19 pandemic, there was a substantial decrease in the level of mobility, with 61% of family breadwinners significantly reducing their mobility. During the COVID-19 pandemic, they were staying at home and being an entrepreneur (25%), unemployed (6%), or working from home (29%). Following the COVID-19 pandemic, there was a noticeable recovery, at least as observed during the observation period in the first semester of 2022. A total of 47% of total households was staying at home, while the remaining 53% had returned to their pre-COVID-19 pandemic activities. These findings show that the Level 1 of PPKM implemented had significantly limited the household mobility. However, as there were fewer cases of COVID-19 and more relaxed PPKM regulations, the household mobility had gradually improved.

4.3. The Impact of COVID-19 Pandemic and Its Recovery on Income Dimension

The household income, in this context, defined the collective income of all family members, either monthly and daily/weekly income. The results of analysis on the income aspects conclude that the COVID-19 pandemic significantly affected the household income. Furthermore, the post-COVID-19 pandemic recovery was proven, where in average, more family breadwinners earned higher income compared to during the COVID-19 pandemic. The following Table 6 summarizes the impact of COVID-19 pandemic on income and the recovery.

Table 6. The Impact of COVID-19 Pandemic and Its Recovery on Income Dimension

No.	Household Income (Monthly)	Before Pandemic	During Pandemic	After Pandemic	Before vs After	During vs After
1.	No Income	2%	15%	3%	1%	-12%
2.	≤ IDR 750,000	1%	7%	3%	2%	-4%
3.	IDR 750,000 – 1,500,000	5%	9%	10%	4%	1%
4.	IDR 1,500,000 – 3,000,000	14%	17%	14%	0%	-3%
5.	IDR 3,000,000 – 6,000,000	27%	22%	27%	0%	5%
6.	IDR 6,000,000 – 10,000,000	19%	13%	16%	-3%	3%
7.	IDR 10,000,000 – 15,000,000	11%	5%	11%	0%	6%
8.	≥ IDR 15,000,000	20%	13%	16%	-4%	3%

Table 6 shows that prior to the COVID-19 pandemic, 77% of respondents had an income higher than IDR 3 million, while the remaining 23% earned lower than IDR 3 million. During the COVID-19 pandemic, these proportions shifted with 53% reporting earning an income of higher than IDR 3 million and 47% reporting the opposite. Meanwhile, following the COVID-19 pandemic, 70% of them reported that they earned higher than IDR 3 million, with the remaining 30% earned lower. Furthermore, there were more household breadwinners who were employed after the COVID-19 pandemic, observed in a decrease in the “No Income” category. However, when considering the nature of income, a significant recovery has not been observed, with the highly variable nature of income, accounting for 15.9% (not shown in Table 6). This finding suggests that the PPKM implementation had significantly lowered the household income during the COVID-19 pandemic. However, it had been recovered, albeit not fully returning to the pre-COVID-19 pandemic level.

On the other hand, the PPKM implementation had worsened the economic conditions of many households which met the poverty criteria under international standards. The poverty was typically classified into two categories: “very poor” (receiving income of less than US\$ 1.9/day or an equivalent of less than IDR 750,000/month) and “poor” (receiving income of less than US\$ 3.2/day or an equivalent of less than IDR 1.5 million/month). While the “very poor” households experienced a 4% recovery compared to the start of the COVID-19 pandemic, the “poor” households saw a 1% increase due to the transition from the “very poor” to “poor” category.

These findings align with a research conducted by Coibion *et al.* (2021) and Rozelle *et al.* (2020) which explored the impact on households following the initiation of lockdown measures. The majority of respondents experienced a significant decrease in their income, loss of income sources, and reduced public spending due to the government measures aimed at controlling the COVID-19 pandemic impacts. Although the exact extent of the decreased income could not be directly determined as in the study by Coibion *et al.* (2021), it could still be calculated and did not exceed the predictions of Sumner *et al.* (2020) who predicted that the extreme scenario for income reduction was 20%. The decline in income was predominantly observed among the household breadwinners who worked in the private and informal sectors, irrespective of their employment terms (monthly, daily, or otherwise). Fortunately, no respondents working in the government office or State-Owned Enterprises (*Badan Usaha Milik Negara*, BUMN) reported a decrease in their income.

4.4. The Impact of COVID-19 Pandemic and Its Recovery on Spending Dimension

The impact of COVID-19 pandemic and its recovery on the spending dimension was assessed by examining which spending categories remained stable and which were reduced or even eliminated / not prioritized by the households. The results conclude that many households had either reduced or ceased their spending on discretionary items. This reduction was highly reasonable when considering the previously discussed income reduction caused by the COVID-19 pandemic.

Given that there was a significant number of households experiencing a decline in their income during the COVID-19 pandemic, they had to choose the items or product they could afford wisely. This present study had identified 22 spending categories (Appendix 1) that were estimated based on typical spending patterns observed among the households in the Greater Jakarta area. In this dimension, the respondents must choose the spending categories which were (1) not purchased

during the COVID-19 pandemic; (2) reduced / used wisely during the COVID-19 pandemic; (3) temporarily not purchased during the COVID-19 pandemic, but will be purchased when life returns to normal; and (4) reduced / used wisely during the COVID-19 pandemic but will be purchased when life returns to normal.

For comparison, Coibion *et al.* (2021) listed 12 spending categories in their research questionnaire, including debt payments, housing expenses, utilities, food, clothing and personal care, gasoline, transportation costs, medical care, travel and entertainment, education and childcare, furniture and durable goods, and miscellaneous expenses. Meanwhile, in this study, there are 10 spending categories that were reduced / used wisely during the COVID-19 pandemic. Each of the category was chosen by more than 20% of the respondents, and each respondent could choose multiple categories at once. These spending categories are listed in the following Table 7:

Table 7. List of Spending Categories Reduced / Used Wisely during the COVID-19 Pandemic

No.	Spending Category	Frequency	Percentage (%)
1.	Recreation / Entertainment	296	74%
2.	Food	194	48%
3.	Social	181	45%
4.	Family	178	44%
5.	Electronic	173	43%
6.	Hobbies	129	32%
7.	Household Appliances	121	30%
8.	Healthcare / Self-care	119	30%
9.	Accessories	111	28%
10.	Cigarette	109	27%

The following Table 8 presents the list of spending categories which will be purchased when life returns to normal. Each of the category was chosen by more than 10% of the respondents, and each respondent could choose multiple categories at once. The results show that most of the respondents would like to spend on their hobbies, which they could not do during the COVID-19 pandemic. Conversely, the groceries / utilities (32%) and food (31%) were the spending categories that the respondents chose to be reduced / used wisely during the COVID-19, but would be spent more when life returned to normal.

Table 8. List of Spending Categories Purchased after the COVID-19 Pandemic

No.	Spending Category	Reappears After Termination	Appear Return After Savings
1.	Recreation / Entertainment	42%	29%
2.	Food	34%	31%
3.	Family	32%	22%
4.	Social	20%	16%
5.	Groceries / Utilities	18%	32%
6.	Household Appliances	14%	19%
7.	Allowance	14%	18%
8.	Communication	12%	16%

Upon closer examination, there was a notable similarity in the spending recovery patterns across different household income categories. For instance, in the recreation / entertainment and food categories, 26% of those with income greater than IDR 15,000,000 experienced a recovery,

while a similar trend was observed among those with income between IDR 10,000,000 – 15,000,000, with an 18% recovery rate. Similarly, the households with incomes ranging between IDR 3,000,000 – 10,000,000 also experienced a recovery rate of 22%. Conversely, for the low-income families (falling under the “poor” and “very poor” categories), a notable recovery was observed in their spending categories related to the recreation / entertainment and food categories, resulting in an overall recovery rate of 43%.

Based on the aforementioned findings, this study highlights how the relaxation of PPKM / mobility restrictions led to a recovery in the household income, consequently influencing the recovery of household behaviors which was also in line with the Maslow’s hierarchy. The higher the mobility level, the more the households fulfilled the third, fourth, and fifth-order needs. The recovery of household spending post-PPKM relaxation was highly related to the recovery of household income. As the COVID-19 pandemic subsided, there would be more households that would progress and follow the Maslow’s hierarchy. When life returned to normal, it was expected that there would be more households that were recovered in terms of their spending which would gradually reach their pre-COVID-19 pandemic level.

4.5. The Impact of COVID-19 Pandemic and Its Recovery on Saving Capability Dimension

The results of this study show that all households, despite of their monthly income category, had their saving capability returned to normal compared to the beginning of the COVID-19 pandemic, with a particularly significant recovery observed among the households which already saved. At the beginning of the COVID-19 pandemic, 52% of households had no savings; however, following the PPKM implementation, this figure declined to 31% - signifying a 21% recovery. The following Table 9 presents the details of household saving capability before, during, and after the COVID-19 pandemic.

Table 9. The Impact of COVID-19 Pandemic and Its Recovery on Saving Capability Dimension

No.	Monthly Savings	Before Pandemic	During Pandemic	After Pandemic	After vs Before	After vs During
1.	Not Saving	15%	52%	31%	16%	-21%
2.	≤ IDR 500,000	20%	19%	19%	-2%	0%
3.	IDR 500,000 – 1,500,000	21%	10%	19%	-2%	9%
4.	IDR 1,500,000 – 2,500,000	12%	5%	8%	-3%	3%
5.	IDR 2,500,000 – 5,000,000	16%	6%	11%	-5%	5%
6.	IDR 5,000,000 – 7,500,000	6%	5%	4%	-2%	-1%
7.	IDR 7,500,000 – 10,000,000	4%	2%	3%	-1%	1%
8.	≥ IDR 10,000,000	5%	1%	4%	-1%	3%

Table 9 shows that the recovery of saving capability primarily occurs among the households with higher income levels, with 3% of them earned more than IDR 15 million, 1% of them earned IDR 10,000,000 – 15,000,000, and 5% of them earned IDR 3,000,000 – 10,000,000. Notably, the “poor” and “very poor” households lacked of savings, both before and during the COVID-19 pandemic, resulting in no significant change in their saving behavior throughout the crisis.

The recovery of saving capability was particularly noticeable among the high-income households. It was in line with the trend of income recovery, with middle-income households

exhibiting the most significant income recovery. In terms of income recovery, those earning IDR 10,000,000 – 15,000,000; more than IDR 15,000,000; and IDR 6,000,000 – 10,000,000 experienced a recovery rate at 6%, 3%, and 3%, respectively.

These findings resonate with a study by Rozelle *et al.* (2020) which revealed that 75% of respondents lost their jobs once quarantine measures were implemented, leading to a substantial reduction in the household income due to the government-imposed pandemic control measures. Similarly, the results are in line with Coibion *et al.* (2021) who reported that approximately 50% of respondents experienced income and wealth losses as a result of the COVID-19 pandemic. The impact of reduced saving capability or the absence of savings among the households underscored the need for government assistance to meet their daily needs. At the time of research period, 203 households, or 46%, were documented as receiving support from the government or other entities.

Furthermore, these findings correlate with a study by Alexander & Karger (2020), which observed that stay-at-home orders resulted in individuals staying indoors. This led to a 6–7% decrease in the mobility at the county level shortly after the implementation of these orders. Consequently, these orders contributed to significant reductions in the spending in sectors associated with mobility, including both small local businesses and larger retail chains.

5. CONCLUSIONS, SUGGESTIONS, AND LIMITATIONS

Based on the findings of this study, it is evident that the COVID-19 pandemic and the government's implementation of PPKM policies had significantly affected the household welfare. To achieve a swift recovery, the government must continue to implement prudent policies. However, the ongoing recovery and the slowly improving economy may face challenges due to the emergence of new COVID-19 variants originating from abroad.

In terms of household mobility, it was found that following the COVID-19 pandemic, its impact had recovered. The results highlight that the more relaxed the PPKM implementation, the higher the level of household mobility. The relaxation of PPKM implementation could only be done when there was a decrease in the COVID-19 cases. The decline in household mobility during the COVID-19 pandemic had also contributed to the decline in household income and spending. The spending patterns changed during the COVID-19 pandemic, as there were 10 spending categories that were reduced / used wisely during the COVID-19 pandemic due to the lower income they earned. However, there were more spending categories purchased / spent more after the COVID-19 pandemic. Similarly, in terms of household income and saving capability, it was found that following the COVID-19 pandemic, its impact had recovered. There was a notable recovery in the household income, which recovered significantly for all households' income category. The recovered income dimension was simultaneously followed by their saving capability. All of the households experienced an increase in their saving capability after the COVID-19 pandemic, compared to the beginning of the COVID-19 pandemic (21%).

These findings underline that the COVID-19 pandemic offered valuable insights for the government and the community. In addition, these findings also imply that it is crucial to evaluate the effectiveness of government efforts in mitigating the COVID-19 pandemic's impact, although not all life aspects have recovered. It should be noted that this incomplete recovery still presents significant challenges. Thus, there is a need for the government to develop more effective yet cautious policies.

Further, this present study has one major limitation. This study could have obtained more accurate results if the data collection process included direct interviews with the respondents. However, considering that the research was conducted in the first semester of 2022, the data was collected using online questionnaire. Future researches are suggested to obtain in-depth information through interviews to draw more accurate research conclusions that represent the real condition of households in the Greater Jakarta area. Furthermore, future researches are suggested to conduct a longitudinal study with a broader time span. Future studies may differentiate the respondents, such as MSME entrepreneurs and non-entrepreneurs. Additionally, explanatory research on the fluctuations of these variables can provide valuable insights. Exploration on the challenges faced, coordination efforts, policy decisions, and actions taken during the COVID-19 pandemic can also be interesting research topics which can transform tacit knowledge into explicit knowledge for future reference.

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