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Informal Sector Workers: Economic Activities and Survival Strategies during the COVID-19 Pandemic

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ABSTRACT: The aim of this research is to determine the economic activities of informal sector workers before and during the COVID-19 pandemic, the survival strategies of informal sector workers during the pandemic, a comparison of the welfare of informal sector workers before and during the pandemic, and the association of survival strategies with economic activity. It is hoped that the research findings can provide recommendations for stakeholders for evaluating policies regarding improving the welfare of informal sector workers in the future. The research was conducted in four sub-districts in Denpasar City, Bali, Indonesia. Data collection in the field was carried out using survey methods. The variables used include Socio-economic characteristics of informal sector workers, economic activity before and during the COVID-19 pandemic, survival strategies during the COVID-19 pandemic, and welfare. The data analysis method uses descriptive analysis and association analysis uses chi square analysis. The survival strategy of informal sector workers in this study was dominated by respondents' answers with the strategy of taking loans from informal lenders (30.7%). The strategy of relying on/applying for government social assistance programs (direct cash assistance, necessities, and other assistance programs) was answered by 14.7% of respondents. There were no respondents who implemented a survival strategy by switching to other types of work in the informal sector. The change in respondents' income during the COVID-19 pandemic compared to before the pandemic was obtained by the majority (90.0%) stating that income from working in the informal sector had decreased compared to before the pandemic. The results of the association test show that there is a significant association between survival strategies and employment status, presence/absence of labor assistance, and physical facilities.

KEYWORDS: Informal sector, informal sector workers, economic activity, survival strategies

I. INTRODUCTION

The informal sector currently plays an important role in providing employment opportunities for many residents, which makes the probability of getting a job in the informal sector quite large. However, looking at the nature and conditions of work in the informal sector, this sector can be classified as a marginal business and faces several obstacles in its development (Sethuraman in Soewartoyo [1]). The informal sector is a part of economic activity that is generally characterized by irregular activity patterns, untouched by government regulations, and small capital and income.

Informal sector workers in population census data are referred to as workers who are self-employed without workers, work alone with casual or family workers and unpaid family workers [2]. According to data from the Bali Province Central Statistics Agency [3], in August 2012 as many as 1,065.05 thousand people (46.95 percent) worked in formal activities and as many as 1,203.66 thousand people (53.05 percent) worked in informal activities. This shows that majority of the working population in Bali Province still depends on informal activities.

There are many factors that have caused the increase in the number of workers in the informal sector, such as: inappropriate and ineffective legal and institutional frameworks that deal with employment, the influence of the economic crisis and economic restructuring at the national and global levels, the number of jobs that are not sufficient, increasing poverty rates, especially women, demographic factors, including migration (ILO, 2006). The above shows that the informal sector in Indonesia is an important source of income. Apart from that, the current economic conditions allow this sector to have a more important role, especially in developing a "survival strategy" mechanism for the poor in urban areas.

The informal sector plays a very important role in absorbing the workforce and supporting the economy as awhole. This sector does not require various formal requirements and therefore remains a shelter for workers who do not meet formal requirements. This means that the inability of the modern sector to absorb surplus labor in the agricultural sector has been replaced by the

informal sector. Empirical facts also show that the formal sector greatly benefits from the existence of the informal sector, there are even indications that the informal sector provides subsidies to the formal sector.

ILO News [4] reports that the COVID-19 Pandemic is having a catastrophic effect on working hours and income, globally. The COVID-19 crisis is expected to wipe out 6.7 percent of working hours globally in the second quarter of 2020 – the equivalent of 195 million full-time workers. The sectors most at risk include accommodation and food services, manufacturing, retail, and business and administrative activities. The increase in global unemployment during 2020 will depend largely on future developments and policy measures. There is a high risk that the year-end figure will be much higher than the ILO's initial projection of 25 million. More than four in five people (81 percent) in the global workforce of 3.3 billion are currently affected by full or partial workplace closures.

According to the new study, 1.25 billion workers are employed in sectors identified as being at high risk of a "drastic and devastating" increase in layoffs and reductions in wages and working hours. Many of them work in low-paying, low-skilled jobs, where a sudden loss of income is devastating. Worldwide, two billion people working in the informal sector (mostly in developing and developing countries) are at particular risk of being impacted by the COVID-19 Pandemic crisis [4].

The COVID-19 pandemic is a major economic and labor market shock, which has had a significant impact in terms of unemployment and underemployment for informal workers. In rural areas, the livelihoods of especially self-employed and wage workers are under threat, as agricultural food supply chains and markets are disrupted due to lockdowns and movement restrictions. Families may use negative coping strategies such as selling distressed assets, taking out loans from informal lenders, or child labor. Certain groups of workers, including women, youth, children, indigenous peoples, and migrant workers, who are overrepresented in the informal economy, will experience increased vulnerability [5]. The COVID-19 pandemic has had an impact on reducing working hours and income in the informal sector due to restrictions on activities and movement of people in effort to reduce the rate of increase in the number of positive COVID-19 cases. Informal sector workers, in their efforts to survive and maintain their businesses, must adopt strategies to survive the COVID-19 pandemic.

It is important to carry out this research to examine the role of the informal sector in improving the welfare of the population, especially for the urban poor. Specifically, this research is important for examining the welfare of informal sector workers in relation to socio-economic characteristics, economic activities, and survival strategies during the COVID-19 pandemic.

Activities in the informal sector are classified into two parts, namely: self-employed and casual (non-permanent) labor/salaried. Friedman and Sullivan in Effendi [6] differentiate the informal sector into two groups, namely: small entrepreneurs and self-employed workers or temporary workers. Meanwhile, the formal sector is broken down into three large groups, namely: 1) Workers in the formal sector; 2) Supervisors, foremen and administrative workers; 3) Groups of high-ranking employees, professionals, managers, large and medium entrepreneurs.

There are boundaries regarding the informal sector which vary depending on the basis used to define the informal sector. This means that employment in one place is not necessarily appropriate when implemented in another place. This situation can occur because the existence of the informal sector will be influenced by various factors, such as socio-cultural conditions, economic characteristics of a region and even political stability (at the micro level), at least the informal sector is really a way out of many employment opportunity problems.

An overview of the definition of the informal sector in Indonesia according to Hidayat (1978) [6] states its characteristics: (1) Business activities are not well organized, because the business units that arise do not use the facilities or institutions available in the formal sector; (2) In general, business units do not have business permits; (3) Irregular business activity patterns both in terms of location and working hours; (4) In general, government policies to help economically weak groups do not extend to this sector; (5) Business units can easily move in and out from one sub-sector to another; (6) The technology used is traditional; (7) Capital and business turnover are relatively small, so the scale of operations is also relatively small; (8) To run a business no formal education is required because the required education is obtained from experience while working; (9) In general, businesses include groups that do their own business and if they do, the workers come from the family; (10) Sources of business capital funds generally come from own savings or from unofficial financial institutions; (11) Production or services are mainly consumed by cities or villages with low incomes but sometimes also middle incomes.

Based on previously existing concepts and adapted to current conditions and considerations of development progress that has been achieved, what is classified as the informal sector in this research is: (1) The activity pattern is irregular, both in terms of time, capital and revenue. ; (2) Capital, equipment and supplies as well as turnover are usually small and are managed on a daily basis; (3) Has no linkage with other large businesses; (4) Some business locations are permanent and some are mobile; (5) Does not require a high level of education; (6) Is an individual business activity or small business unit that employs a small number of workers (less than 10) from family relationships, acquaintances, or from the same area.

Based on the findings, it was found that the share of non-agricultural work from informal labor was 78 percent in Africa, 57 percent in Latin America and 45-85 percent in Asia. It has been found that self-employment has a greater role in informal work than wage employment. Further research explains that although the informal sector in all countries makes a significant contribution to the economy of each government, formal laws have not yet been framed that make this sector hassle-free [7].

Indira [7] studied street vendors in several countries, explaining that street vendors in some urban areas of Sri Lanka are not totally illegal and street vendors can carry out their trade on the sidewalks by paying daily taxes to the city council. The main problems facing street vendors are insecurity in their livelihoods and lack of access to credit. The country's street food vendors make a significant contribution to the country's economy, although they face the same problems as other street vendors, namely, lack of security and lack of institutional facilities.

A study of street vendors in seven cities conducted by The National Alliance of Street Vendors of India (NASVI) shows that low-income groups spend a higher proportion of their income in making purchases from street vendors primarily because of their affordable goods. If there were no street vendors in the city the suffering of the urban poor would be worse. Urban street vendors, helping other parts to survive. Therefore although street vendors are seen as a problem for urban governments, they are actually a solution to some of the problems of the urban poor [7]. Njaya's research [8] examines the nature and operations of street food vendors including socio-economic features that influence the spatial distribution of street food vendors and their impact on the local environment and urban life in the context of sustainable development. The results of this study show that although street food vending is illegal, it significantly helps reduce unemployment, increases workers' income and provides food for urban residents at cheap and varied prices. The government must recognize the street food industry through legislation and the introduction of a code of practice for street food sellers. What is needed to advance the position of street food sellers is to strengthen their capacity and skills through training, credit, information and infrastructure so as to increase their competitiveness and productivity.

Muzaffar, et. al [9] highlighted the problem and identified several key factors that positively influence the income of street food sellers in Dhaka city, Bangladesh. The research results found that business experience and initial capital are the two main factors that positively influence sales revenue. Formal education does not have a significant impact on business performance. Lack of security and problems in providing raw materials are the two main problems felt by workers.

Vargas' article [10], using the empowerment theory defended by Hernando De Soto, examines what formalization—understood as gaining legal status—can serve to empower street vendors to increase capital and economic development. Based on 169 interviews conducted in 2012 with street vendors in the city of Bogota, Colombia whose businesses were formalized, this research was able to observe improvements in vendors' working conditions and income. However, this increase is not due to access to formal credit, as formalization theory suggests but rather due to the ability of street vendors to improve working conditions and be protected from bad weather. The results explain that formalization is about more than access to credit; it is a tool for increasing autonomy, self-esteem, and empowerment of poor communities.

The large absorption capacity of the informal sector for the workforce in Indonesia, proves that the role of the informal sector plays an important role in the national economy, especially in current economic conditions, where many people face problems fulfilling their daily basic needs caused by the COVID-19 pandemic, enabling the sector to informality has a more important role, especially in developing "survival strategy" mechanisms for poor people in urban areas.

Armansyah, Sukamdi & Joko [11] researched informal sector entrepreneurs in Palembang City, Indonesia, aiming to examine whether the informal sector is included in a survival or consolidation livelihood strategy and how this sector has the potential to shift from a survival livelihood strategy to a consolidation strategy. The research results show that the informal sector tends to be considered a survival livelihood strategy, because it is considered capable of accommodating all the limitations of informal sector entrepreneurs, such as lack of skills, investment and work standards, simple use of technology, low access to banking and social services, and little or there are no links with other sectors. Since only two of the ten transition indicators are met, namely education and income, the potential for the informal sector to shift from a survival livelihood strategy to consolidation is low.

Research on the survival strategies of informal sector workers, in this case street vendors, was also conducted by Handoyo & Setiawan [12]. Research findings show that becoming a street vendor for lower class people is the only option and the most feasible way to survive. Some street vendors use survival strategies to meet their daily needs.

The study of survival strategies was also explained by Efendic, Pasovic & Efendic [13], that reliance on the informal economy as a survival strategy for households to supplement insufficient formal income, to compensate for economic insecurity, or to reduce formal business costs by using the practice of “envelope wages”, but it is equally important to overcome the problem of formal institutional rigidity, related to the current contradictory laws.

The informal sector is generally considered a livelihood strategy because it offers manageable resources to meet basic needs [14]. The elements are capabilities, activities, and assets (Chambers & Conway, 1992 in [15]), including the accumulation of personal or family assets [16]. In the next stage, asset ownership is considered by low-income residents to build livelihood strategies and leave the cycle of poverty [17].

A study by Nilakusmawati [18] was carried out specifically to study the economic activities of informal sector actors, namely women canang sari seller in Denpasar City. The aim of the research is specifically to determine the economic activities of women canang seller in Denpasar City and determine the extent of their contribution in increasing household economic resilience. The approach used in this research is the survey method and in-depth interview method, with a sample of 150 respondents. As a result of the research, it was found that the average percentage contribution from canang seller in this study was 35.79%, with a very

large range, namely from 4.2% to 98.33%. Seeing the relatively large contribution made by canang sari seller, with an average contribution of 35.79% to household income, indicates the independence of the nature of this business. The recommendation put forward is that there is a need for better handling of women who work in the informal sector, so that it will create a high economic potential for family welfare, and it is necessary to handle it with sustainable policies and provide greater access to formal capital sources.

Furthermore, Nilakusmawati, Susilawati, & Wall [19] modeled the income of street vendors using socio-economic characteristics. It was found that the variables that influenced street vendors' income were marital status, age, employment status, physical facilities, and the presence/absence of bookkeeping of business activities. Marital status explains that married workers have a greater opportunity than unmarried workers to earn income above the minimum wage in Denpasar. The model also shows that increasing the age of street vendors will reduce their income. Older street vendors tend to have lower incomes than younger ones. Street vendors with self-employed status assisted by permanent workers tend to have incomes above the minimum wage in Denpasar compared to self-employed street vendors assisted by temporary/unpaid workers. Meanwhile, for the physical facilities used by street vendors, it shows that the more supportive the facilities used, the greater the opportunity to earn income above the minimum wage. The absence of bookkeeping tends to be smaller compared to street vendors who have bookkeeping for business operations to earn income above the minimum wage in Denpasar.

Carol & Ongori's research [20] examined the challenges faced by street food sellers in several selected malls in Gaborone, namely Kagiso, Afrika and the main mall. This study investigates the importance of street vending as a livelihood strategy. Data was collected from 97 street vendors using a questionnaire with 51 question items. The findings of this study indicate that street food vending is largely a source of income and a way of creating employment for the urban poor. This research recommends that street food vendors need to be legally recognized. The government and relevant stakeholders need to holistically understand the challenges faced by street food sellers and develop interventions that will enable street food sellers to survive, grow and compete in a dynamic business environment. A similar study was also carried out by Soewartoyo [1] in Yogyakarta City. The research results show that informal sector workers in urban areas have various types of activities, especially businesses in the trade and processing sectors. The Yogyakarta City Government pays attention to its residents who are active in this sector through various assistance and guidance such as capital and other forms of training. Even though the policy program is not yet comprehensive, efforts have been made to pay attention to the poor, including the families of informal workers. Various conveniences for businesses have been considered, such as capital assistance policies for small and micro businesses, arrangement of street trading centers, parking policies, which are proof of concern for workers and labor in traditional sectors in urban areas.

This research aims to determine: (1) a general description of the socio-economic characteristics of informal sector workers; (2) Economic activities of informal sector workers before and during the COVID-19 pandemic; (3) Survival strategies for informal sector workers during the COVID-19 pandemic; (4) Comparison of the welfare of informal sector workers before and during the COVID-19 pandemic; (5) Association of survival strategies with the economic activities of informal sector workers.

II. METHODS

The research was conducted in four sub-districts in Denpasar City, namely West Denpasar, North Denpasar, East Denpasar and South Denpasar. The selection of Denpasar City as a research location was based on the consideration that Denpasar City is the economic center of Bali Province and has the highest number of migrant residents compared to other districts in Bali Province, where most of the migrant population are informal sector workers.

Apart from the considerations above, the employment opportunities for most Denpasar City residents are in the tertiary sector which includes trade/hotels and restaurants, industry, transportation, finance, and services. Based on the considerations above, in this research Denpasar City was chosen as the research location. The locations for collecting respondents were not carried out in all sub-districts (16 sub-districts) in four sub-districts in Denpasar city but were determined purposively.

Respondents in this research are individuals who meet the criteria of being informal sector workers and are located and run their businesses in the research location. Informal sector workers in this study include respondents who work in types of work as street vendors, hawkers, craftsmen, laborers, personal services, and other types of informal work that are classified as informal sector jobs.

Sampling in this research was carried out by means of purposive sampling, namely a sampling technique where sample selection is carried out with certain subjective considerations based on several characteristics possessed by the sample, which are considered closely related to previously known characteristics of the population. The number of samples in this study was set at 150 respondents. Data was obtained by survey using a questionnaire as a data collection tool.

The variables used in this research are: Socio-economic characteristics include the variables: Age, Gender, Marital Status, Last level of education, Type of work in the informal sector. Economic activity before and during the COVID-19 pandemic includes the following variables: Employment Status, Working hours, Length of running the business, presence/ absence of labor assistance in running the business (family labor or non-family labor (paid), Number of workers work/employees outside the family workforce who help run the business, Number of family workers who help run the business, Types of merchandise (if

traders), Types of services (if individual services), How to get merchandise, Physical facilities, and Alternative sources of income outside work as an informal sector worker.

Survival strategies during the COVID-19 pandemic, including negative coping strategies such as selling assets, taking loans from informal lenders, relying on/applying for government social assistance programs (direct cash assistance, basic necessities, and other assistance programs), and strategies for switching to other types of work in the informal sector. The dependent variable in this research is: Welfare, described in variables: Respondent's income (IDR/month) before the COVID-19 Pandemic, Respondent's income (IDR/month) during the COVID-19 Pandemic, and Change in respondent's income during the COVID-19 Pandemic compared to before the pandemic (decreased, constant, increased).

Data analysis technique by following the steps: (1) Carrying out descriptive analysis to get an overview of the socio-economic characteristics of informal sector workers, economic activities, and survival strategies during the COVID-19 pandemic by determining the percentage of variables univariately, (2) Carrying out association analysis using chi square analysis.

The association test (independence test) is used to determine whether there is a relationship between two variables that have been determined. In a two-dimensional table that has variables X and variables Y with the number of rows I and columns J, the hypothesis to test independence as follows:

$H_0 : P_{ij} = P_{i\bullet} P_{\bullet j}$ (there is no association relationship between variable X and variable Y or independent)

$H_1 : P_{ij} \neq P_{i\bullet} P_{\bullet j}$ (there is an association relationship between variable X and variable Y or dependent)

Where:

$P_{i\bullet}$ = probability of observing the i-th row

$P_{\bullet j}$ = probability of observing the j-th column

i = 1, 2,……,I

j = 1, 2, ……,J

So the appropriate statistical test is Pearson's Chi-Square, where the estimated expected value is as follows:

$$\hat{m}_{ij} = \frac{n_{i\bullet} n_{\bullet j}}{n_{\bullet\bullet}}$$

and the test statistics are:

$$\chi^2_{hitung} = \sum_{i=1}^{I} \sum_{j=1}^{J} \frac{\left(n_{ij} - \hat{m}_{ij}\right)^2}{\hat{m}_{ij}}$$

Where:

n_{ij} = frequency of observations in the i-th row, j-th column

$n_{i\bullet}$ = frequency of observations in the i-th row

$n_{\bullet j}$ = frequency of observations in the j-th column

$n_{\bullet\bullet}$ = N = number of all observations

i = 1,2, ……, I

j = 1, 2, ……,J

The test statistics are then compared with a distribution χ^2 dengan with degrees of freedom $(I-1)(J-1)$ and risk of error α, and the rejection criteria H_0 are: $\chi^2_{hitung} > \chi_{(\alpha,(I-1)(J-1))}$. For three-dimensional tables and four-dimensional tables, independence testing is carried out in the same way as for two-dimensional tables in Kleinbaum and Mitchel (2002).

Chi square analysis was carried out to look for associations between survival strategy variables and the economic activity variables of informal sector workers.

III. RESULT AND DISCUSSION

A. General Description of the Socio-Economic Characteristics of Informal Sector Workers

Data collection on research respondents was carried out in four sub-districts in Denpasar City, namely West Denpasar, South Denpasar, East Denpasar, and North Denpasar Districts. Research data collection from informal sector workers was carried out on 150 respondents.

An overview of the socio-economic characteristics of informal sector workers based on the results of data analysis shows that the average age of workers is 35.27 with the lowest age being 15 years and the highest being 66 years. Gender is dominated by male

workers, namely 64.7 percent of the total 150 respondents. The marital status of respondents was dominated by married workers, namely 66.7 percent, while 30.7 percent were unmarried and only 2.6 percent were divorced or dead divorced. The education level of respondents was dominated by workers with a high school education level (65.3 percent), while workers with a junior high school education level were 23.3 percent and elementary school education levels were 11.3 percent. Cross tabulation analysis between gender, marital status and educational level showed that majority of respondents had a high school education level, were male, and were married.

The types of work in the informal sector occupied by respondents are mostly as street vendors and itinerant traders, while other types of work have an almost even distribution of percentages in several other types of work such as hawkers, daily laborer, small workshops, shoe sole makers. , locksmith, masseuse, farmer, and other types of work including laundry services, tailor, motorbike washer, junk/scavenger, barber, ironer, door-to-door body care service, screen-printer, transport worker, and online trader.

Table 1. Socioeconomic Characteristics of Respondents

Variable	Category	Frequency	Percent
1. Gender	1. Male	97	64.7
	2. Female	53	35.3
2. Marital Status	1. Unmarried	48	30.7
	2. Married	100	66.7
	3. Divorced	2	1.3
	4. Widowed	2	1.3
3. Level of education	1. Not schooled	0	0
	2. Elementary school	17	11.3
	3. Middle school	35	23.3
	4. High school	98	65.3
	5. College	0	0
4. Type of work	1. Hawkers	9	6.0
	2. Street Vendors	54	36.0
	3. Itinerant Trader	32	21.3
	4. Farmer	2	1.3
	5. Breeder	0	0
	6. Daily Laborer	9	6.0
	7. Small Workshop	8	5.3
	8. Shoe Sole Maker	4	2.7
	9. Locksmith	2	1.3
	10. Masseur	2	1.3
	11. Others	28	18.7

B. Economic Activities of Informal Sector Workers Before and During the COVID-19 Pandemic

The economic activities that respondents were asked about included the respondents' economic activities before and during the pandemic. Respondents' economic activities recorded include employment status, nature of business services, working hours, length of time running the business, presence/absence of labor assistance, number of workers/employees outside of family labor who help, number of family labor who help, type of merchandise, type services, how to get merchandise, physical facilities, and alternative sources of income outside of work as informal sector workers.

Respondents' employment status did not change between before the pandemic and during the pandemic. Most respondents (62.7 percent) had self-employed employment status with unpaid family workers, followed by respondents with employee/worker employment status (22 percent), and self-employed status with paid workers (15.3 percent). Cross tabulation analysis between type of work and employment status before and during the pandemic showed that majority of respondents who worked as street vendors had self-employed employment status, with unpaid family workers.

Respondents' answers regarding the nature of business services, it was found that majority of respondents before the COVID-19 pandemic had a permanent service nature, namely 66.7 percent, while a mobile service nature was 26.7 percent, and semi-sedentary 9.3 percent. Likewise, during the pandemic, majority of respondents had permanent business services. Cross tabulation analysis between the nature of business services before and during the pandemic according to the respondent's type of work can generally be explained that of the 40 respondents with a mobile service nature before the pandemic, there were 2 respondents who

changed to a permanent service nature while 38 respondents remained with a mobile service nature. move. Likewise, for respondents with permanent business services before the pandemic (100 respondents), the nature of their business services changed to mobile for 4 respondents, semi-sedentary for 4 respondents, and the rest remained with the nature of permanent services (92 respondents).

If we look in detail based on the type of work, there are changes in business services in the types of work for hawkers, street vendors, mobile traders and other types of work. Regarding the type of hawker work (9 respondents), there were 3 respondents whose business services were permanent before the pandemic, becoming mobile services during the pandemic. Street vendors (54 respondents), there were 2 respondents whose business service characteristics were mobile before the pandemic and became permanent during the pandemic, and 1 respondent whose service characteristics were sedentary became mobile during the pandemic, while the remaining 47 respondents had good permanent service characteristics. before and during the pandemic. Other types of business (28 respondents), there were 3 respondents whose business service characteristics were permanent before the pandemic changed to semi-sedentary during the pandemic, the rest did not experience any change, namely 1 respondent with a mobile service nature, 2 respondents semi-sedentary, and 22 respondents with the permanent nature of services before the pandemic and during the COVID-19 pandemic. A complete cross-tabulation between the nature of business services before and during the pandemic according to the respondent's type of work is presented in Table 2.

Table 2. Cross Tabulation between the Nature of Business Services Before and During the Pandemic According to Respondent's Type of Work

Businessservices_Before * Businessservices_During * Typeofwork Crosstabulation

Type of Work			Businessservices_During Mobile services	semi-sedentary	Permanent	Total
Hawkers	Businessservices_before	Mobile services	6			6
		Permanent	3			3
	Total		9			9
Street Vendors	Businessservices_before	Mobile services	0	0	2	2
		Semi-sedentary	0	4	0	4
		Permanent	1	0	47	48
	Total		1	4	49	54
Itinerant Trader	Businessservices_before	Mobile services	21	0	0	21
		Semi-sedentary	0	1	0	1
		Permanent	0	1	9	10
	Total		21	2	9	32
Farmer	Businessservices_before	Permanent			2	2
	Total				2	2
Daily Laborer	Businessservices_before	Mobile services	7	0		7
		Semi-sedentary	0	2		2
	Total		7	2		9
Small Workshop	Businessservices_before	Permanent			8	8
	Total				8	8
Shoe Sole Maker	Layanan_Usaha Businessservices_before	Mobile services	2	0	0	2
		Semi-sedentary	0	1	0	1
		Permanent	0	0	1	1
	Total		2	1	1	4
Locksmith	Businessservices_before	Permanent			2	2
	Total				2	2
Masseur	Businessservices_before	Mobile services	1		0	1
		Permanent	0		1	1
	Total		1		1	2
Others	Businessservices_before	Mobile services	1	0	0	1
		Semi-sedentary	0	2	0	2
		Permanent	0	3	22	25
	Total		1	5	22	28
Total	Businessservices	Mobile services	38	0	2	40

_before	Semi-sedentary	0	10	0	10
	Permanent	4	4	92	100
Total		42	14	94	150

Working hours in this study is the amount of time spent carrying out work. The average working hours per day of respondents before the pandemic was 9.96 hours with a range of minimum working hours per day of 2.5 hours and a maximum of 16 hours and the average working hours during the pandemic was 9.12 hours per day with a range of minimum working hours per day is 1.5 hours and a maximum of 14 hours. The average number of working days per week is 6.5 days. The average length of time running a business for informal sector workers in this study was 4.9 years, with a range of length of business from 6 months to 23.5 years.

Respondents' answers regarding the presence or absence of labor assistance in running the business, namely family labor or non-family labor (paid), before the pandemic, the results obtained were that some stated that they did not have labor to help run the business, namely 52.7 percent, and the remaining 47.4 percent said assisted by labor, both unpaid family labor and paid non-family labor. Meanwhile, during the pandemic, 54.7 percent of respondents said they did not have workers to help, and 45.4 percent said they were assisted by workers. There is no significant difference in the presence or absence of labor assistance in running a business between before the pandemic and during the COVID-19 pandemic.

Cross tabulation analysis between the presence/absence of labor assistance before and during the pandemic according to the respondent's type of work, in general it can be explained that of the 79 respondents with no labor assistance, there was 1 respondent who was then assisted by 1 worker during the pandemic. while 78 respondents remained without labor assistance. Likewise, for respondents with 1 person's labor assistance before the pandemic (70 respondents), then 4 respondents were without labor assistance during the pandemic and the rest remained with the assistance of 1 worker.

If we look in detail based on type of work, there are changes in the presence/absence of labor assistance for street vendors and other types of work. There were 16 street vendors (54 respondents) with no labor assistance before the pandemic, 1 respondent with the assistance of 1 worker during the pandemic, and the remaining 15 respondents remained without labor assistance both before and during the pandemic. Other types of business (28 respondents), there were 19 respondents with the help of 1 worker before the pandemic changed to 3 respondents without help from workers and the rest (16 respondents) were still assisted by 1 worker. Meanwhile, 1 respondent with the help of 2 staff before the pandemic experienced no change during the pandemic.

Type of merchandise, for respondents whose job type was as a trader (70.7 percent) and the remaining 29.3 percent did not answer (44 respondents whose job type was personal services). The results showed that majority of merchandise types (72.6%) were food/drinks before the pandemic, followed by other types of merchandise (15.1 percent), and clothing/textiles/grocery/children's toys (9.4 percent). Likewise, during the pandemic, the majority (71.8 percent) of the type of merchandise was food/drinks, followed by other types of merchandise (16.5 percent), and clothing/textiles/grocery/children's toys (8.7 percent). There is no significant difference regarding the type of merchandise between before and during the pandemic.

How to get merchandise is categorized into production/making it yourself, from suppliers, and from producers/factories. Respondents' answers regarding how to obtain merchandise before the pandemic were dominated by producing/making it themselves (49.6 percent), followed by obtaining it from suppliers (43.2 percent), producers/factories (5.3 percent), and 1.4 percent by other means. Likewise, during the pandemic, most of the methods for obtaining merchandise were from self-production/making (47.1 percent) and from suppliers (47.8 percent), the remaining 5.1 percent came from other sources.

Types of work in the informal sector as individual service providers, with types of services grouped into laundry services, massage, sewing services, broker services, repair services (locks, shoe soles), maintenance services, and other services. The results of data analysis of respondents' answers showed that before the pandemic respondents worked in other types of services (29.6 percent), followed by repair services (29.5 percent), washing services (20.5 percent), sewing services (9.1 percent), massage services (4.5 percent) and care services (6.8 percent) from a total of 44 respondents who work in personal services. Likewise, the distribution of the percentage of types of services employed by respondents during the pandemic, most respondents worked in other types of services, followed by repair services, laundry services, sewing services, massage services and maintenance services with a total of 48 respondents answering.

The physical facilities used for selling and providing services before the pandemic were dominated by kiosks (36.0 percent), followed by carts/pushcarts (26.5 percent), tables (14.7 percent), baskets (8.1 percent), mats/pedestals, semi-peranen stalls, and others (online). Likewise for facilities during the pandemic with distribution almost the same as before the pandemic.

Majority of workers stated that before the pandemic they had no alternative income other than working as informal sector workers, namely 96.7 percent and 3.3 percent stated they had other alternative income. Likewise, during the pandemic, 94.7 percent had no alternative income other than working as informal sector workers and only 5.3 percent said they had other alternative income.

Cross tabulation analysis between the presence/absence of alternative sources of income outside of work as informal sector workers before the pandemic and during the pandemic according to the respondent's type of work, in general it can be explained

that of the 145 respondents who said they had no other alternative income, there were 6 respondents who then had alternative sources of income outside of work as informal sector workers during the pandemic, while 139 respondents still did not have a side job. Likewise, for respondents who had alternative side jobs before the pandemic (5 respondents), then 3 of them did not have side jobs during the pandemic, the remaining 2 respondents still had side jobs during the pandemic.

If we look in detail based on type of work, there are changes in the presence/absence of alternative sources of income before and during the pandemic, changes in the types of work of street vendors, itinerant traders and day laborers. There were 54 street vendors (54 respondents) who did not have alternative sources of income before the pandemic, of which 5 respondents had other alternative sources of income during the pandemic, the remaining 49 respondents remained with no side jobs either before or during the pandemic. Itinerant traders (32 respondents), there were 3 respondents who had side jobs before the pandemic changed to not having side jobs during the pandemic. Likewise, daily laborers (9 respondents) did not have other alternative sources of income before the pandemic, 1 respondent then had a side job during the pandemic, the remaining 8 people still did not have other alternative sources of income either before or during the COVID-19 pandemic

C. Survival Strategies of Informal Sector Workers During the COVID-19 Pandemic

Survival strategies during the COVID-19 pandemic, including: 1) Negative coping strategies such as selling assets, 2) Taking loans from informal lenders, 3) Relying on/applying for government social assistance programs (direct cash assistance, basic necessities, and other assistance programs), and 4) Switching to other types of work in the informal sector.

Table 3. Survival Strategies During the COVID-19 Pandemic

Survival strategies	Absence		Presence	
	Frequency	Percent	Frequency	Percent
Negative coping strategies such as selling assets	149	99.3	1	0.7
Taking loans from informal lenders	104	69.3	46	30.7
Relying on/applying for government social assistance programs (direct cash assistance, basic necessities, and other assistance programs)	128	85.3	22	14.7
Switching to other types of work in the informal sector	150	100	0	0

Respondents' answers to the survival strategies carried out during the pandemic, out of a total of 150 respondents, only 69 respondents (46 percent) stated that they carried out one of the strategies from the four answer choices on the questionnaire given, the rest stated that they did not carry out any of these survival strategies.

Based on Table 3, it can be explained that respondents' survival strategies were dominated by respondents' answers, with the strategy of taking loans from informal lenders answered by 30.7 percent of respondents. Furthermore, the survival strategy by relying on/applying for government social assistance programs (direct cash assistance, basic food supplies, and other assistance programs) was answered by 14.7 percent of respondents, while the survival strategy by coping with negative things such as selling assets was only answered by 1 respondent (0.7 percent). There were no respondents who implemented a survival strategy by switching to other types of work in the informal sector, and 54 percent of respondents stated that they did not implement a survival strategy.

Cross tabulation analysis between the presence/absence of a strategy by taking loans from informal lenders and the variable change in income (before the pandemic compared to during the pandemic) according to the type of work of the respondent, in general it can be explained that of the 102 respondents who stated that they did not carry out a strategy by taking loans from Informal lenders, 93 respondents stated that their income had decreased during the pandemic compared to before the pandemic, 3 respondents stated that their income had remained the same, and 6 people stated that their income had increased. Meanwhile, for respondents who implemented a strategy by taking loans from informal lenders (46 respondents), there were 42 respondents who stated that their income had decrease and 4 respondents stated that their income had remained constant.

Furthermore, cross-tabulation analysis between the presence/absence of a survival strategy by relying on/applying for government social assistance programs and changes in income according to the respondent's type of work, it was found that of the 126 respondents who stated that they did not use a strategy by relying on/applying for government social assistance programs, there were 115 Respondents stated that their income had decreased during the pandemic compared to before the pandemic, 5 respondents stated that their income had remained the same, and 6 people stated that their income had increased. Meanwhile, for respondents who implemented a strategy by relying on/applying for the government's social assistance program (22 respondents), there were 20 respondents who stated that their income had decrease and 2 respondents stated that their income remained the same during the pandemic compared to before the COVID-19 pandemic.

D. Comparison of the Welfare of Informal Sector Workers Before and During the COVID-19 Pandemic

Changes in respondents' income during the COVID-19 pandemic compared to before the pandemic, which was obtained from respondents' answers to the question item "In your opinion, what is your income during the Covid-19 pandemic compared to your income before the pandemic?", with answer options decrease, remain, increase. The results of respondents' answers showed that 90 percent stated that their income from working in the informal sector had decreased compared to before the pandemic, 4.7 percent stated that their income had remained the same, the remaining 5.3 percent stated that their income had increased during the pandemic compared to their income before the pandemic.

However, if we look at the overall income data of respondents, it is found that there was a decrease in the average income of respondents during the COVID-19 pandemic compared to before the pandemic. The average income of respondents before the pandemic was IDR. 3,623,333.33 with a minimum average income range of Rp. 300,000 and a maximum of Rp. 26,000,000, while the average income of respondents during the pandemic was IDR. 2,342,666.67, with a minimum income of Rp. 900,000 and maximum income of Rp. 13,000,000. Descriptive statistical results of the average income of respondents before and during the pandemic are presented in Table 4.

Table 4. Descriptive Statistics on Average Income of Respondents During the COVID-19 Pandemic Compared to Before the Pandemic

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Average Income_Pre	150	300000	26000000	3623333.33	2777266.694
Average Income_During	150	900000	13000000	2342666.67	1363736.806
Valid N (listwise)	150				

The t test for two paired samples was carried out on the average income, working hours, working days and length of business, whether the averages were significantly different or not between before the pandemic and during the COVID-19 pandemic.

Table 5. Paired Samples Correlations of Average Income, Working Hours, Working Days, and Length of Business Before the Pandemic and during the COVID-19 Pandemic

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Average Income_Pre & Average Income_During	150	.922	.000
Pair 2	Working hours_Pre & Working hours_During	150	.801	.000
Pair 3	Working days_Pre & Working days_During	150	.977	.000
Pair 4	length of business _Pre & length of business During	150	.	.

The correlation between the average income variable before the pandemic and during the pandemic has a correlation value of 0.922 with a significance of 0.000. This states that there is a significant linear relationship between income before and during the pandemic. Likewise, the average working hours before the pandemic and during the pandemic showed a correlation value of 0.801 with a significance of 0.000, indicating that there was a significant linear relationship between the average working hours of respondents before and during the pandemic.

Table 6. Paired Samples Test Average Income, Working Hours, Working Days, and Length of Business Before and During the COVID-19 Pandemic.

Paired Samples Test		Mean	t	df	Sig. (2-tailed)
Pair 1	Average Income_Pre & Income_During	Average1280666.667	9.747	149	.000
Pair 2	Working hours_Pre & hours_During	Working.83333	6.719	149	.000
Pair 3	Working days_Pre & days_During	Working-.02000	-1.000	149	.319
Pair 4	length of business _Pre & length of business _During	of3.47333	9.319	149	.000

The paired sample T test for average income before and during the pandemic obtained a probability (Sig. 2 tailed) of 0.000, which means that the average income of respondents before and during the pandemic was significantly different. Likewise, the same results were obtained for average working hours and length of business. However, the average length of the respondent's working day before and during the pandemic was not significantly different.

E. Test of the Association of Survival Strategies with Welfare Variables

The results of data analysis to determine whether there is an association between survival strategies carried out during the COVID-19 pandemic and welfare variables are presented in table 7. Based on Table 7, the results of the association test with Pearson Chi-Square test statistics are obtained. Referring to the null hypothesis, there is no association between economic activity variables and survival strategies, and the alternative hypothesis, on the contrary, shows that the significant association is employment status, presence/absence of labor assistance, and physical facilities. This means that employment status, the presence/absence of labor assistance and physical facilities are closely related to survival strategies. Meanwhile, the variables of business services and type of merchandise did not prove to have a significant association, seeing a significance value greater than 0.05.

Table 7. Test of the Association of Survival Strategies with Economic Activity Variables

Crosstab Variable	Pearson Chi-Square	Asymptotic Significance (2-sided)	Keputusan
Employment status vs Survival strategies	16.57	0,011	Reject Ho
Nature of business services vs Survival strategies	8.432	0,208	Accept Ho
Presence or absence of labor assistance vs Survival strategies	14.180	0,043	Reject Ho
Types of merchandise vs Survival strategies	10.543	0,104	Accept Ho
Physical facilities vs Survival strategies	59.585	0,000	Reject Ho

IV. CONCLUSION

A general description of the socio-economic characteristics of informal sector workers based on the results of data analysis shows that the average age of workers is 35.27, gender is dominated by male workers (64.7 percent). The marital status of respondents was dominated by workers with married status (66.7 percent). The education level of respondents is dominated by workers with a high school education level (65.3 percent). The types of work in the informal sector that are occupied are mostly as street vendors and mobile vendors, while other types of work have an almost even percentage distribution in several other types of work in the informal sector. Cross tabulation analysis between type of work and employment status before and during the pandemic showed that majority of respondents who worked as street vendors had self-employed employment status with unpaid family workers.

The nature of business services before and during the pandemic mostly had a permanent service nature. The average working hours per day of respondents before the pandemic was 9.96 hours per day and the average working hours during the pandemic was 9.12 hours per day. The average number of working days per week is 6.5 days. The average length of running a business is 4.9 years.

Respondents' answers related to the presence or absence of labor assistance in running the business (family labor or non-family labor (paid)), before the pandemic, the results showed that some stated that they did not have labor to help run the business (52.7 percent), and the remainder (52.7 percent) 47.4 percent) stated that they were assisted by labor, whether unpaid family labor or paid non-family labor. Meanwhile, during the pandemic, 54.7 percent said they did not have workers to help, and 45.4 percent said they were assisted by workers.

Before the pandemic, most of the types of merchandise (72.6 percent) were food/drinks. Likewise, during the pandemic, the majority (71.8 percent) sold food/drinks. The method of obtaining merchandise before the pandemic was dominated by producing/making it yourself (49.6 percent), followed by obtaining it from suppliers (43.2 percent). Likewise, during the pandemic, the way to get merchandise was mostly from self-production/making (47.1 percent) and from suppliers (47.8 percent).

Types of work in the informal sector as personal service providers, it was found that before the pandemic most respondents worked in other types of services (29.6 percent), followed by repair services (29.5 percent), laundry services (20.5 percent), sewing services (9.1 percent), massage services (4.5 percent) and care services (6.8 percent) from a total of 44 respondents who worked in personal services. Likewise, the distribution of the percentage of types of services employed by respondents during the pandemic, most respondents worked in other types of services, followed by repair services, laundry services, sewing services, massage services and maintenance services with a total of 48 respondents.

The physical facilities used for selling and providing services before the pandemic were dominated by kiosks (36.0 percent), followed by carts/pushcarts (26.5 percent), tables (14.7 percent), baskets (8.1 percent), and floor/pedestal facilities, semi-permanent stalls, and others (online). Likewise for facilities during the pandemic with distribution almost the same as before the pandemic.

Majority of workers stated that before the pandemic they had no alternative income other than working as informal sector workers, namely 96.7 percent and 3.3 percent stated they had other alternative income. Likewise, during the pandemic, 94.7 percent had no alternative income other than working as informal sector workers and only 5.3 percent said they had other alternative income.

The survival strategies of informal sector workers are dominated by respondents' answers with the strategy of taking loans from informal lenders (30.7 percent). The survival strategy of relying on/applying for government social assistance programs (direct cash assistance, necessities, and other assistance programs) was answered by 14.7 percent of respondents. Meanwhile, survival strategies with negative coping such as selling assets were only answered by 1 respondent. There were no respondents who implemented a survival strategy by switching jobs, and 54.0 percent of respondents stated that they did not implement a survival strategy. Based on the results of this research, it can be explained that the survival strategy option of switching to other types of work in the informal sector does not appear to be the right choice for informal sector workers during the COVID-19 pandemic.

Changes in respondents' income during the COVID-19 pandemic compared to before the pandemic. Majority of respondents' answers (90 percent) stated that their income from working in the informal sector had decreased compared to before the pandemic, 4.7 percent stated their income remained the same, the remaining 5.3 percent stated their income increased during the pandemic compared with income before the pandemic.

If we look at the respondents' income data as a whole, it is found that there was a decrease in the average income of respondents during the COVID-19 pandemic compared to before the pandemic. The average income of respondents before the pandemic was IDR. 3,623,333.33 with a minimum average income range of Rp. 300,000 and a maximum of Rp. 26,000,000, while the average income of respondents during the pandemic was IDR. 2,342,666.67, with a minimum income of Rp. 900,000 and maximum income of Rp. 13,000,000.

The paired sample T test for average income before and during the pandemic obtained a probability (Sig. 2 tailed) of 0.000, which means that the average income of respondents before the pandemic and during the pandemic was significantly different. Likewise, the average working hours of respondents before and during the pandemic were significantly different. The results of the association test show that there is a significant association between survival strategies and employment status, presence/absence of labor assistance, and physical facilities.

Research findings show that: 1) there has been a change in respondents' income during the COVID-19 pandemic compared to before the pandemic, namely that the majority (90 percent) stated that income from working in the informal sector had decreased compared to before the pandemic; 2) 54.0 percent of respondents stated that they did not carry out survival strategies and 46.0 percent stated that they carried out survival strategies during the COVID-19 pandemic, including the strategy of taking loans from informal lenders (30.7 percent) and survival strategies by relying on/applying for programs government social assistance (14.7 percent). Based on several research findings, sustainable policy recommendations that make it possible to improve the welfare of informal sector workers so that they can maintain their businesses in similar conditions in the future include: 1) government efforts to empower informal sector business actors by providing loan options for capital formal business with various loan procedure relief facilities and relief regarding payment systems; 2) variations in the types of social assistance that focus more on business capital assistance that can help informal sector actors maintain the existence of their businesses during the pandemic; 3) empowering informal sector actors through e-commerce (online business) training so that they can develop their businesses with a wider market reach; and 4) post-COVID-19 pandemic business recovery program with various empowerment programs facilitated by the government including training, business capital and social assistance for small businesses with the right targets.

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