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# Labor Turnover during COVID-19 in Bali: Why Did It Happen and What Factors Influenced It?

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**Abstract:**
The province of Bali, whose economy is based on tourism, was hit hard by the COVID-19 outbreak. The percentage of workers affected by COVID-19 in Bali was the highest in Indonesia in August 2020. This study examines labor turnover in Bali during the COVID-19 pandemic, including job changes and the transition from working to not working. The multinomial logistic regression model is used to determine the characteristics that influence labor turnover. The regression model was processed using STATA 13. This investigation used 2,665 Susenas panel data before and during the pandemic. Qualitative data collection using in-depth interviews was carried out to determine the reasons for not working anymore and changing jobs. This study found that between March and September 2020, 34.95% of the labor force changed jobs. At the time of the pandemic in September 2020, more urban residents lost their jobs, men changed jobs more than women, young workers (30-55 years) changed jobs more than older workers (over 55 years), and workers who graduated from junior high and high school on the same level were more likely to change jobs than diploma or university graduates. The in-depth interviews indicated that labor turnover was compelled by being laid off, losing much income, or closing the business.

**Keywords:** tourism, job loss, labor force, shifting jobs, multinomial logistic regression.

# 巴厘岛新冠肺炎期间的劳动力流动：为什么会发生以及哪些因素影响了它？

**摘要：**
巴厘岛省的经济以旅游业为主，受到新冠肺炎（新冠肺炎）疫情的严重打击。2020年8月，巴厘岛受新冠肺炎影响的工人比例是印度尼西亚最高的。本研究调查了新冠肺炎大流行期间巴厘岛的劳动力流动情况，包括工作变化和从工作到不工作的转变。多项逻辑回归模型用于确定影响劳动力流动的特征。回归模型使用统

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计数据13进行处理。这项调查使用了大流行之前和期间的2,665个苏塞纳斯面板数据。通过深度访谈收集定性数据，以确定不再工作和换工作的原因。这项研究发现，2020年3月至9月期间，34.95%的劳动力更换了工作。2020年9月疫情发生时，城镇居民失业人数较多，男性跳槽多于女性，年轻工人（30-55岁）跳槽多于老年工人（55岁以上），大专毕业的工人高中和同一级别的高中毕业生比文凭或大学毕业生更有可能换工作。深度访谈显示，劳动力流动是由于下岗、收入减少、企业倒闭等原因造成的。

**关键词：**旅游业、失业、劳动力、工作转移、多项逻辑回归。

# 1. Introduction

COVID-19 (Pneumonia Coronavirus Disease 2019) was identified for the first time in December 2019 in Wuhan, China (Mohammadi et al., 2020), while President Joko Widodo reported the first case in Indonesia on March 2, 2020 (Ihsanuddin, 2020). On March 11, 2020, the World Health Organization (WHO) (2020b) reported at least 118 thousand cases in 114 countries, with a total death toll of 4,291. Because of the virus's alarming spread and severity, it was declared a pandemic (Cucinotta & Vanelli, 2020). To prevent the transmission of the COVID-19 virus and high mortality rates, physical distancing policies may be implemented (Woskie & Wenham, 2021; World Health Organization, 2020a; Ainslie et al., 2020; Pannu, 2020). The Covid-19 pandemic poses a double challenge to the government, which must combat both the health pandemic and its socioeconomic effects (International Labour Organization, 2020a, 2020c; Santos et al., 2020; Stiegler & Bouchard, 2020; Goswami et al., 2021; Varona & Gonzales, 2021).

The COVID-19 pandemic has had varying effects on various regions, with tourism-dependent regions experiencing the greatest rise in unemployment (Gounder, 2020; Houston, 2020; International Labour Organization, 2020b; Piyapromdee & Spittal, 2020; Janssens et al., 2021). As a tourist destination dependent on the tourism industry, the province of Bali is enduring an economic shock. During the fourth quarter, Bali's economic growth contracted more than the national average, by -12.21 percent. Transportation and warehousing, with a -40.03 percent decline, and the provision of lodging and food and drink, with a -31.81 percent decline, exhibited the steepest negative growth in business sectors closely associated with tourism activities (Badan Pusat Statistik Provinsi Bali, 2021). A survey analyzing the impact of COVID-19 on business actors revealed that the Province of Bali had the highest proportion of business actors experiencing a decline in income (Badan Pusat Statistik, 2020). Due to Covid-19, 98.18 thousand Bali residents of working age are unemployed, of which 76.61 thousand reside in urban areas (Badan Pusat Statistik Provinsi Bali, 2020). During the 1998 economic crisis in Indonesia, male employees shifted from the formal sector to self-employment, while the number of female family workers in rural areas increased, according to Frankenberg et al. (2003). Priyono (2002) argued that unemployment was low in Indonesia during the economic crisis because many workers continued to work to surmount the crisis. In August 2020, 7.23% more persons in the province of Bali were engaged in informal employment, bringing the total to 1.37 million. The employment status that increased the most from 2019 to 2020 was family/unpaid work, which increased by 4.82% (Badan Pusat Statistik Provinsi Bali, 2020). This demonstrates a shift in labor from formal to informal activities. Indicators of labor mobility between business fields were also observed, as the number of workers in Bali's food and beverage accommodation business sector decreased to 91 thousand in August 2020, while the workforce in the agricultural business field increased to 82 thousand (Badan Pusat Statistik Provinsi Bali, 2020).

Those of working age who lost their careers due to the pandemic will seek alternative employment opportunities. Those who do not find new employment will be unemployed or excluded from the labor force. Therefore, it is necessary to examine the characteristics of the population that lost employment as a result of the pandemic. Finding new employment to survive the pandemic or being unemployed are both viable options. Reduced employment opportunities in formal activities (particularly for laborers/employees) will encourage residents to establish their own jobs or work in informal activities (as unpaid family workers). This research has two objectives: to investigate the movement of workers, including the movement between jobs and the transition from working to not working during the COVID-19 pandemic, and to determine the sociodemographic factors that influence labor turnover in Bali.

# 2. Literature Review

Economic disturbances result in a decline in output, which decreases the demand for laborers and causes unemployment (Borjas, 2013). The present rate of spread of the COVID-19 pandemic is so rapid that nearly all nations have implemented policies to slow the pandemic's spread and prevent an economic slowdown. The economic downturn was followed by a decline in demand, which led to a decline in production. This has resulted in workforce adjustments/rationalization or even a cessation of operations. The Central Bureau of Statistics (Badan Pusat Statistik, 2020) reveals that at least 8.76 percent of companies in Indonesia have ceased operations and 35.56 percent have chosen to

reduce their workforce. Workers who lose their jobs look for new employment opportunities, or if none are available, they create their own. They create their own income opportunities, typically through low-income self-employment. Various policies have been implemented in Indonesia, including online education, the work from home (WFH) system, travel restrictions, and the closure of tourist attractions and international aircraft. Aside from the direct effects of the pandemic, it is undeniable that policies relating to health protocols to prevent the spread of COVID-19 restrict people's activities, particularly travel. Tourism is the most severely affected industry, with nearly every nation implementing travel restrictions (Gounder, 2020; Houston, 2020). It is impossible for entrepreneurs or subsistence farmers to cease working, and there are few restrictions on their activities (Bundervoet et al., 2022). In contrast, rural households and subsistence farmers in particular experience a lesser impact.

During periods of higher economic growth, there are more opportunities to change jobs, and the likelihood of becoming unemployed or inactive is reduced. During a recession, however, the likelihood of transitioning from employment to unemployment or inactivity increases because it is difficult to find a suitable position and the demand for labor decreases substantially (Fontaine, 2016). Shaw et al. (1998) classified job changes into two categories: voluntary and involuntary. In contrast, involuntary turnover is the employer/company's decision to terminate the employment relationship and is uncontrollable for workers who experience it. The movement of labor is divided into six categories by Schettkat (1996): moving from one job to another, from one employer to another, from one industry to another, from one region to another, from working to being unemployed, and from working to not being in the labor force.

Becker (1975) stated that the workforce possesses developable abilities and skills. Education is one form of human capital that influences the workplace. Investing in education enhances one's skills, thereby expediting the acquisition of a position that meets expectations. During a pandemic, laborers with lower levels of education were affected more than those with higher levels of education (Piyapromdee & Spittal, 2020).

## 3. Research Method

This analysis uses household panel data from the March 2020 and September 2020 Susenas. There were 1.286 panel households distributed across nine regencies/cities in the province of Bali. Susenas data are used because panel data were accessible before (March 2020) and during (September 2020) the Covid-19 pandemic. In this research, the unit of analysis is the workforce working in March 2020. The number of samples that meet the requirements for research is 2665 workers. Informants for in-depth interviews are samples who changed their main activity or employment statuses during the pandemic. The dependent variable of the study is workforce transfers, which are classified into three categories: transferring from working (March 2020) to not working (September 2020), changing jobs in September 2020, and not changing jobs in September 2020. The transfer of labor from formal to informal activities and vice versa is considered a job transition. The model's independent variables include age, gender, education level, employment status, household headship status, and place of domicile.

There were no queries about the impact of the COVID-19 pandemic on employment in the Susenas, so qualitative data collection was conducted to supplement the analysis. Certain criteria were used to conduct in-depth interviews with households and household members of the September 2020 Susenas to collect qualitative data. The informants for the in-depth interviews are households that have relocated or migrated, households in which at least one household member changed employment in September 2020 (basic data is from March 2020), and households in which the number of household members has increased compared to March 2020.

Table 1. Research variables and their categorization (The authors)

| No. | Research Variables | Categories | |
|---|---|---|---|
| (1) | (2) | (3) | |
| **Dependent Variable** | | | |
| 1 | Labor turnover | 1. | Unemployed |
| | | 2. | Changes Job |
| | | 3. | Still at the same job |
| **Independent Variables** | | | |
| 1 | Gender | 1. | Male |
| | | 2. | Female |
| 2 | Age group | 1. | 15-29 |
| | | 2. | 30–55 |
| | | 3. | > 55 |
| 3 | Status in the household | 1. | Head of the household |
| | | 2. | Not the head of the household |
| 3 | Level of education | 1. | Primary education level (elementary school) |
| | | 2. | Secondary education level (junior high school/high school) |
| | | 3. | Higher education level (college) |
| 4 | Job Status | 1. | Formal |
| | | 2. | Informal |

Continuation of Table 1

| | | | |
|---|---|---|---|
| 5 | Main employment | 1. | Agricultural |
| | | 2. | Non-agricultural |
| 6 | Residential area | 1. | Urban |
| | | 2. | Rural |

This study employs descriptive and inferential analysis as its method of analysis. Descriptive analysis was used to acquire an overview and pattern of labor movement variables, while inferential analysis was used to explain the relationship/association between the variables. During the COVID-19 pandemic, the multinomial logistic regression model was used to determine the characteristics of workers who tended to change occupations, either by switching industries or employment statuses or by becoming unemployed. This regression model was selected because it can be used to analyze the relationship between the dependent variable and the independent variable when the dependent variable consists of more than two categories on a nominal scale and the explanatory variable consists of categorical or numeric data (Agresti, 2013).

## 4. Results and Discussion

The COVID-19 pandemic that began to affect Indonesia in March 2020 had an effect on employment in Bali. 34.95% of respondents had changed careers, either by changing their business field or their position at work. In contrast to the phenomenon of mass resignations (great resignations) that occurred in the United States, these individuals quit their jobs of their own accord and not because they were laid off (Schmiedehaus et al., 2023). Mass resignations occur as a result of the availability of alternative, more enticing employment opportunities (Moon et al., 2023). The results of in-depth interviews revealed that job transfers were the result of involuntary attrition in which the workforce could not influence the employer's decision to terminate the employment relationship. During the pandemic, many workers lost their employment due to layoffs or were laid off. Permanent employees were given the option of being laid off with or without severance pay based on the results of in-depth interviews.

To date, there are no unemployment benefits in Indonesia; therefore, workers who lose their jobs must continue to search for work. According to Frankenberg et al. (2003), there was a shift in work from the formal sector to the self-employed during the 1998 economic crisis in Indonesia. Priyono (2002) argued that unemployment was low during the economic crisis in Indonesia because many workers continued to work to overcome the crisis. During the COVID-19 pandemic, workers who lost their jobs had to find new employment to survive. The percentage of respondents who were unemployed in September 2020 was 11.90% (316 individuals). This is consistent with Fontaine's (2016) assertion that, during an economic recession, the likelihood of transitioning from employment to unemployment or inactivity increases because it is difficult to locate suitable employment, and labor demand decreases significantly.

The consequences of the Covid-19 pandemic vary from industry to industry. Our findings indicate that many workers in agriculture, forestry, and fisheries did not change occupations or were not significantly affected by the COVID-19 pandemic compared with workers in other industries. This is consistent with findings by Bundervoet et al. (2022), who discovered that residents employed in the agricultural sector were more likely to survive the COVID-19 pandemic than those employed in manufacturing and services. In accordance with the findings of the International Labour Organization (2020a), tourism-related sectors such as the manufacturing industry, wholesale and retail trade, transportation and warehousing, accommodation and food and beverage provision, and many other services have restructured their workforces or ceased operations as of September 2020.

Multinomial logistic regression was used to examine the characteristics of employees who experienced job changes as a follow-up analysis. In this investigation, STATA Version 13 was used to estimate the multinomial logistic regression model. Using the likelihood ratio (LR), simultaneous model testing was performed to determine the effect of all independent variables on the dependent variable. The model formed passed the suitability test and has a log likelihood value of -2400.8496, resulting in a -2 log likelihood value of 4801.6992. The processing results demonstrate that the LR chi2 value is 278.37, with a statistical LR probability of 0.000 (prop > chi2). The value of prop > chi2 is less than = 0.05, indicating that H0 is rejected; therefore, the resulting multinomial logistic regression model can be used to estimate job transfers from March to September 2020.

Table 2. Results of the inferential model of job shifting between industries (Susenas March and September 2020, processed using STATA 13)

| Notation | Variable name | Coeff. | Stand. Error | RRR |
|---|---|---|---|---|
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
| **Gdr** | **Gender** | | | |
| | Female(1)** | -0,3041 | 0,1265 | 0,7378 |
| **Age** | **Age Group** | | | |
| | 30–55 (1) | 0,0560 | 0,1341 | 1,0576 |

| | Continuation of Table 2 | | | |
|---|---|---|---|---|
| | > 55 (2)* | -0,4648 | 0,1760 | 0,6283 |
| **SArt** | **Status in the household** | | | |
| | Head of household (1) | 0,1025 | 0,1296 | 1,1079 |
| **Edu** | **Level of education** | | | |
| | Primary education level (0)* | 0,9590 | 0,1593 | 2,6090 |
| | Secondary education level (1)* | 0,7335 | 0,1467 | 2,0823 |
| **Swork** | **Jobs status** | | | |
| | Informal (1) | -0,0988 | 0,1011 | 0,9059 |
| **Agri** | **Main Employment** | | | |
| | Agricultural (1)* | -0,9510 | 0,1234 | 0,3863 |
| **DTT** | **Residential area** | | | |
| | Rural (2) | 0,0189 | 0,0921 | 1,0191 |
| Const | | -0,7579 | 0,1774 | 0,4687 |

** Significant at the p value = 0.05
* Significant at the p value = 0.01

Table 3. Inferential results of the transfer of workers to the unemployed (Susenas March and September 2020, processed using STATA 13)

| **Notation** | **Variable name** | **Coeff.** | **Stand. Error** | **RRR** |
|---|---|---|---|---|
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
| **Gdr** | **Gender** | | | |
| | Female (1)** | -0,3652 | 0,1670 | 0,6941 |
| **Age** | **Age Group** | | | |
| | 30–55 (1)* | -0,6326 | 0,1735 | 0,5312 |
| | > 55 (2) | 0,2041 | 0,2218 | 1,2264 |
| **SArt** | **Status in the household** | | | |
| | Head of household (1)* | -0,9661 | 0,1870 | 0,3806 |
| **Edu** | **Level of education** | | | |
| | Primary education level (0)* | 0,2815 | 0,2320 | 1,3252 |
| | Secondary education level (1) | 0,5615 | 0,2030 | 1,7534 |
| **Swork** | **Jobs status** | | | |
| | Informal (1) | -0,0040 | 0,1530 | 0,9960 |
| **Agri** | **Main Employment** | | | |
| | Agricultural (1)* | -0,7422 | 0,1888 | 0,4761 |
| **DTT** | **Residential area** | | | |
| | Rural (2)* | -0,4711 | 0,1395 | 0,6243 |
| Const | | -0,7179 | 0,2330 | 0,4878 |

** Significant at the p value = 0.05
* Significant at the p value = 0.01

### *4.1. Model of Job Shifting between Industries, March-September 2020*

In accordance with Wicaksono's (2023) findings, the March-September 2020 trend of job transfers between business fields was influenced by gender, age group, household status, level of education, and business field in March 2020. During September 2020 (pandemic), men are more likely to switch occupations than women, and one reason for this is to increase their income. More than ninety percent of the heads of the households (KRT) studied were males. During a pandemic, the KRT will attempt to maintain the domestic economy, which includes searching for a new job. Workers aged 55 and older are 0.6283 times less likely to switch occupations than those between the ages of 15 and 30. During the pandemic, young employees were more likely to switch industries than older workers (over 55 years old). During the pandemic, those aged 55 and older were more susceptible to exposure to the virus than younger workers; consequently, the older age group preferred to remain at their previous jobs despite a decrease in income. In addition, 89% of youth workers are employed in non-agricultural industries, which were hit harder by the pandemic.

Junior and senior high school graduates tend to switch occupations 2.0823 times more frequently than college and graduate school graduates. In accordance with findings by Kim et al. (2021), the implementation of a lockdown during COVID-19 had the greatest effect on Asian American employees with low levels of education. Reviewing labor data in Bali Province in 2019 before the pandemic, more than fifty percent of the workforce with a high school diploma or equivalent worked in tourism-related industries such as lodging, food and beverage, wholesale and retail trade, services, and processing. Consequently, the pandemic had a greater impact on the workforce, as many were laid off or temporarily laid off. To date, there are no unemployment benefits or unemployment benefits in Indonesia, so workers who lose their jobs must continue to search for work.

In accordance with findings by Bundervoet et al. (2022), residents employed in the agricultural sector are more likely to survive the COVID-19 pandemic than those employed in the manufacturing and services sectors. In March 2020, agricultural and mining business employees tended to switch occupations 0.3863 times less frequently than non-agricultural and mining business employees. When a pandemic occurs, non-agricultural workers are more likely to switch occupations because the pandemic has a greater impact on the non-agricultural business sector. Even in August

2020, the agricultural business personnel increased by 82,000 individuals (Badan Pusat Statistik Provinsi Bali, 2020).

### *4.2. Model of Transfer of Working Individuals from March 2020 to September 2020: Unemployed*

In accordance with the findings of Wicaksono (2023), female workers are 0.6941 times more likely to become unemployed in September 2020 than male workers. More men than women have lost their employment as a result of the COVID-19 pandemic. In September 2020, the proportion of 30-55-year-old workers who were unemployed was 0.5312 times greater than that of 15-29-year-old workers. This is consistent with Churchill's (2021) finding in Australia that the younger workforce is more affected by COVID-19 than the elderly workforce. Kikuchi et al. (2021) and Djoumessi (2021) in Cameroon reached the same conclusion based on his research in Japan. In the age range of 15 to 29 years, most workers are recent college graduates (fresh graduates), and many workplaces use a system of contract labor and daily laborers. Allen's (2016) research in Indonesia revealed that the provision of substantial severance pay is one of the reasons why more and more businesses are hesitant to engage permanent employees. The majority of contract workers and hourly employees lost their employment during the pandemic, particularly in tourism-related industries. In contrast to the 30–55 age group, they on average labored for a long time and became permanent employees. During the COVID-19 pandemic, some workplaces still implemented salary cuts and shortened workweeks for permanent employees so that they did not lose their employment.

Based on the relationship status in the household, the propensity for workers with the status of head of household to be unemployed in September 2020 was 0.3806 times that of workers with a status other than head of household. Workers with the status of the household head are typically the backbone of the family; therefore, if they lose their positions, they will seek new employment to support their families. This is consistent with the findings of Priyono (2002), who discovered that during the economic crisis in Indonesia, many employees continued to work despite the absence of unemployment benefits. The likelihood that a worker with a junior high/high school diploma will no longer be employed in September 2020 is 1,734 times greater than that for those with a diploma/university degree. This is consistent with findings by Piyapromdee and Spittal (2020), who discovered that COVID-19 had the greatest impact on low-educated employees in a heterogeneous labor market.

People who work in the agricultural and mining industries are 0.4761 times less likely to work again in September 2020 than those who work in industries other than agriculture and mining. During the pandemic, tourism-related industries in Bali, such as hotels, restaurants, souvenir trading centers, and the souvenir craft industry, suffered the most. Many of these companies have reduced their workforce, and some have even temporarily ceased operations. This is consistent with the findings of Santos et al. (2020), who discovered that lockdowns and travel restrictions had the greatest impact on the tourism sector during COVID-19. Lockdown in rural areas is more lax than that in urban areas; consequently, the impact on population activities in rural areas is also less than that in urban areas. Residents of rural areas continue to work, particularly in agricultural business fields.

## 5. Conclusion

The study concluded that during the COVID-19 pandemic (September 2020), 34.95% of the labor force changed occupations, whether by switching industries or positions. Uncontrollable and involuntary, job changes are unavoidable for employees who experience them. Because of the pandemic, workers are laid off, temporarily laid off, or their enterprises are closed. In September 2020, 11.90% of laborers were no longer employed because they were either unable to find employment or lacked the capital to start their own business. Based on an inference of the characteristics that influence job changes between business fields from March to September 2020, namely gender, age group, household status, education level, and business field in March 2020. The likelihood of workers losing their employment and ceasing to work in September 2020 is significantly influenced by gender, age group, household status, level of education, and business sector in March 2020, as well as by location.

We do not merely look at the unemployment rate to see the influence of COVID-19 on the workforce because the low unemployment rate is created by many people who have lost their jobs and are seeking alternative jobs to survive. Most jobs are no better than their prior ones, even if they are unpaid. Because workers who cannot survive in cities opt to return to their hometowns during the epidemic, unemployment is fairly dispersed in rural regions.

## 6. Limitations and Future Study

This study utilizes only panel data from March 2020 to September 2020. Recommendations for additional research with panel data until 2023 so that labor disruptions caused by COVID-19 can be observed over the long term.

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## Contributions of the Authors

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