Pre-Pandemic, Pandemic, and Post-Pandemic (Recovery):
The Relationship Between Poverty, Economic Growth, and Unemployment Rates in Bali Province

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Abstract. Poverty, economic growth, and unemployment are socio-economic indicators that remain pertinent for discussion, particularly in the context of the Covid-19 pandemic. Bali is a region abundant in culture and traditions, heavily reliant on tourism. The Covid-19 pandemic has devastated Bali's economy due to the absence of tourist arrivals. This article examines the descriptive relationship among poverty, economic growth, and unemployment from a spatial perspective in various regions of Bali during the pre-pandemic, pandemic, and recovery phases. The methodology employed to attain this objective is descriptive, utilizing primary data derived from the Central Statistics Agency's secondary data. Data is organized in tabular format and subjected to descriptive analysis. The findings indicate that in Bali's regions with the lowest economic growth during the pandemic, the poverty rate was not the highest; nevertheless, in that year, the two most adversely affected areas saw an increase in the percentage of impoverished individuals. When economic growth declines (from 2019 to 2020), there is a subsequent rise in the unemployment rate across all regions without exception. During the height of the pandemic, Denpasar exhibited the highest poverty rate. During the recovery phase, economic growth enhanced, subsequently leading to a reduction in the unemployment rate across all regions.

Keywords: Poverty, Economic Growth, Unemployment, Pandemic, Bali

1 Introduction

Poverty, economic growth and unemployment are three key indicators that are interrelated in analyzing the socio-economic conditions of a country [1]. Before the COVID-19 pandemic, many countries, including Indonesia, had recorded a trend of decreasing poverty along with a stable rate of economic growth [2]. However, despite economic growth, the problem of unemployment remains an unresolved issue. This shows that economic growth has not always been in line with the creation of adequate job opportunities, and has not completely reduced existing economic inequality [3].

Before the pandemic, Indonesia recorded stable economic growth, with gross domestic product (GDP) growth rates ranging between 5-6% per year [4]. However, the reduction in poverty rates is often not balanced with the rate of economic growth [5]. Another factor that also

influences is the uneven quality of growth in various sectors, as well as inequality between regions which remains high. In this context, unemployment, especially educated unemployment, becomes a big challenge because of the mismatch between labor market needs and the skills of the available workforce.

When the COVID-19 pandemic hit, the economic shock resulting from restrictions on social and economic activities caused a drastic decline in economic growth [6–9]. In 2020, Indonesia experienced an economic contraction with negative growth of -2.07%. The most significant impact of this situation is the increase in poverty and unemployment rates. The informal sector, which has been a support for most of the poor, has also experienced a hard blow due to social restriction policies and a decline in people's purchasing power as has happened in India, Bangladesh and Africa [10–13]. In this situation, the government launched various social assistance programs (bansos) and economic stimulus to overcome the socio-economic impact of the pandemic. However, a sharp decline in household income, especially among the poor and vulnerable, as well as an increase in unemployment led to an increase in poverty rates in 2020.

Entering the post-pandemic recovery period, new challenges have emerged in efforts to reduce poverty and unemployment. Even though the economy is starting to show signs of recovery with positive GDP growth in 2021 and beyond, the problems of poverty and income inequality continue to dominate. Economic recovery is uneven across various sectors and regions, so that many community groups are still experiencing difficulties, especially in the informal sector and areas most affected by the pandemic. In addition, the challenge of creating new jobs is crucial to overcome the increase in unemployment due to company closures and workforce reductions during the pandemic [14]. The development of inclusive economic policies, as well as improving the quality and access of education and job training, is important to ensure that the post-pandemic economic recovery not only benefits a small portion of society, but is also able to lift the most vulnerable groups out of poverty.

On a smaller spatial scale, the phenomenon of the relationship between poverty, economic growth and unemployment is interesting to study. For example, Bali, a region that is part of Indonesia is famous throughout the world thanks to its unique culture and traditions that are not found anywhere else [15]. Thanks to this culture and tradition, Bali has become a magnet for foreign tourists (including local tourists) thereby bringing high economic benefits. Based on existing data, Bali is always at the top of Indonesia with a low poverty rate, followed by high economic growth and a low unemployment rate. Bali relies heavily on tourism to survive, but the Covid-19 pandemic has devastated Bali's economy. How much influence this disaster had on Bali's economy will be studied further regarding poverty, economic growth and unemployment in Bali Province during the pre-pandemic, pandemic and recovery periods. The aim of this paper is to look at the descriptive relationship between poverty, economic growth and unemployment from a spatial perspective.

2 Method

This research uses a descriptive design. The data source used is secondary data sourced from the Bali Province Central Statistics Agency. Secondary data which is the focus of the study includes data on the poor population per district in 2019 (pre-pandemic), 2020 (pandemic

period), 2021-2023 (recovery), unemployment data per district in the same time period, economic growth data (GRDP) per district in the same time period, as well as data on the population aged 15 years and over who work according to business fields per district in the same time period. Data processing was carried out using tabulation techniques, then analyzed descriptively qualitatively.

3   Result and Discussion

In an effort to find the relationship between poverty and economic growth and unemployment rates in Bali Province in the pre-pandemic period (before 2020), the peak period of the pandemic (2020), and the post-pandemic (recovery) period (2021-now), first The following supporting data is presented:

1. Trend data on the percentage of poor people in Bali Province per district from 2019 to 2023

Table 1. Trends in the percentage of poor people in Bali Province per district
from 2019 to 2023

Regency/City	Percentage of Poor Population in Bali Province According to Regency/City				
	2023	2022	2021	2020	2019
Kab. Jembrana	4,96	5,3	5,06	4,51	4,88
Kab. Tabanan	4,7	5,18	5,12	4,27	4,21
Kab. Badung	2,3	2,53	2,62	2,02	1,78
Kab. Gianyar	4,47	4,7	4,85	4,08	3,88
Kab. Klungkung	5,61	6,07	5,64	4,87	5,4
Kab. Bangli	5,28	5,28	5,09	4,19	4,44
Kab. Karangasem	6,56	6,98	6,78	5,91	6,25
Kab. Buleleng	5,85	6,21	6,12	5,32	5,19
Kota Denpasar	2,68	2,97	2,96	2,14	2,1
Provinsi Bali	4,25	4,57	4,53	3,78	3,79

Source: BPS Bali, 2020-2024

Based on table 1 above, the highest percentage of poverty has consistently been in Karangasem and Buleleng Regencies in the last 4 years, in 2019 alone Buleleng Regency was replaced by Klungkung Regency with the highest poverty percentage together with Karangasem. Meanwhile, the two regions that consistently have the lowest poverty percentage in the last 5 years are Badung Regency and Denpasar City.

2. Unemployment trend data (percentage) in Bali Province per district from 2019 to 2023

Table 2. Unemployment Trends (percentage) in Bali Province per district from 2019 to 2023

Regency/City	Bali Province Unemployment Percentage by Regency/City (Percent)				
	2023	2022	2021	2020	2019
Kab. Jembrana	2.52	3.94	4.11	4.52	1.44
Kab. Tabanan	2.64	3.83	3.94	4.21	1.29
Kab. Badung	2.72	6.87	6.93	6.92	0.40
Kab. Gianyar	2.96	6.78	6.90	7.53	1.46
Kab. Klungkung	1.29	1.96	5.35	5.42	1.57
Kab. Bangli	0.75	0.76	1.80	1.86	0.75
Kab. Karangasem	2.61	3.09	2.32	2.42	0.62
Kab. Buleleng	3.60	5.20	5.38	5.19	3.12
Kota Denpasar	2.85	5.08	7.02	7.62	2.29
Provinsi Bali	2.69	4.80	5.37	5.63	1.57

Source: BPS Bali, 2020-2024

The percentage of unemployment shows data that is not very consistent. Two districts that are always in the middle in terms of unemployment are Jembrana and Tabanan. Meanwhile, other districts have alternately been areas with the highest and lowest percentages of unemployment. Gianyar once had the highest percentage of unemployment in 2023, 2022, and 2020. While Badung had the highest percentage of unemployment in 2022 and 2021 (possibly due to the pandemic). Buleleng was the area with the highest unemployment in 2023 and 2019, while Denpasar experienced it in 2021 and 2020. For the lowest unemployment, Badung experienced it in 2019, Klungkung and Bangli in 2023 and 2022, Bangli and Karangsem in 2021 and 2020, and again Karangasem 2019 had a low unemployment percentage. It seems that this unemployment percentage is not related to poverty.

3. Data on GRDP/Economic growth trends in Bali Province per Regency from 2019 to 2023

Table 3. Trends in GRDP/Economic growth in Bali Province per Regency from 2019 to 2023

Regency/City	Regency/City GRDP/Economic Growth in Bali Province (Percent)				
	2023	2022	2021	2020	2019
Kab. Jembrana	2.98	2.98	-0.65	-4.98	5.56
Kab. Tabanan	2.94	2.94	-1.98	-6.17	5.58
Kab. Badung	9.97	9.97	-6.74	-16.55	5.81
Kab. Gianyar	4.04	4.04	-1.05	-8.39	5.62

Kab. Klungkung	3.12	3.12	-0.23	-6.38	5.42
Kab. Bangli	2.79	2.79	-0.33	-4.10	5.45
Kab. Karangasem	2.58	2.58	-0.56	-4.49	5.50
Kab. Buleleng	3.11	3.11	-1.27	-5.80	5.51
Kota Denpasar	5.06	5.06	-0.92	-9.44	5.82
Provinsi Bali	4.84	4.84	-2.46	-9.34	5.60

Source: BPS Bali, 2020-2024

Before and after the pandemic, Badung Regency and Denpasar City consistently had the highest regional economic growth. This seems to be related to the percentage of poverty in these two regions which is relatively low compared to other regions. On the other hand, during the pandemic, these two regions, especially Badung Regency, were the hardest hit, causing economic growth to plummet to minus to double digits. Then, after the pandemic, the two regions that consistently had the lowest economic growth were Bangli and Karangasem, while in 2019 the lowest economic growth was held by Klungkung and Bangli.

4. Data on trends in the population aged 15 years and over who work according to business fields in Bali province from 2019 to 2023

Table 4. Trends in Population Aged 15 Years and Over Working According to Business Fields in Bali Province from 2019 to 2023

| Business Fields (17 Categories/Sectors)	Population Aged 15 Years and Over Working by Business Field (17 Categories) in Bali Province (People)				
	2023	2022	2021	2020	2019
Agriculture, Forestry and Fisheries	495732	518584	534705	545533	462871
Mining and Quarrying	6093	6250	7859	9013	9627
Processing industry	384323	403698	394125	381746	368947
Procurement of Electricity and Gas	5202	6480	3703	5473	5709
Water Supply, Waste Management, Waste and Recycling	18255	8928	6486	8324	11870
Construction	174496	176488	155461	159554	162469
Wholesale and Retail Trade; Car and Motorcycle Repair	559836	553557	511721	495533	480622
Transportation and Warehousing	99521	85949	57669	59540	77347
Provision of accommodation and food and drink	357657	314733	233811	236386	327609
Information and Communication	12649	16943	16494	14360	12805
Financial Services and Insurance	55658	62632	62708	62230	71061
Real Estate	4629	3559	2738	3094	4092

Company Services	46330	51297	33764	42832	58490
Government Administration, Defense and Mandatory Social Security	114436	125737	136969	114051	125316
Education Services	109176	97073	109449	103537	100014
Health Services and Social Activities	49101	60284	56262	51303	54886
Other services	124722	114878	117930	130910	135271
Amount	**2617816**	**2607070**	**2441854**	**2423419**	**2469006**

Source: BPS Bali, 2020-2024

According to the business field, it seems almost consistent that the population aged 15 years who work predominantly in the wholesale and retail trade sector, car and motorbike repair and in the agricultural sector in the last 5 years. Meanwhile, the lowest absorption is consistent in the real estate and electricity and gas procurement sectors. Only in 2022 will the lowest absorption in the electricity and gas procurement sector be replaced by the mining and quarrying sector.

Based on the description of each data above, it is then analyzed further regarding the relationship between poverty and economic growth, and the unemployment rate based on three phases, namely Pre-Pandemic (2019), Pandemic (2020), and Post-Pandemic/Recovery (2021 until now) . To see the relationship between these three variables, graph 1 is presented as follows.

Graph 1. Dynamics of Poverty, Economic Growth and Unemployment in Bali Province 2019-2023
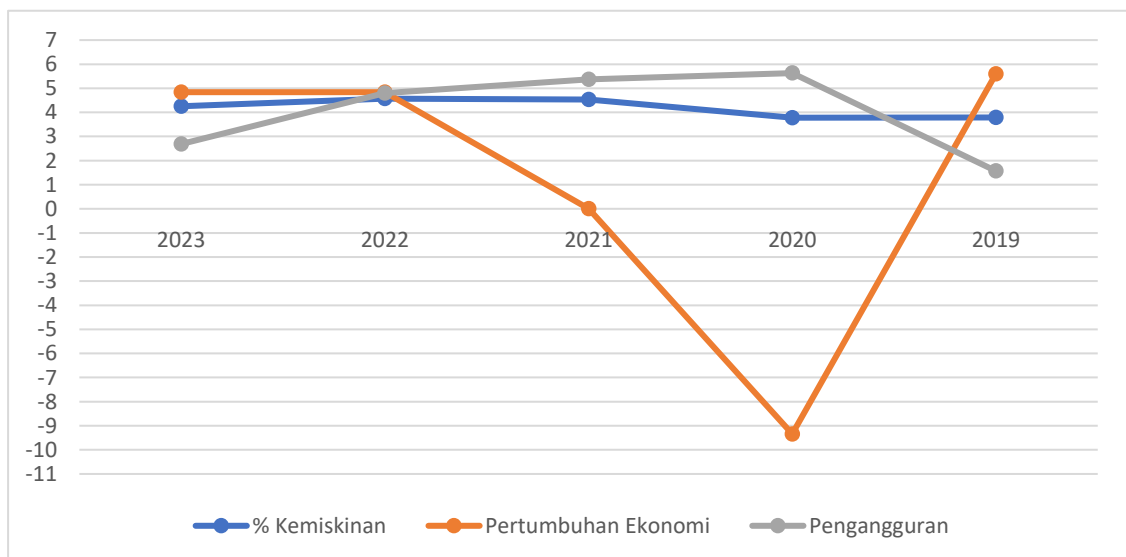
In percentage terms, poverty in Bali Province can be said to be constant (it actually decreased during the peak of the pandemic), then increased during the recovery period (2021-2022) with the peak of poverty occurring in 2022 and decreasing again in 2023. However, the percentage of poverty in Bali as a whole there has been an increase from before the pandemic compared to current conditions. This finding is in line with the research results of Laborde et al., (2021); Moyer et al., (2022); Pereira & Oliveira, (2020); Saunders & Evans, (2020) [16]–[19] who found that Covid-19 has pushed millions of people into extreme poverty, with significant impacts in South Asia and sub-Saharan Africa. The global recession caused by the pandemic is more severe than the 2008-2009 financial crisis, with nearly 150 million people expected to fall into extreme poverty and food insecurity.

The dynamics of poverty above are not followed by the dynamics of economic growth that have occurred in the last five years. The highest economic growth occurred before the pandemic, and fell the most at the peak of the pandemic in 2020. In the year of recovery, economic growth has improved. What is interesting is that when economic growth fell the most during the peak of the pandemic, the percentage of poverty was actually the lowest. On the other hand, the peak of poverty occurred in 2022, economic growth was actually close to the figure before the pandemic. This indicates that the poverty that occurs in Bali is not influenced by economic growth. This is contrary to what was stated by Adams, (2003); Dollar & Kraay, (2001); Fields, (1989); Skare & Druzeta, (2016) [5, 20–22], that economic growth generally reduces poverty, although the amount varies depending on factors such as growth patterns and the absorption capacity of the poor.

For your information, the contribution of various sectors to the economic growth of Bali Province is as follows (top 5 in each year, in order of most dominant contribution):

1. In 2019, the main sectors that contributed were 1). Provision of accommodation and food and drink (average 23.2%); 2). Agriculture, Forestry and Fisheries (average 13.45%); 3). Transportation and Warehousing (average 9.8%); 4).Construction (average 9.5%); and 5). Wholesale and Retail Trade; Car and Motorbike Repair (average 8.5%)

2. 2. In 2020, the main sectors that contributed were 1). Provision of Accommodation and Food and Drink (average 18.26% = decreased compared to 2019); 2). Agriculture, Forestry and Fisheries (average 15.12% = increase compared to 2019); 3). Construction (average 10.54% = increase compared to 2019); 4). Wholesale and Retail Trade; Car and Motorbike Repair (average 9.05% = increase compared to 2019); and 5). Transportation and Warehousing (average 6.90% = decreased compared to 2019).

3. 3. In 2021, the main sectors contributing are 1). Provision of Accommodation and Food and Drink (average 16.6% = decreased compared to 2020); 2). Agriculture, Forestry and Fisheries (average 15.77% = increase compared to 2020); 3).Construction (average 10.97% = increase compared to 2020); 4). Wholesale and Retail Trade; Car and Motorcycle Repair (average 9.2% = increase compared to 2020); and 5). Information and Communication (average 6.7%, increase compared to 2019 and 2020)

4. 4. In 2022, the main sectors contributing are 1). Provision of Accommodation and Food and Drink (average 17.8% = increase compared to 2021); 2). Agriculture, Forestry and

Fisheries (average 14.7% = decrease compared to 2021); 3).Construction (average 10.67% = decrease compared to 2021); 4). Wholesale and Retail Trade; Car and Motorcycle Repair (average 9.20% = relatively constant from 2021); and 5). Transportation and Warehousing (average 7.64% = increase compared to 2021).

5. In 2023, the main sectors contributing are 1). Provision of Accommodation and Food and Drink (average 19.70% = increase compared to 2022); 2). Agriculture, Forestry and Fisheries (average 13.62% = decrease compared to 2022); 3). Transportation and Warehousing (average 10.12% = increase compared to 2022); 4). Construction (average 9.8% = decrease compared to 2022); 5). Wholesale and Retail Trade; Car and Motorbike Repair (average 8.9% = decrease compared to 2022).

The contribution to Bali Province's GRDP almost consistently comes from the 5 sectors mentioned. Only the transportation and warehousing sector was once not included in the top 5 main sectors that contributed to Bali's GRDP, replaced by the information and communications sector, which happened in 2021. If you look at existing trends, the main sector always contributes the most The majority comes from the accommodation and food and drink provision sectors. Its contribution decreased during the peak of the pandemic and early recovery period, and again showed an increasing trend in 2022 and 2023. On the other hand, the contribution of the agriculture, forestry and fisheries sectors increased during the peak of the pandemic and early recovery period, but has decreased again in the last two years. . Based on this data, and cross-checking it with economic growth, it is suspected that the decline in economic growth during the pandemic was due to the decreasing contribution of the accommodation and food and drink provision sector. Poverty will peak in 2022 when the contribution of agriculture is increasingly weakening, while the accommodation and food and drink provision sector is improving, but has not been able to provide decent wages to workers in that year because it is still in the recovery stage.

Furthermore, the lowest unemployment occurred before the pandemic, then increased drastically and reached its peak during the pandemic and gradually fell during the recovery period. However, the unemployment rate in Bali is currently still higher than before the pandemic. If you look at the period before the pandemic, there seems to be a relationship between poverty, economic growth and unemployment. When the percentage of poverty is low (almost the same as the situation at the peak of the pandemic), followed by the highest economic growth in line with what was stated by Adams, (2003); Dollar & Kraay, (2001); Fields, (1989); Skare & Druzeta, (2016) [5, 20–22], that economic growth generally reduces poverty, although the amount varies depending on factors such as growth patterns and the absorption capacity of the poor. Then, when poverty is low it is also followed by the lowest percentage of unemployment which is in accordance with the findings of Adenike, (2014); Dahliah & Nur, (2021); Mulyadi, (2017); Oktaviani & A'yun, (2021) [23–26] who stated that unemployment is proven to have a positive and significant impact on poverty levels, which shows that the lower the unemployment rate, the lower the poverty level. However, after that, the relationship between these three variables became unclear. During the pandemic, the percentage of poverty was the lowest, while economic growth was also the lowest, and unemployment was the highest.

If we only look at the relationship between unemployment and economic growth during this period, it seems to be in accordance with the existing general theory, namely when a high unemployment rate is followed by a low economic growth rate. Ideally, in theory, poverty during this period would also be the highest, but this is not the case. In the recovery years, economic growth has improved, followed by a decrease in unemployment, but poverty has actually increased. This will happen until 2022. In 2023, poverty will decrease followed by a decrease in the percentage of unemployment, but economic growth will be constant. Observing these existing dynamics, the phenomenon of poverty in Bali is unique, because it is not influenced by economic growth and is also not determined by unemployment, especially during the pandemic and after. At the peak of the pandemic, poverty actually decreased, allegedly because people still had sufficient savings, while when economic conditions got better, people's savings became thinner, and economic conditions were not immediately able to provide decent wages. This is thought to make people's purchasing power weak and they easily become poor.

If detailed by district, the dynamics of the three variables analyzed occur in several regions as presented in table 5 below.

Table 5. Levels of poverty, economic growth and unemployment during the pre-pandemic, pandemic and recovery periods in various districts in Bali

Category	% Poverty			Economic Growth			% Unemployment		
	Pre-Pandemic	Pandemic	Recovery	Pre-Pandemic	Pandemic	Recovery	Pre-Pandemic	Pandemic	Recovery
Highest	• Karangasem • Klungkung	• Karangasem • Buleleng	• Karangasem • Buleleng	• Badung • Denpasar	• Bangli • Karangasem	• Klungkung • Bangli • Badung • Denpasar	• Buleleng • Denpasar	• Denpasar • Gianyar	• Denpasar • Badung • Gianyar • Buleleng
Lowest	• Badung • Denpasar	• Badung • Denpasar	• Badung • Denpasar	• Klungkung • Bangli	• Badung • Denpasar	• Badung • Tabanan • Bangli • Karangasem	• Badung • Karangasem	• Bangli • Karangasem	• Bangli • Karangasem • Klungkung

Source: BPS Bali, 2020-2024

Ideally, when the poverty level is high then economic growth is low and the unemployment rate is high, conversely when the poverty level is low then economic growth is high and the unemployment rate is low. Referring to the table above, it seems that ideal conditions do not occur.

In the pre-pandemic period, the highest percentage of poverty was in Karangasem and Klungkung, but the lowest economic growth was only in Klungkung, not in Karangasem. Likewise, the percentage of unemployment is actually highest in Buleleng and Denpasar. What consistently happened before the pandemic was only in Badung, when this region had the lowest percentage of poverty, followed by the highest economic growth with the lowest percentage of unemployment.

During the pandemic, the relationship between these three variables using a regional perspective was also unclear. The highest poverty during this period occurred in Karangsem and Buleleng, but the lowest economic growth was in Badung and Denpasar, and the highest percentage of unemployment was in Denpasar and Gianyar. If you only look at the relationship between the two variables at this time, it seems that in Denpasar there is a consistent relationship when economic growth is low, followed by a high percentage of unemployment, but this still does not make it the poorest. What is also interesting at this time is Karangasem, when this region had the best economic growth (the lowest minus figure along with Bangli), but the poverty was actually the highest. Karangsem seems to be the region least economically affected by the pandemic along with Bangli, but poverty has existed since before the pandemic. Another thing that is also interesting is Badung and Denpasar, where economic growth is the lowest (most affected by the pandemic), but still have the lowest percentage of poor people. However, in that year the two hardest hit areas experienced an increase in the percentage of poor people, especially Badung which experienced the highest increase compared to other districts.

During the recovery period, the relationship between the three variables is also not so strong and clear. The highest percentage of poverty still occurs in Karangasem and Buleleng, but the lowest economic growth is only consistent with Karangasem, not Buleleng. The state of poverty in Buleleng is only consistent with its high percentage of unemployment. Then, Badung and Denpasar have the lowest percentage of poverty, followed by high economic growth, but this is not in line with the percentage of unemployment which is actually high. Regions that have high levels of economic growth are also accompanied by high unemployment.

4 Conclusion

The conclusion from the findings above is an effort to achieve the aim of this research, namely to look at the relationship descriptively between poverty, economic growth and unemployment from a spatial perspective, which is explained as follows. The region with the lowest economic growth during the pandemic, the poverty rate is not the highest (in fact it is still the lowest). However, in that year the two hardest hit areas experienced an increase in the percentage of poor people, especially Badung which experienced the highest increase compared to other districts. When economic growth worsens (from 2019 to 2020), economic growth in all regions in Bali is minus. This was followed by an increase in the percentage of unemployment in all regions without exception. In percentage terms, at the peak of the pandemic, Denpasar was the region with the highest percentage of poverty, but if you look at the increasing trend in all regions, Badung is the region with the highest spike in poverty percentage. This is consistent with the level of economic growth which fell the most during the pandemic. During the recovery

period, economic growth has improved, and this has been followed by a decrease in the percentage of unemployment that occurs in all regions

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