Characteristics, Fertility, And Mortality Of The Population In Teluk Bintuni Regency, West Papua Province

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Abstract.
This article aims to reveal the characteristics, fertility, and mortality of the population in Teluk Bintuni Regency, West Papua Province. This study applies two approaches, namely (1) a theoretical approach and (2) a methodological approach. The theoretical approach is an exploration of the sociological theory of fertility (Davis and Blake, 1974) and the economic theory of fertility (Becker, 1976), while the methodological approach is a descriptive approach with an explanative dimension. Based on a demographic perspective, this research applies scientific principles to population data, as well as adapts the steps of scientific studies in other fields of science. This study follows the procedures of (1) providing data, (2) analyzing data, and (3) presenting the results of data analysis. The data used in this study are derived from primary data and secondary data. Primary data are in the form of data derived from the results of the Census of Indigenous Papuans (OAP) of Teluk Bintuni Regency, which was conducted by the author in 2019, and secondary data, which are derived from the data published by the Central Statistics Agency (BPS) of West Papua Province and Teluk Bintuni Region. This article focuses on the efforts to reveal the "Characteristics, Fertility, and Mortality of the Population in Teluk Bintuni Regency, West Papua Province".

Keywords: *Characteristics, fertility, mortality, Teluk Bintuni.*

I. INTRODUCTION

In a certain zone or area, the population component becomes one of the most important elements in the development of a complete human being. The development of an area is often faced with population problems, which continuously give rise to the impact of very large and rapid population growth. According to Mantra [1], population growth in a country is essentially based on 3 (three) main components, namely (1) fertility, (2) mortality, and (3) migration. In line with the Mantra's view, these 3 (three) components of population growth also occurred in most of the new autonomous regions (DOB) in the reform era in Indonesia.In addition, according to Severus [2], the government intervention as a control of fertility levels by suppressing infant mortality is a form of concern for the quality of life of the community. The government often

supports its programs through related agencies by encouraging public awareness of the importance of controlling the population growth. The population density can psychologically influence a person to control the birth rate. The phenomenon is related to population density, forming a mindset and community preference in determining the number of children or the quality of children's education and knowledge.

Referring to the views of Micevska (2001) [3], and Severus [2], fertility can also affect economic growth. When the number of children in each family is large, the attention given to the children by their parents is low, as a consequence, it would result in a decrease in the level of human capital output. On the other side, when the size of a family is small, then a high level of human capital quality would produce highly productive workers, which in turn accelerating output growth and affect economic growth. Likewise, the investment made by parents in their children when the number of children they have is relatively large, the costs incurred by parents will also be greater, but when the number of family members tends to be small, the investment that may be incurred by parents will be optimal and children will receive better education and training to acquire the skills needed in the future.Related to the impact of population growth above, Teluk Bintuni Regency in West Papua Province is one of the new autonomous regencies, which is also experiencing population problems both at the level of fertility and mortality.

Teluk Bintuni Regency was born based on Law Number 26 of 2002 concerning the Establishment of Sarmi Regency, Keerom Regency, South Sorong Regency, Raja Ampat Regency, Bintang Mountains Regency, Yahukimo Regency, Tolikara Regency, Waropen Regency, Kaimana Regency, Boven Digoel Regency, Mappi Regency, Asmat Regency, Teluk Bintuni Regency, and Teluk Wondama Regency in Papua Province [4].Based on the narratives above, this study attempts to examine the topic from a different point of view, by focusing on the problems of this study as follows. (1) demographic characteristics of the region and population, (2) fertility, and (3) mortality. To answer the three focus problems above, this study is entitled: "Characteristics, Fertility, and Mortality of the Population in Teluk Bintuni Regency, West Papua Province".

II. LITERATURE REVIEWS AND CONCEPTUAL FRAMEWORKS

A review of the previous studies related to the Characteristics, Fertility, and Mortality of the Population in Teluk Bintuni Regency, West Papua Province in the form of literary sources or the results of previous research as a comparison to this study is briefly described as follows.

First, Surnaryanto, Hery with the title: "Analisis Fertilitas Penduduk: Provinsi Bengkulu (The Analysis of Population Fertility: Bengkulu Province)". This study describes the population development in Bengkulu Province by analyzing the socio-demographic factors related to fertility. Based on data analysis, it was found that during the period of four decades (1970-2010), the population of Bengkulu Province

experienced a significant increase, as many as three times. In addition to high fertility, the acceleration of the population growth is also correlated with the high number of immigration, in which Bengkulu is still one of the main targets of the transmigration program until now [5].

Second, Surnaryanto, Hery with the title: “Dampak Fertilitas Terhadap Kebutuhan Dasar Keluarga (Studi Kasus Pada Keluarga Dengan Jumlah Anak Lebih Dari Dua di Desa Pondok Kelapa, Kabupaten Bengkulu Tengah). The results of this study show that generally, the families perceive children, not as a burden to the family. In other words, the number of children does not affect the family's efforts to meet these basic needs, such as housing, food, health, and education. This reality indicates that the family’s perception of the value of children is still very strong, in which in traditional societies children are more often seen from a socio-cultural perspective, than from an economic perspective. Children are considered as sustenance or blessing so that they must be addressed with gratitude [6].

Third, Alfana, Muh. A.F, Widha A.N.P Hanafi, and Maulida Iffani with the title: "Mortalitas di Indonesia (Sejarah Masa Lalu dan Proyeksi ke Depan)". This study examines the dynamics of changes in mortality parameters in Indonesia. These parameters are used to see how the trend of development in the past year, current achievements and projections in the future. The parameters of the mortality used in this study include (1) infant mortality rates, (2) child mortality rates, and (3) life expectancy. These three parameters are negative indicators that are often used as a benchmark in seeing the achievement of human development, especially in the field of mortality [7].

Fourth, Sinaga, Lennaria; Hardiani and Purwaka Hari Prihanto with the title: “Faktor-faktor yang mempengaruhi tingkat fertilitas di perdesaan (Studi pada Desa Pelayangan Kecamatan Muara Tembesi Kabupaten Batanghari). This study analyzed the factors which affect fertility in rural areas by taking the case of the Pelayangan Village, Muara Tembesi District, Batanghari Regency. This study uses a survey method, while the sample consisted of women of childbearing age in the village being studied. The analytical tool used is path analysis. The results of the analysis indicated that simultaneously women's education, family income and age at first marriage had a significant effect on fertility. Partially, based on path analysis, the results show that age at first marriage has a negative effect on fertility [8].

Fifth, Nasrullah with the title: "Pengaruh Migrasi Dan Faktor Sosial Ekonomi Demografi Terhadap Fertilitas di DKI Jakarta". This study examines the correlation between development and changes in various fields to population displacement. Changes in population movement (migration) and socio-economic and demographic factors in society are assumed to affect the changes in fertility patterns and behavior. This study aims at determining the effect of migration factors and socio-economic demographics on fertility in DKI Jakarta. The analysis was carried out using the Multinomial Logistics Regression method. The results of the analysis show that

migrant women are more likely to have two to three children, while non-migrant women are more likely to have one child and four or more children. Migration significantly affects fertility in women who have four or more children. Migrant women tend to be 0.76 times lower than non-migrant women in having four or more children than those without children. In addition, it was found that there was a significant influence of socio-economic demographic factors on fertility [9].

The description of the conceptual framework on the Characteristics, Fertility, and Mortality of the Population in Teluk Bintuni Regency, West Papua Province can be described as follows. First, characteristics are references to special characteristics or markers that distinguish the conditions of certain areas from the other areas [10]. In this study, based on population perspective, identity means the determination of information related to population in an area which includes geographical, demographic, socio-cultural and other demographic conditions.

Second, fertility (live birth) means the ability to produce children or fertility; the occurrence of the fertilization process, pregnancy [10]. The definition of fertility can be explained in more detail based on a population perspective, as the process of releasing a baby from the womb of a woman, with the baby's characteristics such as breathing, still alive, has a heartbeat, pulse, the umbilical cord has been cut or the placenta is attached and is considered alive. The basic constructions that may affect fertility are (1) Natural Increase, in which the determinants of population growth are the amount of natural population increase (births and deaths), and (2) Reproduction Rates, or high rate due to the high female fertility rate.

Third, mortality is natural, in which every human being will eventually die; the average number of deaths of residents in a region or area; and the proportion of deaths caused by certain diseases; death [10]. In addition, according to Mantra, mortality is one of the three components of the demographic process which affects the population structure, the other two components are birth (fertility) and population mobility [1]. Several concept constructions related to mortality according to Alfana, Muhammad A.F., et al, namely (1) *neonatal death*, is the deaths which occur to infants who are not yet one month old, (2) *stillbirth* which is also called fetal death is the death that occurs before the complete expulsion of the baby from the mother at birth regardless of the duration in the womb, (3) *post-neonatal* is the death of children aged between one month and less than one year, and (4) *infant death*, is the death of a child before reaching one year of age.

III. METHODS

This study applies two approaches, namely (1) a theoretical approach and (2) a methodological approach. The theoretical approach is an exploration of the sociological theory of fertility [11], and the economic theory of fertility [12], while the methodological approach is a descriptive approach with an explanative dimension. Descriptive studies attempt to systematically describe the facts and characteristics of

the target object or subject accurately, namely to reveal the population data not only as what is seen but more than that to reveal the meaning of the data it contains. Based on a demographic perspective, this research applies scientific principles to population data, as well as adapts the steps of scientific studies in other fields of science. This study follows the procedures of (1) providing data, (2) analyzing data, and (3) presenting the results of data analysis.

IV. DATA SOURCE

The data used in this study are sourced from primary data and secondary data. The primary data is in the form of data derived from the results of the Census of Indigenous Papuans (OAP) of Teluk Bintuni Regency conducted by the writer in 2019, while the secondary data is in the form of published data from the Central Statistics Agency (BPS) of West Papua Province and Teluk Bintuni Regency. The BPS data is used to see the trends in population conditions in Teluk Bintuni Regency, such as the population, birth rates, and population growth rates.

Table 1. Research Data and Sources

No.	Data Type	Data Source	Data Origin
1.	Primary Data (Field Data)	Census Report of Indigenous Papuans (OAP) Teluk Bintuni Regency (2019) [13]	Hugo Warami, et al
		Teluk Bintuni Regency Population Profile Report (2019) [14]	Hugo Warami
2.	Secondary Data (Library Study Data)	Teluk Bintuni Regency in Figures 2018 [15]	BPS Teluk Bintuni Reg.
		Teluk Bintuni Regency in Figures 2019 [16]	BPS Teluk Bintuni Reg.
		Teluk Bintuni Regency Development Index 2018 [17]	BPS Teluk Bintuni Reg.
		Regional Statistics of Teluk Bintuni Regency 2019 [18]	BPS Teluk Bintuni Reg.
		West Papua in Figures 2019 [19]	BPS Papua Barat Prov.
		Regional Profile of Teluk Bintuni Regency (2015) [20]	Arif Rahman Hakim

Source: Author Identification Results, 2020

V. RESULT AND DISCUSSION

Regency Demographic Characteristics

Teluk Bintuni Regency, West Papua Province, according to Warami, et al [13], has an area that is directly adjacent to 6 (six) regencies, spread over 2 (two) provinces, namely (1) South Sorong Regency, (2) Manokwari Regency, (3) Fak-fak Regency, (4)

Kaimana Regency, (5) Teluk Wondama Regency, West Papua Province, and (6) Nabire Regency, Papua Province. The boundaries of Teluk Bintuni Regency are as follows: (1) On the North: Aifat Timur Regency, Maybrat Regency, Kebar Regency, Testega, Meayambouw and Sururey Manokwari Regency, (2) South: Kaimana District and Teluk Arguni District, Kaimana Regency and Kokas District, Fak-fak Regency, (3) West: Kokoda District, South Sorong Regency and Aifat Timur District, Maybrat Regency, and (4) East: Ransiki District, South Manokwari Regency, Wamesa District, Windesi District, and Wasior District, Teluk Wondama Regency and Yaur District, Nabire Regency.

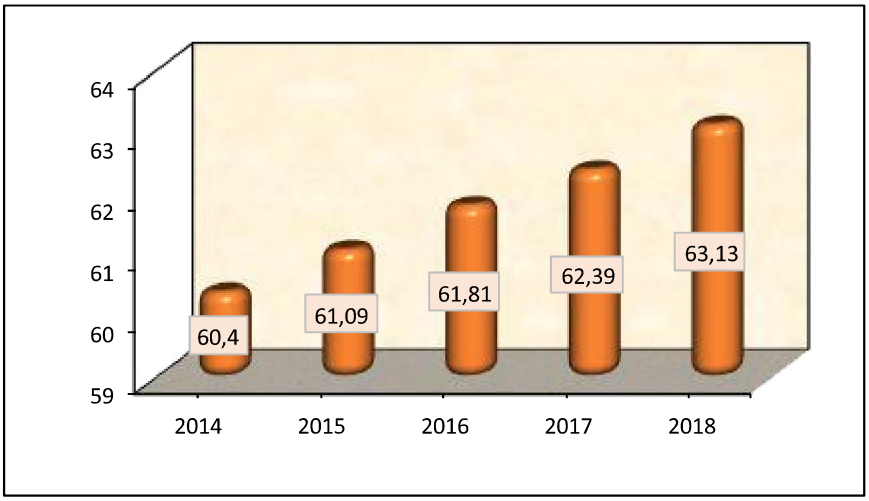
Teluk Bintuni Regency can be grouped into 3 (three) regions, based on the characteristics of resources, routes between regions, and growth centers as follows. *First*, based on the characteristics of existing resources, it consists of: (1) The coastal areas around the bay are characterized by beaches, estuaries, and deltas that are overgrown by coastal forests, mangrove forests, nipah, and sago/mixed forests. The region is inhabited by residents of the Aranday, and Babo districts; (2) Lowland areas are characterized by lowland forests, rivers, and deltas. This area is inhabited by some residents in the Bintuni district; and (3) Highland areas are characterized by forests, rivers, and lakes.

Second, based on inter-regional traffic routes, include: (1) Areas that have access to the sea and river routes such as Babo District and Bintuni District that have access to Sorong regency/city; (2) Areas that have road access such as Bintuni City in Bintuni district that have access to Manokwari regency/city; and (3) Areas that have access to airlines such as Babo in Babo Regency and Bintuni City in Bintuni Regency are areas which are located on economic roads that have access to towns/villages in Bintuni Bay with other areas in West Papua Province.

Third, based on the growth centers, namely the areas used as agglomeration (urban development in certain areas) including the city of Bintuni and Babo. Some areas that are developing into new growth centers are the Sumuri-Kelapa Dua region, Tanah Merah-Saengga, and the Aranday area in the city.

Population Demographics Characteristics

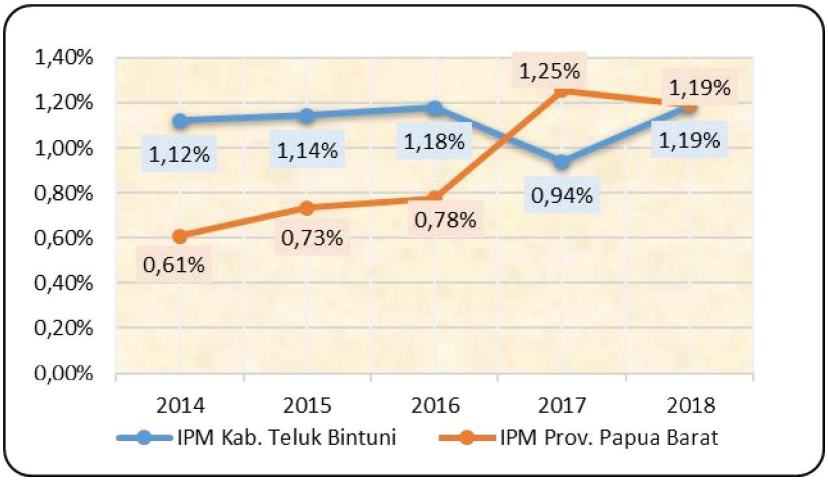
The Human Development Index (IPM) is one of the indices that measure the level of human development based on three indicators, namely health, education and welfare. In 2018, the achievement of the IPM of Teluk Bintuni Regency reached 63.13 and is in the sixth position in West Papua Province. The IPM of Teluk Bintuni Regency for the last 5 (five) years (2014-2018) continues to increase. In 2018, the IPM Teluk Bintuni Regency experienced an increase of 1.19 percent from 2017. The lowest decrease in IPM occurred in 2017, with an increase of 0.94 percent from 2016.



Source: Regional Statistics of Teluk Bintuni Regency 2019

Fig 1. The IPM of Teluk Bintuni During 2008-2013

Based on Figure 1 above, it can be seen that the increase in the IPM of Teluk Bintuni Regency during 2014-2016 is higher than the increase in the IPM of West Papua Province. However, in 2016-2017, the IPM of Teluk Bintuni Regency experienced a decrease of 0.94 percent which is lower than the increase in the IPM of West Papua Province by 1.25 percent.



Source: West Papua in Figures 2019

Fig 2. Changes in HDI of Teluk Bintuni Regency and West Papua 2014– 2018

According to UNDP, a region's IPM can be grouped into four categories, namely: (1) Very High IPM if IPM ≥ 80.00 (2) High IPM if 70.00≤ IPM <80.00, (3) Medium IPM if 60 ≤ IPM <70.00, and (4) Low IPM when IPM <60.00. Based on this category, Teluk Bintuni Regency belongs to the group of regions with a moderate IPM category.

Source: BPS West Papua 2019

Fig 9. The Average ALH by Age Group of Women in Teluk Bintuni Regency in 2018

Based on Figure 9 above, the average ALH of women who are older (45-49 years) is higher than the average ALH of women who are younger (15-19 years). The average ALH of women aged 15-19 years is 0.24 and the average ALH of women aged 45-49 is 3.74. Young women have lower ALH because the reproductive period of women in this age group has just begun, while in the 45-49 year age group, female reproduction has been going on for a long time. When compared with the average ALH in West Papua in all age groups, it can be seen that the average ALH in Teluk Bintuni in 2018 for women aged 25-29 years and women aged 35-39 years was higher, while in other age groups the average of ALH in Teluk Bintuni Regency is lower than the average ALH in West Papua.

Source: BPS Teluk Bintuni 2019

Fig 10. The Percentage of Women Aged 10 Years or Older who have had Marriage according to Age at First Marriage in Teluk Bintuni Regency in 2015-2018

Based on Figure 10 above, it can be stated that the Singulate Median Age at First Mariage (SMAM) is an indicator used to see the average age at which women first married (legally and biologically). In Teluk Bintuni regency, women generally get married at the age of 19-24 years. This can be seen in the percentage of women who are married at that age which is higher (> 40%) in the 2014-2018 period. However, in 2018, the percentage of women who were married at the age of 19-24 years decreased compared to 2017, on the contrary, the percentage of women who were married at the age of 16-18 years experienced an increase in the same year. This symptom shows that there is a tendency for women in Teluk Bintuni Regency in 2018 to marry at a young age. This will have an impact on the risk of childbirth. The younger the age of a woman's first marriage, the greater the risk faced for the safety of both mother and child. In addition, the age at first marriage also has a major influence on the level of female fertility and the population, as a result of the length of time for female reproduction.

Population Mortality in Teluk Bintuni Regency

The infant mortality rate is the number of deaths of children under one year of age per 1000 live births. The IMR of Teluk Bintuni Regency in 2018 was 4.53 percent, meaning that there were 4 or 5 infant deaths out of 1000 live births in 2018. This IMR figure has decreased compared to the IMR figure in 2017 (24.90 percent). The number of babies who died in Teluk Bintuni regency during 2018 was recorded as 6 babies. This number decreased by 550 percent or decreased by 39 babies from 2017. The number of babies who died was more in Kamundan District by 0.33 percent of the total babies who died or as many as 2 babies.

Table 6. The Number of Infants Died by District in Teluk Bintuni Regency in 2018

NO	District	Number of Dead Babies (People)	Ratio (%)
1.	Farfurwar	0	0
2.	Babo	0	0
3.	Sumuri/Tofoi	0	0
4.	Tanah Merah	0	0
5.	Kaitaro	1	3,33
6.	Kuri	0	0
7.	Wamesa (Idoor)	0	0
8.	Bintuni	0	0
9.	Manimeri	1	0,53
10.	Muturi	0	0
11.	Tuhiba	0	0
12.	Dataran Beimes	0	0
13.	Tembuni	1	7,14
14.	Aranday	0	0
15.	Kamundan (Kaltami)	2	6,67
16.	Weriagar	0	0
17.	Moskona Selatan	0	0
18.	Moskona Barat	0	0

19.	Merdey	1	6,25
20.	Masyeta	0	0
21.	Moskona Utara	0	0
22.	Moskona Timur	0	0
21.	Rumah Sakit	0	0
Teluk Bintuni		6	100

Source: Teluk Bintuni Regency in Figures 2019

In addition, there are other conditions such as the *Neonatal Death Rate* (NDR) and *Post Neonatal Death Ratio*. *Neonatal Death Rate* (NDR) is a death that occurs before the baby is 1 month or 28 days old. Based on data from the Bintuni Bay District Health Office, the number of NDRs in Bintuni Bay Regency in 2018 was 44 babies. While the *Postneonatal Death Ratio* is the death that occurs in infants aged 1 month or 28 days per 1,000 births in a certain period. Based on 2018 Health Service data, the post neonatal death ratio in Teluk Bintuni Regency in 2018 was 27, meaning that there were 27 or 28 babies aged 1 month or 28 days who died in 1,000 births in a certain period. The number of deaths of children under five in Teluk Bintuni Regency in 2018 was 8 children. This number has decreased compared to 2017 with the number of under-five deaths as many as 53 children. The mortality rate for children under five in 2018 was 0.8 percent, meaning that there were 0 or 1 children under five who died in 1000 births of children under five in the 2018 period. This figure has decreased compared to 2017 with a CMR figure of 5.30 percent.

VI. CONCLUSION

Based on the results of the description and analysis of the Characteristics, Fertility, and Mortality of the Population of Teluk Bintuni Regency, West Papua Province, it can be concluded several things as follows. *First*, the characteristics of the population in Teluk Bintuni Regency include (1) district demographics, (2) population demographics, (3) health services, (4) education services, (5) economic services, and (6) employment services. *Second*, the fertility of the population of Teluk Bintuni Regency refers to the average number of children born to a woman during her fertile age (15-49 years).

In 2018 the fertility rate was 2.57, meaning that on average women in Teluk Bintuni Regency had 2 or 3 children during their fertile age (aged 15-49 years). The total fertility rate of Teluk Bintuni Regency is slightly lower than the total fertility rate of West Papua Province with an average of 2.73. *Third*, the population mortality of Teluk Bintuni Regency refers to children under one-year old per 1000 live births. The mortality rate in Teluk Bintuni Regency in 2018 was 4.53 percent, meaning that there were 4 or 5 infant deaths out of 1000 live births in 2018. This figure has decreased compared to the figure in 2017 of 24.90 percent.

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