THE CONTRIBUTION OF ANIMAL HUSBANDRY SECTOR TO BINJAI CITY REGIONAL INCOME DURING ON PANDEMIC COVID 19.

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Abstract
The modern era demands the continuous advancement of the economic wheel, and local governments must have their own sources of revenue to reduce reliance on the central government. Therefore, increasing income from various sectors, including the animal husbandry sector, becomes crucial. One of the revenue sources from the animal husbandry sector is through livestock slaughterhouse levies, which contribute to regional income. This study employs a case study method, using time series data as secondary data. The extent of the animal husbandry sector's contribution to regional income was assessed with the contribution analysis method. The growth analysis of animal husbandry sector income is conducted to understand its yearly growth pattern. Lastly, multiple regression analysis is employed to identify factors that significantly influence the animal husbandry sector's income. The findings reveal that the contribution of the animal husbandry sector remains relatively low due to the impact of the Covid-19 pandemic, resulting in reduced production. Income growth has also declined due to the implementation of Covid-19 restrictions, making production, distribution, and marketing challenging. Nevertheless, among the observed factors, the number of livestock slaughtered at the slaughterhouse, meat production, and population growth significantly positively affect the animal husbandry sector's income.
Keywords: Animal Husbandry, Regional Income, Contribution of Husbandry, Income Growth, Binjai City

KONTRIBUSI SEKTOR PETERNAKAN TERHADAP PENDAPATAN DAERAH KOTA BINJAI SELAMA PANDEMI COVID-19.

Abstrak
Era modern menuntut roda ekonomi untuk terus bergerak maju dan pemerintah daerah harus memiliki sumber pendapatan sendiri untuk mengurangi ketergantungan pada pemerintah pusat. Oleh karena itu, peningkatan pendapatan dari sektor-sektor yang dimiliki pemerintah daerah menjadi penting, termasuk sektor peternakan. Salah satu sumber pendapatan dari sektor peternakan adalah retribusi rumah potong hewan yang berkontribusi pada pendapatan daerah. Penelitian ini menggunakan metode studi kasus dengan jenis data time series yang digunakan adalah data sekunder. Analisis kontribusi digunakan untuk menganalisis sejauh mana sektor peternakan berkontribusi terhadap pendapatan daerah. Selain itu, metode pertumbuhan pendapatan sektor peternakan digunakan untuk mengetahui pertumbuhan pendapatan sektor tersebut setiap tahun. Analisis regresi berganda digunakan untuk mengetahui faktor-faktor apa saja yang mempengaruhi pendapatan sektor peternakan. Hasil penelitian menunjukkan bahwa kontribusi sektor peternakan masih rendah karena dampak pandemi Covid 19 yang menyebabkan penurunan produksi. Selain itu, pertumbuhan pendapatan juga menurun karena penerapan PPKM selama pandemi yang mengakibatkan kesulitan dalam produksi, distribusi, dan pemasaran. Namun, dari ketiga faktor yang diamati, ditemukan bahwa jumlah ternak yang dipotong di RPH, produksi daging, dan pertumbuhan populasi adalah faktor yang berpengaruh positif secara signifikan terhadap pendapatan sektor peternakan.
Kata Kunci: peternakan, pendapatan daerah, kontribusi peternakan, pertumbuhan pendapatan, Kota Binjai

INTRODUCTION

Modern era requires the economic wheels to grow faster. Indonesian government pushes their regional government to not depend their economy on the central government., but to self-funde themselves using their own regional income. However, in order to provide a better service, the regional government must have a better economic finance, human resource, and regional management practice (Berwulo et al., 2007) as regional government are expected to improve their sector income to fund their region's development (Pradnyana & Erawati, 2016).

Binjai, a city in North Sumatra Province, Indonesia, has a much potential as a connector between two big North Sumatran cities: Aceh and Medan. The animal agriculture sector,

especially its slaughterhouses, is one of Binjai City's sources of income. Khusaini (2018) described slaughterhouse as the place that facilitates livestock slaughter, including the animal's health pre-slaughter and the after-product. Slaughter service charge varies based on the animal type: cows and horses are charged 25,500 IDR/head, pigs are charged for 12,000 IDR/head, and sheeps and goats are charged for 3,000 IDR/Head (Binjai city Regulation No.15, 2008). The purpose of the study was to know: The contribution of animal husbandry sector to the regional income; The growth of animal husbandry sector income; Factors affecting the income from the animal husbandry sector. The author hypothesized that Binjai City's animal husbandry sector significantly affects its regional income.

MATERIALS AND METHODS

The study employed a case study design, allowing for intensive, precise, and in-depth research within the institution and organization (Fitrah & Luthfiyah, 2017). Conducted at the Binjai Statistic Centre between December 21st 2022 and January 21st 2023, the research utilized purposive sampling as the sample technique and relied on secondary data. The secondary data, collected in a time series format from 2019 to the maximum available annual data in 2021, encompassed two key variables: Binjai's regional income for 2019 to 2021, and Binjai's animal husbandry sector income for the same period. In the analysis, multiple regression was employed to examine the significant factors influencing the animal husbandry sector income. The variables tested in the regression included the number of livestock slaughtered in the slaughterhouse, meat production, and livestock population in Binjai City.

The quantitative data in this study were analyzed to determine the contribution of the animal husbandry sector to its regional income. Fitria (2019) explained that contribution analysis is used to know the proportional part of the overall to all income using the following formula:

$$X \frac{y}{z} \times 100\%$$

X = Percentage of contribution of animal husbandry sector income (IDR…./….)
Y = Real number of animal husbandry sector income (IDR…./….)

Z = Real number of regional income (IDR…./….)

To assess the growth of animal husbandry sector income, grow analysis was used. Halim (2004) stated that the growth of income shows the regional strength to achieve success from one period to another, the formula used are:

$$G_X = \frac{Xt - X(t-1)}{X(t-1)} \times 100\%$$

Gx = Animal husbandry sector income growth (Rp…./….)
Xt = Real number of income from the animal husbandry sector that year (Rp…./….)
X(t-1) = Real number of income from the animal husbandry sector previous year (Rp…./….)

To know what factor affects the animal husbandry sector income, multiple regression method with general least square and path analysis were used to know how the independent variables affect the dependent variables. The formula used were:

$$Y = f(X_1, X_2, X_3, ….X_n)……….(1)$$

Y = The animal husbandry sector's regional income
X_1 = Number of livestock slaughtered in Binjai's slaughterhouse
X_2 = Total meat production in Binjai
X_3 = Livestock population in Binjai

To know how far an independent variable affects dependent variables, the T-test analysis was used. If the T-count is higher than T-table value, it can be concluded that the independent variable affects the dependent variable. From the statistic used above, the author hypothesized that the animal husbandry regional income affects the regional income.

RESULTS AND DISCUSSION
Animal Husbandry Income Growth

The animal husbandry sector is vital for the agricultural economy and livelihoods, involving the breeding and raising of animals for various products. Table 1. shows the animal husbandry sector income growth from 2019 to 2021, offering insights into its performance and trends. Factors such as product demand, market price, efficiency, and policies influence income fluctuations.

The data shows that the animal husbandry sector income fluctuated over the years. It

decreased by 30,3% between 2019-2020 and another 23,9% between 2020-2021, showing that animal husbandry has a poor performance. This claim is supported by Halim (2007), that regional revenue/income growth lower than 30% surplus is considered unsuccessful. The Covid-19 pandemic is believed to cause this decrease due to its effect on the production of livestock in that region. Zefanya (2020) added that Covid-19 decreases profit, market demand, and causes production, marketing, and distribution problem.

Contribution of Animal Husbandry Sector to Binjai City Regional Income

The animal husbandry sector plays a significant role in shaping the economic landscape of Binjai City, making vital contributions to the city's regional income. As an integral part of the city's agricultural activities, this sector involves the breeding and rearing of livestock for its meat, dairy, and other products. The income generated from animal agriculture practices directly impacts the overall economic well-being of the city and the livelihoods of its residents. Figure 1. visually represents the animal husbandry sector's contribution to Binjai City's regional income, offering valuable insights into its significance and potential trends.

The animal husbandry's contribution also decreased over the years, starting from 0.085% in 2008, and gradually decreasing over the years. This decline was not caused by animal husbandry declining performance, but because of the highly increasing city tax income. In 2019, the animal husbandry sector contributes 0.03% and the number decrease to 0.023% in 2020 and 0.02% in 2021. According to the Ministry of Agriculture's Regulation number 690.900.327 (2006), a sector's contribution to regional income are considered low if it's percentage is lower than 10%. The animal husbandry domain is primarily classified as a cultivation industry rather than a substantial income receptor despite its critical importance in various agricultural activities. Binjai's main source of income is tax, especially the restaurant, catering, and café taxes. Decreasing animal husbandry contribution was caused by the Indonesian government's activity prohibition program (PPKM) during the pandemic, which shut down the animal
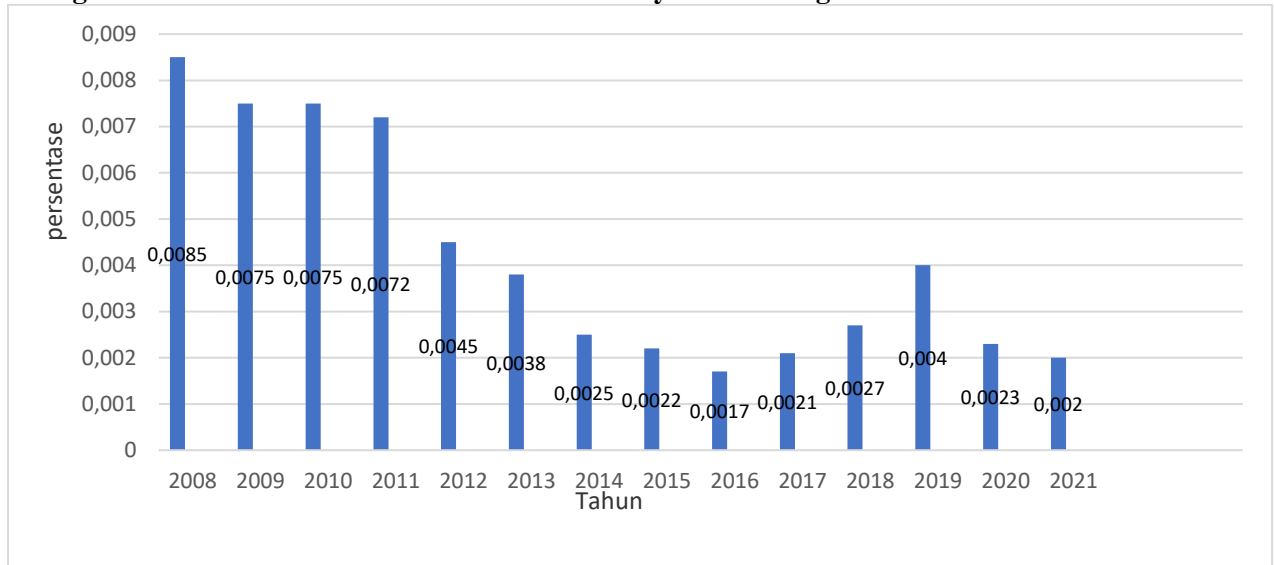
agriculture product markets. But with a lot of potential of the city, the animal husbandry sector needs to improve their products with the help of all parties involed.

Multiple Regression Result

The data used in this study can be seen in the Table 2, and the multiple regression result is shown on Table 3. The multiple regression result of X_1 (number of livestock slaughtered in Binjai slaughterhouse) was 0.44, meaning that for every 1% increase of (X_1) will increase the animal husbandry sector income (Y) by 0.44%. This shows that (X_1) positive effect are significant to animal husbandry sector income with the probability of $0.0000 < 0.05$, which indicate that it was significantly affected. The number of slaughtered livestock directly influences the slaughterhouse profits as it determines the slaughter fee. The number of livestock, age and farmer's experience, production cost, and farm size affect the farm's income (Siregar, 2013).

The multiple regression result of X_2 (meat production) was 0.22, which means that every 1% increase in X_2 also increases the animal husbandry sector income by 0.22%. This shows that X_2 positive impacts were significant with the probability of $0.0000 < 0.05$. More meat produced means higher output produced by the slaughterhouses, and hence higher income. Pancasilawati (2016) also stated tat the increase of meat production will bring more profit to the producer.

The multiple regression result of X_3 (population growth) was 0.64, meaning that for every 1% increase in X_3 also increases the animal husbandry sector income by 0.64%. This shows that X_3 positive impacts were significant with the probability of $0.0000 < 0.05$. The T statistic shows that X_3 is the factor that has the most significant number. Population growth shows the success of livestock production, because the increasing population means more livestock produced and hence increasing number of livestock slaughtered in slaughterhouses. The government had conducted programs to increase cattle number with the involvement of researchers, universities, private sectors, etc. That means population growth is one of the government's main focuses on increasing the animal husbandry sector's income.

Figure 1. The Contribution of Animal Husbandry sector to regional

Table 1. Animal Husbandry sector income

Year	Income (Rupiah)	Year	Income (Rupiah)
2008	139,248,000	2015	175,072,000
2009	128,758,000	2016	167,326,000
2010	141,796,000	2017	171,886,000
2011	190,913,000	2018	207,977,000
2012	218,848,000	2019	275,508,000
2013	188,856,000	2020	183,657,500
2014	180,846,000	2021	139,691,000

Table 2. Variable Data

Livestock	Year	Y	X_1	X_2	X_3
	2008	83,055,000	2,373	350.494	3,188
	2009	76,160,000	2,176	320.6	3,402
	2010	85,190,000	2,434	402.872	3,637
	2011	79,304,000	1,724	321	5,206
	2012	110,262,000	2,397	353.68	6,061
	2013	86,572,000	1,882	278	5,860
Cow	2014	81,236,000	1,766	260.5	5,928
	2015	78,844,000	1,714	252.94	6,050
	2016	69,046,000	1,501	221.4	6,619
	2017	72,588,000	1,570	231.6	6,923
	2018	107,732,000	2,342	435.9	6,960
	2019	147,940,000	2,276	336	6,713
	2020	97,630,000	1,502	222	6,246
	2021	85,095,000	1,263	186	6,064

Livestock	Year	Y	X_1	X_2	X_3
Goat	2008	6,850,000	1,885	18.456	6,253
	2009	5,900,000	1,996	19.554	5,589
	2010	5,540,000	1,785	19.51	6,721
	2011	18,740,000	903	12.4	8,521
	2012	13,980,000	885	9.889	9,055
	2013	9,800,000	658	6.8	5,931
	2014	9,640,000	667	7	8,641
	2015	8,900,000	753	7.2	8,771
	2016	8,810,000	506	6	8,006
	2017	9,100,000	695	7.8	7,532
	2018	9,680,000	700	9.9	8,994
	2019	10,500,000	326	3.99	9,874
	2020	9,785,000	574	6.2	9,003
	2021	8,780,000	609	6.1	8,362
Pig	2008	46,078,000	2,362	121.076	6,201
	2009	43,134,000	2,212	113.387	7,600
	2010	47,814,000	2,568	179.76	8,507
	2011	87,174,000	2,006	175.8	9,742
	2012	87,841,000	3,029	155.3	11,203
	2013	86,159,000	2,971	114.6	6,026
	2014	84,100,000	2,900	148.7	5,305
	2015	80,823,000	2,787	142.9	4,595
	2016	83,520,000	2,880	147.6	4,635
	2017	83,578,000	2,854	146.3	4,665
	2018	83,955,000	2,895	169.3	4,548
	2019	111,293,000	2,446	125.4	3,440
	2020	69,842,500	1,535	78.7	954
	2021	40,631,000	901	46.2	835
Sheep	2008	3,265,000	1,101	8.032	3,306
	2009	3,564,000	708	7.999	5,042
	2010	3,252,000	727	9.12	4,250
	2011	5,695,000	726	9.3	4,318
	2012	6,765,000	501	4.175	6,086
	2013	6,325,000	417	4.1	5,959
	2014	5,870,000	367	3.5	5,116
	2015	6,505,000	274	3.3	3,672
	2016	5,950,000	478	4	6,686
	2017	6,620,000	342	2.7	7,306
	2018	6,610,000	390	4.7	4,685
	2019	5,775,000	185	1.35	5,576
	2020	6,400,000	371	3.4	5,900
	2021	5,185,000	340	3.6	5,079

Table 3. Multiple Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.978935	0.617256	-14.54653	0.0000
X_1 Livestock Number	0.440643	0.097993	4.496673	0.0000
X_2 Meat Production	0.220058	0.091543	2.403870	0.0200
X_3 Population Growth	0.647694	0.085606	7.566015	0.0000

Dependent Variable: Y
Method: Panel Least Squares
Total Panel (Balanced) Observations: 56

CONCLUSION

The research results show that animal husbandry sector contributes 0.3% of Binjay's total income in 2019, 0.23% in 2020 and 0.2% in 2021, with an average yearly decrease of 0.05% every year. The low contribution was due to Covid-19 prohibited animal product markets' activities. The animal husbandry sector income decreased by 30.3% from 2019-2020 and 23.9% from 2020-2021, which also shows that the pandemic in early 2020 affected the animal husbandry sector income negatively. The number of livestock slaughtered in slaughterhouses, meat production and population growth are factors that significantly affects Binjai's animal husbandry sector income. Therefore, improving these three factors can maximalize the animal husbandry sector income in Binjai.

REFERENCES

Berwulo, L.L.D., V.A.J. Masinambow, & P.C. Wauran. (2017). Analisis Pendapatan Asli Daerah (PAD) di Kota Jayapura. *Jurnal Berkala Ilmiah Efisiensi*, 17(1), 22-33.

Fitrah, M. dan Luthfiyah. (2017). *Metodologi penelitian; penelitian kualitatif, tindakan kelas dan studi kasus*. Sukabumi: CV Jejak.

Fitria, M. 2019. *Analisis neraca dan laporan realisasi anggaran pemerintah daerah*. Malang: CV IRDH.

Halim, A. (2004). *Bunga rampai manajemen keuangan daerah*. Revised Edition. Yogyakarta: Unit Penerbitan dan Percetakan (UPP) AMP YKPN.

Halim A. (2007). *Akuntansi sektor publik dan akuntansi keuangan daerah*. Jakarta: Salemba Empat.

Khusaini, M. (2018). *Keuangan daerah*. Malang: UB Press.

Pancasilawati. S. (2016). *Analisis Faktor-Faktor yang Mempengaruhi Pandapatan Peternak*. (Undergraduate Thesis). Medan State University, Indonesia.

Pradnyana, G.A., & N.M.A. Erawati. (2016). Perbedaan pendapatan asli daerah sebelum dan sesudah otonomi daerah di Kabupaten dan Kota Provinsi Bali. *E-Jurnal Akuntansi Universitas Udayana*, 16(3),1885-1911.

Siregar, N. W. P. (2013). *Faktor – faktor yang mempengaruhi usaha ternak sapi potong di Desa Mangkai Lama Kecamatan Lima Puluh Kabupaten Batu Bara Provinsi Sumatera Utara*. (Undergraduate Thesis). Faculty of Economy and Management, IPB University, Bogor.

Zefanya, D., & Mahesa, A. (2020). *Penurunan Pendapatan UMKM Akibat Covid 19*. Kediri: Badan Penerbit Universitas Nusantara.