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Causes of panic selling in broiler farms in Malang raya

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Abstract. Broiler farmers in Malang Raya are not only faced with chicken performance targets that must be achieved. However, farmers are more faced with the powerlessness to determine prices and unpredictable market conditions. It was found that many intermediary traders were speculating to reduce the price of chicken at the farmer level, especially during a pandemic. Farmers experience panic selling by choosing to sell chickens below the Cost of Production (HPP) rather than delaying the harvest schedule. The imbalance between the production price and the sales price causes the farmers to suffer losses. An analysis of the factors causing panic selling was carried out to find out the root of the problem in order to create a solution for chicken price stability at the farmer level. This study used a descriptive research design through filling out questionnaires by 30 respondents. Data analysis used quantitative descriptive and Partial Least Square (PLS-SEM). The results showed that the factors causing panic selling in broiler farms in Malang Raya were internal factors (38.9%), demography (29.9%), the Covid-19 pandemic (15.3%) and external factors (0.6%). External factors were confirmed to significantly strengthen the influence of the Covid-19 pandemic on panic selling with a p-value of 0.035 and a path coefficient of 29.6%. In addition, internal factors were confirmed to significantly strengthen the influence of demography on panic selling with a p-value of 0.083 and a path coefficient of 23.2%. The biggest cause of panic selling is internal factor so that the selection of sapronak used and maintenance management determines the mortality rate of the chickens and the performance of the chickens produced. Because both of them determine the income earned by farmers as a motivation to remain wise in raising livestock.
Keywords: price; panic selling; farmers; intermediary traders; broiler

1. Introduction

Livestock is a subsector that is responsible for meeting food needs for the survival of every person. Broiler chicken is the largest meat contributor commodity, which is 70.14 percent of total production. It was recorded that the average household consumption per capita a week for purebred chicken meat increased by 8.62 percent from 2020. However, the population and meat production of purebred chickens decreased by 1.04 percent from the previous year. According to the prevailing market mechanism, a decrease in the number of chickens coupled with an increase in demand causes the price of chicken to become expensive. This is evidenced by the average price of purebred chicken meat at the consumer level of IDR 34,249 per kg or an increase of 6.30 percent compared to 2020 [1].

The high price of purebred chicken meat at the consumer level does not indicate that prices at the farmer level are also high. Because the price of purebred chickens in independent farmers' cages ranges from IDR 18,500 to IDR 19 thousand per kg, which is far below the cost of goods produced (HPP) and government reference prices (HAP) in accordance with the National Food Agency Regulation (Perbadan Number 5 of 2022) of IDR 21-23 thousand per kg. This is the main reason for the national poultry farming community (KPUN) to hold a rally in front of the East Java Governor's office (4/10), in front

of the offices of the Ministry of Trade, the Ministry of Commerce, the Business Competition Supervisory Commission, and the Indonesian Ombudsman (13/12) and held a demonstration for free chicken distribution in Malang, East Java.

The action was due to the disappointment of independent farmers with the government's lack of attention to broiler trading. The party that connects independent farmers with consumers is an intermediary trader. Many intermediary traders speculate to reduce chicken prices at the independent farmer level, especially during the pandemic [2]. Limited capital makes it difficult for independent farmers to resist low purchase prices from intermediary traders. On the other hand, many plasma farmers experience unfair contracts from partner companies. The price of chicken contracts that are considered profitable in fact does not always produce because of the low quality of sapronak provided by the company. The above conditions cause independent and plasma farmers to experience stress which leads to panic selling.

Panic selling is a humane response to the possibility of large financial losses. Meeting chicken performance targets has burdened farmers because the condition of chickens is different for each maintenance period. In addition, the powerlessness to determine prices, market uncertainty and contractual entanglements make farmers forced to sell chickens below the Cost of Goods Produced (COGS) or below performance targets. Simply put, it is better to sell at a modest price or weight than to delay the harvest schedule which results in swelling feed costs. This is done in order to maintain business continuity even though it has an impact on reducing labor [3] and production capacity [2].

Some previous studies [4] [5] [6] [7] [8] have discussed the roots and causes of panic selling and its influence in the investment world. However, there has been no research related to the factors that cause panic selling in the poultry world, especially broiler chickens where selling prices are prone to fluctuations. This fluctuation is caused by commodity production processes that are uncertain, seasonal, perishable and supply is inelastic [9]. The unpredictable condition of chickens and markets raises a sense of anxiety for independent farmers in particular. If the selling price of chicken is found to be low at harvest time, then there can be a complete deterioration between rational decision making and emotional reactions with psychological torture to try to figure out when income will improve soon.

Efforts in the field need to be made to maintain the stability of broiler prices at the farmer level. Because if broiler farmers are not prosperous, many farmers will go out of business. As a result, there is a decrease in chicken production which has an impact on the inadequacy of animal protein consumption needs, decreased quality of community resources and weakening food security programs. Because broiler chicken meat is the prima donna of consumption and alternative substitutes for beef and fish meat [10]. Internal and external problems faced by farmers will be faced maturely if the government and related parties are committed together in maintaining price stability at the farmer level. The purpose of this study is 1) to identify the factors that cause panic selling in broiler chicken farms in Malang Raya, 2) to know which factors have the greatest influence in the incidence of panic selling, and 3) to know the relationship between the factors that cause panic selling in broiler chicken farms in Malang Raya.

2. Research Methods

This research was conducted in broiler farmers in Malang Raya which includes Malang City, Malang Regency and Batu City. The choice of this place is due to Malang Raya being one of the largest broiler producers in East Java so that panic selling events are possible often. The sampling technique uses probalbility sampling based on the criteria of respondents having breeding experience over 1 year.

The type of data used is primary data and secondary data. Primary data were obtained from direct surveys to farmers in Malang Raya using structured questionnaires. This questionnaire contains 27 questions grouped into 5 sections. The first part consists of 4 questions related to internal chicken performance factors (seeds, feed, medicines and maintenance management). The second part consists of 8 questions related to external factors such as the price of seeds, feed, medicines, selling prices of chickens, access to capital, market breadth, speculation of intermediary traders and natural and artificial disasters experienced by respondents. The third part consists of 8 questions related to the socio-demographic condition of respondents such as age, gender, education, number of family dependents,

employment status, work experience, number of livestock ownership and income of respondents. The fourth part consists of 4 questions related to the influence of the covid-19 pandemic such as negative news, intensity of speculation of intermediary traders, demand for chickens and harvest weight. The fifth part consists of 3 questions related to panic selling events such as motivation to survive running a business, market opportunities and the impact of government policies. The data obtained were analyzed using quantitative descriptive analysis as well as PLS-SEM analysis using outer model and inner model. The PLS test is able to test many independent variables, to display symptoms of multicollinearity. Quantitative descriptive analysis explains the socio-demographic characteristics of respondents while PLS-SEM analysis explains the research objectives which are both displayed using averages, percentages and frequencies.

3. Results and Discussion

3.1. Demographic Characteristics of Respondents

Demographic characteristics, as shown in Table 1, show that the majority of respondents are male (97%), aged 20-64 years (93%) which according to the Indonesian Ministry of Health (2017) includes productive age, has a high school / vocational education level (37%), main employment status (100%), has 11-15 years of working experience (30%), has livestock ownership above 5,000 heads (60%) and has an income of more than Rp 8,100,000 under normal circumstances.

Table 1. Demographic Characteristics of Respondents

Variable	Answer Options	Frequency **(n)**	Percentage **(%)**
Gender	Man	29	97
	Woman	1	3
Age	< 15	0	0
	15 – 64	27	93
	> 65	3	7
Education	Primary School	7	23
	Junior High School	3	10
	High School / Vocational School	11	37
	Diploma	1	3
	Bachelor	8	27
Number of family dependents	0	4	13
	1 – 5	22	74
	6 – 10	4	13
Employment status	Main	30	100
	Side	0	0
Work experience	≤ 5	4	13
	6 – 10	7	23,5
	11 – 15	9	30
	15 – 20	3	10
	≥ 21	7	23,5
Number of livestock holdings	Below 5,000 heads	12	40
	Above 5,000 heads	18	60
Income	≤ 2.000.000	1	3
	2.100.000 – 4.000.000	0	0
	4.100.000 – 6.000.000	6	20
	6.100.000 – 8.000.000	1	3
	≥ 8.100.000	22	73

Source: Primary Data Processed (2023)

3.2. The Strongest Indicator of the Cause of Panic Selling in Broiler Chicken Farms

Panic selling is a natural attitude of farmers when faced with the possibility of financial losses in business. Several research variables show the role between indicators that increase the chances of panic selling on broiler chicken farms in Malang Raya. The results of the convergent validity test, as shown in Table 2, show that the strongest indicators of internal factor variables are chicken feed (0.930), chicken breed (0.770), chicken health (0.758) and maintenance management (0.747). The price of medicines (0.726), the selling price of chickens (0.649), the price of feed (0.555), and the price of seeds (0.474) are the strongest indicators of external factors. Work experience (0.881), number of family dependents (0.798) and age (0.795) are the strongest socio-demographic indicators. Harvest weights (0.837), speculation (0.639) and market demand (0.623) are the strongest indicators of the Covid-19 pandemic, and the strongest indicators of panic selling are policy impact (0.879) and market opportunities (0.797).

Table 2. Convergent Validity Test Based on Loading Factor, P-Value dan AVE

Variable	Indicator	*Loading Factor*	*p-value*	AVE	Information
Internal Factors (X1)	Chicken health	0,758	<0,001	0,805	Has convergent validity
	Breeds of chickens	0,770	<0,001		
	Chicken feed	0,930	<0,001		
	Maintenance management	0,747	<0,001		
External Factors (X2)	Price of day-old chick (DOC)	0,474	0,001	0,538	
	Feed price	0,555	<0,001		
	Price of drugs	0,726	<0,001		
	Selling price of chicken	0,649	<0,001		
	Speculation of intermediary traders	0,441	0,003		
	Access to capital	0,457	0,002		
	Disaster	0,381	0,009		
Demographics (X3)	Age	0,795	<0,001	0,722	
	Number of family dependents	0,798	<0,001		
	Work experience	0,881	<0,001		
Covid-19 Pandemic (X4)	Negative news	0,604	<0,001	0,682	
	Speculation	0,639	<0,001		
	Market demand	0,623	<0,001		
	Final weight of chickens	0,837	<0,001		
Panic Selling (Y1)	Motivation to persevere	0,635	<0,001	0,777	
	Market opportunities	0,797	<0,001		
	Policy impact	0,879	<0,001		

Source: Primary Data Processed (2023)

External factor variables indicating the price of medicines, the selling price of chickens, the price of feed, and the price of seeds can affect the income obtained by farmers. This is because if the price of sapronak is affordable and the selling price of chickens is stable, farmers will make a profit. Conversely, if the price of sapronak is expensive and the selling price of chicken is low, farmers will get losses. The majority of farmers agree that feed prices are the main determinant of the amount of operational costs. Because 70% of total expenditure comes from chicken feed. In addition, all farmers agree that the price

of feed is getting more expensive and never goes down. This is in line with [11] that domestic broiler production is unable to compete with foreign countries (Brazil) due to high production costs. The production cost is due to the main feed of chickens which still comes from imported corn and wheat as well as limited land and technology.

The panic selling variable shows that the impact of policies and market opportunities can affect the fate of broiler farming businesses in the future. All independent farmers and plasma farmers agree that existing government policies have not been able to stabilize the selling price of chickens at the farmer level. The government, in this case, the Ministry of Agriculture is aware of the low price of broilers at the farmer level and is aware of the potential surplus production of DOC FS broilers in certain months such as Ramadan fasting and Eid al-Fitr. Efforts to stabilize the balance of availability and demand of broilers refer to the Regulation of the Minister of Agriculture Number 32/Permentan/PK.230/09/2017 concerning the Supply, Circulation and Supervision of Purebred Chickens and Eggs carried out by the Ministry of Agriculture such as an appeal to 39 broiler breeding companies to:

1. Regulate the production of DOC FS broilers through independent internal control according to their respective production capacity and market absorption capabilities and continue to pay attention to the fulfillment of purebred chicken meat ahead of Ramadan and Eid al-Fitr in 2023.
2. Meet the needs of DOC FS broilers for external farmers amounting to at least 50% of the products of the breeding company according to Minister of Agriculture Number 23 of 2017.
3. Maximize livebird ingestion (internal and partnership) for cutting in RPHU and stored in cold storage.
4. Purebred chicken breeding companies are strictly prohibited from trading hatching eggs (HE) for consumption purposes based on Minister of Agriculture Regulation Number 23 of 2017, if found from the results of supervision will be subject to sanctions in accordance with applicable regulations.
5. Encourage and foster healthy business competition conditions and maintain the price of DOC FS and livebird (LB) broilers to match the reference price set by the Regulation of the Head of the National Food Agency Number 5 of 2022 concerning Purchase Reference Prices at the Producer Level and Sales Reference Prices at the Consumer Level of Corn, Purebred Chicken Eggs and Purebred Chicken Meat, while still prioritizing upstream-downstream production efficiency.
6. Implementation of DOC FS production control carried out independently in Java and Sumatra.
7. Each breeding company is given 2 (two) days to propose a plan and amount of DOC FS production control and verification by the Directorate of Breeding and Livestock Production.
8. The implementation of cross monitoring will be further coordinated by GPPU.
9. The implementation of these production arrangements is reported to the Director General of Livestock and Animal Health through the Director of Livestock Breeding and Production.
10. Companies that do not implement this appeal will be subject to sanctions in accordance with the regulations and authorities of the Ministry of Agriculture cq. Directorate General of Livestock and Animal Health.

If this policy is implemented and carried out firm and thorough supervision, market opportunities and selling prices of broilers for farmers can be improved. But overall farmers agree that the market opportunity for broilers is now difficult to predict. For example, when the month of Mawlid prophet of Muhammad arrives, farmers expect if the demand for broilers in the market increases so that the selling price at the farmer level is high. But in reality, the selling price of chickens at the farmer level is lower than HPP so that farmers experience losses. This is because the demand for chickens cannot keep up with the chicken population circulating in the market. The causes can come from breeding companies that do not obey policies, integrator companies that participate in chicken cultivation with a large population, Chicken Slaughterhouses (RPA) that release frozen chicken meat deposits to traditional markets and seasonal farmers who raise chickens only when there is a certain moment.

3.3. The Relationship between Factors Causing Panic Selling in Broiler Chicken Farms

The effect between variables is significant if the error rate is not more than 5% (Figure 1). The results of path coefficients and p-values between variables showed that internal factor variables were declared significant influencing panic selling in Malang Raya with P = 0.008 and path coefficients 0.389 (Table

3). The positive internal factor path coefficient means that increasing the value of internal factors will increase the value of panic selling by 38.9%. If feed is difficult to convert into muscle, chicken breeds are difficult to reach their true genetic potential, many chickens are sick and poor maintenance management increases the decline in chicken performance. The size of the path coefficient makes internal factors have the greatest influence on panic selling compared to others. Independent farmers and plasma farmers experience panic if they get chicken mortality above 10% because live chickens will bear the burden of dead chickens and automatic performance targets are not achieved, which directly affects farmers' income.

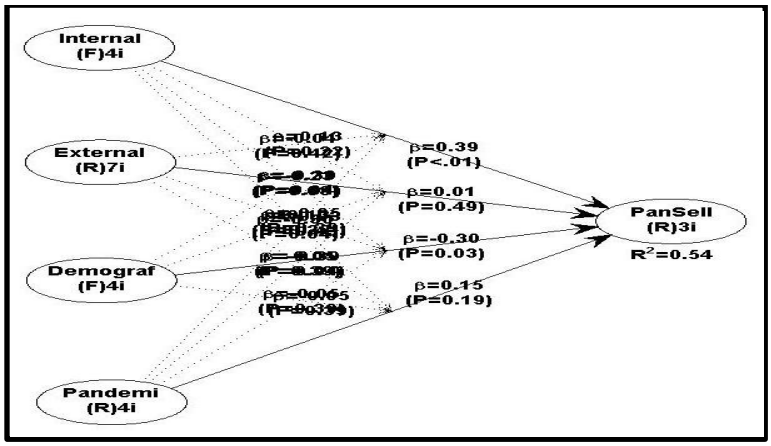

Figure 1. SEM Model and Path Coefficient Results between Variables

External factors were shown to influence panic selling in Malang Raya with p = 0.488 and a path coefficient of 0.006 (Table 3). The positive external factor path coefficient means that increasing the value of the external factor will increase the value of panic selling by 0.6%. The strongest indicators of external factors are the price of medicines (0.726), the selling price of chickens (0.649), the price of feed (0.555), and the price of seeds (0.474). This influence is lower than internal factors, indicating that plasma farmers rarely experience panic selling because even though they get sapronak prices more expensive than market prices, chicken contract prices still generate profits. While some independent farmers rarely experience panic selling because they have extensive relationships and side professions that can support the main profession when experiencing losses in the selling price of chickens.

Table 3. Path Coefficients and P-Values between Variables

Variable	Value *Path Coefficients*	*P-Values*
	Panic Selling	
Internal Factors	0,389	(0,008)*
External Factors	0,006	(0,488)
Demographics	-0,299	(0,034)**
Covid-19 Pandemic	0,153	(0,187)
Internal Factors X External Factors	-0,038	(0,418)
Internal Factors X Demographics	-0,232	(0,083)***
Internal Factors X Covid-19 Pandemic	0,132	(0,223)
External Factors X Demographics	-0,032	(0,429)
External Factors X Covid-19 Pandemic	-0,296	(0,035)*
Demographics X Covid-19 Pandemic	-0,049	(0,393)

Description: *,**,*** indicates significance levels of 1%, 5% and 10%

Demographics proved to significantly influence panic selling in Malang Raya with p = 0.034 and a path coefficient of -0.299 (Table 3). A negative demographic path coefficient means that increasing demographic types can actually reduce their influence on the incidence of panic selling. This shows only the working experience, age and number of dependents of the farmer's family directly affect the incidence of panic selling. Because work experience can be balanced with the level of education. Farmers who graduated from elementary school who are friends with breeders who graduated from education above will get a lot of information and insights to apply in their business. The majority of farmers are productive age and have a sufficient number of family dependents so that the mental and mental abilities for consideration and decision making can be carried out maturely.

4. Conclusion

The factors causing panic selling in broiler chicken farms in Malang Raya are internal factors (38.9%) which include feed, seeds, chicken health, maintenance management; demographics (29.9%) that include work experience, age, number of family dependents; COVID-19 pandemic (15.3%) which includes harvest weight, speculation, market demand; and external factors (0.6%) which include the price of medicines, the selling price of chickens, the price of feed, price of day-old chick (DOC).

The factors that have the greatest influence in the incidence of panic selling on broiler farms in Malang Raya are internal factors and demographic factors with internal factors having the highest influence of 38.9%. The moderating effect of internal factors was confirmed to significantly strengthen the demographic influence on panic selling with a p-value of 0.083 and a path coefficient of -0.232.

5. Suggestion

The suggestions from this study are 1) independent farmers are expected to expand market reach, namely mastering downstream with the condition that they are competent to become halal slaughterers of poultry so as to shorten the chicken sales chain and increase income. Meanwhile, plasma farmers are expected to improve the performance of chickens in cages to obtain maximum income, 2) the government is expected to be fully committed to implementing existing policies with careful supervision and focusing on the factors that have the greatest influence so that chicken price stability at the farmer level can be achieved, and 3) further researchers are expected to expand and continue this research model in their respective regions and in Indonesia on overall, so that general results can be obtained for the factors causing panic selling in broiler farms.

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