Agrisociabus
Journal of Agricultural Social and Business

ISSN (Online) 2963-4407
Vol. 4 No. 2 Tahun 2025: 117-124
DOI: 10.31315/agrisociabus.v4i2.15651

Analysis of Factors Affecting Sweet Bread Production

Avinda Sofitaria* & Ni Made Suyastiri Yani Permai

Program Studi Agribisnis Jurusan Agribisnis Fakultas Pertanian
Universitas Pembangunan Nasional "Veteran" Yogyakarta, Indonesia

*Penulis Korespondensi: sofitariaavinda@gmail.com

Abstract:
This study aims to (1) analyze the influence of raw materials, supporting materials, and labor on the production of sweet bread at Kedai Djoen Malioboro, (2) analyze the condition of the business scale on the production of sweet bread at Kedai Djoen Malioboro. The type of research used is quantitative descriptive with a case study approach. Data analysis techniques include classical assumption tests, multiple linear regression analysis, and return to scale analysis. The results of the study indicate that the factors that influence the production of sweet bread at Kedai Djoen include raw materials (wheat flour), supporting materials (chicken eggs, powdered milk, granulated sugar, salt, arrowroot flour, and chocolate) and labor. Meanwhile, supporting materials such as butter, roombutter, wet yeast, and bread improver do not affect production. The return to scale value is 0.892 <1, which means that the condition of sweet bread production at Kedai Djoen is on a decreasing return to scale business scale. The proportion of additional production factors for raw materials, supporting materials and labor is greater than the proportion of additional production of sweet bread.

Keywords: *Production, Production Factors, Return to Scale*

1. Introduction

On a business what we can be certain of is No off from the production process carried out to meet request consumers. According to Khairinal & Muazza (2019), production is purposeful activities for create, improve, and produce, as well as add utility value of a goods and services. Production food is large production in demand by entrepreneurs because products produced of course needed by the community society. As time goes by time production food especially food ready serving the more many and varied. Products like a lot of bread in demand by consumers and many producers who produce it. Consumer interest in buy this bread which tends to go up in price push increase companies that produce bread and also produce companies new Because there is good prospects.

One of bakery business in Yogyakarta produces bread with all characteristics that are maintained however still following the times, namely Kedai Djoen which is located at Jalan Margo Mulyo No.78, Ngupasan, District Gondomanan, Yogyakarta City. Djoen Shop has stand since 1935 and chose for maintain form typical they Good from aspect buildings, equipment cook until the recipe used.

Sweet bread production carried out at the shop this using input includes material standard that is flour flour, ingredients supporters that is eggs, milk, sugar, salt, flour arrowroot, butter, bread improver, room butter, wet yeast , capital (in the form of tools making sweet bread), and energy work. Even though the input is used already can produce sweet bread but results production No meet the target. This is due to production carried out only 3-4 times per week with amount products produced about 250-450 sweet buns at a time production.

Raw material obtained from suppliers who have cooperate with Kedai Djoen. Different case in point with material supporters purchased at several shops in Yogyakarta and some purchased at the market. Ingredients this purchased rely on shops that are far away no far from shop. However, the availability material No can confirmed and the price given no uncertain. Labor covers all over activity human, good in a way physique or the mentality used in the production process. This factor play a role important in manage as well as add mark something product (Khairinal & Muazza, 2019). Currently, Kedai Djoen want to increase sweet bread production for supply daily so that consumers can buy sweet bread every day. However, this the not yet can implemented because power work limited. Sweet bread production at the shop this only employs two people in the department kitchen. The workforce employed has also been old that is 72 years old and 65 years old so that mobilization in do work limited.

Sustainability production with input materials raw materials supporters, capital (in the form of tools production), and energy work to be done produce the output is in the form of sweet bread can determine scale businesses at Kedai Djoen Malioboro. The scale of the business in this condition certain can help something business for do defense and improvements for business more good and profitable. If scale business in condition certain so something business can determine step next for sustainability growing business good.

2. Research Methods

Types of research This use descriptive quantitative with approach studies case, namely the approach taken in a way intensive, in-depth, detailed, and comprehensive. However, the results studies case No can generalized because only applies to the context or situation place studies that done (Sadiartha, 2020). Research data used consists of on the primary data and secondary data collected through interviews, observations, documentation, and studies bibliography. Data analysis techniques using assumption tests classical, multiple linear regression, and return to scale.

3. Result and Discussion

3.1 Assumption Test Classic

3.1.1 Normaly Test

Normality test is techniques used for determine whether data comes from from population with normal distribution. One of the methods used is the Kolmogorov-Smirnov (KS) test, where the data is considered normally distributed if mark its significance more from 0.05. On the other hand, if mark significance not enough from 0.05, then the data No normally distributed. Test results can seen in table 1 as following. Based on table 1 can known normality test values contained in the section Asymp. Sig (2-tailed) is 0.061. Normality test with the Kormognov-Smirnov test criteria if mark asymp sig. (2-tailed) > 0.05. This data own meaning 0.061 > 0.05, so can concluded that data distribution from variables independent show results that the data is normally distributed.

Table 1. Normality Test Results

		Unstandardized Residual
N		32
Normal Parameters [a,b]	Mean	.0000000
	Standard Deviation	.03781841
Most Extreme Differences	Absolute	.169
	Positive	.169
	Negative	-.068
Test Statistics		.169
Asymp . Sig. (2-tailed)		.061 [c]

Source: Secondary Data Analysis (2025)

3.1.2 Multicollinearity Test

Multicollinearity test used for detect existence strong relationship between variables independent in the regression model multiple. Existence multicollinearity can known through mark Variance Inflation Factor (VIF) and Tolerance (TOL). A model is stated free from multicollinearity if VIF < 10 and Tolerance > 0.1. Conversely, if VIF > 10 and Tolerance < 0.1, then multicollinearity stated happened. Test results can seen in table 2 as following. Based on table 2 with criteria multicollinearity test that is If VIF value < 10 and Tolerance > 0.1, then No happen symptom multicollinearity If the VIF value > 10 and Tolerance < 0.1, then happen symptom multicollinearity. In this case this, obtained results that all variables independent own VIF value > 10 and Tolerance < 0.1, which means happen multicollinearity.

3.1.3 Heteroscedasticity Test

Heteroscedasticity test used for know There is or whether or not similarities variance from the residuals on the whole observation in the regression model. Testing using the Glejser Test with criteria testing with mark absolute residual > 0.05 then No happen heteroscedasticity and if mark absolute residual < 0.05 then happen heteroscedasticity. Test results can seen in table 3 as following. Based on table 3 criteria heteroscedasticity test seen from absolute residual that is if mark significance > 0.05, then No happen symptom heteroscedasticity. If mark significance < 0.05, then happen symptom heteroscedasticity. The test results above obtained that all variables independent own mark significance > 0.05 which means no happen heteroscedasticity.

Table 2. Multicollinearity Test Results

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**	**Tolerance**	**VIF**
(Constant)	.384	.185		2,074	.052		
Flour Wheat	.210	.026	.022	8,517	.000	.055	18,223
Chicken eggs	.201	.069	.032	2,892	.009	.026	39,044
Milk powder	.101	.042	.027	2,383	.028	.024	41,756
Sugar	.105	.012	.855	2,879	.010	.000	3291.484
Salt	.123	.053	.024	2,329	.031	.028	35,441
Flour Garut	-.299	.084	-.030	-3,545	.002	.042	23,535
Butter	.080	.011	.005	.503	.621	.033	30,273
Roombutter	-.064	.033	-.020	-1,920	.070	.027	37,117
Wet Yeast	-.036	.067	-.046	-.538	.597	.000	2400.746
Bread Developer	.090	.054	.014	1,668	.112	.045	22,310
Chocolate	.145	.057	.147	2,528	.020	.001	1097.188
Labor	.092	.040	.016	2,291	.034	.066	15,090

Source: Secondary Data Analysis (2025)

Table 3. Heteroscedasticity Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	
	B	Std. Error	Beta	Sig.
(Constant)	-.030	.074		.686
Flour Wheat	.000	.000	1,297	.059
Chicken eggs	-.044	.028	-1,441	.127
Milk powder	.013	.017	.717	.452
Sugar	-.003	.005	-5.135	.543
Salt	-.037	.021	-1,509	.095
Flour Garut	.071	.034	1,480	.058
Butter	-1.814E-5	.000	-.037	.963
Roombutter	-.002	.013	-.126	.887
Wet Yeast	.024	.027	6,250	.388
Bread Developer	-.008	.021	-.265	.702
Chocolate	-.001	.023	-.288	.953
Labor	-.010	.016	-.340	.551

Source: Secondary Data Analysis (2025)

Table 4. Multiple Linear Regression Results

Model	Unstandardized Coefficients		Standardized Coefficients	
	B	Std. Error	Beta	Sig.
(Constant)	.384	.185		.052
Flour Wheat	.210	.026	.022	.000(**)
Chicken eggs	.201	.069	.032	.009(**)
Milk powder	.101	.042	.027	.028(*)
Sugar	.105	.012	.855	.010(*)
Salt	.123	.053	.024	.031(*)
Flour Garut	-.299	.084	-.030	.002(**)
Butter	.080	.011	.005	.621(NS)
Roombutter	-.064	.033	-.020	.070(NS)
Wet Yeast	-.036	.067	-.046	.597(NS)
Bread Developer	.090	.054	.014	.112(NS)
Chocolate	.145	.057	.147	.020(*)
Labor	.092	.040	.016	.034(*)
Regression (F Test)				.000(**)
Adjusted R Square (Coefficient Determination)				.884

Source: Secondary Data Analysis (2025)

Information:
***** : Significant at the 0.05 level (p < 0.05)
****** : Significant at the 0.01 level (p < 0.01)
NS : Not significant

3.2 Multiple Linear Regression

Multiple linear regression is an equation model used For describe connection between One variables bound (Y) with two or more variables free (X 1 , X 2 ,.. X n). Test results can seen in table 4 as following.

Based on results analysis multiple linear regression in table 4, obtained that variables flour wheat own mark significance of 0.000 because mark this more small from 0.05, then can concluded that flour wheat in a way significant influence sweet bread production. That is, the hypothesis null (H 0) is rejected and the hypothesis alternative (H a) is accepted. This result in line with Nayana and Kartika's opinion in Asmini et al., (2022) who stated that material standard is component important in the production process as material base for produce something product.

Analysis results show that egg chicken own mark significance is 0.009. Because the value is < 0.05, then can concluded that egg chicken in a way individual influential significant to sweet bread production. With Thus, H 0 rejected and H a accepted. This result support Cahya and Amara's theory (2024) which explains that egg in bread making function as emulsifier for strengthen structure dough, increase content nutrition, and helps produce more bread texture expand because his abilities tie air.

In the powdered milk variable, the value significance of 0.028, which means < 0.05, so that can concluded that powdered milk also provides influence significant to amount sweet bread production. With Thus, the hypothesis zero rejected and hypothesis alternative accepted. This result in accordance with opinion Koswara (2009) who stated that powdered milk used in bread making for add mark nutrition Because protein, lactose, and calcium content, as well influence color and taste of bread.

As for granulated sugar, the value significance of 0.010 also shows significant influence to sweet bread production. H0 is rejected and Ha is accepted. This support opinion Koswara (2009) stated that that granulated sugar no only play a role as sweetener, but also improve quality results grill, giving color good crust, and speed up the ripening process.

Temporary that, salt with mark significance of 0.031 indicates existence significant influence to sweet bread production, which means H0 is rejected and Ha is accepted. The statement this reinforced by theory Koswara (2009) explains that salt has role important in balance the taste, strengthen the taste of other ingredients, and enhances quality bread texture.

Significance value flour arrowroot of 0.002 < 0.05, which indicates that material this influential in a way significant to sweet bread production. With thus, H 0 rejected and H a accepted. This result in harmony with study Herlinawati et al. (2024) who stated that flour arrowroot is substitution potential for flour wheat Because content high calories and properties gluten free.

Based on results multiple linear regression in table 4, it is known that mark significance for variables butter is 0.621. Because the value the more big from 0.05, then can concluded that butter no own significant influence individually towards sweet bread production. That is, the hypothesis zero (H 0) is accepted, while hypothesis alternative (H a) is rejected. This is in line with Jaya's opinion (2022) states that butter functioning as material addition in bread making, which plays a role gives a distinctive aroma and enhances quality sensory product.

Next, room butter show mark significance of 0.070 > 0.05. With thus, it can concluded that room butter in a way individual No give influence significant to results sweet bread production . This conclusion indicates that H0 is accepted and Ha is rejected. The statement this reinforced by Ananto (2019) who explains that room butter is material addition like butter, but own form more liquid and point more melting low.

Significance value of wet yeast recorded of 0.597. Because the value this > 0.05, then can concluded that the yeast is wet No give influence significant individually towards sweet bread production. With Thus, H 0 accepted and H a is rejected. This is contradictory with theory from Koswara (2009) who stated that the yeast is wet should play a role important in develop dough , softening the gluten through the acid produced , as well as give taste and aroma of bread.

As for material bread developer, results analysis show mark significance of 0.112. This value more big from 0.05, which means bread developer no give influence significant to individual production of sweet bread. Therefore that is, H 0 is accepted and H a rejected. This result No in line with opinion Koswara (2009), who stated that bread developer function for increase the volume of bread dough.

Chocolate own mark significance of 0.020, which is more small from 0.05. That means, chocolate in a way individual own significant influence to sweet bread production. Therefore, H0 is rejected and Ha accepted. Findings This in accordance with theory from Hall (2006) who stated that chocolate is material deliberate addition used in the production process for enhance taste, value nutrition, as well as help form texture and appearance product.

Significance value power Work of 0.034 < 0.05 indicates that power Work own influence significant to amount sweet bread production. With mark said, it is concluded that H 0 rejected and H a accepted. This result support theory by Asmini et al., (2022) that power Work is factor crucial in smoothness activity production.

Based on table 4, retrieval decision in the F test carried out with H 0 criteria accepted and Ha rejected If significance > 0.05 (no influential significant), then H 0 rejected and Ha accepted If significance < 0.05 (influential significant). Acquisition mark significance in the F test is 0.000 which means 0.000 < 0.05, then can concluded flour flour, eggs chicken, powdered milk, granulated sugar, salt, flour arrowroot, butter, roombutter, wet yeast, bread improver, chocolate, and energy Work in a way together influential significant to sweet bread production (Ha accepted)

The resulting Adjusted R Square value of 0.884 so that can concluded that flour flour, eggs chicken, powdered milk, granulated sugar, salt, flour arrowroot, butter, roombutter, wet yeast, bread improver, chocolate, and energy work in a way together own influence to sweet bread production by 88.4%. Meanwhile that, the rest 11.6 % is influenced by other variables that are not including in the model.

3.2.1 Regression Equation

Study this use SPSS application version 23 for analyze multiple linear regression. Table 4 shows results analysis multiple linear regression with equation as following:

$$Y = 0.384 + 0.210\,11 + 0.092X\,12 + u$$

Based on equality regression above, it is known that mark constant of 0.384 indicates existence influence positive from variables independent. This means that if all over variables like flour flour, eggs chicken, powdered milk, granulated sugar, salt, flour arrowroot, butter, roombutter, wet yeast, bread improver, chocolate, and energy work considered worth zero, then sweet bread production at Kedai Djoen estimated amounting to 0.384 pcs.

As for the influence of each variable to sweet bread production at Kedai Djoen is as following:

a. Flour wheat own coefficient regression of 0.210 which shows connection positive. This means that every addition one gram of flour wheat can increase production amounting to 0.210 pcs.
b. Egg chicken with coefficient of 0.201 also has influence positive. Every addition one grain eggs chicken will increase production amounting to 0.201 pcs.
c. Milk powder own coefficient 0.101, indicating that addition one gram of powdered milk will add production amounting to 0.101 pcs.
d. Sugar give contribution positive with coefficient 0.105, which means addition one gram of granulated sugar increase production amounting to 0.105 pcs.
e. Salt has coefficient regression of 0.123, indicating that addition one gram of salt can increase output by 0.123 pcs.

f. Flour arrowroot precisely give influence negative with coefficient -0.299, which means every addition one gram of flour arrowroot lower production amounting to 0.299 pcs.
g. Butter contribute positive of 0.080, meaning one additional gram butter can increase production amounting to 0.080 pcs.
h. Roombutter own coefficient negative of -0.064, so that every addition one gram of room butter will lower results production as many as 0.064 pcs.
i. Wet yeast also shows influence negative with coefficient -0.036, where each addition one gram of wet yeast reduce production as many as 0.036 pcs.
j. Bread developers provide impact positive with coefficient 0.090, which means addition one gram of material this will increase production amounting to 0.090 pcs.
k. Chocolate own influence positive with mark coefficient 0.145, so that addition one gram of chocolate can increase output by 0.145 pcs.
l. The workforce also showed influence positive with coefficient 0.092, indicating that every addition one working hour can increase production as many as 0.092 pcs.

3.3 Return to Scale

Calculation with add up coefficient regression from each variable independent namely as following:

$$b\,1 + b\,2 + b\,3 + b\,4 + b\,5 + b\,6 + b\,7 + b\,8 + b\,9 + b\,10 + b\,11 + b\,12$$
$$= 0.210 + 0.201 + 0.101 + 0.105 + 0.123 - 0.299 + 0.080 - 0.064 - 0.036 + 0.090 + 0.145 + 0.092$$
$$= 0.892\ so\ 0.892 < 1$$

Seen from the calculation above can concluded that results calculation is of 0.892. This value show that 0.892 < 1, which means condition sweet bread production at Kedai Djoen be on a scale business decreasing returns to scale with criteria (b i < 1). In the case of This means that proportion addition factor production material raw (flour) flour), ingredients supporter (egg chicken, powdered milk, granulated sugar, salt, flour arrowroot, butter, roombutter, wet yeast, bread improver, and chocolate), and energy Work will exceed proportion addition sweet bread production.

Conclusion and Suggestions

of sweet bread production at Kedai Djoen is on decreasing returns to scale. Addition of raw materials, supporting ingredientss and labor will exceed the proportion of addition sweet bread production. Kedai Djoen need focus management and availability of factors that influence production of sweet breads such as quality and dosage material covering material raw, supporting ingredients and labor. Regeneration of workers at Kedai Djoen is needed so their capabibilities help increase sweet bread production. Conditions business from Djoen's Shop need For improved with improving consistency in producing sweet bread especially in weighing the weight of the sweet bread is more accurate to maximize the amount production produced.

Bibliography

Asmini , Supri, W., & Binar, D. P. (2022). *Analysis Influence of Production Factors to Productivity Sales (A Study on Langsung Enak Bakery Sumbawa Besar)*, *2*(2), 1–10.

Cahya, AP, & Amara, D. (2024). Experimental Study: Influence Use Eggs in Banana (Musa Paradisiaca L.) and Red Bean (Phaseolus Vulgaris L.) Based Cookies. *Indonesian Health Journal, 6*(2), 934–944.

Hall, R. L. (2006). Food additives. Nutrition Today, 8(4), 20–28.

Herlinawati, L., Hernawan, A. A., & Ningrumsari, I. (2024). The Influence Comparison Flour Wheat Flour, Flour Arrowroot (Maranta Arundinacea L.) and Carrot Flour (Daucus Carota L.) Against Characteristics Skin Steamed Dumplings. *Composite: Journal Knowledge Agriculture*, *6*(2), 91–99.

Jaya, S. M. K. S. (2022). Inovasi Mentega Plant-Based: Plant-based butter innovation. *Jurnal Ilmiah Pariwisata Dan Bisnis*, *1*(6), 1428–1454.

Khairinal, & Muazza. (2019). *Economics in PLP*. Salim Media Indonesia.

Mardiatmoko, G. (2020). The Importance of Assumption Testing Classics in Analysis Multiple Linear Regression. *BAREKENG: Journal Knowledge Mathematics and Applied Mathematics*, *14*(3), 333-342.

Mubarak, R. (2021). *Introduction Econometrics* (Edition First). Duta Media Publishing.

Sadiartha, A. A. N. G. (2020). *Best Practice: Research Qualitative and Publication Scientific*. CV Cakrawala Satria Mandiri.

Sahir, S. H. (2021). *Methodology Research*. KBM Indonesia Publisher.

Sinaga, W. A. L., Sumarno, S., & Sari, I. P. (2022). Application of Multiple Linear Regression Method for Estimate Amount Population in the District Mount Malela. *JOMLAI: Journal of Machine Learning and Artificial Intelligence*, *1* (1), 55–64.

Soekartawi. (1994). *Theory of Production Economics with Main Point Discussion Analysis Cobb-Douglas Function*. PT Raja Grafindo Persada.