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DETERMINANTS OF BALINESE LIQUOR PRODUCTION IN SIDEMEN DISTRICT, KARANGASEM REGENCY

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Abstract

The production of Arak Bali is one of the thriving economic activities in the community of Sidemen District, Karangasem Regency. The success of Arak Bali production is influenced by various factors of production, such as business capital, labor, raw materials, and technology. In addition to economic factors, social capital is also believed to play a role in supporting the effective use of these factors of production. This study aims to analyze the effects of business capital, labor, raw materials, and technology on the production of Arak Bali and to examine the role of social capital in moderating the effect of business capital on the production of Arak Bali in Sidemen Subdistrict, Karangasem Regency. This study employs a quantitative approach with a sample size of 87 arak farmers selected through simple random sampling. Data were collected through questionnaires, interviews, and documentation. The analysis technique used was Moderated Regression Analysis (MRA). The results of the study indicate that business capital does not have a significant effect on the production of Arak Bali, with a significance value of 0.355. Labor also does not have a significant effect on the production of Arak Bali, with a significance value of 0.235. Technology does not have a significant effect on the production of Arak Bali, with a significance value of 0.554. Meanwhile, raw materials have a positive and significant effect on the production of Arak Bali, with a significance value of 0.000. The results of the moderation analysis indicate that social capital moderates the effect of business capital on the production of Arak Bali, with a significance value of 0.044. The research findings indicate that raw materials are the most critical production factor in increasing Arak bali production in Sidemen District. Furthermore, social capital has been shown to play a role in enhancing the effectiveness of business capital utilization; thus, the success of Arak Bali production is influenced not only by economic factors but also by the quality of social relationships among arak farmers. Based on the research results, it is recommended that arak farmers pay closer attention to the availability of raw materials and continue to strengthen social capital through enhanced cooperation, trust, social networks, and social participation. Local governments are also expected to support the sustainability of Bali Arak production through programs focused on improving the availability of raw materials and strengthening the business capacity of arak farmers.

Keyword: *Arak Bali Production; Business Capital; Labor; Raw Materials; Technology; Social Capital.*

INTRODUCTION

The agricultural sector plays a strategic role in Indonesia's economic development, serving not only as a food provider but also as a driver of regional growth and improving community welfare. In Bali Province, the agricultural sector is one of the main pillars of the regional economy after tourism and contributes to the development of the plantation subsector and agricultural-based industries. Optimizing this sector has the potential to increase community incomes while strengthening sustainable regional economic development (Suarsa et al., 2024; Raditya et al., 2021).

One of Bali's leading commodities with high economic and cultural value is Arak Bali, a traditional fermented and distilled beverage that has become an integral part of Balinese identity. In addition to its use in traditional and religious activities, Arak Bali has also developed as a creative economy and tourism product following the issuance of Bali Governor Regulation Number 1 of 2020, which legalized the management of its production and distribution. This policy opens opportunities for farmers and artisans to increase production, innovation, and legal product marketing, thereby boosting the welfare of local communities (Pranatayana & Trisna, 2021).

Karangasem Regency is the largest center of Balinese Arak production in Bali Province, with approximately 1,254 arak farmers. Sidemen District boasts the highest concentration of artisans, accounting for approximately 52.3% of the total number of arak farmers in Karangasem. Arak production in this region is still dominated by community-based home industries, using coconut sap as the primary raw material, processed through traditional fermentation and distillation. However, challenges remain, including low artisan regeneration, as some younger generations prefer other occupations perceived as more profitable and less risky (Saputra & Darmawan, 2022; Nopiari & Reni, 2024; Astuti & Mustika, 2019).

Balinese Arak production is influenced by various production factors, such as capital, labor, raw materials, and technology. Capital is needed to finance production and business development, while labor plays a crucial role in the fermentation and distillation processes, which require specialized skills. Furthermore, the seasonal availability of raw palm sap and the application of different production technologies, such as firewood or gas stoves, also determine the level of efficiency and output (Nicholson & Snyder, 2017; Mankiw, 2021; Sukirno, 2016; Bernheim & Whinston, 2008). Although the legalization of Balinese Arak has increased business opportunities, various production constraints remain, primarily related to high production costs and limited access to capital (Brahmantya et al., 2022).

Previous research has shown that business capital, labor, and raw materials significantly influence Balinese Arak production (Nopiari & Reni, 2024; Meisthya et al., 2025). However, a research gap remains as most studies focus solely on economic factors and

have not yet thoroughly examined the role of social factors in increasing the effectiveness of business capital utilization. Furthermore, research specifically examining Sidemen District, the primary center of Balinese Arak production, is still limited, and the approaches used generally fail to consider the interaction between economic and social factors in their analytical models.

Based on these conditions, this study integrates economic and social factors by using social capital as a moderating variable in the relationship between business capital and Balinese Arak production. Social capital, encompassing trust, social norms, social networks, and social participation, is believed to increase the effectiveness of business capital utilization through cooperation, coordination, and information exchange within the community (Tsounis & Xanthopoulou, 2024). Using a Moderated Regression Analysis (MRA) approach, this study analyzes the influence of business capital, labor, raw materials, and technology on Balinese Arak production and examines the role of social capital in strengthening these relationships. The research's novelty lies in the integration of economic and sociological perspectives to provide a more comprehensive understanding of the determinants of Balinese Arak production in a community-based traditional industry in Sidemen District, Karangasem Regency (Ariessi & Utama, 2017; Krishna & Uphoff, 2002).

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Production Theory

According to Mankiw (2021:247), production is the process of transforming various inputs such as labor, capital, raw materials, and technology into goods or services with added value. Production encompasses not only the physical activities of producing goods but also the creation of economic value by increasing the utility of those goods and services.

Business Capital Concept

According to Nicholson and Snyder (2017:55), capital is the accumulation of wealth in physical and financial form used to support production activities, such as equipment, machinery, buildings, and labor funds. In economic theory, capital is classified as a man-made factor of production that functions to increase labor productivity and the efficiency of the production process.

Labor Concept

Mankiw (2021:251) defines labor as the amount of time, skill, and physical ability an individual contributes to the production of goods or services. In the context of production activities, labor is measured not only by the number of workers involved, but also by the allocation of working time, skill level, and productivity of that workforce.

Raw Material Concept

Nicholson and Snyder (2017:64) state that raw materials are the main component in the production process, which are processed through a series of activities to produce the final product. In production activities, raw materials are the primary input because without their availability, the production process cannot proceed.

Technology Concept

Mankiw (2021) explains that technology is the knowledge or best methods used by producers to combine various inputs to produce outputs more effectively and efficiently. In other words, technological developments enable producers to produce more optimal outputs using relatively the same or fewer inputs.

Social Capital Concept

According to Tsounis and Xanthopoulou (2024), the social capital theory developed by Coleman explains that social capital is formed through trust, norms, and social networks that facilitate collective action, enabling individuals and groups to utilize resources more effectively.

Hypothesis

Hypotheses are temporary answers to the formulation of research problems that are based on relevant theories, but have not been supported by empirical facts obtained through data collection (Sugiyono, 2017). Based on the formulation of the problem and the literature review that has been described, the hypothesis in this study is as follows:

1. Business capital, labor, raw materials, and technology have a positive effect on the production of Bali Arak in Sidemen District, Karangasem Regency.
2. Social capital moderates the influence of business capital on the production of Balinese Arak in Sidemen District, Karangasem Regency.

RESEARCH METHODS

This study uses a quantitative approach with an associative research design to analyze the relationship between production factors and Balinese Arak production and to examine the role of social capital as a moderating variable. According to Sugiyono (2017), quantitative research is used to test hypotheses through numerical data analyzed using statistical techniques. The study was conducted in Sidemen District, Karangasem Regency, Bali, one of the main centers of Balinese Arak production.

The object of the study was Balinese Arak production as the dependent variable (Y), with independent variables being business capital (X_1), labor (X_2), raw materials (X_3), and

technology (X_4). Furthermore, social capital (M) served as a moderating variable, playing a role in strengthening or weakening the relationship between business capital and Balinese Arak production. Balinese Arak production was measured based on the amount of output produced (liters/production), business capital based on production costs (Rp/production), labor based on work time (hours/production), raw materials based on the amount of palm sap used (liters/production), and technology using a dummy variable (0 = traditional and 1 = modern). Social capital was measured through the dimensions of trust, social norms, social networks, and social participation using a 1–5 Likert scale, which was then processed into factor scores (Tsounis & Xanthopoulou, 2024).

The study population consisted of all active Balinese Arak farmers in Sidemen District, Karangasem Regency, a total of 655 people spread across Tri Eka Buana, Telaga Tawang, and Sidemen Villages (Karangasem Regency Cooperatives, SMEs, Industry, and Trade Office, 2025). The sample was determined using the Slovin formula with a 10 percent margin of error, resulting in 87 respondents. The sampling technique used proportionate stratified random sampling based on village area, followed by simple random sampling to ensure each farmer had an equal chance of being included in the sample.

The data used consisted of quantitative and qualitative data. Quantitative data included Balinese Arak production, business capital, labor, raw materials, technology, and social capital, which were analyzed statistically. Qualitative data were obtained through observation and interviews to provide an overview of the socioeconomic conditions of arak farmers. The research data sources consisted of primary data obtained through questionnaires and direct interviews with arak farmers, as well as secondary data from relevant agencies, scientific literature, and previous research.

Data collection was conducted through field observations, structured interviews, and in-depth interviews. Observations were used to observe the Balinese Arak production process, technology use, and the farmers' business conditions. Structured interviews were conducted using questionnaires with research respondents, while in-depth interviews were conducted with key informants consisting of village heads, Balinese Arak entrepreneurs, and relevant government agencies. The research instruments were tested for validity and reliability. Validity was measured using Pearson Product Moment, while reliability was assessed using Cronbach's Alpha with a value of ≥0.70 (Ghozali, 2018).

Data analysis was conducted using descriptive analysis and inferential analysis using the Moderated Regression Analysis (MRA) method. The research model used multiple linear regression based on Ordinary Least Squares (OLS) with the equation:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5M + \beta_6(X_1 \times M) + e$$

This analysis was used to determine the effect of business capital, labor, raw materials, technology, social capital, and the interaction between business capital and social capital on Balinese Arak production. Model testing was carried out using the coefficient of

determination (R^2), F-test, classical assumption tests (normality, multicollinearity, and heteroscedasticity), and t-test to determine the partial effect of each variable. The moderating variable is assessed based on the significance of the interaction coefficient (β_6), where a significant value indicates that social capital is able to strengthen or weaken the influence of business capital on Balinese Arak production (Ghozali, 2018; Gujarati & Porter, 2009).

RESULTS AND DISCUSSION

Results of Analysis of Research Data

Descriptive Statistical Analysis

Descriptive statistical analysis is used to provide an overview of the characteristics of the research data which includes the minimum, maximum, *mean*, and standard deviation values of each research variable. The results of the descriptive statistical analysis are shown in the following table:

Table 1. Descriptive Statistical Analysis Results

Variable	N	Minimum	Maximum	Average (*Mean*)	Standard Deviation
Business Capital (X_1)	87	15.000	90.000	37.632,18	16.048,701
Workforce (X_2)	87	6	9	7,83	0,795
Raw Materials (X_3)	87	60	100	84,08	14,578
Technology (X_4)	87	0	1	0,67	0,474
Social Capital (M)	87	-2,06716	2,10736	0,0000003	0,99999975
Production (Y)	87	10	35	21,67	6,720

Source: SPSS data processing results, 2026 (Appendix 5)

Based on Table 1, the variable working capital has a minimum value of 15,000 and a maximum value of 90,000 with an average of 37,632.18 and a standard deviation of 16,048,701. This shows that the business capital owned by Balinese Arak farmers in Sidemen District is quite diverse among respondents.(X_1)

The labor variable has a minimum value of 6 people and a maximum value of 9 people with an average of 7.83 people and a standard deviation of 0.795. These results show that the amount of labor used in Bali Arak production activities is relatively not much different between farmers.(X_2)

The raw material variable has a minimum value of 60 liters and a maximum value of 100 liters with an average of 84.08 liters and a standard deviation of 14.578. This condition shows that the use of raw materials by Balinese Arak farmers is quite varied according to the production capacity carried out.(X_3)

The technology variable has a minimum value of 0 and a maximum value of 1 with an average of 0.67 and a standard deviation of 0.474. The average value shows that most of the respondents have used modern technology in the production process of Balinese Arak.(X_4)

The social capital variable (M) has a minimum value of -2.06716 and a maximum value of 2.10736 with an average of 0.00000 and a standard deviation of 0.99999. This value shows that social capital data has been transformed into a standard score (*z-score*) so that it has an average that is close to zero.

Meanwhile, the production variable (Y) has a minimum value of 10 liters and a maximum value of 35 liters with an average of 21.67 liters and a standard deviation of 6.720. This shows that the production of Balinese Arak produced by farmers in Sidemen District is quite diverse among respondents.

Inferential Analysis (MRA)

Inferential analysis in this study was carried out using *Moderated Regression Analysis* (MRA) to determine the influence of business capital, labor, raw materials, technology, and social capital on the production of Bali Arak and to test the role of social capital as a moderation variable in the relationship between business capital and Balinese Arak production in Sidemen District, Karangasem Regency. The results of MRA analysis can be seen in Table 2.

Table 2. Moderated *Regression Analysis* (MRA) Results

Variable	B	Std. Error	Beta	t	Sig.
Constant	-15,674	5,817		-2,695	0,009
Business Capital	0,0000335	0,000	0,080	1,081	0,283
Workforce	0,661	0,693	0,078	0,954	0,343
Raw Materials	0,362	0,035	0,785	10,467	0,000
Technology	0,692	1,135	0,049	0,610	0,544
Social Capital	-1,778	0,988	-0,265	-1,800	0,076
INT_X1_M	0,00004915	0,000	0,295	2,050	0,044

Source: SPSS data processing results, 2026 (Appendix 5)

Based on the results of the Moderated Regression Analysis (MRA) in Table 2, the regression equation is obtained as follows:

$\hat{Y} = -15.674 + 0.0000335X_1 + 0.661X_2 + 0.362X_3 + 0.692X_4 - 1.778M + 0.00004915(X_1 \times M)$

Description:

Y = Balinese Wine Production

X_1 = Venture Capital

X_2 = Labor

X_3 = Raw Material

X_4 = Technology
M = Social Capital
(X_1 × M) = Interaction of Business Capital and Social Capital

Based on the regression equation, the variables of business capital, labor, raw materials, technology, and the interaction between business capital and social capital have a positive regression coefficient. This shows that the increase in these variables tends to be followed by an increase in Balinese Arak production. Meanwhile, the social capital variable has a negative regression coefficient that shows an opposite relationship with Balinese Arak production. The results of this analysis provide an overview of the direction of the relationship between variables in the research model.

Model Feasibility Test

The *Goodness of Fit Test* is used to determine the extent to which the regression model constructed is able to explain the variation of dependent variables through independent variables used in the study. In this study, the model feasibility test was carried out using the determination coefficient (R^2) and the F test (simultaneous). The results of the test are presented as follows.

1) Coefficient of Determination Test (R^2)

The coefficient of determination (R^2) is used to measure the ability of independent variables to explain the variation of dependent variables. The results of the determination coefficient test can be seen in Table 3.

Table 3. Determination Coefficient (R^2) Test Results

Models	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,877	0,768	0,751	3,353

Source: SPSS data processing results, 2026 (Appendix 5)

Based on Table 3, the *value of R Square* (R^2) is 0.768. This shows that 76.8 percent of the variation in Balinese Arak production can be explained by the variables of business capital, labor, raw materials, technology, social capital, as well as the interaction between business capital and social capital. Meanwhile, the remaining 23.2 percent was explained by other variables outside the research model that were not included in the analysis.

In addition, the *Adjusted R Square* value of 0.751 shows that after adjusting for the number of variables in the model, the ability of the free variables to explain the variation in Balinese Arak production is still relatively high. Thus, the regression model used has a good ability to explain changes in Bali Arak production in Sidemen District.

F Test (Simultaneous)

The F test is used to find out whether all independent variables in the regression model simultaneously affect the dependent variables. The results of the F test can be seen in Table 4.

Table 4. Test F Results (Simultaneous)

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Regression	2983,799	6	497,300	44,227	0,000
Residual	899,534	80	11,244		
Total	3883,333	86			

Source: SPSS data processing results, 2026 (Appendix 5)

Based on Table 4, the F value of 44.227 was obtained with a significance value of 0.000. The significance value is less than 0.05 (0.000 < 0.05), so it can be concluded that the variables of business capital, labor, raw materials, technology, social capital, and the interaction between business capital and social capital simultaneously affect the production of Balinese Arak.

These results show that the regression model used in the study is declared fit to be used in explaining the relationship between independent variables and Balinese Arak production in Sidemen District. Thus, the analysis can be continued on partial hypothesis testing using the t-test.

Classic Assumption Test

Before the regression analysis was carried out, a classical assumption test was first carried out to ensure that the regression model used met the basic assumptions in the *Ordinary Least Squares* (OLS) method. Classical assumption testing is carried out so that the regression model produced is BLUE (*Best Linear Unbiased Estimator*), so that the estimation results can be used appropriately in decision-making. In this study, the classical assumption test used includes the normality test, the multicollinearity test, and the heteroscedasticity test. The results of the test are described as follows.

Normality Test

The normality test aims to find out whether the residual data in the regression model is normally distributed or not. In this study, the normality test was carried out using the *One-Sample Kolmogorov-Smirnov Test method*. The results of the normality test can be seen in Table 5.

Table 5. Normality Test Results

Unstandardized ed Residual		
N		87
Normal Parameters	Red	0.0000000

	Std.Deviation	3.31800388
Most Extreme Differences	Absolute	0.080
	Positive	0.080
	Negative	-0.066
Test Statistic		0.080
Asymp. Sig.(2-tailed)		**0.200**

Source: SPSS data processing results, 2026 (Appendix 5)

Based on Table 5, the results of the normality test using the *One-Sample Kolmogorov-Smirnov Test* method, a total of 87 respondents were obtained (N). The *resulting Asymp. Sig. (2-tailed)* value is 0.200. This value is greater than the significance level of 0.05, so it can be concluded that the residual data in this study is normally distributed. In addition, a *statistical test* value of 0.080 shows that the level of data deviation from the normal distribution is relatively small. The residual mean value of 0.0000000 also indicates that the residual is evenly distributed. Thus, the regression model in this study has met the assumption of normality so that it is suitable for use in further analysis.

Multicollinearity Test

The multicollinearity test aims to find out whether or not there is a high correlation between independent variables in the regression model. A good regression model should not experience symptoms of multicollinearity. The multicollinearity test in this study was carried out by looking at *the values of Tolerance* and *Variance Inflation Factor* (VIF). The regression model is declared free of multicollinearity if it has a *Tolerance* value of > 0.10 and a VIF value of < 10. The results of the multicollinearity test can be seen in Table 6.

Table 6. Multicollinearity Test Results

Models	Variable	*Collinearity Statistic*	
		Tolerance	VIVID
1	Business Capital	0.532	1.881
	Workforce	0.437	2.289
	Raw Materials	0.520	1.925
	Technology	0.452	2.215
	Social Capital	0.920	1.087

Source: SPSS data processing results, 2026 (Appendix 5)

Based on Table 6, the results of the multicollinearity test showed that all independent variables had a *Tolerance* value greater than 0.10 and a VIF value less than 10. The business capital variable has a *Tolerance* value of 0.532 and a VIF value of 1.881. The labor variable has a *Tolerance* value of 0.437 and a VIF value of 2.289. The raw material variable has a *Tolerance* value of 0.520 and a VIF value of 1.925. The technology variable has a *Tolerance* value of 0.452 and a VIF value of 2.215, while the social capital variable has a *Tolerance* value of 0.920 and a VIF value of 1.087. Thus, it can be concluded that there are no symptoms of

multicollinearity between independent variables in the regression model of this study. Therefore, the regression model was declared feasible for use in further analysis.

Heteroscedasticity Test

The heteroscedasticity test aims to find out whether in the regression model there is a residual variance disparity from one observation to another. In this study, the heteroscedasticity test was carried out using the *Glejser Test* method, which is by regressing independent variables to the residual absolute value (*ABS_RES*). The regression model is declared free of heteroscedasticity if the significance value of each independent variable is greater than 0.05. The results of the heteroscedasticity test can be seen in Table 7.

Table 7. Heteroscedasticity Test Results

Variable Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	5,490	3,303		1,662	0,100
Business Capital (X1)	0,00000244	0,000	0,020	0,138	0,891
Workforce (X2)	-0,608	0,395	-0,248	-1,539	0,128
Raw Materials (X3)	0,032	0,020	0,239	1,615	0,110
Technology (X4)	-1,258	0,652	-0,306	-1,930	0,057
Social Capital (M)	-0,008	0,216	-0,004	-0,039	0,969

Source: SPSS data processing results, 2026 (Appendix 5)

Based on Table 7, it is known that all independent variables have a significance value greater than 0.05. The variable of business capital has a significance value of 0.891, labor of 0.128, raw materials of 0.110, technology of 0.057, and social capital of 0.969. Thus, it can be concluded that the regression model in this study did not experience symptoms of heteroscedasticity. Therefore, the regression model was declared feasible to be used for further analysis.

Hypothesis Testing

Hypothesis testing in this study was carried out using a partial regression coefficient test (t test). The t-test aims to determine the influence of each independent variable, namely business capital, labor, raw materials, and technology on the production of Balinese Arak in Sidemen District partially. The results of hypothesis testing in this study are shown as follows.

Table 8. Partial Regression Coefficient Test Results (t-test)

Variable	Regression Coefficient (B)	t count	Sig.

Business Capital	0,0000335	1,081	0,283
Workforce	0,661	0,954	0,343
Raw Materials	0,362	10,467	0,000
Technology	0,692	0,610	0,544
Social Capital	-1,778	-1,800	0,076
INT_X1_M	0,00004915	2,050	0,044

Source: SPSS data processing results, 2026 (Appendix 5)

Testing the Influence of Business Capital (X_1) on Balinese Liquor Production in Sidemen District (Y)

Based on Table 8, the variable working capital (X_1) obtained a value of 1.081. If the value for = = 1.664 is known, then (1.081) < (1.664). In this test, a one-way approach ($t_{hitung} t_{tabel} t_{\alpha;(n-k-1)} t_{(0,05);(80)} t_{hitung} t_{tabel}$*single-tailed t-test) was used*, so that the significance value of the business capital variable does not need to be divided in half. The value of Sig. (0.283) is greater than α (0.05), so it is not rejected. These results show that working capital (X_1) does not have a significant effect on the production of Balinese Arak in Sidemen District. The regression coefficient of the variable of working capital of 0.0000335 shows that every increase in working capital by one unit will increase the production of Balinese Arak by 0.0000335 units, assuming that the other independent variables are constant. However, this influence is not statistically significant so that the increase in business capital has not been able to increase the production of Balinese Arak significantly in Sidemen District.H_0

Testing the Influence of Labor (X_2) on Balinese Liquor Production in Sidemen District (Y)

Based on Table 8, the labor variable (X_2) obtained a value of 0.954. If the value for = = 1.664 is known, then (0.954) < (1.664). In this test, a one-way approach ($t_{hitung} t_{tabel} t_{\alpha;(n-k-1)} t_{(0,05);(80)} t_{hitung} t_{tabel}$*single-tailed t-test) was used*, so that the significance value of the labor variable does not need to be divided in half. The value of Sig. (0.343) is greater than α (0.05), so H_0 is not subjected. These results show that labor (X_2) does not have a significant effect on the production of Balinese Arak in Sidemen District. The regression coefficient of the labor variable of 0.661 indicates that any increase in labor by one unit will increase the production of Balinese Arak by 0.661 units, assuming the other independent variables are constant. However, this influence is not statistically significant so that the increase in labor has not been able to increase the production of Balinese Arak significantly in Sidemen District.

Testing the Influence of Raw Materials (X_3) on Balinese Liquor Production in Sidemen District (Y)

Based on Table 8, the raw material variable (X_3) obtained a value of 10.467. If the value for = = 1.664 is known, then (10.467) > (1.664). In this test, a one-way approach (t_{hitung} $t_{tabel}$$t_{\alpha;(n-k-1)}$$t_{(0,05);(80)}$$t_{hitung}$$t_{tabel}$*single-tailed t-test) is used*, so that the significance value of the raw material variable does not need to be divided in half. The value of Sig. (0.000) is smaller than α (0.05), so H_0 is subtracted. These results show that raw materials (X_3) have a positive and significant effect on the production of Balinese Arak in Sidemen District. The regression coefficient of the raw material variable of 0.362 states that every increase in the use of raw materials by one unit will increase the production of Balinese Arak by 0.362 units, assuming that the other independent variables are constant. These results show that the more raw materials used in the production process, the greater the amount of Balinese Arak production produced by liquor farmers in Sidemen District.

Testing the Influence of Technology (X_4) on Balinese Liquor Production in Sidemen District (Y)

Based on Table 8, the technology variable (X_4) obtained a value of 0.610. If the value for = = 1.664 is known, then (0.610) < (1.664). In this test, a one-way approach ($t_{hitung}$$t_{tabel}$$t_{\alpha;(n-k-1)}$$t_{(0,05);(80)}$$t_{hitung}$$t_{tabel}$*single-tailed t-test) was used*, so that the significance value of the technology variable did not need to be divided in two. The value of Sig. (0.544) is greater than α (0.05), so H_0 is not subtracted. These results show that technology (X_4) does not have a significant effect on the production of Balinese Arak in Sidemen District. The regression coefficient of the technology variable of 0.692 shows that any increase in the use of technology by one unit will increase the production of Balinese Arak by 0.692 units, assuming that the other independent variable is constant. However, this influence is not statistically significant so that the use of technology has not been able to increase the production of Balinese Arak significantly in Sidemen District. This condition shows that although the use of modern technology in the form of gas stoves can increase the efficiency of the distillation process compared to the use of firewood, the amount of Balinese Arak production produced is still more determined by other factors, especially the availability of raw materials.

The Influence of Social Capital (M) on Balinese Liquor Production in Sidemen District (Y)

Based on Table 8, the social capital variable (M) obtained a value of -1,800. If the value for = = = 1.664 is known, then (1,800) > (1.664). Nevertheless, the value of Sig. (0.076) is greater than α (0.05), so H_0 is not rejected. These results show that social capital (M) does not have a significant effect on the production of Balinese Arak in Sidemen District. The regression coefficient of the social capital variable of -1.778 indicates a negative relationship

direction. This means that every increase in social capital by one unit tends to decrease the production of Balinese Arak by 1,778 units, assuming that other free variables are constant. However, because these influences are not statistically significant, changes in social capital have not been able to explain the change in Balinese Arak production in real terms. $t_{tabel} t_{tabel} t_{\alpha;(n-k-1)} t_{(0,05);(80)} t_{hitung} t_{tabel}$

The results of this study show that social capital does not directly affect the production of Balinese Arak. The beliefs, social norms, social networks, and social participation owned by liquor farmers have not been able to increase production if it is not supported by other production factors. Thus, social capital plays a more role as a supporting factor that helps the effectiveness of business activities than as a factor that directly determines the level of Bali Arak production in Sidemen District.

The Role of Social Capital (M) in Moderating the Influence of Business Capital (X1) on Bali Liquor Production in Sidemen District (Y)

Based on Table 8, the variable of interaction between business capital and social capital (INT_X_1_M) obtained a value of 2.050. If the value for = = 1.664 is known, then (2.050) > (1.664). In this test, a one-way approach $t_{hitung} t_{tabel}$ $t_{\alpha;(n-k-1)} t_{(0,05);(80)} t_{hitung} t_{tabel}$*single-tailed t-test) was used*, so that the significance value of the interaction variable did not need to be divided in half. The value of Sig. (0.044) is smaller than α (0.05), so H_0 is subtracted. These results show that social capital (M) is able to moderate the influence of business capital (X_1) on the production of Bali Arak in Sidemen District. The regression coefficient of the interaction variable (INT_X_1_M) of 0.00004915 shows that the moderation relationship that occurred is positive. This means that the higher the social capital owned by liquor farmers, the stronger the influence of business capital on Balinese liquor production. On the other hand, at low levels of social capital, the influence of business capital on the production of Balinese Arak tends to be weaker.

The results of this study show that social capital reflected in beliefs, social norms, social networks, and social participation is able to increase the effectiveness of the use of business capital in production activities. The trust established between liquor farmers can facilitate cooperation and exchange of information related to production activities. A wide social network also allows farmers to gain access to information, assistance, and support that can support their business activities. In addition, high social participation can encourage the creation of better coordination and cooperation in the wine-farming community. Thus, even though business capital does not directly have a significant effect on the production of Bali Arak, the existence of social capital is able to strengthen the relationship so that the use of business capital becomes more effective in supporting increased production. These results show that the success of Balinese Arak production is not only influenced by

economic factors, but also influenced by the quality of social relations that develop in the community of liquor farmers in Sidemen District.

CONCLUSION

Based on the results of the research, it can be concluded that raw materials are a factor that has a positive and significant effect on the production of Balinese Arak in Sidemen District, Karangasem Regency. Meanwhile, business capital, labor, and technology did not show a significant influence on the increase in production. This shows that the availability of raw materials is the main factor that determines the amount of production of Balinese Arak because the production process is still highly dependent on the supply of sap as the main basic ingredient. In addition, social capital has been proven to be able to moderate the influence of business capital on the production of Balinese Arak. The existence of trust, social norms, social networks, and social participation can increase the effectiveness of the use of business capital through cooperation, information exchange, and strengthening relationships between farmers in supporting production activities.

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