Youth's Decision to Work in the Agricultural Sector Determinants: Case of Bima Regency 2022

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Abstract. This article aims to describe the characteristics of agriculture youth labor force and the determinants of their decision to work in this sector in Bima. This article uses a secondary data of the National Labor Force Survey held by Statistics of Bima Regency in 2022 by selecting youth as the research sample. The finding is that the characteristics of young people who work in the agricultural sector are dominated by those aged 25-30 years, male, married, have less than a high school education, are the head of the household, earn a wage or income above the District Minimum Wage, have less than 4 household members and do not participate in the Pre-Employment Card program. While the determinants of youth work in the agricultural sector show that gender, marital status, and education affect the decision of youth to work in the agricultural sector. The conclusion is that there are only three predictor variables that significantly effect on the decision of youth to work in the agricultural sector with an alpha of 5 percent. Meanwhile, the age, position in the household, wages, number of household members, and participation in the pre-employment card program variables have no significant impact in their decisions.

Keywords: Decision, Youth, Work, Agriculture

1   Introduction

The era of disruption has made a profound impact on various facets of life, and one of these areas is the declining interest of the younger generation in pursuing careers in the agricultural sector, even as the world faces the looming threat of a food crisis. The decline in the farmer population carries significant repercussions, affecting both the availability of domestic produce and employment opportunities. This is especially concerning because agriculture plays a pivotal role, contributing to 40 percent of the country's total employment. The government's ambitious goal of transforming Indonesia into a global food hub by 2045 may prove challenging to achieve if the issue of farmer regeneration is not addressed with utmost seriousness. As emphasized by Junaedi et al.[1], regeneration of agricultural workforce is crucial to achieve sustainable development in agriculture sector.

The Ministry of Agriculture of the Republic of Indonesia address this issue by formulating strategies that focus on the sustainability of agricultural resources and the enhancement of agricultural infrastructure and facilities in 2020-2024 Strategic Plan (Renstra). This plan will be achieved through the promotion and increased utilization of mechanization to modernize agriculture [2]. One key strategy involves fostering a culture of agricultural mechanization within rural farming communities and implementing initiatives to enhance the quality of human resources and national agricultural institutions. However, it is crucial to acknowledge that the effectiveness of these efforts may be limited if there is a decline in youth participation in the agricultural sector.

Bima Regency, with a population of 514.105 according to the 2020 Population Census, is primarily an agricultural district [3]. Agriculture still dominates the Gross Regional Domestic Income (GRDP) at 44.23 percent. In 2021. The employment-to-population Ratio (EPR) stood at 70.51 percent, with variations among youth. The EPR for those aged 15-19 was 53.51. for 20-24-year-olds, it was 76.15. and for 25-29-year-olds, it reached 82.27. indicating a decline as age increased. The agricultural sector had the highest EPR at 48.52 percent[4]. However, there was a concerning trend noted in the 2021 Sakernas data, revealing a decline in the number of young workers in agriculture in Bima Regency, dropping from 24.15 percent in 2020 to 18.49 percent in 2021[5]. This suggests an increasing percentage of agricultural workers but not a corresponding rise in young individuals pursuing careers in this sector.

Previous studies have addressed the declining interest of youth in the agricultural sector. Sostenes Konyep [6] underscores the challenge of changing young people's perceptions of agriculture, suggesting that providing informative agricultural content in the form of advice and through various media, such as print and electronic platforms, could be pivotal. In parallel, Octaviana et al. [7] high light the positive influence of Word of Mouth (verbal communication) on young people's intentions to engage in agriculture, and their research shows that showcasing positive agricultural activities on platforms like Instagram can reignite the interest of young individuals in pursuing careers within the agricultural sector. These insights collectively offer strategies to revitalize youth interest and participation in agriculture.

In his phenomenological study, Hamyana [8] identifies two primary motives that hinder young people from pursuing careers in the agricultural sector: moral-cultural and rational-structural motives. On the moral-cultural front, the reluctance of young individuals to engage in agriculture stems from the swift influence of Westernization in societal norms, transforming the values traditionally associated with the East, such as tolerance and cooperation, into a hedonistic, individualistic, and instant-gratification-oriented lifestyle. This modernization process also prompts young people to perceive agricultural work as dirty, uninspiring, and outmoded. Conversely, from a rational-structural perspective, young people pragmatically view agricultural employment as incapable of ensuring a more decent quality of life. When evaluated from an economic standpoint, considering profits and losses, they believe that working in the agricultural sector will not lead to an improvement in farmers' overall welfare.

Another influential factor in deterring youth from pursuing careers in agriculture is the phenomenon of urbanization and the migration of rural populations to urban areas. As noted by Arvianti et al., [9], the younger generation increasingly favors urbanization

and seeks employment as migrant workers. The rapid pace of modernization has resulted in the concentration of various development opportunities in urban centers, where industrial and service sectors have come to define the trajectory of modern development. Consequently, cities have become alluring hubs with promising prospects, drawing rural youth away from villages and into urban areas in search of better opportunities and livelihoods.

Arimbawa, [10] has posited that income has a positive impact on children's inclination to carry on the family farming legacy, albeit with a caveat: the education variable exerts a negative influence. In contrast, Saleh et al., [11] argue that, from the perspective of young individuals, choosing a career as a farmer is often regarded as unfavorable due to its perceived inability to enhance social status. Furthermore, there exists a prevailing sentiment that a high level of education is ill-suited for this profession. Saleh and colleagues support this notion by referencing several studies indicating that parents who work as farmers typically do not aspire for their children to follow the same path in agriculture.

This research aims to complement the findings of the aforementioned previous studies by employing Max Weber's theory of action [12]as an analytical framework. By applying this theoretical framework, this research seeks to conduct an in-depth exploration of young individuals who remain willing to engage in the agricultural sector. Specifically, it aims to identify their characteristics and the determining factors that drive their interest in this sector. The findings of this study can serve as valuable insights for shaping agricultural policies in the Bima district.

2   Research Method

This quantitative research focused on working youth as the primary research subjects to investigate various variables, including age, sex, education, marital status, position within the household, wage / income, the number of household members, and participation in the pre-employment card program as determining factors in young people's decisions to work in the agricultural sector. These variables were assumed to influence youths' choices of employment. Subsequently, in-depth interviews were conducted to bolster the research findings based on these results.

This research employs Labor Force Survey (Sakernas 2022) data retrieved from BPS, utilizing the SAK22.AK questionnaire. Data processing in this research is performed using IBM SPSS Statistics 25 software to present descriptive and inferential analysis in order to address the research objectives.

Data processing in this research is performed using IBM SPSS Statistics 25 software to present descriptive and inferential analysis in order to address the research objectives. Descriptive analysis is presented using tables, while inferential analysis employs binary logistic regression.

This research examined nine variables, comprising eight predictor (independent) variables and one response variable as shown on Table 1

Table 1. Variabel and definition

Variabel	Definition
Working youth (dependen)	Working in the agricultural sector (y = 1); working in the non-agricultural sector (y =0)
Age	16-24 years = 1; 25-30 years = 0.
Sex	Male = 1; Female = 0.
Marital status	Already married = 1; Not yet married = 0.
Education	< High School = 1; ≥ High School = 0.
Position in the Household	Head of the household = 1; Not head of the household = 0.
Wage / income	≥ Minimum Wage = 1; < Minimum Wage = 0.
Number of Household Members (ART)	< 4 persons = 1; ≥ 4 persons = 0.
Participation in the Pre-Employment Card Program	No = 1; Yes = 0.

The model formed is described as follows.

$$\ln\left[\frac{\pi(x)}{1-\pi(x)}\right] = \beta_0 + \beta_1 X_1.X_8 + \beta_2 X_2.X_8 + \beta_3 X_3.X_8 + \beta_4 X_4.X_8 + \beta_5 X_5.X_8 + \beta_6 X_6.X_8 + \beta_7 X_7.X_8 + e \qquad (1)$$

where:

$p = \pi(x)$: Probability of youth choosing to work in the agricultural sector.

$\beta_0, \beta_{1....} \beta_7$: regression coefficient

X_1 : age
X_2 : sex
X_3 : marital status
X_4 : education background
X_5 : position in the household
X_6 : wage /income
X_7 : number of family members
X_8 : Pre-employment Program Participation
e : *error term*

3   Results and Discussions

3.1   The Characteristics of Working Youth in Bima Regency

The 2022 Sakernas data analysis reveals that there are a total of 288 individuals between the ages of 16 and 30 employed in Bima Regency during that year. Among them, 132 were engaged in the agricultural sector, while 156 were employed in the non-agricultural sector. For a more detailed breakdown of the distribution and corresponding percentages of working youth based on individual characteristics, please refer to Table 2.

Table 2. The Distribution and Percentage of Working Youth in Biam Regency and their Characteristics, 2022

Variable	Category	Working Youth		
		Agri-culture	Non Ag-riculture	Total
		%	%	%
Age	16-24 years	44.24	55.76	100
	25-30 years	45.42	54.58	100
Sex	Male	53.28	46.72	100
	Female	32.60	67.40	100
Marital status	Married	49.67	50.33	100
	Not married	40.14	59.86	100
Education	< High School	60.80	39.20	100
	≥ High School	37.77	62.23	100
Position in the Household	Family Head	49.97	50.03	100
	Not Family Head	42.92	57.08	100
Wage/income	≥ Minimum Wage	52.99	47.01	100
	< Minimum Wage	43.11	56.89	100
Number of family members	< 4 persons	45.84	54.16	100
	≥ 4 persons	42.05	57.95	100
Pre-employment program participation	Yes	0	100	100
	No	44.91	55.09	100
Total		44.80	55.20	100

Table 2. shows that the young individuals employed in the agricultural sector are primarily aged between 25 and 30 years, predominantly male, married, possess educational qualifications below high school level, hold the status of Household Head, earn wages or income surpassing the Regional Minimum Wage, and typically belong to households with fewer than four members. They are not participants in the Pre-Employment Card program. In contrast, young people engaged in the non-agricultural sector exhibit characteristics that are in stark contrast to those of their counterparts in the agricultural sector.

3.2   Model Significance Test and Parameter Test

To address the research inquiries concerning the factors influencing the choice of youth to work in the agricultural sector in Bima Regency during 2022. this study employs binary logistic regression analysis. Before interpreting the outcomes of the regression model, it is imperative to commence with the assessment of model adequacy and simultaneous evaluation. The findings of the model suitability test, assessed through the Hosmer-Lemeshow test, and the simultaneous assessment through the Omnibus test, are detailed in Table 3.

Table 3. Results of Model Feasibility Test and Simultaneous Test

Test	Chi-Square	df	Sig
Hosmer-Lemeshow Test	9.463	7	0.221
Omnibus Test	31.650	8	0.000

The examination of model suitability through the Hosmer-Lemeshow test yielded a significance value of 0.221. which is greater than the alpha level of 0.05. This outcome indicates that the logistic regression model constructed is suitable for investigating the determining factors in young people's decisions to engage in agricultural sector work. Moreover, Table 2. as presented above, demonstrates that the significance value in the Omnibus Test is 0.000. which is smaller than the predetermined significance level of 0.05. This implies that at least one independent variable exerts an influence on the youth's choice to work in the agricultural sector within Bima Regency in 2022. Consequently, the subsequent step involves assessing the predictive capacity of the formulated regression model concerning the response variable.

Table 4. The Classification of Observation Value and Prediction Value of the Model

Observation	Prediction		Per-centage
	Youth working in the agricultural sector	Youth working in non-agricultural sector	
Youth working in the agricultural sector	0	132	100
Youth working in non-agricultural sector	0	156	0
Overall Percentage			54.2

Source: Sakernas, 2022 (processed data)

The parameter estimation results also furnish an overall percentage value, which stands at 54.2%, following the inclusion of variables into the model, employing an optimal cut value of 0.50. These figures indicate that, in general, the utilized model possesses a predictive capacity of 54.2% concerning the determining factors in young people's choices to engage in agricultural sector employment. A partial assessment in the form of Wald test was conducted to examine the influence of each predictor variable on the response variable in Table 5.

Table 5. The Results of Partial Test using Wald Test

Variable	β	S.E.	Wald	Sig.
Age (16-24 years)	0.217	0.283	0.591	0.442
Sex (male)	1.304	0.345	14.297	0.000*
Marital (Married)	0.787	0.360	4.779	0.029*
Education (< High School)	0.755	0.269	7.865	0.005*
Position in the household (Head of the Household)	-0.847	0.450	3.531	0.060
Wage / Income ($\geq$ City Minimum Wage)	0.168	0.363	0.213	0.644
Number of family members (< 4 persons)	0.281	0.324	0.752	0.386

Variable	β	S.E.	Wald	Sig.
Participation in Pre-employment Program	-19.76	40192.97	0.000	1.000.
Constant	-1.661	0.425	15.302	0.000

*) significant at $\alpha = 0.05$
Source: Sakernas, 2022 (processed data)

The test outcomes presented in Table 4 reveal that the predictor variables significantly impacting the decisions of young individuals to work in the agricultural sector are those with a Wald test significance value of less than 5 percent alpha. Specifically, sex, marital status, and education fall within this category. Conversely, the variables age, position in the household, wages, number of household members, and participation in the pre-employment program card did not exhibit a significant influence on the decision-making process.

3.3   Factors that Determine Youth Working in the Agricultural Sector

Based on the significance testing of the model and its parameters, the decision-making model for youth to work in the agricultural sector is as follows.

$$\ln\left[\frac{\pi(x)}{1-\pi(x)}\right] = -2.800 + 0.632\,X_1 + 1.018\,X_2 + 0.518\,X_3 + 0.179\,X_4 + 0.564\,X_5 + 1.066\,X_6 + 0.447\,X_7 + 0.779\,X_8 + e \qquad (2)$$

where:
$p = \pi(x)$: Probability of youth choosing to work in the agricultural sector.
X_1 : age
X_2 : sex
X_3 : marital status
X_4 : education
X_5 : position in the household
X_6 : wage
X_7 : number of family members
X_8 : participation in the Pre-employment program
e : error term

This section discusses the tendency of youth to prefer working in the agricultural sector over the non-agricultural sector based on individual characteristics in Table 5.

Table 6. Beta Coefficients and Odds Ratios for Youth Working in Bima Regency by Individual Characteristics, 2022

Variable	Category	β	Exp(β) Odds Ratio
Age	16-24 years	0.217	1.243
	25-30 years		
Sex	Male	1.304*	3.684
	Female		
Marriage	Kawin	0.787*	2.197
	Unmarried		
Education	< SMA	0.755*	2.127
	≥ SMA		
Position	Head of Household	-0.847	0.429
	Not head of household		
Wage / Income	≥ City Minimum Wage	0.168	1.182
	< City Minimum Wage		
Number of family members	< 4 persons	0.281	1.324
	≥ 4 persons		
Participation in the Pre-employment Program	No	-19.76	0.000
	Yes		
Constant		-1.661	0.190

*) significant at α = 0.05
Source: Sakernas, 2022 (processed data)

The odds ratio for the sex variable indicates that the likelihood of a male youth opting for employment in the agricultural sector is 3.684 times higher than that of a female youth. In other words, males exhibit a greater inclination towards agricultural work. This observation aligns with the findings of Werembinan et al. [13], which suggested that women's interest in pursuing agricultural careers tends to be lower, possibly due to perceived societal expectations as a hard and difficult work. Furthermore, this perspective is supported by insights gleaned from an interview conducted with an informant, Muslimin. He said:

"Farm work is physically demanding, and only a few tasks are relatively light, so it would be more effective if it is done by men".
Interview 30/08/20023

Based on Max Weber's theory of action, the result above explains that the actions of young men in choosing agriculture as their job are based on actions of instrumental rationality. Men consciously assess that their greater physical strength than women has the potential to minimize the obstacles that will occur in heavy agricultural work. They have also considered the effectiveness where men can complete their work faster, which is economically more profitable.

The odds ratio presented in Table 6 for the marital status variable indicates that a young person who is married is 2.197 times more likely to choose agricultural employment compared to a young person who has never been married. This finding is consistent with prior research conducted by Pujiriyani et al., [14] which suggests that for married young individuals, in the absence of perceived better job opportunities that could elevate their social status, working as a farmer remains a viable and preferred choice.

This view is further supported by an interview with an informant named Muhtar, who stated:

"The responsibility of providing for one's livelihood becomes greater for married young men because they have to support themselves and their families. So, if they don't see better job opportunities, the easiest available option is to become a farmer". Interview 30/08/20023

Based on Weber's theory of action, the decision of a young married man to pursue a career in agriculture can be categorized as an instrumental rational action. As for married young people, having a job as a source of income is a necessity to meet the family's needs. Of course, the job you hope for is better, can be economically profitable, and can raise their social status. However, the current reality is that the agricultural sector is still far from expectations. Meanwhile, there are not many better options available in other sectors. Based on considering the potential, obstacles, and consequences, married young people consciously consider that agriculture is a better and more profitable option.

The likelihood of young individuals having less than a high school education is 2.217 times higher compared to those who have completed high school or attained a higher level of education. This observation is consistent with the findings of Werembinan et al. [13], which underscore the significant impact of education on the career choices of young people. Those with lower educational attainment are more inclined to pursue careers in farming, primarily due to their limited awareness and knowledge, which restricts their ability to explore alternative job opportunities. Conversely, young individuals with high school education or above, benefiting from a broader perspective and a wider range of options, are more prone to seek employment outside the agricultural sector. This research aligns with Arimbawa and Rustariyuni [10] wherein educational factors negatively influence the decision of farmer children to continue the family farming tradition. This sentiment was also validated during an interview with informant Suherman, who expressed the following viewpoint:

"To work outside the agricultural sector requires higher knowledge and skills so that young people with less than a high school education are only able to work in the agricultural sector or other menial jobs".
Interview 30/08/2023

The result shows that the eduaction variabel tend to align Weber's theory of action, this action is also based on instrumental rational action. oung people with an education level below high school assess their low potential academically as an obstacle to working outside the agricultural sector which requires higher and more specific knowledge and skills. The knowledge and farming skills that have been acquired from generation to generation are the only potential that the average young person has so becoming a farmer is the most rational choice.

On the contrary, several variables, including age, household position, wages, the number of household members, and participation in the pre-employment card program, fail to yield statistically significant effects on the decision-making process of young individuals to engage in the agricultural sector, with odds ratios spanning from 0.000 to 1.324. In practical terms, age, household position, and wage levels do not exert any discernible influence on the choice to pursue agricultural employment due to the substantial labor demand in the agricultural sector and the shrinking available labor pool. Consequently, regardless of an individual's age, household role, or wage income – whether it aligns with or falls below the minimum wage (UMK) – the propensity to opt for agricultural work remains consistent. Meanwhile, the variable related to participation in the pre-employment card program exhibits negligible impact, primarily because the training provided through this program does not encompass agricultural competencies.

4   Conclusions

In regard to the results and discussion of this research, the following conclusions were drawn.

1. The predominant characteristics of agricultural workers in Bima Regency are males between 25 to 30, married, with below high school education, Head of Household, earning more than Minimum Regional Wage, having less than four household members, and not participating in the Kartu Pre-employment program. Conversely, youth engaged in the non-agricultural sector exhibit contrasting traits to those in the agricultural sector.
2. Only three variables that significantly influence the decision-making process of youth regarding agricultural sector employment, namely sex, marital status, and education.
3. Based on Max Weber's theory of action, young people's choices to work in the agricultural sector are based on instrumental rational actions/choices
4. Youth participating in the Pre-employment card program tend not to exhibit a preference for agricultural sector employment. This trend is attributed to the program's training focus, which does not emphasize agricultural competencies.

This aspect warrants considerable attention from the government if they aim to stimulate interest among youth in pursuing agricultural careers.

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