

## An analysis of employment participation and its determinants among older adults in Jambi Province, Indonesia

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### Abstract

The older adult population in Jambi Province constituted 10.23% of the total population in 2023, categorizing it as an "aging population." This study aims to provide an overview of the employment participation of older adults in Jambi Province and to analyze the factors influencing their continued engagement in the labor force. The research employs descriptive and inferential analyses, utilizing binary logistic regression methods based on data from the National Labor Force Survey (Sakernas) conducted in October 2023 in Jambi Province. The findings reveal that the majority of the older adult population in Jambi Province remains actively employed, with 53.40% reporting work as their main activity. The working older adult population is predominantly characterized by individuals residing in rural areas, males, those with education levels up to junior high school or lower, individuals without physical limitations, married individuals, and heads of households—factors that significantly increase their likelihood of being employed in old age. The agricultural sector serves as the primary employer for the older adult workforce in Jambi, absorbing 69.64% of older adult workers, followed by the trade sector at 10.95%. Both sectors are characterized by their minimal reliance on formal educational qualifications, emphasizing physical capability over academic credentials.

**Keywords:** *Employment participation, Labor force determinants, Older adults*

**JEL Classification:** J14, J21, J26

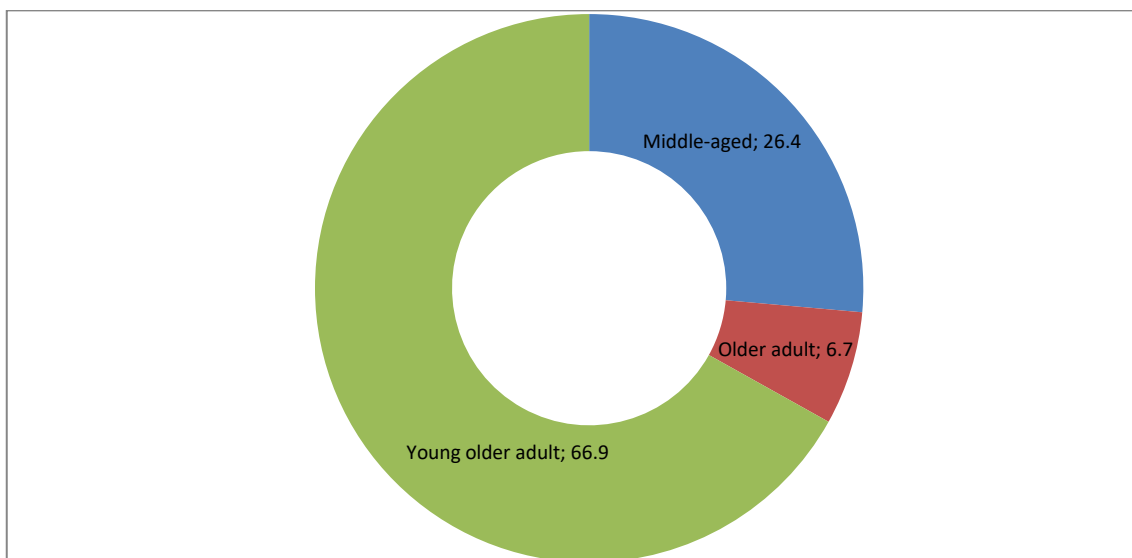
### INTRODUCTION

Population aging is an inevitable outcome of the demographic transition—a historical shift from high to low fertility and mortality rates. This process leads initially to a period of rapid population growth and eventually to an increasing proportion of older individuals within the population. In the least developed countries (LDCs), many of which remain in the early stages of this transition, a steady and gradual rise in both the number and proportion of older people can be anticipated (UN, 2023). According to the United Nations' definition of developing countries, individuals aged 60 years and older are considered older adults (UNFPA & HelpAge International, 2012; WHO, 2001). The Indonesian Central Statistics Agency (BPS) further categorizes the older

adult population into three age groups: younger older adults (60–69 years), middle older adults (70–79 years), and older older adults (80 years and above). A population is classified as "aging" when individuals aged 60 and above comprise at least 10% of the total population (Adioetomo & Pardede, 2018; BPS RI, 2023).

In 2023, based on projections from the 2020 Population Census (SP2020), Jambi Province had a population of 3.6 million people, with over 300,000 individuals aged 60 years and above. This trend aligns with both national and global patterns, signifying that Jambi Province has entered the structure of an aging population. Indonesia, as a whole, transitioned into an aging population in 2022, when the percentage of older adults reached 11.75%. Globally, individuals aged 60 years and older accounted for 12.3% of the population in 2015.

Population aging has become a significant global issue, characterized by the increasing number and proportion of older adults worldwide. In 2023, the percentage of individuals aged 60 years and above in Jambi Province reached 10.23%. Among the older adult population in Jambi, 66.9% were categorized as younger older adults, 26.4% as middle older adults, and 6.7% as older older adults. These figures indicate that the majority of the older adult population in Jambi Province is within the younger older adult group (Figure 1).



**Figure 1.** Percentage of older population in Jambi Province, 2023

*Source: BPS Provinsi Jambi, (2024).*

The Labor Force Participation Rate (LFPR) among older adults is calculated by dividing the number of older adults actively participating in economic activities by the total older adult population, then multiplying the result by 100 to express it as a percentage. The significance of the LFPR lies in the ability of older adults to contribute economically, both to meet their own living needs and to help reduce the dependency burden on younger generations.

Table 1 reveals a notable increase in the LFPR of older adults, rising by approximately 9.64% from 48.94% in 2017 to 53.66% in 2023. This growth may reflect improved employment opportunities or a heightened intention among older adults to remain economically active. The unemployment rate among older adults declined by 36.59%, from 0.41% in 2017 to 0.26% in 2023, indicating greater absorption of older workers and potentially more inclusive economic development. Additionally, the

proportion of working older adults increased by 10.04%, rising from 48.53% in 2017 to 53.40% in 2023. These trends suggest the success of initiatives aimed at encouraging participation in the workforce of older adults.

**Table 1.** Labor and dependency statistics among older adults in Jambi Province, 2017 and 2023

Indicators	Year	
	2017	2023
Labor Force Participation Rate	48.94	53.66
Unemployment Rate	0.41	0.26
Proportion of Working	48.53	53.40
Dependency Ratio	10.27	13.17

Source: *BPS Provinsi Jambi (2017) and BPS Provinsi Jambi (2024)*

As the older population continues to grow in Jambi Province, understanding their workforce participation becomes increasingly important. Older adults represent a valuable development asset, contributing to societal progress by maintaining productivity in later life. Their decision to work is often driven by the desire for financial independence and the need to remain active in society. Enhanced health, educational advancements, and better economic conditions underscore positive development impacts, as increased knowledge and community awareness facilitate effective family planning and birth control.

Improved health care and a stable economy also contribute to higher life expectancy and lower mortality rates, transforming Indonesia’s population pyramid from an expansive structure characterized by a larger young population to an aging pyramid, where the older adult demographic is growing. A constructive population pyramid approach is necessary to manage resources effectively, address societal aspirations, and enhance the quality of life for older adults equitably and sustainably.

Several studies have examined the factors influencing participation in the workforce of older adults. Research by Andini et al. (2013) in Mengwi District, Badung Regency, found that household status, marital status, and health conditions significantly affect the likelihood of older individuals continuing to work. Educational attainment, while not a direct factor, indirectly influences this tendency.

These findings align with research by Sumarsono (2015), which utilized data from the 2011 National Socioeconomic Survey (Susenas). The study revealed that older men, married individuals, those in good health, and household heads were more likely to remain in the workforce. Similarly, research by Affandi (2009), using data from the Indonesian Family Life Survey (SAKERTI), identified household head status, education level, urban or rural residence, and health conditions as significant factors influencing employment among older adults. Affandi’s study also found that over 90% of older workers were physically healthy.

A study conducted by Junaidi et al. (2017) on Jambi’s older adult population, using 2015 Susenas data, revealed that most older adult workers resided in rural areas. Men predominantly entered the workforce, particularly those who were household heads and married. Older adults with lower educational attainment were more likely to work, particularly in agriculture and trade, with extended working hours.

Numerous studies collectively highlight that factors such as age, education level, gender, household head status, health condition, and marital status play a significant role in determining workforce participation among older adults (Bin Sayeed et al., 2021; Dantas et al., 2017; Lee, 2005; McNamara & Williamson, 2004; Oshio et al., 2011; Shin & Lee, 2019). Understanding these variables is crucial, especially as Jambi Province

increasingly reflects national and global trends of an aging population. Workforce participation among older adults has important implications for financial independence, health, and reducing dependency ratios. This underscores the need for targeted policies aimed at improving their quality of life while enabling meaningful contributions to society.

**METHODS**

This study utilizes data from 2023, specifically raw data obtained from the National Labor Survey (SAKERNAS) conducted by BPS in Jambi Province. Data collection was carried out in October 2023. The sample includes 2,053 older adults, of whom 1,053 are either currently employed or temporarily not working but still have a job.

The analytical methods used in this study consist of descriptive and inferential analyses. The descriptive analysis aims to identify and characterize the working older adult population through the use of tables, figures, or graphs. For inferential analysis, the study employs binary logistic regression to examine the factors influencing the likelihood of older adults being employed.

The binary logistic regression model used in this study is as follows:

$$\log it(P(PLK = 1)) = \log \left( \frac{P(PLK = 1)}{1 - P(PLK = 1)} \right) = \beta_0 + \beta_1TD + \beta_2JK + \beta_3TDik + \beta_4Dis + \beta_5SKwn + \beta_7SRT$$

The description of each variable, along with its categorization and values used in the analysis, can be seen in Table 2

**Table 2.** Variables used in the binary logistic regression model, 2023

Variable	Variable Description	Category	Value
PLK	Employment Opportunities for Older Adults	Not Working	0
		Working	1
TD	Type of Area	Urban*	0
		Rural	1
JK	Gender	Female*	0
		Male	1
TDik	Education Level	High School and Above *	0
		Junior High School and Below	1
Dis	Disability	With Disability *	0
		Without Disability	1
SKwn	Marital Status	Married	1
		Single/Divorced*	0
SRT	Household Status	Not Head of Household *	0
		Head of Household	1

Source: Processed SAKERNAS Data August 2023, in Jambi Province

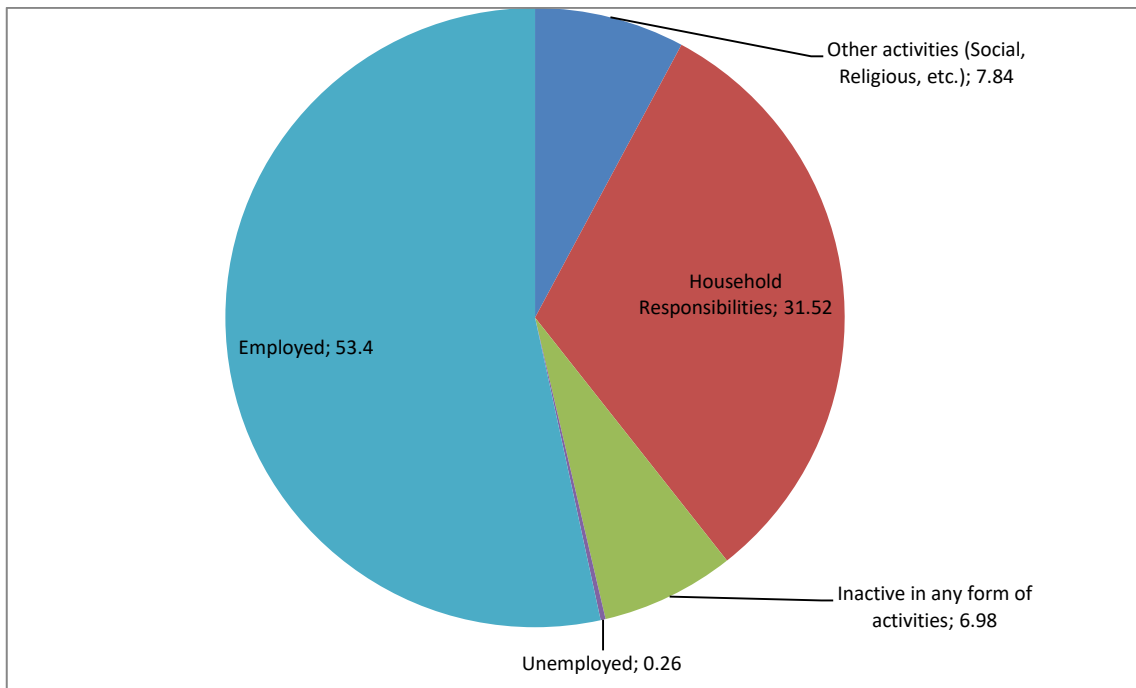
Note: Categories marked with an asterisk (\*) represent the reference categories in the regression model.

**RESULTS AND DISCUSSION**

**Characteristics of working older adults in Jambi Province**

Based on the SAKERNAS survey conducted in October 2023, the older adult population in Jambi Province participated in various activities. Of this population,

53.40% were employed, while 31.52% were engaged in household duties. The remaining percentages were distributed among other activities (7.84%), inactivity (6.98%), and unemployment (0.26%) (see Figure 2). These findings suggest that older adults in Jambi Province remain capable of being productive and working independently.



**Figure 2.** The proportion of the older adult population in Jambi Provincie by Activity, 2023

Based on Table 3, the following provides an overview of the characteristics of working older adults in Jambi Province. These characteristics are analyzed from several aspects: age distribution, place of residence, gender, education level, physical and health condition, marital status, and family status. Regarding age distribution, most working older adults are typically between 60 and 64 years old, representing 47.43% of the working older adult population. Additionally, Table 3 shows that as age increases, the proportion of older adults who are working decreases. This is expected, as physical condition, which is crucial for employment, tends to decline with age. Consequently, fewer older adults can continue participating in the labor market as they grow older. Nevertheless, the percentage of older adults aged 65–69 who are still working is relatively significant, at 30.88%. Furthermore, there are older adults aged 70 and above who are still working, accounting for 21.69% of the total.

Most working older adults, at 70.33%, reside in rural areas, while 29.67% live in urban areas. Regarding gender, the proportion of working older adults is dominated by males, who comprise 67% of the total, compared to 33% for females. Cultural factors in Indonesia influence this gender disparity, as men are traditionally seen as the primary breadwinners for their families or households. At the same time, women are more often engaged in domestic duties such as household chores, child-rearing, cooking, and laundry. These norms contribute to the higher proportion of older men remaining in the labor market compared to older women.

Regarding educational attainment, most older adults engaged in work have low levels of education, with 88% having completed education below the junior high school

level. Only 12% have attained relatively higher education, such as senior high school or above. Older adults with higher levels of education are more likely to have had higher-paying jobs during their productive years and to benefit from retirement income or pensions. Marital status data shows that a significant percentage of working older adults are married, approximately 74.24%, indicating that they are still in marital unions. Additionally, 77.22% of working older adults are household heads. These individuals often have the responsibility of supporting their spouses and other household members, necessitating continued employment to provide for their families.

Health significantly influences an individual's ability to work. Good health generally leads to higher work contributions and productivity, whereas poor health or disabilities hinder daily activities, including job tasks. According to Table 3, 98.38% of working older adults in Jambi Province do not experience disabilities, allowing them to participate in employment. Meanwhile, only 1.62% of working older adults reported living with disabilities, which may limit their capacity to work effectively.

**Table 3.** Working older population by selected characteristics in Jambi Province, 2023

No	Characteristic type	Categories	Percentage (%)
1	Age Group	60-64	47.43
		65-69	30.88
		70+	21.69
		Total	100.00
2	Type of Area	Urban	29.67
		Rural	70.33
		Total	100.00
3	Gender	Male	67.00
		Female	33.00
		Total	100.00
4	Education Level	Junior High School and Below	88.00
		High School and Above	12.00
		Total	100.00
5	Disability	Without Disability	98.38
		With Disability	1.62
		Total	100.00
6	Marital Status	Married	74.24
		Single/Divorced	25.76
		Total	100.00
7	Household Status	Not Head of Household	22.78
		Head of Household	77.22
		Total	100.00

Source: *Processed SAKERNAS Data August 2023*

In terms of employment sectors, the older adult population in Jambi Province is predominantly employed in agriculture, accounting for 69.64%, as shown in Table 4. The trade sector ranks second at 10.95%, followed by other sectors at 9.60%, services at 5.21%, construction at 3.49%, and mining and excavation at 1.11%. Agriculture remains a major employment sector for older adults because it is generally an informal sector that does not require specific qualifications. This field also does not demand a relatively high level of education. Many older adults likely began working in agriculture during their productive years and continue to pursue it into old age. Similarly, the trade sector, which ranks second, also employs older adults in Jambi Province without requiring formal educational credentials, much like the agriculture sector.

**Table 4.** Job characteristics of the working older population in Jambi Province, 2023

No	Job characteristic	Percentage (%)
<i>Field of Employment</i>		
	Agriculture	69.64
	Mining and Quarrying	1.11
1	Construction	3.49
	Trade	10.95
	Services	5.21
	Other	9.60
Total		100.00
<i>Employment Status</i>		
	Self-Employed	37.53
	Self-employed with Assistance from Casual/Unpaid Workers	23.88
2.	Self-employed with Assistance from Permanent/Paid Workers	12.83
	Employee/Worker	9.38
	Independent Agricultural Worker	5.13
	Independent Non-Agricultural Worker	1.78
	Unpaid Family Worker	9.47
Total		100.00
<i>Hours Worked per Week (Hours)</i>		
	<14	17.20
3.	14-34	45.51
	35-40	11.67
	>40	25.62
Total		100.00

Source: Processed SAKERNAS Data August 2023

Employment status reflects an individual's position or role within a business or activity unit. Most older adults in Jambi Province are self-employed, accounting for 37.53%. Those employed with assistance from unpaid or informal workers make up 23.88%, while those with assistance from paid workers account for 12.83%. Wage or salaried employees constitute 9.38%. Additionally, 5.13% of older adults are seasonal agricultural workers, and 1.78% are non-agricultural workers. The remaining 9.47% work as unpaid family workers.

Regarding weekly working hours, most older adults in Jambi Province (45.51%) work 14–34 hours per week. Meanwhile, 11.67% work 35–40 hours per week. The percentage of older adults working more than 40 hours per week is 25.62%. Additionally, 17.20% work less than 14 hours per week. The percentage of older adults working less than 35 hours per week is 62.71%, while those working more than 35 hours per week make up 38.29%. This data indicates that 62.71% of the older adult population is underemployed, while 38.29% work normal hours.

#### **Factors affecting older adult employment**

The results of the Pearson Chi-Square Tests, as presented in Table 5, indicate that all six independent variables tested have a significant p-value of 0.0000, compared to the significance level of  $\alpha = 0.05$ . This confirms a significant relationship between each independent variable and the dependent variable, which represents the percentage of the older adult population engaged in employment.

**Table 5.** Pearson Chi-Square Tests

Variable	Value	Df	Asymptotic Significance (2-sided)
Type of Area (TD)	41.999	1	0,000
Gender (JK)	237.426	1	0,000
Education Level (TDik)	18.765	1	0,000
Disability Status (Dis)	93.582	1	0,000
Marital Status (SKwn)	94.445	1	0,000
Household Status (SRT)	208.542	1	0,000

The results of the overall model test for the older adult employment model are presented in Table 6. According to the omnibus test of model coefficients, a Chi-Square statistic value of 498.431 was obtained with a significance probability (p) of 0.000. This finding indicates that all independent variables in the model collectively influence the decisions and behavior of the older adult population regarding employment.

The Hosmer and Lemeshow Test yielded a Chi-Square value of 4.784, with a significance probability (p) of 0.691. Since the significance probability is greater than 0.05 ( $p > 0.05$ ), the Chi-Square value is considered insignificant. This suggests that the predicted probabilities align well with the observed probabilities, and no significant difference exists between the model and the data. Therefore, the model is considered a good fit for the data.

**Table 6.** Overall model fit test for older adult employment

	Chi-Square	df	Sig
Omnibus Test of Model Coefficients	498.431	6	0.000
Hosmer and Lemeshow Test	4.784	6	0.691

The parameter estimation in the binary logistic regression model for older adult employment is presented in Table 7. Based on inferential testing, each independent variable shows a positive and significant relationship with the dependent variable, which represents the percentage of older adults engaged in employment.

The results indicate that the type of residential area significantly influences the probability of older adults being employed. Older adult residents in rural areas are 1.5 times more likely to work compared to those in urban areas. This finding aligns with research conducted by Affandi (2009) and Lee (2007), which highlights that older adults in rural areas remain active in the workforce, predominantly in the agricultural sector. In contrast, older adults in urban areas are typically employed in industrial or service sector jobs.

Gender also significantly affects employment likelihood, with older males being 1.9 times more likely to work than older females. This is consistent with the perception of males as the primary breadwinners, a role that emphasizes their responsibility to provide for their families. This finding is supported by Simanjuntak (1985, as cited in Sumarsono, 2015), who noted that cultural expectations often position males as the primary earners. Additionally, the employment gap between genders is influenced by the decision of many females to leave the workforce after marriage to focus on household responsibilities.

Various studies also reveal that older women face significant barriers to workforce participation compared to older men. For instance, older women often work in low-wage jobs with minimal job security, which impacts their ability to remain in the labor force. Moreover, the service sector, which employs a large proportion of older women, struggles to mitigate productivity losses and competitiveness challenges they encounter



in the workplace (Sheen, 2017; Vandenberghe, 2011, 2013).

**Table 7.** Parameter estimation of older adult employment model

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	Reference Categories
Type of Area (TD)	.436	.106	16.835	1	.000	1.546	Urban
Gender (JK)	.662	.142	21.732	1	.000	1.938	Female
Education Level (TDik)	.941	.147	41.181	1	.000	2.563	High School and Above
Disability Status (Dis)	2.175	.271	64.294	1	.000	8.803	With Disability
Marital Status (SKwn)	.899	.123	53.060	1	.000	2.458	Single/Divorced
Household Status(SRT)	1.147	.142	65.433	1	.000	3.149	Not Head of Household
Constanta	-4.520	.335	182.189	1	.000	.011	Constant

The education level of the older adult population significantly influences the likelihood of employment. Older adults with relatively low education levels (Junior High School or below) are 2.5 times more likely to remain in the labor market compared to those with higher education levels (Senior High School or above). This finding aligns with research by Affandi (2009) and McNamara & Williamson (2004), which indicates that older adults with higher education levels generally held better jobs during their productive years. These positions provided financial security, enabling them to sustain themselves and their families without the need for employment in old age. Typically, older adults with higher education worked in the formal sector and now benefit from retirement guarantees. However, this group may still choose to work if their skills remain in demand. Conversely, older adults with lower education levels often lack retirement guarantees due to lower lifetime earnings, which limit their ability to save or invest for retirement.

Disability status is another significant factor influencing employment among older adults. Older adults without disabilities are 8.8 times more likely to work than those with disabilities. This result aligns with data showing that 98.38% of working older adults in Jambi Province do not experience disabilities. Good physical health is a critical factor enabling older adults to remain in the workforce. Research by Bin Sayeed et al. (2021) found that poor health, including physical disabilities and chronic conditions such as cardiovascular disease, significantly reduces workforce participation. Mental health issues, such as depressive symptoms, also serve as significant barriers to labor force involvement.

Marital status also plays a significant role in determining employment. Married older adults are 2.4 times more likely to work compared to those who are single or divorced. This finding is consistent with the study by Yanti & Sudibia (2019), which suggests that married older adults are more likely to work due to their roles as household providers.

Nevertheless, various studies highlight the complex dynamics between marital status and workforce participation among older adults. For older men, being married tends to increase the likelihood of continuing to work after retirement. In contrast, for older women, being in a marital relationship is often associated with lower chances of employment (Settels & McMullin, 2017).

Additionally, a spouse's condition plays a significant role. The health and insurance status of a partner can influence the employment decisions of married older

adults. For instance, individuals are more likely to work full-time if their spouse is in poor health, potentially due to economic needs or increased family responsibilities (Shin & Lee, 2019; Wenger & Reynolds, 2009).

Household status significantly impacts employment likelihood. Older adults who are heads of households are 3.1 times more likely to work compared to those who are not heads of households. According to Schatz and Madhavan (2011), older adults who serve as household heads often bear greater responsibilities, which may compel them to continue working to support their household needs. This is particularly evident in contexts where older adults have access to non-contributory pensions, which can increase their household responsibilities and, potentially, their need to work. Furthermore, as noted by Srivastava et al. (2022), the shift from joint family structures to nuclear families has led to a growing number of older adults becoming household heads. This transition is also linked to the need to maintain economic independence through employment.

Kaufman & Hotchkiss (2003) demonstrated through a household model that men are more likely to dominate the labor market, often perceiving their economic value as higher when working full-time as heads of households. Furthermore, the absence of financial support from children often compels older household heads to stay in the labor market to meet their own and their household's needs.

## **CONCLUSION AND RECOMMENDATIONS**

### **Conclusion**

This study reveals that a significant proportion of the older adult population in Jambi Province remains actively employed (53.40%). Working older adults are predominantly characterized by those living in rural areas, males, individuals with junior high school education or lower, those without physical limitations, and individuals who are married and head of a household.

Inferential analysis confirms that all six independent variables examined in this study have a significant positive relationship with the dependent variable—the percentage of older adults who remain employed. These findings underscore the key factors influencing workforce participation among older adults and provide a valuable foundation for policymakers and stakeholders aiming to support this demographic in the labor market.

### **Recommendations**

Collaboration among various stakeholders is paramount to ensure the continued participation of older adults in the labor market. This can be achieved through the development of supportive regulations and competency training programs specifically designed to address the needs of the older adult population. Such measures will enhance sustainable economic inclusion by equipping older workers with the skills and opportunities required to remain active in the workforce.

Moreover, welfare programs, social safety nets, and targeted health interventions are crucial to improving the overall quality of life for older adults. These initiatives not only enhance their physical and mental well-being but also reinforce their ability to contribute positively to society. Addressing the social and health challenges faced by older adults empowers them to maintain their roles as productive members of their communities.

Creating age-friendly work environments represents another vital step toward safeguarding the economic potential of the older adult population. Government support should focus on sectors such as agriculture, a significant source of employment for older

adults. Policies that promote safe, accessible, and inclusive workplaces will not only foster sustainable development but also uphold the dignity and well-being of older workers.

This study, utilizing 2023 SAKERNAS data, offers an important perspective on older adult workforce participation in Jambi Province. However, the analysis is limited by the scope of available variables. Future research should consider incorporating more recent and comprehensive data to investigate this demographic trend further. Expanding the range of variables analyzed will provide deeper insights and inform more effective policies to enhance the economic inclusion and overall well-being of the older adult population.

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