The Influence of cultural values and external support on the effectiveness of GESI approaches in increasing the empowerment of young farmers

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Abstract. Indonesia's sustainable agriculture agenda increasingly relies on youth participation and Gender Equality and Social Inclusion (GESI) approach, including within the YESS project, to promote gender-equal access to resources and opportunities. However, patriarchal norms, limited mobility and information for women, weak institutional support, and dependence on external actors can constrain GESI effectiveness at the grassroots. This study examines the influence of socio-cultural values and external support on effectiveness of GESI approach in enhancing the empowerment of young farmers in Indonesia. A quantitative research design was employed using survey data from 152 young farmers who received competitive grants. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results indicate that socio-cultural values ($\beta = 0.349$; $t = 4.713$; $p < 0.001$) and external support ($\beta = 0.404$; $t = 5.939$; $p < 0.001$) have a significant positive effect on the effectiveness of the GESI approach. Multigroup analysis by gender reveals that socio-cultural values exert a stronger influence among male respondents ($\beta = 0.409$), whereas external support is more influential among female respondents ($\beta = 0.444$). These findings highlight the critical role of inclusive socio-cultural transformation and gender-responsive external support in strengthening young farmers's empowerment and advancing effective GESI implementation.

1 Introduction

Efforts to develop sustainable agriculture in Indonesia are inseparable from the active role of the younger generation, which embraces the values of inclusivity and gender equality. The Gender Equality and Social Inclusion (GESI) approach is integrated into various empowerment programs, including the Youth Entrepreneurship and Employment Support Services (YESS) project, to ensure that all groups, both men and women, have equal

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opportunities to access resources and development benefits. However, the implementation of GESI at the grassroots level often faces socio-cultural obstacles, such as traditional perceptions of gender roles, limited social mobility for women, and a lack of institutional support and access to information. Patriarchal socio-cultural values often limit women's participation in productive agricultural activities and decision-making. Furthermore, the effectiveness of the GESI approach depends heavily on external support from the government, educational institutions, the private sector, and banks, which provide access to capital and entrepreneurship training.

Globally, various studies indicate that youth involvement in agriculture is closely linked to the dynamics of agrarian transformation, climate change, and gender inequality. Gender inequality and access to productive resources are key research themes in developing sustainable food systems in developing countries [1]. Furthermore, challenging unequal norms and power relations tend to be more effective in increasing women's empowerment in the agricultural sector than gender-neutral approaches [2, 3]. This aligns with research findings in Africa and Asia, which show that women and youth face structural barriers in access to land, information, and technology, as well as limited positions in decision-making opportunities for both young men and women [4].

In the context of Indonesia and other developing countries, the issue of youth participation in agriculture is also associated with a declining trend in young people's interest in becoming farmers and with high gender- and social-status-based inequality in access. Various studies confirm that agricultural transformation and increased food security depend heavily on the ability of agricultural systems to attract and retain youth through viable and inclusive agripreneurship opportunities [5, 6]. Within this framework, the GESI approach is viewed not merely as a normative agenda, but as a strategic instrument to reduce access gaps, strengthen capacity, and encourage transformative participation of youth, especially women, in the agricultural value chain. Therefore, this study specifically analyzes the influence of socio-cultural values and external support on the effectiveness of the GESI approach in enhancing the empowerment of young farmers and examines the differences in these influences based on gender. GESI effectiveness reflects how far the principles of gender equality and social inclusion are realized in concrete and fair practices at the community level, particularly in ensuring balanced access to resources, information, training opportunities, and decision-making processes for both young women and young men.

2 Methods

This study employed a quantitative approach with a survey and interviews with young farmers who benefited from a competitive grant program in two locations: Banjar (South Kalimantan Province) and Cianjur (West Java Province). The study population consisted of young farmers involved in GESI-based empowerment activities. Sampling was conducted using the Slovin formula with a 7 percent margin of error, resulting in 152 respondents: 81 men (53.29 percent) and 71 women (46.71 percent). Respondent details are shown in Table 1. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS software version 3.9.2. The research model consisted of three latent variables and 13 measurement indicators. Model testing included:

(1) Outer model testing to assess construct validity and reliability. Factor loading values ≥ 0.5, Composite Reliability (CR) ≥ 0.7, and Average Variance Extracted (AVE) ≥ 0.5 are declared valid [7].
(2) Inner model testing to assess the relationship between variables by examining the path coefficient, t-statistics, and p-value.

Table 1. Demographics of the research sample

Description	Category	Frequency	Percentage (%)
Gender	Male	81	53.29
	Female	71	46.71
Place of Origin	Banjar District	97	63.82
	Cianjur District	55	36.18
Age	19 – 22 years	10	6.58
	23 – 26 years	17	11.18
	27 – 30 years	32	21.05
	31 – 34 years	37	24.34
	35 – 38 years	45	29.61
	39 – 42 years	11	7.24

Based on a literature review highlighting the influence of socio-cultural values and external support on the effectiveness of the Gender Equality and Social Inclusion (GESI) approach in improving the empowerment of young farmers (independent variables X1, X2), this study investigates its influence on the Effectiveness of the GESI Approach in Improving the Empowerment of Young Farmers (Y1) as the dependent variable. The analysis combined descriptive statistics and inferential procedures, and the hypothesized relationships were evaluated through SEM using SmartPLS software. The empirical results are outlined in the following section.

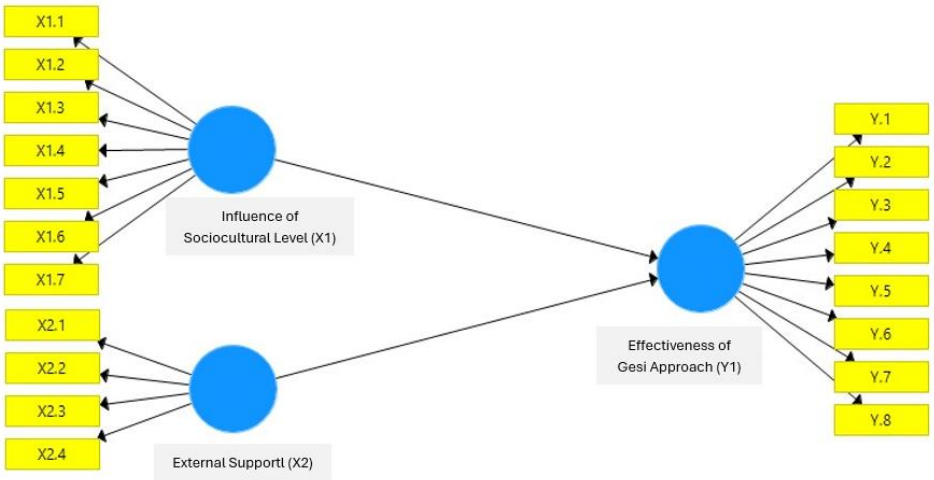

Fig. 1. Hypothetical model of the influence of cultural values and external support on the effectiveness of nutrition approaches in increasing the empowerment of young farmers

Figure caption 1.

X1 Influence of Sociocultural Level

X1.1 Family Support
X1.2 Perception of Traditional Gender Roles
X1.3 Community Social Norms
X1.4 Permission for Social Mobility
X1.5 Influence of Religious/Traditional Leaders

X1.6 Experience of Gender Discrimination
X1.7 Internalization of Social Norms
X2 External Support
X2.1 Government Support
X2.2 University Support
X2.3 Company Support
X2.4 Banking Support
Y1 Effectiveness of the GESI Approach
Y1.1 Access to Program Information
Y1.2 Access to Training and Facilitation
Y1.3 Involvement in Planning
Y1.4 Involvement in Implementation
Y1.5 Influence on Decision-Making
Y1.6 Control over Business Resources
Y1.7 Perception of Program Impact
Y1.8 Capacity and Income Enhancement

3 Result and discussion

3.1 Measurement model evaluation

The model was tested using Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis with SmartPLS version 3.9.2. PLS-SEM itself works by measuring the variance present in each latent variable and the measured variables. PLS-SEM testing will test and confirm the existing hypotheses by analyzing all existing path relationships to provide conclusions regarding the proposed hypothetical theory. The PLS-SEM analysis is divided into two stages: outer model testing and structural model analysis (inner model testing).

Outer model testing involves validity and reliability tests to ensure that the model used in this study is feasible and can be used as a basis for measurement. In validity testing, particularly convergent validity, all factor loadings must have a minimum of high statistical significance. A factor loading is considered acceptable when it reaches at least 0.50, and values exceeding 0.70 indicate a strong contribution of the indicator to its respective latent construct." [8]. Reliability testing then involves two statistical values: composite reliability (CR) and average variance extracted (AVE). Composite Reliability (CR) is applied to assess the internal consistency of a construct and to evaluate how reliably each indicator reflects its latent variable, whereas the Average Variance Extracted (AVE) indicates the proportion of variance captured by the indicators within the latent construct [7]. The accepted CR value in this PLS-SEM model analysis is 0.7 or higher, and the accepted AVE value is 0.5 or higher. The following are the results of the outer model testing used in this study, which can be seen in Table 2.

Table 2. Validity and reliability test results

Latent Variable	Validity	Reliability	
	Factor loading	**CR**	**AVE**
Acceptability Limit Value	≥ 0.5	≥ 0.7	≥ 0.5
Influence of Sociocultural Level (X1)	0.662 – 0.805	0.789	0.557
External Support (X2)	0.644 – 0.781	0.817	0.528
Effectiveness of the GESI Approach	0.595 – 0.721	0.826	0.443

Based on Table 2, the Average Variance Extracted (AVE) value for the effectiveness of the GESI approach (Y) is below the commonly recommended threshold of 0.50. However, according to the Fornell–Larcker criteria, an AVE value lower than 0.50 is still acceptable provided that the Composite Reliability (CR) exceeds 0.60, indicating adequate internal consistency reliability [7]. Furthermore, all measurement indicators exhibit factor loadings above 0.50, suggesting sufficient convergent validity. Therefore, the measurement model can be regarded as construct-valid and reliable.

3.2 The influence of socio-cultural levels and external support on the effectiveness of GESI approaches in increasing the empowerment of young farmers

3.2.1 The influence of sociocultural value levels (X1) on GESI effectiveness

The sociocultural values variable describes the extent to which social norms, beliefs, and practices within a farming community support equal roles between men and women. The indicators used in this study include: (a) social norms that support gender equality, (b) acceptance of women's and men's participation in farming groups, (c) freedom to participate in social activities, and (d) community support for innovation and collaborative learning.

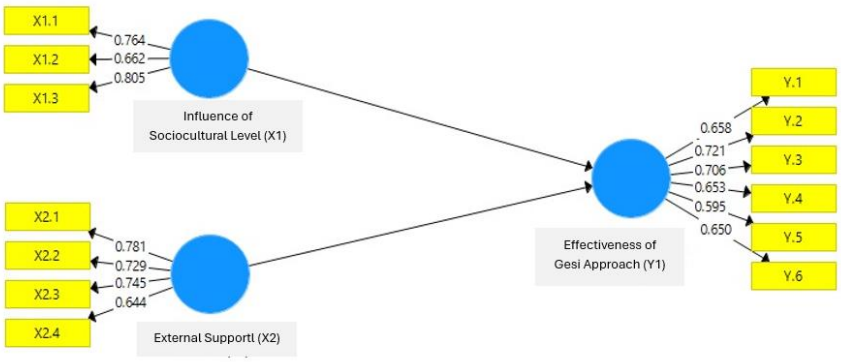

Fig. 2. Inner model

The analysis results, as seen in Figure 2, indicate that the freedom to engage in various activities within the community has the highest loading value (0.805), indicating that active and inclusive participation is a key factor driving the success of GESI implementation. This condition reinforces the view that social transformation in rural development is determined by the community's ability to build participatory spaces that are equal and adaptive to changing values [9]. The more open a community is to cross-gender participation, the greater the opportunity for equitable empowerment of young farmers.

3.2.2 The influence of external support (X2) on GESI effectiveness

The external support variable reflects the contribution of external parties in strengthening the capacity and access of young farmers to productive resources. The indicators in this study consist of: (a) government support for farming community activities, (b) assistance from

agricultural extension workers, (c) family support for young agricultural businesses, (d) access to markets and financial institutions, and (e) community support and social networks.

Based on Table 3, government support (X2.1) emerged as the most dominant indicator with a loading value of 0.781, indicating that public policies and facilitation have a significant influence on the success of the GESI approach. This result is consistent with the conclusions of previous research, which highlight that institutional support plays a critical role in promoting women's and youth participation in climate-smart agricultural systems. In addition, extension services and family encouragement were found to be equally important, as they provide both social motivation and psychological assurance that enable young farmers to engage actively in group activities and pursue innovation [4].

3.2.3 Effectiveness of the GESI approach (Y) as a reflection of young farmers' empowerment

The effectiveness of the GESI approach is measured through five indicators: (a) active participation in training and farmer group activities, (b) openness to expressing opinions, (c) equal access to resources, (d) enhanced capacity and self-confidence, and (e) the sustainability of socially inclusive activities. The results indicate that the indicator openness to expressing opinions (Y.2) has the highest loading value (0.721), illustrating that the success of GESI is characterized by the creation of a safe and equitable space for both women and men to participate.

Theoretically, this finding supports the gender-transformative approach [3], which emphasizes the importance of shifting social power relations to achieve sustainable empowerment. In the context of the YESS program and agricultural extension support, GESI effectiveness not only involves formal equality but also reflects shifts in social norms and behaviors that enable individuals to contribute as agents of change within their communities actively.

3.2.4 The influence of sociocultural level and external support on the effectiveness of the GESI approach in enhancing young farmers' empowerment

Based on Table 3, the structural model analysis shows that the sociocultural level (X1) and external support (X2) have a significant effect on the effectiveness of the Gender Equality and Social Inclusion (GESI) approach in enhancing young farmers' empowerment. The path coefficient for X1→Y ($\beta = 0.349$; t-value = 4.713; p-value = 0.000) indicates that the stronger the internalization of sociocultural values that support equality and collaboration, the more effective GESI implementation becomes in the agricultural context. Meanwhile, the effect of X2→Y ($\beta = 0.404$; t-value = 5.939; p-value = 0.000) confirms that external support, including government policies, extension services, family support, and institutional networks, plays a dominant role in strengthening young farmers' empowerment through the application of the GESI approach.

Table 3. Hypothesis test and path coefficients

Hypothesis	Path model	Coefficient	*t*-value	*p*-value	Result*
H1	Influence (X1) → Effectiveness of GESI approach (Y)	0.349	4.713	0.000	Accepted
H2	External support (X2) → Effectiveness of GESI approach (Y)	0.404	5.939	0.000	Accepted

*) Testing was conducted with a 7% margin of error

The outer model analysis shows that indicator X1.3 (freedom to participate in social activities) has the highest loading value (0.805), indicating the importance of social engagement as a reflection of inclusive cultural values (Table 4). For the external support variable (X2), indicator X2.1 (government support for farming communities) obtains the highest loading value (0.781), reinforcing the finding that institutional interventions serve as an effective catalyst for social change. Meanwhile, indicator Y.2 (openness to expressing opinions in the YESS program), with a loading value of 0.721, confirms that equal participation spaces constitute a tangible manifestation of the effectiveness of the GESI approach at the community level.

Table 4. Factor loading values for all measurement indicatorss

Latent variable	Indicator measurement	*Factor loading*	*t-value*	*p-value*	Conclusion*)
Influence of Sociocultural Level (X1)	X1.1	0.764	9.961	0.000	Significant
	X1.2	0.662	5.890	0.000	Significant
	X1.3	0.805	11.997	0.000	Significant
External Support (X2)	X2.1	0.781	14.323	0.000	Significant
	X2.2	0.729	10.117	0.000	Significant
	X2.3	0.745	8.605	0.000	Significant
	X2.4	0.644	6.321	0.000	Significant
Effectiveness of the GESI Approach (Y)	Y.1	0.658	10.243	0.000	Significant
	Y.2	0.721	9.787	0.000	Significant
	Y.3	0.706	9.771	0.000	Significant
	Y.4	0.653	7.126	0.000	Significant
	Y.5	0.595	6.768	0.000	Significant
	Y.6	0.650	10.385	0.000	Significant

*) Testing was conducted with a 7% margin of error

These findings are consistent with research findings that emphasize the importance of social transformation in achieving sustainable agricultural development and the Sustainable Development Goals (SDGs) through actor synergy within a hexahelix framework involving government, academia, the private sector, communities, the media, and change agents [10]. This approach positions shifts in social values as a fundamental factor in strengthening young farmers' capacity and participation in inclusive development.

Furthermore, institutional reforms grounded in principles of gender equality and social justice can create a safe, adaptive, and participatory social environment, both within educational institutions and agricultural communities [11]. Gender-responsive and socio-culturally sensitive institutions have been shown to reduce power asymmetries and strengthen social trust among development actors. This aligns with the findings of the present study, which show that the effectiveness of the GESI approach is reflected in enhanced openness and trust within collaborative processes among young farmer communities.

From a global perspective, youth participation in Farmer Producer Organizations (FPOs) in India is positively associated with crop diversification, increased household income, and women's empowerment [12]. In addition, the success of nutrition-sensitive interventions in ethnic minority communities in Vietnam depends on the integration of local social values with cross-sector external support [13]. More broadly, the social and institutional dimensions

of food systems are often overlooked in nutrition policies, even though they are major determinants of successful integration between agriculture and nutrition [14].

Taken together, the findings of this study reinforce the view that the effectiveness of the GESI approach in empowering young farmers is shaped by the synergy between internal strengths (sociocultural values) and external strengths (institutional support). Sociocultural values serve as the foundation for building awareness and social solidarity, while external support functions as a structural enabler that provides resources, training, and collaborative spaces. When these two forces operate simultaneously, an agricultural ecosystem emerges that is inclusive, adaptive, and gender-responsive, forming a necessary condition for the economic and social sustainability of young farmers.

3.3 Comparison of model analysis based on genders

The structural model analysis then focused on comparing the results based on gender, namely from the perspectives of men and women. To analyze the PLS-SEM structural model based on gender in this study, the research data were grouped by gender, namely the male group (81 research samples) and the female group (71 research samples), which were then analyzed using a multi-group analysis. Table 5 below shows the results of the hypothesis testing and path coefficients obtained by analyzing all answers provided by male respondents.

Table 5. Hypothesis testing and path coefficients (male respondents)

Hypothesis	Path model	Coefficient	*t*-value	*p*-value	Result*
H1	Influence (X1) → Effectiveness of GESI approach (Y)	0.409	3.779	0.000	Accepted
H2	External support (X2) → Effectiveness of GESI approach (Y)	0.392	3.578	0.000	Accepted

*) Testing was conducted with a 7% margin of error

Table 6 below shows the results of the hypothesis testing and path coefficients obtained by analyzing all answers provided by female respondents.

Table 6. Hypothesis testing and path coefficients (female respondents)

Hypothesis	Path model	Coefficient	*t*-value	*p*-value	Result*
H1	Influence (X1) → Effectiveness of GESI approach (Y)	0.268	2.518	0.006	Accepted
H2	External support (X2) → Effectiveness of GESI approach (Y)	0.444	5.494	0.000	Accepted

*) Testing was conducted with a 7% margin of error

Based on Tables 5 and 6, both male and female respondents agree that there is a significant relationship between the sociocultural level (X1) and external support (X2) on the effectiveness of the GESI approach (Y). The difference between the two structural models lies in which independent latent variable contributes more strongly to shaping the dependent latent variable. In the male structural model, the sociocultural level (X1) exerts a greater influence ($\beta = 0.409$) on the effectiveness of the GESI approach (Y) compared with external support. Conversely, in the female structural model, external support demonstrates a stronger effect ($\beta = 0.444$) in shaping the effectiveness of the GESI approach (Y).

These findings align with studies showing that gender-transformative approaches in agriculture generate different effects for men and women due to asymmetric social norms and role distributions. A gender-sensitive approach is therefore essential to ensure that women have greater opportunities for self-actualization and access to decision-making processes in the agricultural sector [2, 3].

Moreover, differences in access to and control over productive resources result in significant variations in empowerment outcomes, with women often requiring stronger structural and institutional support than men, who are often advantaged by established social networks and prevailing cultural norms [15].

This study demonstrates that sociocultural values and external support significantly influence the effectiveness of the Gender Equality and Social Inclusion (GESI) approach in enhancing the empowerment of young farmers in Indonesia. Sociocultural values that are support gender equality serve as a social foundation that enables active and collaborative participation between men and women in the agricultural sector. Meanwhile, external support from government institutions, extension services, financial agencies, communities, and families acts as a key driver that strengthens young farmers' capacity, access, and confidence in developing inclusive agribusiness ventures.

The analysis further shows that sociocultural values exert a stronger influence on young male farmers, whereas external support is more strongly felt by young female farmers. This confirms that GESI-based empowerment strategies must consider gender-specific contexts in both design and implementation. The effectiveness of GESI can only be achieved when transformation of social values occurs alongside the strengthening of institutional support systems that are responsive to the unique needs of each group.

4 Conclusion

Sociocultural values and external support play a significant role in strengthening the effectiveness of the Gender Equality and Social Inclusion (GESI) approach, ultimately enhancing the empowerment of young farmers in Indonesia. Inclusive sociocultural values help create a social environment that encourages equal participation, while external support, through government policies, extension facilitation, as well as family and community backing, serves as a key driver in improving young farmers' capacity and access to productive resources. These findings affirm that the success of GESI implementation relies not only on structural policies but also on shifts in social norms and the strengthening of gender-responsive institutional support to achieve equitable and sustainable agricultural development.

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