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ASSESSING MUTĀBARAH MEDIATION IN EMPOWERING SUSTAINABLE AGRIBUSINESS DEVELOPMENT FOR INDONESIAN MILLENNIAL FARMERS

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Abstract. This study aims to examine the mediating role of Mutābarah (perseverance) in sustainable agribusiness development among Indonesian millennial farmers. Grounded in the Theory of Planned Behavior and Character-Based Entrepreneurship Theory, it analyzes how attitudes toward behavior, subjective norms, and entrepreneurial character influence agribusiness development directly and indirectly through Mutābarah. A quantitative explanatory approach was employed using survey data from 150 millennial farmers in Bone Regency, Indonesia. Data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM). The results show that attitudes, subjective norms, and entrepreneurial character significantly influence Mutābarah. In turn, Mutābarah has a significant positive effect on agribusiness development. Direct effects of these variables on agribusiness development are also observed, with varying levels of significance. Mediation analysis indicates that Mutābarah partially mediates the relationships, confirming its role in translating behavioral and entrepreneurial factors into sustained agribusiness performance.These findings highlight the importance of perseverance grounded in ethical values in strengthening agribusiness sustainability and offer practical implications for character-based empowerment programs.

Keywords: entrepreneurial character; millennial farmers; mutābarah; sustainable agribusiness, theory of planned behavior

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INTRODUCTION

Mutābarah promotes ethical agribusiness values among millennial farmers by integrating responsible and value-based practices into daily farming, strengthening social accountability and environmental stewardship (Unay-Gailhard and Brennan 2023). It supports the adoption of sustainable agricultural technologies that enhance resource efficiency, reduce environmental degradation, and maintain long-term ecosystem balance (Abu et al. 2022; Bhujel and Joshi 2024; Mohamad Saleh, Mehellou, and Omar 2023). Through inclusive, technology-driven initiatives, Mutābarah fosters

equitable access to innovation and socially responsible productivity, while contributing to rural socio-economic development, improved livelihoods, stronger agribusiness networks, and food security (Chowdhury et al. 2025).

Previous studies on *Mutābarah* in agribusiness development among millennial farmers remain limited, although research in other fields has widely examined perseverance in entrepreneurship, land management, and product marketing (Diepolder, Weitzel, and Huwer 2021). Prior findings show that perseverance, supported by knowledge, motivation, and leadership, strengthens entrepreneurial interest and supports womenpreneurs. Other studies highlight persistence in land cultivation through sustainable home gardening, environmentally friendly innovations, and improved agricultural productivity and income (Karami et al. 2024; Ramos Farroñán et al. 2024). In the marketing context, perseverance is shown to enhance farmers' resilience in expanding market access, sustaining digital-based marketing during crisis periods, and encouraging continuous learning and innovation within community-based enterprises (Mohammad et al. 2025).

Despite these contributions, a significant research gap persists because Mutābarah has not yet been systematically examined as a strategic value shaping sustainability (Muhammad Zuardi et al. 2025), ethical behavior, empowerment, and long-term performance in millennial farmers' agribusiness endeavors (Tinggi et al. 2024). The lack of comprehensive academic exploration highlights the need to better understand how Islamic-based perseverance can strengthen the resilience, productivity (Salleh et al. 2020), and innovation of young farmers facing dynamic agricultural challenges. Therefore, further empirical and systematic research is required to establish a deeper and more integrated understanding (Dewi and Eddyono 2024) of how Mutābarah can serve as a transformative force in developing sustainable agribusiness among Indonesia's millennial farming communities.

This study examines the mediating role of Mutābarah in millennial agribusiness development using the Theory of Planned Behavior and Character-Based Entrepreneurship Theory as complementary frameworks (Abdulshakur and Sulaiman 2021; Caliendo et al. 2021). The Theory of Planned Behavior explains how attitudes and subjective norms influence entrepreneurial intentions, clarifying how Mutābarah translates value internalization into agribusiness behavior (Ohanu and Shodipe 2021). Meanwhile, Character-Based Entrepreneurship Theory emphasizes moral character as a driver of ethical and sustainable entrepreneurship, positioning Mutābarah as a mechanism for character formation. Together, these theories provide a coherent and empirically grounded framework for analyzing value-based agribusiness development (Daradkeh 2023; Uriarte, Geldes, and Santorcuato 2025).

This study addresses gaps in existing literature by analyzing the mediating role of Mutābarah (perseverance) in agribusiness development among millennial farmers (Heryadi, Widarawati, and Suprapto 2025; Sundari, Waluyo, and Mawardi 2025). Mutābarah functions as a key value linking attitudes toward behavior, subjective norms, and entrepreneurial character to agribusiness advancement, strengthening resilience and persistence in addressing contemporary agricultural challenges (Bhujel and Joshi 2023; Bias Tri Banadi, Muhaimin, and Shinta 2024).

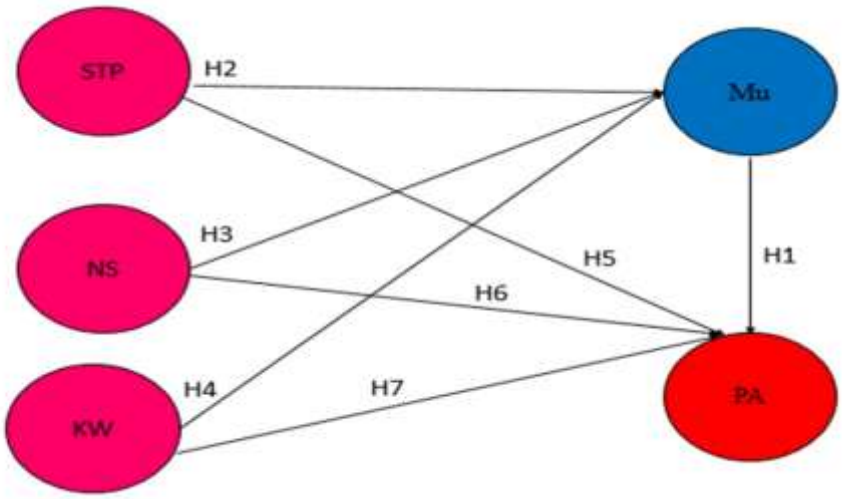
This study aims to contribute to the Islamic value-based entrepreneurship literature by providing empirical evidence and offering practical insights for sustainable, character-driven agribusiness training and empowerment programs (Sinta Kasim et al. 2024).

METHOD

This study adopts a quantitative explanatory research design integrated with an Islamic economics perspective to empirically examine the causal relationships among attitudes toward behavior, subjective norms, entrepreneurial character, Mutābarah, and agribusiness development among millennial farmers in Bone Regency, Indonesia (Che Nawi et al. 2022; Ihou and Mansingh 2025). The explanatory approach is employed to test the direct effects of psychological and social

factors on agribusiness development, as well as the mediating role of Mutābarah in strengthening these relationships(Ihou and Mansingh 2025; Sargani et al. 2020). Data were analyzed using the Partial Least Squares–Structural Equation Modeling (PLS-SEM) technique, which is appropriate for predictive analysis, complex mediation models, and moderate sample sizes (Sarstedt and Liu 2024).

The analytical model conceptualizes agribusiness development as the endogenous variable influenced by attitudes toward behavior, subjective norms, and entrepreneurial character, with Mutābarah positioned as an intervening (mediating) variable(Cortés-Rodríguez et al. 2023; Daradkeh 2023). In this model, attitudes toward behavior reflect farmers' positive evaluations of innovation and sustainability, subjective norms represent perceived social expectations from significant others, and entrepreneurial character captures traits such as independence, resilience, and innovativeness(Montes de Oca Munguia, Pannell, and Llewellyn 2021; Wu et al. 2024). Mutābarah functions as a core Islamic value reflecting perseverance, consistency, and commitment, mediating the transformation of intentions and character into sustained agribusiness practices. Overall, agribusiness development is framed as an outcome of the interaction between psychological, social, and character-based factors internalized through Mutābarah (Sismanto, Siswanto, and Djalalludin 2024).



Note: STP (attitude towards behavior), NS (subjective norms, KW (entrepreneurial character), Mu (mutābarah), and PA (agribusiness development)

Figure 1. Analytical Model
Source: Author's Own Work, 2025

The study employed a two-section structured questionnaire. The first section collected respondents' demographic information, while the second section consisted of 15 Likert-scale items (1 = Strongly Disagree to 5 = Strongly Agree) measuring five constructs: Attitudes toward Behavior, Subjective Norms, Entrepreneurial Character, Mutābarah, and Agribusiness Development. All indicators were developed based on established theories and operational definitions of the constructs.

Data collection was conducted over a three-month period in 2025 across five districts in South Sulawesi region , with Bone Regency using a cluster sampling technique. A total of 150 millennial farmers aged 20-40 years participated in the survey, meeting the minimum sample adequacy requirement for SEM-PLS analysis with a 10:1 ratio between sample size and estimated parameters. The data were analyzed using SmartPLS 4, following two main stages: (1) measurement model evaluation to assess validity and reliability through factor loadings, Composite Reliability, Cronbach's

Alpha, and Average Variance Extracted (AVE); and (2) structural model evaluation to test hypotheses using R-square values, path coefficients, and mediation effects at a significance level of $p \leq 0.05$.

RESULT AND DISCUSSION

Demographic Profile of Respondents

Table 1. Demographic profile of the respondents

Criteria / Category	Frequency	Percentage
Gender		
Male	116	71.6%
Female	46	28.4%
Total	162	100%
Age		
29–33 years	108	66.7%
34–38 years	31	19.1%
39–44 years	23	14.2%
Total	162	100%
Marital Status		
Single	80	49.4%
Married	82	50.6%
Total	162	100%
Highest Level of Education		
Senior High School / Equivalent	95	58.6%
Diploma (II/III/IV)	9	5.6%
Bachelor's Degree (S1)	47	29.0%
Master's Degree (S2)	6	3.7%
Others	5	3.1%
Total	162	100%
Occupation		
Farmer	84	51.9%
Entrepreneur / Business Owner	20	12.3%
Public/Private Employee	6	3.7%
Teacher	7	4.3%
TNI / POLRI / Civil Servant	1	0.6%
Employee	2	1.2%
Health Worker	7	4.3%
Others	34	21.0%
Total	162	100%
Monthly Income		
Below IDR 1 million	14	8.6%
IDR 1 million – IDR 2 million	22	13.6%
Above IDR 2 million – IDR 3 million	28	12.3%
Above IDR 3 million	60	37.0%
Uncertain / Others	38	23.5%
Total	162	100%

Source: Data Processed, 2025

To illustrate the diversity of millennial farmers participating in this study and to provide an overview of the demographic profile of the research sample, respondents' characteristics are presented. This section describes key attributes of the respondents, including gender, age, marital status, educational background, primary occupation, and monthly income. Table 1 summarizes the data collected from 162 respondents, which form the basis for the subsequent analysis.

Based on Table 1, the respondent profile is predominantly male (71.6%) and concentrated within the productive age range of 29–33 years (66.7%). Married and unmarried respondents are almost equally represented (50.6% and 49.4%, respectively). Educational attainment is largely at the senior high school level (58.6%), followed by bachelor's degrees (29.0%), indicating moderate formal education. Farming constitutes the main occupation for the majority of respondents (51.9%), while others are engaged in diverse professions. Most respondents report monthly incomes exceeding IDR 3 million (37.0%), reflecting relatively stable economic conditions among the millennial farmers in the sample.

Measurement Model Assessment

Validity and Reliability Test Results

Table 2 indicates that all constructs in the measurement model meet the criteria for convergent validity and reliability. Cronbach's Alpha and Composite Reliability values exceed the 0.70 threshold, while AVE values range from 0.660 to 0.746, above the minimum requirement of 0.50. These results confirm that all constructs are valid and reliable, supporting further structural model analysis.

Table 2. Validity and reliability test result

Variable	Cronbach's Alpha	Composite Reliabilty (rho_a)	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
Entrepreneurial Character	0.743	0.743	0.854	0.660
Mutābarah	0.829	0.829	0.898	0.746
Subjective Norms	0.777	0.779	0.870	0.691
Agribusiness Development	0.802	0.803	0.883	0.716
Attitude toward Behavior	0.794	0.797	0.879	0.708

Source: Data Processed, 2025

Outer Loadings

Table 3 presents the outer loading values of each indicator for its respective latent construct, confirming the measurement model's convergent validity. All indicators show outer loading values above the recommended threshold of 0.70, indicating strong and reliable contributions to their intended constructs. Entrepreneurial Character, Mutābarah, Subjective Norms, Agribusiness Development, and Attitude Toward Behavior constructs are all measured by indicators with consistently high loading values, demonstrating adequate indicator reliability. Overall, these results confirm that the measurement model meets the convergent validity requirements for Partial Least Squares Structural Equation Modeling (PLS-SEM) and is appropriate for further structural analysis.

Fornell–Larcker Criterion Values

Table 4 confirms that all constructs meet the Fornell–Larcker Criterion for discriminant validity. The square root of AVE (diagonal values) for each construct exceeds its correlations with other constructs, indicating clear empirical distinctiveness. For example, Entrepreneurial Character (0.813) and Mutābarah (0.864) both show higher diagonal values than their inter-construct correlations. The same pattern applies to subjective norms, agribusiness development, and attitude toward behavior.

Therefore, discriminant validity is well established, and the measurement model is suitable for further analysis.

Table 3. Outer loadings

Construct	Indicator	Outer Loading
Entrepreneurial Character	Entrepreneurial Character 1	0.832
	Entrepreneurial Character 2	0.802
	Entrepreneurial Character 3	0.803
Mutābarah	Mutābarah 1	0.871
	Mutābarah 2	0.857
	Mutābarah 3	0.863
Subjective Norms	Subjective Norms 1	0.842
	Subjective Norms 2	0.819
	Subjective Norms 3	0.832
Agribusiness Development	Agribusiness Development 1	0.868
	Agribusiness Development 2	0.843
	Agribusiness Development 3	0.827
Attitude Toward Behavior	Attitude Toward Behavior 1	0.865
	Attitude Toward Behavior 2	0.849
	Attitude Toward Behavior 3	0.811

Source: Data Processed, 2025

Table 4. Fornell–Larcker criterion values

Constructs	Entrepreneurl Characteristis	Mutābarah	Subjective Norms	Agribusiness Development	Attitude Toward Behavior
Entrepreneurial Characteristics	0.813				
Mutābarah	0.713	0.864			
Subjective Norms	0.671	0.758	0.831		
Agribusiness Development	0.719	0.738	0.702	0.846	
Attitude Toward Behavior	0.733	0.738	0.688	0.679	0.842

Source: Data Processd, 2025

R-Square and Adjusted R-Square Results

Table 5 demonstrates robust explanatory power of the structural model, with an R^2 value of 0.685 for Mutābarah and 0.545 for Agribusiness Development. The corresponding adjusted R^2 values of 0.679 and 0.542 indicate model stability and confirm the absence of overfitting. Overall, these findings reflect moderate-to-strong predictive accuracy and highlight the substantial contribution of the exogenous variables in explaining Mutābarah and agribusiness development within the proposed empirical framework.

Table 5. R-Square and adjusted R-Square results

Endogenous Variable	R-Square	Adjusted R-Square
Mutābarah	0.685	0.679
Agribusiness Development	0.545	0.542

Source: Data Processed, 2025

F-Square (f^2) Effect Size Values

Table 6 reports the f-square (f^2) values used to evaluate the relative effect sizes in the structural model. The strongest effect is found in the relationship between Mutābarah (Mu) and Agribusiness Development (AD) ($f^2 = 1.199$), indicating a large and dominant influence. Subjective Norms (SN) show a moderate effect on Mutābarah ($f^2 = 0.241$), while Entrepreneurial Characteristics (EC) ($f^2 = 0.067$) and Attitude toward Behavior (ATB) ($f^2 = 0.108$) exhibit weak effects. Overall, the results highlight Mutābarah as the key explanatory construct, with social and individual factors providing supporting contributions.

Table 6. F-Square (f^2) effect size values

Exogenous Variable	Entrepreneurial Characteristics	Mutābarah	Subjective Norms	Agribusiness Development	Attitude toward Behavior
Entrepreneurial Characteristics	—	0.067	—	—	—
Mutābarah	—	—	—	1.199	—
Subjective Norms	—	0.241	—	—	—
Agribusiness Development	—	—	—	—	—
Attitude toward Behavior	—	0.108	—	—	—

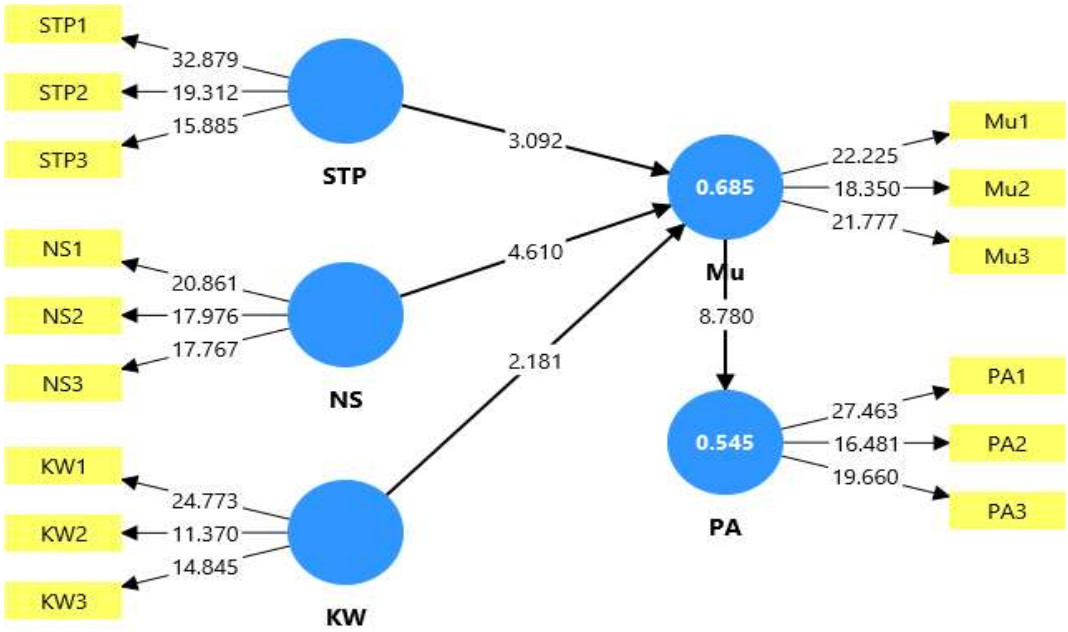
Source: Data Processed, 2025

Structural Model Assessment

SEM-PLS: Results of Direct Effects Testing

Table 7. reveals significant structural relationships within the proposed model, as also illustrated in Figure 2. Entrepreneurial Character exerts a positive and significant influence on Mutābarah ($\beta = 0.227$), while Subjective Norms show a stronger effect on Mutābarah ($\beta = 0.404$). Attitude toward Behavior likewise significantly affects Mutābarah ($\beta = 0.294$), indicating that personal dispositions, social pressures, and favorable behavioral evaluations jointly shape perseverance and sustained effort among millennial farmers. In turn, Mutābarah has a substantial and significant effect on Agribusiness Development ($\beta = 0.738$), underscoring its central role in translating individual and social factors into sustainable agribusiness outcomes. These findings highlight Mutābarah as a core value-based construct that drives consistency, resilience, and long-term performance in agribusiness activities.

In addition, the mediation analysis confirms the strategic role of Mutābarah as an intervening variable. The indirect effects of entrepreneurial character, subjective norms, and Attitude toward Behavior to Agribusiness Development through Mutābarah are all statistically significant, indicating that these antecedent variables influence agribusiness development primarily through the internalization of perseverance and commitment. Overall, Mutābarah functions as a key mediating mechanism that integrates entrepreneurial attributes, social influence, and behavioral attitudes into effective agribusiness development, reinforcing the model's theoretical robustness and empirical relevance.



Note: STP (attitude towards behavior), NS (subjective norms, KW (entrepreneurial character), Mu (mutābarah), and PA (agribusiness development)

Figure 2. Output of the structural model testing
Source: Data Processed, 2025

Table 7. SEM-PLS: results of direct effects testing

Path Relationship	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Entrepreneurial Character → Mutābarah	0.227	0.242	0.104	2.181	0.031
Mutābarah → Agribusiness Development	0.738	0.729	0.084	8.780	0.000
Subjective Norms → Mutābarah	0.404	0.396	0.088	4.610	0.000
Attitude toward Behavior → Mutābarah	0.294	0.277	0.095	3.092	0.002

Source: Data Processed, 2025

SEM-PLS: Results of Indirect Effects Testing

The mediation results indicate that Mutābarah plays a pivotal mediating role in agribusiness development among millennial farmers. Entrepreneurial character, subjective norms, and attitude toward behavior influence agribusiness outcomes primarily through the internalization of perseverance and commitment reflected in Mutābarah. This finding suggests that before generating meaningful agribusiness development, individual attributes, social influences, and positive attitudes must first be transformed into sustained effort. Overall, the model confirms a clear and substantive mediation effect driven by internalized values rather than direct external influence.

This study advances the behavioral and entrepreneurship literature by integrating the Theory of Planned Behavior (TPB) with entrepreneurial character theory to explain agribusiness development among millennial farmers through the mediating role of *Mutābarah* (Rustiana 2025). Within the TPB framework, attitudes toward behavior and subjective norms are widely recognized as key antecedents of behavioral intention. However, sustaining entrepreneurial action in agribusinessan economic sector characterized by long production cycles, environmental uncertainty, and delayed financial returnsrequires more than favorable intentions alone (Tetteh et al. 2025; Yasir et al. 2021). The empirical results demonstrate that attitudes toward agribusiness activities and subjective norms significantly influence *Mutābarah*, indicating that perseverance and spiritually grounded commitment function as critical mechanisms that translate intention into sustained entrepreneurial behavior (Elgarhy and Alotaibi 2025; Teruel-Sanchez et al. 2025).

Table 8.SEM-PLS: results of indirect effects testing

Path Relationship	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Entrepreneurial Character → Mutābarah → Agribusiness Development	0.168	0.176	0.079	2.123	0.035
Attitude toward Behavior → Mutābarah → Agribusiness Development	0.298	0.289	0.075	3.971	0.000
Subjective Norms → Mutābarah → Agribusiness Development	0.217	0.204	0.078	2.795	0.006

Source: Data Processed, 2025

Entrepreneurial character theory further strengthens this explanation by emphasizing the role of internalized personal attributes, including discipline, responsibility, innovativeness, and goal orientation (Cao et al. 2022; Salmony and Kanbach 2022). The findings show that entrepreneurial character significantly contributes to the formation of *Mutābarah*, underscoring that long-term agribusiness development depends on deeply embedded character traits rather than short-term motivation (Caliendo, Goethner, and Weißenberger 2020; Runst and Thomä 2023). This result is consistent with prior entrepreneurship research, which identifies resilience and persistence as central determinants of business continuity, particularly in agricultural contexts exposed to external shocks and uncertainty (Bachtiar et al. 2023).

The mediating role of *Mutābarah* constitutes a key theoretical contribution of this study by bridging cognitive intention and observable economic outcomes (Haseeb et al. 2021). Rather than operating solely as a behavioral disposition, *Mutābarah* functions as a value-based construct that internalizes social expectations and personal attitudes into consistent patterns of effort and commitment (Brieger, De Clercq, and Meynhardt 2021; Tambunan et al. 2021). In collectivist rural communities such as Bone Regency, social support from family, peers, and local institutions reinforces *Mutābarah*,

thereby strengthening its capacity to sustain entrepreneurial engagement over time. This dynamic explains the strong indirect effects of subjective norms on agribusiness development through *Mutābarah* (Alferaih 2022).

The structural model exhibits substantial explanatory power from a methodological perspective, confirming the robustness of the proposed mediation mechanism (Sarstedt and Moisescu 2024). The absence of strong direct effects from antecedent variables to agribusiness development further supports the argument that perseverance-based values are essential for converting entrepreneurial orientation into measurable development outcomes (Al Issa 2020; Meekaewkunchorn et al. 2021). These findings align with contemporary research in behavioral economics and entrepreneurship, which emphasizes the importance of intrinsic motivation and value internalization in shaping sustainable economic behavior (Valencia-Arias et al. 2025).

Normatively, *Mutābarah* is rooted in Islamic ethical philosophy, which conceptualizes economic activity as a moral responsibility requiring continuous effort, patience, and accountability (Valencia-Arias et al. 2025). Islamic teachings emphasize coherence between intention (*niyyah*), action (*ʿamal*), and outcome (*natījah*), positioning perseverance as a core ethical principle (Valencia-Arias et al. 2025). Accordingly, the results suggest that agribusiness development among millennial farmers should be understood not merely as an economic process, but as a value-driven practice shaped by ethical commitment and spiritual resilience (Istiqomah et al. 2025; Suresha, Joshi, and Joisa 2025).

In summary, this study demonstrates that sustainable agribusiness development emerges from the interaction of behavioral intention, entrepreneurial character, and value-based perseverance (Diepolder et al. 2021). By empirically validating *Mutābarah* as a mediating construct, the study offers a theoretically grounded and contextually relevant framework for understanding agribusiness development in emerging rural economies (Diepolder et al. 2021).

CONCLUSION

Mutābarah serves as a significant mediating variable between attitudes, subjective norms, and entrepreneurial character on the one hand, and sustainable agribusiness behavior among millennial farmers on the other. The integration of the Theory of Planned Behavior with entrepreneurial character theory confirms that perseverance-based values are not merely cultural attributes but functional determinants of long-term agribusiness commitment. This finding suggests that agribusiness development among millennial farmers cannot be fully explained by behavioral intention alone; value-based resilience plays a critical and distinct role.

These results carry practical implications for agribusiness policy and capacity-building programs. Interventions that address only technical skills or economic incentives are insufficient. Strengthening perseverance, ethical responsibility, and community-based social networks is equally necessary to sustain entrepreneurial behavior over time.

This study is limited by its cross-sectional design, localized setting, and reliance on self-reported data. Future research employing longitudinal and mixed-method approaches across wider geographic contexts would help confirm the generalizability of *Mutābarah* as a mediating construct in agribusiness development.

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