

## **Financial Resilience and Livelihood Sustainability among Coffee Farmers in Kerala**

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### **Abstract**

The study examined the relationship between financial resilience and livelihood sustainability among coffee farmers in Kerala. A descriptive and analytical research design was adopted, and primary data were collected from 300 coffee farmers using a structured questionnaire containing separate measures of financial resilience and livelihood sustainability. The data were analysed using EDUSTAT. Descriptive statistics, Pearson correlation, simple linear regression, independent samples t-test, and one-way ANOVA were employed. The results indicated a moderate level of financial resilience and a relatively high level of livelihood sustainability among the respondents. Financial resilience had a significant positive relationship with livelihood sustainability ( $r = .662$ ,  $p < .001$ ) and significantly predicted livelihood sustainability, explaining 43.8 per cent of its variance. Significant differences in financial resilience and livelihood sustainability were observed according to annual household income, farm size, farmer-organisation membership, and access to institutional credit, whereas differences based on farming experience and whether coffee farming was the main occupation were not significant. The study highlights the importance of strengthening farmers' financial capacity, institutional credit access, collective participation, and economic resources for sustaining coffee-based livelihoods.

**Key Words:** Financial Resilience, Livelihood Sustainability, Coffee Farmers

### **INTRODUCTION**

Agriculture-based livelihoods are exposed to multiple forms of uncertainty arising from fluctuations in income, production risks, changing input costs, market instability, climatic events, and unexpected household expenditure. For farm households, the capacity to withstand and recover from such disturbances is therefore an important component of long-term economic security. Financial resilience refers broadly to the capacity to draw upon internal and external resources to cope with adverse financial circumstances and recover from financial shocks. It is multidimensional and encompasses economic resources, access to financial products and services, financial knowledge and behaviour, and social support (Salignac et al., 2019).

The concept of livelihood sustainability extends beyond the immediate generation of income. A sustainable livelihood depends on the capacity of households to maintain or improve their livelihood resources, respond to disturbances, utilise available assets and institutional opportunities, and sustain an acceptable standard of living over time. The sustainable livelihoods framework emphasises the interaction of natural, human, financial, physical, and social resources with livelihood strategies and institutional conditions in producing sustainable livelihood outcomes (Scoones, 1998). Consequently, financial resilience can be viewed as an important element in the broader capacity of farming households to protect and sustain their livelihoods.

Coffee cultivation occupies an important position within the plantation economy of Kerala. The traditional coffee-growing region of India is concentrated in Karnataka, Kerala, and Tamil Nadu, and Kerala remains one of the

country's major coffee-producing states. Coffee Board data for 2023-2024 reported 85,957 hectares under coffee in Kerala. The Kerala State Planning Board reported coffee production of 70,354 metric tonnes and productivity of 827 kilograms per hectare during the same period, with Wayanad accounting for 83.6 per cent of the State's coffee production (Coffee Board of India, 2024; Kerala State Planning Board, 2025).

Coffee farmers nevertheless operate under conditions that can threaten both financial stability and livelihood continuity. Changes in rainfall and temperature, water scarcity, production uncertainty, market-related difficulties, and limited institutional support can increase the vulnerability of coffee-based farm households. Research conducted in Wayanad has demonstrated variation in the climatic vulnerability of coffee-based households and has emphasised the relevance of irrigation, insurance, weather information, and adaptive farming practices (Anjitha et al., 2024). Studies of farming systems in Kerala have also shown that coffee farmers use crop diversification and non-farm income sources as strategies for maintaining household livelihoods when farm income becomes inadequate or uncertain (Menon & Schmidt-Vogt, 2022).

Against this background, examining financial resilience together with livelihood sustainability provides a useful perspective for understanding the economic capacity of coffee farmers. Financial resilience may enable farmers to meet regular expenses, respond to income reductions, access necessary finance, manage debt, undertake required farm expenditure, and recover from adverse events. These capacities may ultimately determine whether coffee farming can continue to support household livelihoods over the long term. The present study therefore examined the relationship and predictive effect of financial resilience on livelihood sustainability among coffee farmers in Kerala and investigated whether these variables differed across selected socio-economic and farm characteristics.

## **BACKGROUND OF THE STUDY**

The financial condition of agricultural households differs from that of households receiving relatively predictable and continuous income. Farm income is commonly seasonal and can be affected by production outcomes, market prices, climatic conditions, input costs, pests and diseases, and other external disturbances. Financial resilience is therefore especially relevant in an agricultural setting because it reflects the ability to mobilise financial resources, maintain expenditure, manage liabilities, access credit, and adapt financial behaviour when adverse circumstances arise. Salignac et al. (2019) conceptualised financial resilience as a multidimensional capacity involving economic resources, financial products and services, financial knowledge and behaviour, and social capital rather than merely the possession of income or savings.

Access to formal financial institutions is particularly important in agriculture because farming often requires expenditure before income is realised. Evidence from India indicates that institutional agricultural credit can contribute to improvements in farm income and household consumption, while access to formal credit itself varies according to the economic and socio-demographic characteristics of agricultural households (Kumar et al., 2017). Thus, financial access and the capacity to manage financial commitments are likely to affect farmers' ability to absorb shocks and continue agricultural operations.

Livelihood sustainability in farming involves the capacity to maintain income-generating activities while adapting to economic, environmental, and institutional changes. The sustainable livelihoods perspective considers sustainability to be influenced not only by material resources but also by farmers' access to institutions, networks, knowledge, alternative livelihood strategies, and opportunities for adaptation (Scoones, 1998). This perspective is particularly relevant to coffee farming because a household's ability to continue cultivation may depend on a combination of farm income, access to credit and markets, diversification, institutional support, resource management, and capacity to respond to production and climatic risks.

The circumstances of coffee farmers in Kerala make the interaction between financial resilience and livelihood sustainability particularly relevant. Coffee production in the State is concentrated heavily in Wayanad, and a substantial part of cultivation occurs in small holdings. Climate-related research in Wayanad has identified altered rainfall patterns, temperature variations, water scarcity, and inadequate institutional support as factors contributing to household vulnerability (Anjitha et al., 2024).

The economic sustainability of coffee cultivation may also depend on farmers' ability to diversify their livelihood portfolios. Menon and Schmidt-Vogt (2022), in their study of farming systems in Kerala, observed that coffee farmers used intercropping and employment outside farming to supplement agricultural income, with some farmers reporting difficulty in sustaining households exclusively through coffee cultivation, particularly where holdings were small. These findings illustrate how income diversification and adaptive livelihood strategies may function as mechanisms for coping with economic instability.

Although existing studies have examined climatic vulnerability, coping responses, institutional credit, and livelihood adaptation, the direct connection between farmers' financial resilience and the sustainability of their livelihoods requires further empirical attention in the Kerala coffee sector. Examining these constructs together permits an assessment of whether the capacity to withstand financial adversity is associated with, and contributes to, the continued viability of farm-based livelihoods. The present study addressed this issue by analysing financial resilience and livelihood sustainability among coffee farmers and by examining variations associated with selected socio-economic and farm characteristics.

### **RESEARCH QUESTIONS**

1. What is the relationship between financial resilience and livelihood sustainability among coffee farmers in Kerala?
2. To what extent does financial resilience predict livelihood sustainability among coffee farmers in Kerala?
3. Do financial resilience and livelihood sustainability differ significantly across selected socio-economic and farm characteristics of coffee farmers in Kerala?

### **RESEARCH OBJECTIVES**

1. To examine the relationship between financial resilience and livelihood sustainability among coffee farmers in Kerala.
2. To assess the predictive effect of financial resilience on livelihood sustainability among coffee farmers in Kerala.
3. To examine the differences in financial resilience and livelihood sustainability across selected socio-economic and farm characteristics of coffee farmers in Kerala.

### **HYPOTHESES**

1. Financial resilience is significantly related to livelihood sustainability among coffee farmers in Kerala.
2. Financial resilience significantly predicts livelihood sustainability among coffee farmers in Kerala.
3. Financial resilience and livelihood sustainability differ significantly across selected socio-economic and farm characteristics of coffee farmers in Kerala.

### **METHODOLOGY**

The study adopted a descriptive and analytical research design to examine financial resilience and livelihood sustainability among coffee farmers in Kerala. The population of the study consisted of coffee farmers engaged in coffee cultivation in Kerala. For the purpose of the study, a sample of 300 coffee farmers was selected from major coffee-growing areas of the State. A multistage sampling approach was followed to identify the study areas and respondents. The study relied on primary data collected directly from coffee farmers using a structured questionnaire.

The questionnaire consisted of three sections. The first section collected information relating to selected socio-economic and farm characteristics of the respondents, including annual household income, farming experience, farm size, whether coffee farming was the main occupation, membership in farmer organisations or cooperatives, and access to institutional credit. The second section measured Financial Resilience through 30 statements covering financial stability, shock absorption, credit and debt management, financial planning, income

diversification, and financial preparedness. The third section measured Livelihood Sustainability through 30 statements relating to economic viability, household security, adaptive capacity, access to resources and institutional support, sustainable farm management, and long-term livelihood continuity. Responses to the statements in the Financial Resilience and Livelihood Sustainability scales were recorded on a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. Higher scores indicated higher levels of the respective constructs. For interpretation of mean scores, 1.00–1.80 was considered Very Low, 1.81–2.60 Low, 2.61–3.40 Moderate, 3.41–4.20 High, and 4.21–5.00 Very High.

The collected data were coded, processed, and analysed using EDUSTAT. Descriptive statistics, including mean and standard deviation, were used to assess the overall levels of financial resilience and livelihood sustainability. Pearson correlation analysis was used to examine the relationship between financial resilience and livelihood sustainability. Simple linear regression analysis was employed to assess the predictive effect of financial resilience on livelihood sustainability. Independent samples t-tests were used to examine differences across socio-economic and farm characteristics having two categories, while one-way ANOVA was applied for characteristics having more than two categories. Tukey's post-hoc test was performed only where the ANOVA result was statistically significant. The level of statistical significance was fixed at 5 per cent.

#### **DATA ANALYSIS AND INTERPRETATION**

The analysis focused on the two major study variables and the tests required for the three hypotheses. Demographic and lengthy profile tables were omitted in order to keep the analysis concise and appropriate for a journal paper.

#### **Descriptive Analysis of Financial Resilience and Livelihood Sustainability**

**Table 1**

*Descriptive Statistics of Financial Resilience and Livelihood Sustainability*

| Variable                  | N   | Mean  | SD    | Interpretation |
|---------------------------|-----|-------|-------|----------------|
| Financial Resilience      | 300 | 3.283 | 0.502 | Moderate       |
| Livelihood Sustainability | 300 | 3.529 | 0.530 | High           |

*Source: Primary data*

Table 1 shows the overall levels of financial resilience and livelihood sustainability among the coffee farmers. The mean score for financial resilience was 3.283 (SD = 0.502), indicating a moderate level of financial resilience. This suggests that the respondents possessed a reasonable ability to manage financial fluctuations, withstand financial difficulties, and maintain financial stability, although there remained scope for improvement. The mean score for livelihood sustainability was 3.529 (SD = 0.530), indicating a relatively high level of livelihood sustainability. Thus, the respondents generally perceived their farming-based livelihoods as sustainable in terms of continuity, adaptability, household security, and long-term viability.

#### **Relationship between Financial Resilience and Livelihood Sustainability**

The first hypothesis examined whether financial resilience was significantly related to livelihood sustainability among coffee farmers in Kerala. Pearson correlation analysis was employed for this purpose.

**Table 2**

*Correlation between Financial Resilience and Livelihood Sustainability*

| Variables                                          | N   | Pearson r | p-value | Result      |
|----------------------------------------------------|-----|-----------|---------|-------------|
| Financial Resilience and Livelihood Sustainability | 300 | .662      | < .001  | Significant |

Source: Primary data

Table 2 reveals a statistically significant positive relationship between financial resilience and livelihood sustainability,  $r = .662$ ,  $p < .001$ . The magnitude of the correlation indicates that coffee farmers with higher financial resilience tended to have higher livelihood sustainability. Greater capacity to manage financial shocks, income fluctuations, credit requirements, expenditure, and financial planning was therefore associated with greater sustainability of livelihood. Since the relationship was statistically significant, the null hypothesis of no significant relationship between financial resilience and livelihood sustainability was rejected. Hence, the first hypothesis was supported.

#### Predictive Effect of Financial Resilience on Livelihood Sustainability

Simple linear regression analysis was conducted to examine whether financial resilience significantly predicted livelihood sustainability.

Table 3

Regression Analysis of Financial Resilience on Livelihood Sustainability

| Predictor            | B     | SE    | Standardised $\beta$ | t      | p-value |
|----------------------|-------|-------|----------------------|--------|---------|
| Constant             | 1.233 | 0.152 | —                    | 8.101  | < .001  |
| Financial Resilience | 0.699 | 0.046 | .662                 | 15.251 | < .001  |

Model statistics:  $R = .662$ ;  $R^2 = .438$ ; Adjusted  $R^2 = .436$ ;  $F(1, 298) = 232.601$ ;  $p < .001$ . Dependent variable: Livelihood Sustainability. Source: Primary data.

As shown in Table 3, the regression model was statistically significant,  $F(1, 298) = 232.601$ ,  $p < .001$ . The  $R^2$  value of .438 indicates that financial resilience explained approximately 43.8 per cent of the variation in livelihood sustainability. Financial resilience was a statistically significant positive predictor of livelihood sustainability ( $\beta = .662$ ,  $t = 15.251$ ,  $p < .001$ ). The unstandardised coefficient ( $B = 0.699$ ) indicates that a one-unit increase in financial resilience was associated with an estimated 0.699-unit increase in livelihood sustainability. The regression equation was: Livelihood Sustainability =  $1.233 + 0.699(\text{Financial Resilience})$ . Therefore, the null hypothesis that financial resilience does not significantly predict livelihood sustainability was rejected, and the second hypothesis was supported.

#### Differences Based on Selected Socio-Economic and Farm Characteristics

The third hypothesis examined whether financial resilience and livelihood sustainability differed significantly across selected socio-economic and farm characteristics. Independent samples t-tests were employed for characteristics having two groups, while one-way ANOVA was used for characteristics having more than two groups.

Table 4

Independent Samples t-test Results for Selected Characteristics

| Characteristic                    | Variable                  | Group Mean 1 | Group Mean 2 | t      | p-value |
|-----------------------------------|---------------------------|--------------|--------------|--------|---------|
| Coffee Farming as Main Occupation | Financial Resilience      | Yes: 3.268   | No: 3.316    | -0.749 | .454    |
|                                   | Livelihood Sustainability | Yes: 3.520   | No: 3.549    | -0.424 | .672    |

| Characteristic                 | Variable                  | Group Mean 1 | Group Mean 2 | t     | p-value |
|--------------------------------|---------------------------|--------------|--------------|-------|---------|
| Farmer-Organisation Membership | Financial Resilience      | Yes: 3.365   | No: 3.176    | 3.272 | .001    |
|                                | Livelihood Sustainability | Yes: 3.595   | No: 3.442    | 2.498 | .013    |
| Institutional Credit Access    | Financial Resilience      | Yes: 3.383   | No: 3.145    | 4.149 | < .001  |
|                                | Livelihood Sustainability | Yes: 3.617   | No: 3.407    | 3.440 | .001    |

Source: Primary data

Table 4 indicates that whether coffee farming was the main occupation did not produce a statistically significant difference in either financial resilience ( $p = .454$ ) or livelihood sustainability ( $p = .672$ ). Farmer-organisation membership, however, produced significant differences in both variables. Members recorded higher financial resilience ( $M = 3.365$ ) and livelihood sustainability ( $M = 3.595$ ) than non-members ( $M = 3.176$  and  $M = 3.442$ , respectively). Institutional credit access also produced significant differences: farmers with such access reported higher financial resilience ( $M = 3.383$ ) and livelihood sustainability ( $M = 3.617$ ) than those without access ( $M = 3.145$  and  $M = 3.407$ , respectively).

**Table 5**

*One-Way ANOVA Results for Selected Characteristics*

| Characteristic            | Variable                  | F     | df     | p-value | Result          |
|---------------------------|---------------------------|-------|--------|---------|-----------------|
| Annual Household Income   | Financial Resilience      | 3.027 | 4, 295 | .018    | Significant     |
|                           | Livelihood Sustainability | 7.755 | 4, 295 | < .001  | Significant     |
| Coffee-Farming Experience | Financial Resilience      | 0.511 | 4, 295 | .728    | Not Significant |
|                           | Livelihood Sustainability | 0.651 | 4, 295 | .627    | Not Significant |
| Farm Size                 | Financial Resilience      | 2.909 | 4, 295 | .022    | Significant     |
|                           | Livelihood Sustainability | 2.732 | 4, 295 | .029    | Significant     |

Source: Primary data

Table 5 shows that financial resilience differed significantly across annual household income categories,  $F(4, 295) = 3.027$ ,  $p = .018$ , and livelihood sustainability also differed significantly according to annual household income,  $F(4, 295) = 7.755$ ,  $p < .001$ . No significant differences were identified across coffee-farming experience categories for either financial resilience ( $p = .728$ ) or livelihood sustainability ( $p = .627$ ). Farm size produced significant

differences in financial resilience,  $F(4, 295) = 2.909$ ,  $p = .022$ , and livelihood sustainability,  $F(4, 295) = 2.732$ ,  $p = .029$ . Tukey's post-hoc test was therefore conducted only for annual household income and farm size.

**Table 6**

*Significant Tukey Post-Hoc Comparisons*

| Variable                                             | Comparison                                  | Mean Difference | p-value |
|------------------------------------------------------|---------------------------------------------|-----------------|---------|
| Financial Resilience by Annual Household Income      | Below ₹2,00,000 vs. ₹4,00,001-₹6,00,000     | 0.245           | .033    |
|                                                      | Below ₹2,00,000 vs. ₹6,00,001-₹8,00,000     | 0.293           | .033    |
| Livelihood Sustainability by Annual Household Income | Below ₹2,00,000 vs. ₹4,00,001-₹6,00,000     | 0.430           | < .001  |
|                                                      | Below ₹2,00,000 vs. ₹6,00,001-₹8,00,000     | 0.343           | .009    |
|                                                      | Below ₹2,00,000 vs. Above ₹8,00,000         | 0.385           | .007    |
|                                                      | ₹2,00,001-₹4,00,000 vs. ₹4,00,001-₹6,00,000 | 0.274           | .004    |
| Financial Resilience by Farm Size                    | Below 1 acre vs. Above 10 acres             | 0.422           | .043    |

*Only statistically significant pairwise comparisons are shown. Source: Primary data.*

Table 6 presents only the statistically significant pairwise comparisons. For financial resilience, farmers with annual household incomes of ₹4,00,001-₹6,00,000 and ₹6,00,001-₹8,00,000 had significantly higher scores than those earning below ₹2,00,000. For livelihood sustainability, farmers earning below ₹2,00,000 had significantly lower scores than those earning ₹4,00,001-₹6,00,000, ₹6,00,001-₹8,00,000, and above ₹8,00,000. Farmers earning ₹2,00,001-₹4,00,000 also had significantly lower livelihood sustainability than those earning ₹4,00,001-₹6,00,000. With respect to farm size, financial resilience was significantly higher among farmers with farms above 10 acres than among farmers with farms below one acre. Although the overall ANOVA for livelihood sustainability across farm-size categories was significant, none of the individual pairwise comparisons remained significant after Tukey adjustment.

**Table 7**

*Summary of Hypothesis Testing*

| Hypothesis                                                                  | Statistical Result                         | Decision  |
|-----------------------------------------------------------------------------|--------------------------------------------|-----------|
| Financial resilience is significantly related to livelihood sustainability. | $r = .662$ , $p < .001$                    | Supported |
| Financial resilience significantly predicts livelihood sustainability.      | $\beta = .662$ , $R^2 = .438$ , $p < .001$ | Supported |

| Hypothesis                                                                                                         | Statistical Result                                                                                                                         | Decision            |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Financial resilience and livelihood sustainability differ across selected socio-economic and farm characteristics. | Significant for income, farm size, organisation membership, and credit access; not significant for farming experience and main occupation. | Partially Supported |

*Source: Primary data*

Overall, the findings show that financial resilience is strongly associated with and significantly predicts livelihood sustainability among the coffee farmers studied. Differences in the major study variables were particularly evident according to household income, farm size, farmer-organisation membership, and access to institutional credit. Accordingly, the first and second hypotheses were supported, while the third hypothesis received partial support.

## DISCUSSION OF THE RESULTS

The findings indicated that coffee farmers in Kerala possessed a moderate level of financial resilience, while livelihood sustainability was relatively high. The moderate financial resilience score suggests that the respondents were reasonably capable of managing regular farm and household expenses, adjusting to income fluctuations, accessing financial resources, and dealing with temporary financial difficulties. However, the result also indicates that the financial capacity of coffee farmers was not uniformly strong and that exposure to price instability, production uncertainty, rising cultivation costs, and unexpected financial shocks continued to affect their financial position. In contrast, the comparatively higher level of livelihood sustainability suggests that coffee farming continued to provide a viable livelihood base for many respondents, supported by their ability to adapt farming practices, maintain household security, utilise available resources, and continue cultivation over time.

A major finding of the study was the significant positive relationship between financial resilience and livelihood sustainability. The correlation coefficient of  $r = .662$  indicated that farmers with stronger financial resilience also tended to report higher livelihood sustainability. This is consistent with the broader understanding of financial resilience as the capacity to mobilise resources and withstand adverse financial events (Salignac et al., 2019). Within a farming context, such capacity can help households maintain cultivation and consumption when income is unstable, thereby supporting livelihood continuity.

The regression analysis further established the importance of financial resilience as a predictor of livelihood sustainability. Financial resilience explained 43.8 per cent of the variation in livelihood sustainability, and the predictive relationship was statistically significant. The result implies that the capacity of coffee farmers to plan finances, mobilise resources, manage financial risks, and recover from economic difficulties contributes substantially to the sustainability of their livelihoods. This interpretation is compatible with the sustainable livelihoods perspective, which treats financial resources and adaptive capacity as important components of sustainable livelihood outcomes (Scoones, 1998).

The group-difference analysis revealed that annual household income, farm size, farmer-organisation membership, and access to institutional credit were associated with significant differences in both financial resilience and livelihood sustainability. Farmers in higher household-income groups generally reported stronger financial resilience and greater livelihood sustainability. Similarly, differences based on farm size suggest that farmers with larger holdings may possess comparatively greater economic flexibility, production potential, and access to resources than those operating very small farms. The finding regarding institutional credit is also consistent with evidence that formal agricultural credit can contribute to improved farm income and household expenditure capacity (Kumar et al., 2017).

Membership in farmer organisations or cooperatives was associated with significantly higher financial resilience and livelihood sustainability. Such organisations may strengthen farmers through access to information, collective support, market linkages, institutional assistance, and financial opportunities. The result is also relevant in light of Kerala-based evidence showing that diversification and adaptive livelihood strategies can help coffee-farming households respond to economic disruptions (Menon & Schmidt-Vogt, 2022).

On the other hand, no significant differences were found based on coffee-farming experience or whether coffee farming was the respondent's main occupation. This suggests that long experience in coffee cultivation by itself did not necessarily translate into stronger financial resilience or more sustainable livelihoods. Similarly, depending primarily on coffee farming did not independently determine the level of either construct. These findings indicate that financial and institutional factors may be more influential than farming experience or occupational dependence in shaping the economic sustainability of coffee farmers.

### **IMPLICATIONS OF THE STUDY**

The findings have important implications for the financial and livelihood security of coffee farmers in Kerala. Since financial resilience emerged as a significant predictor of livelihood sustainability, initiatives aimed at strengthening the financial capacity of coffee farmers may contribute directly to the long-term sustainability of their livelihoods. Measures that improve financial planning, savings behaviour, liquidity management, access to emergency funds, debt management, and income diversification may enable farmers to cope more effectively with market fluctuations, production risks, and unexpected financial pressures.

The significant role of institutional credit highlights the need for greater accessibility, affordability, and timeliness of formal agricultural finance. Banks, cooperative institutions, and other rural financial agencies may strengthen credit delivery mechanisms suited to the seasonal and uncertain income patterns of coffee farming. Easier access to working capital, crop-related credit, and flexible repayment arrangements may reduce financial vulnerability and help farmers maintain continuity in cultivation during difficult periods.

The differences observed according to annual household income and farm size suggest that smaller and lower-income coffee farmers may require greater policy and institutional support. Targeted financial assistance, input support, risk-management mechanisms, income diversification programmes, and market-oriented interventions may be particularly useful for economically vulnerable farmers. Such measures may help reduce the gap in financial resilience between small farmers and those possessing greater income and resource capacity.

The higher financial resilience and livelihood sustainability recorded among members of farmer organisations and cooperatives indicate the importance of collective institutional participation. Strengthening farmer producer organisations, cooperatives, self-help groups, and local farmer networks may improve access to information, markets, financial services, training, and collective bargaining opportunities. Encouraging wider farmer participation in such institutions can therefore be considered an important strategy for improving both financial resilience and livelihood sustainability.

The study also implies that interventions should not focus solely on farming experience or dependence on coffee cultivation. The absence of significant differences across these characteristics indicates that the sustainability of coffee-based livelihoods is influenced more strongly by access to financial resources, institutional support, household economic capacity, and farm-level resource endowment. Accordingly, policies and programmes designed for coffee farmers should adopt an integrated approach that combines financial inclusion, institutional strengthening, risk management, market support, and livelihood diversification.

### **CONCLUSION**

The study established that financial resilience plays a significant role in sustaining the livelihoods of coffee farmers in Kerala. While the respondents exhibited a moderate level of financial resilience, their livelihood sustainability was relatively high. Financial resilience was positively and significantly related to livelihood sustainability and explained a substantial proportion of its variation, demonstrating that farmers who were better able to manage financial resources, withstand economic difficulties, and respond to financial shocks were also more capable of sustaining their livelihoods. Significant differences associated with household income, farm size, farmer-organisation membership, and institutional credit access further demonstrated the importance of economic resources and institutional support, whereas farming experience and dependence on coffee as the main occupation did not produce significant differences. The findings therefore emphasise the need to strengthen financial preparedness, access to affordable institutional finance, farmer organisations, income diversification opportunities, and targeted support for economically vulnerable and small-scale farmers. Such measures can

enhance farmers' capacity to withstand financial uncertainty and contribute to the long-term sustainability of coffee-based livelihoods in Kerala.

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