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The Impact of Rural Land on the Life Satisfaction of Farming Women: Evidence from China

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Abstract: This study investigates the impact of rural land on the life satisfaction of rural-farming women with a modified institutional analysis and development (IAD) framework as the theoretical framework. The research sample is composed of data acquired from surveys of thirty-six randomly selected villages in three provinces in China. The main findings include that the quality of the cultivated land, embodied in the cultivated land location and the land cultivation facilities, has an impact on the life satisfaction of rural-farming women; agreeable living conditions can improve the life satisfaction of rural-farming women; and the well-being status of rural-farming women also has an impact on their life satisfaction, but there are differences in this impact. The objective factors, such as household cash and savings, farming income, and farming time, also have inconsistent effects on the life satisfaction of rural-farming women. This study bridges the gap and explains the land-related factors, which have an impact on rural women farmers, and brings attention to this group of people who are easily overlooked.

Keywords: rural-farming women; life satisfaction; IAD framework

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1. Introduction

The group of rural women are heroes as they contribute substantially to the world food system. According to statistics, rural women account for a quarter of the world's population and play the role of farmers, wage earners, and entrepreneurs. In developing countries, women account for a large proportion of the agricultural labor force. For example, in Latin America, the number reaches 20%; in some regions of Africa and Asia, the proportion is even more than 50%. On average, women account for more than 40% of the agricultural labor force [1]. The contribution of rural women to development is substantial. However, it is often overlooked that rural women have made significant contributions to agricultural production, food security and nutrition, land and natural resource management, and building climate resilience [2]. In other words, the well-being of this group is often ignored.

There have been some studies on farmer life satisfaction [3–9], but few studies specifically on life satisfaction that involve female farmers [10,11]. However, research on the satisfaction of rural-farming women by considering land-related variables remains lacking. Rural women farmers are closely associated with land, but land-related variables are not considered. This article would like to supplement the current literature. It aims to bridge the gap and explains the land-related factors that impact rural women farmers, while also bringing attention to this group of people who are easily overlooked. The main conclusions and policy recommendations of this study can help governments and relevant authorities to improve the well-being of the relevant population.

This paper applies the institutional analysis and development (IAD) framework as the theoretical framework to investigate the impact of land on the life satisfaction of rural women. Based on the well-designed IAD framework and the relevant literature

review, this paper explores the impacts of the selected variables on the life satisfaction of rural women with four hypotheses, which are specifically concerned with the physical attributes, community attributes, action situations, and the personal qualities of farming women, respectively.

This paper conducts an investigation based on the data acquired from surveys undertaken in thirty-six randomly selected villages in three provinces in China. The questionnaire was well-designed by reviewing the scale for the measurement of existing variables and adjusting to the research objective. This paper also incorporates the independent designs of the scale of the living environment and the perception of infrastructure. Meanwhile, rural women's personal qualities are selected as control variables in the empirical investigation. With such a research sample, multiple linear regression is carried out. The objective of this paper is to explore the impact of land-related factors on the life satisfaction of women farmers. The originality of this study is manifested in the use of the latest questionnaire data, combined with the analysis of the IAD theoretical framework. The contribution of this study is that it adds to the literature on the life satisfaction of farmers as well as the literature on the IAD theoretical framework in the field of life satisfaction research.

The rest of the paper proceeds as follows: Section 2 reviews the existing literature and puts forward a theoretical framework; Section 3 explains the research design and provides the empirical results; Section 4 discusses the main results; and Section 5 summarizes the main findings and proposes policy recommendations.

2. Theoretical Framework along with Literature Review

2.1. Theoretical Framework

The IAD [12] is a flexible analytical framework that structures the relevant variables into a related scheme; therefore, it facilitates the evaluation process. Based on the IAD framework, this paper explores the factors influencing the life satisfaction of rural women farmers. In this theoretical framework, the life satisfaction of rural women farmers is mainly affected by two levels: One is the personal characteristics of rural women farmers, and the action situation in farming, i.e., the action arena; the other is physical and community attributes, collectively known as the external variables.

The first is the action arena, which includes actors and action situations. In the case of the rural women farmers studied in this paper, the actors are women who engage in agricultural activities in rural areas whose personal qualities, such as age, marital status, social security, cash and savings, farming income, as well as farming time, have an impact on life satisfaction. These factors are widely recognized as having significant impacts on life satisfaction [13–15]. Action situations refer to the expectation, exhaustion, and loneliness of rural women farmers in their farming. These three variables come from the mentality of farmers when they are farming: Expectation refers to the level of farming expectations of the rural women who participate in agriculture production; exhaustion refers to their sense of fatigue due to agricultural production activities; and loneliness refers to the sense of loneliness in the process of agricultural production. Expectation [16,17], exhaustion [18,19], and loneliness [20,21] have been proven to have impacts on life satisfaction.

This is followed by external variables, including physical attributes and community attributes. Physical attributes refer to land-related variables, which are mainly reflected in the cultivated land area, cultivated land location, land cultivation facilities, and housing conditions, as in this study. These variables are 'land' variables that are closely related to farmers, where the size, location, and facilities of the cultivated land are related to the land, where the farmers 'work', and the housing condition is related to the land upon which the farmer 'live'. In this way, we take into account all 'land' variables related to farmers in the IAD analysis framework, which is also an important originality of this paper. Community attributes refer to rural women farmers' living environments and their farming infrastructure, which are highlighted as determinants of well-being in many findings [22–25]. The outcome of the interactions of these variables is the life satisfaction of the rural-farming women, which form the evaluation criteria.

Based on the above analysis, this paper constructs an analysis framework that affects the life satisfaction of rural female farmers based on the IAD analysis framework (Figure 1).

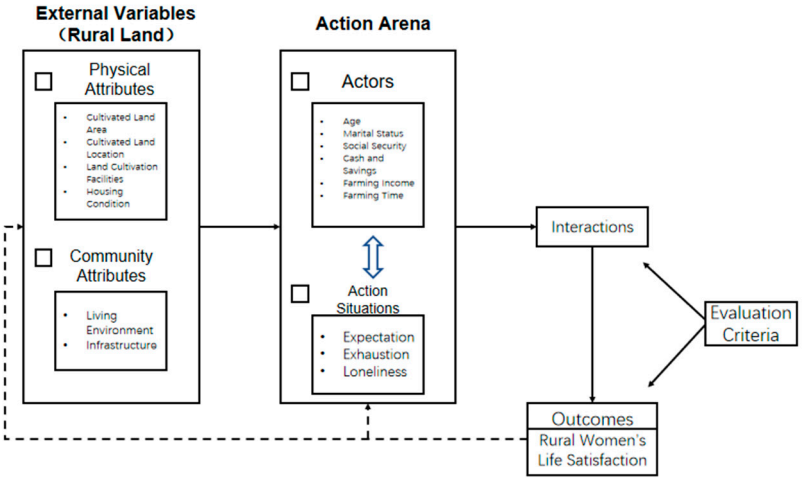

Figure 1. An IAD analytical framework for life satisfaction of rural women farmers. Source: authors' own construction.

2.2. Research Hypotheses

Based on the adopted IAD analytical framework and the relevant literature, four hypotheses emerge.

The first hypothesis relies on the physical attributes, namely, the cultivated land area, cultivated land location, land cultivation facilities, and housing conditions. In terms of cultivated land area, the larger the farmer's farming area, the greater the farmer's workload. Workload is often associated with stress [26]. The greater the stress, the lower the life satisfaction. In other words, the smaller the farmer's farming area, the lighter the farmer's workload, thus causing less stress and higher life satisfaction. In terms of cultivated land location, the further the farmland is from the traffic road, the quieter the working environment for farmers, so that rural women farmers can concentrate more on agricultural work, therefore causing higher life satisfaction. When it comes to the cultivated land facilities, it [5] shows that the pilot of new cooperative medical care in rural areas and the inadequacy of village road construction significantly improve and reduce the life satisfaction of farmers, respectively, while irrigation difficulties lower the life satisfaction of professional farmers. Finally, in general, good housing conditions lead to higher comfort. Housing conditions, such as homeownership and house size, play important roles in determining overall happiness [27]. Based on this, this paper proposes:

Hypothesis 1. *The smaller the cultivated land area, the further the cultivated land location; and the more complete the cultivated land facilities, the better the housing conditions, and the higher the life satisfaction.*

The second hypothesis takes the living environment and infrastructure into account. In Rostow's opinion [28], the improvement of the quality of life is embodied in the improvement of the living environment. A study by Ferrer-i-Carbonell and Gowdy [29] found that environmental problems reduce life satisfaction, despite income being controlled for them. In a survey conducted by Hu and Huang [4], environmental quality assessments can effectively improve the life satisfaction of rural residents, among which the two dimensions of 'air quality' and 'green environment' are the most significant factors affecting their life satisfaction. On the other hand, the relevant factor of infrastructure refers to community facilities and public transportation, specifically. Empirical study shows that road and transport infrastructure development is found to be positively related to community satisfaction [30]. Therefore, this paper proposes:

Hypothesis 2. *The better the living environment and infrastructure, the higher the life satisfaction.*

The third hypothesis comes from action situations, referring to expectations, exhaustion, and loneliness. The expectation here emphasizes the expectations that farmers expect from agricultural activities when engaging in agricultural production. An important factor of expectation formation is the most recent ones [31]. According to the latest statistics [32], grain output increased nearly sixfold from the beginning of the founding of New China to 2020. Since the food production has been achieving new highs in China and higher agricultural output, it means more and more harvest experiences. The positive harvest experiences in the past produced positive expectations. The expectation of a bumper harvest would give them a sense of fulfillment and accomplishment, which would increase their life satisfaction. Therefore, higher expectations lead to higher life satisfaction.

In terms of exhaustion, empirical studies indicate that workload impacts exhaustion [33,34]. Specifically, work intensity is negatively related to life satisfaction via emotional exhaustion [35]. However, the focus here is not on emotional exhaustion, but on physical exhaustion. Considering that the farming women did not work for a long time and that they were assisted by mechanical tools in their farming, the workloads were not very large. Against this backdrop, this type of non-high-intensity work means a level of suitable workload, which, to a large extent, bring a sense of accomplishment. In other words, the higher the exhaustion, the higher the sense of fulfillment and accomplishment for rural-farming women; therefore, their life satisfaction increases.

When it comes to the concept of loneliness, it is commonly defined as the subjective perception of social isolation [36]. Working long hours in the fields may make rural-farming women interact less frequently with their fellow villagers. Low frequency of interaction may lead to feelings of loneliness. Since loneliness has been identified as a crucial determinant of well-being [37–40], life satisfaction is negatively correlated with it. Based on this, this paper proposes:

Hypothesis 3. *The higher the expectation of farming, the higher the exhaustion, the lower the loneliness, and the higher the life satisfaction.*

The fourth hypothesis is concerned with the personal qualities of rural women farmers, including cash deposits, proportion of agricultural incomes, and farming time. Kang and Zhang [3] used a questionnaire survey to investigate the impact of rural resident income quality on their life satisfaction in China, and the results showed that the higher the satisfaction with the savings after spending, the higher the life satisfaction of the rural residents. As for 'income', many studies have found that it is an important factor affecting farmers' subjective well-being and life satisfaction. In 1974, Easterlin [41] proposed that residents' incomes can positively affect their life satisfaction. Later, in 1995, he put forward the conclusion that relative income has a more significant impact on life satisfaction, which has triggered relevant heated discussions in the relevant research field. Income was identified as the first of the seven broad categories in the literature having a potential influence on well-being [42]. A study conducted by Wang et al. [8] points out that, despite that the economy is not an absolute indicator to measure one's life satisfaction, the level of income has a direct impact on farmer overall life and satisfaction in all dimensions, as the richer farmers can obtain more social support. In other words, farmers with higher incomes have higher life satisfaction. Another study of 1367 survey samples from Anhui Province, China, has shown that women in agriculture have a higher life satisfaction, with income being an important factor affecting their life satisfaction [10]. Based on NSFH (National Survey of Families and Households) data, Luttmer [43] found a negative correlation between usual working hours and happiness. According to [44], data from the GSOEP (German Socio-Economic Panel Survey) shows an inverse U-shaped relationship between life satisfaction and work hours, showing that well-being rises as work hours

rise, but only to a certain point, when excessive hours lead to a drop. Based on this, this paper proposes:

Hypothesis 4. *The higher the cash deposit, the higher the proportion of agricultural income, the shorter the time of farming, and the higher the life satisfaction.*

The proposed hypotheses are summarized in Figure 2 below.

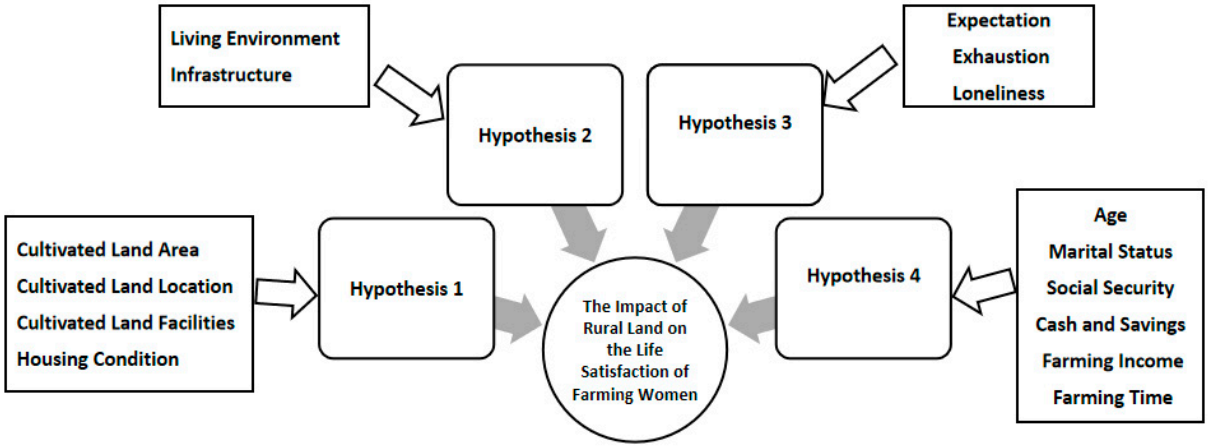

Figure 2. Research hypotheses proposed. Source: Authors' own construction.

3. Data and Methods

3.1. Research Design

3.1.1. Questionnaire Design

This research acquired its data by surveying rural women participating in agricultural production. In order to have a well-designed questionnaire to provide valid measurement of variables, we reviewed the scale for the measurement of existing variables, namely, life satisfaction [45] and loneliness [46]. Adjustments were made according to our research objective. Meanwhile, due to the difficulty of quantifying the other variables, on the basis of thorough preresearch, this research also incorporates independent designs of scale of the living environment, infrastructure, farming expectation, and exhaustion. The questionnaire scale of this study is shown in Table 1, where each item complies with the five-level Likert scale.

Table 1. Questionnaire Scale.

Variables	Questionnaire Questions
Life Satisfaction (LS)	A1: Do you feel the life you are living is consistent with your expectation? A2: Are you living under nice conditions? A3: Are you content with your life now? A4: Would you say that you have acquired things you wish to possess by now? A5: Would you say that you would not change much to your life if you had a chance to start over?
Living Environment (LE)	B1: I have centralized refuse disposal at my residence. B2: I cannot sense any unpleasant smell at my residence. B3: I cannot sense any noise at my residence. B4: The degree of environmental greening is great at my residence.

Table 1. *Cont.*

Variables	Questionnaire Questions
Infrastructure	B5: Local shuttle buses and other means of public transportation can suffice my daily commuting needs. B6: Commercial facilities in my community can suffice my daily needs. B7: I find going to nearby educational/medical facilities from my residence convenient.
Farming Expectation (FE)	C1: I have lived up to my living expectation through participation in agricultural production. C2: Comparing with non-agricultural production, I am more content with my participation in agricultural production. C3: Comparing with other families and friends working in agricultural production, I have a higher standard of living. C4: Comparing with other families and friends working in non-agricultural production, I have a higher standard of living. C5: My living quality has improved since my participation in agricultural production. C6: My living quality would improve further if I continued my participation in agricultural production.
Exhaustion	C7: Participation in agricultural production is making me fatigued and exhausted. C8: Participation in agricultural production is affecting my focus of attention. C9: Participation in agricultural production is making me physically tired so that I want to lie down and rest constantly. C10: Participation in agricultural production is interfering carrying out my daily chores (housekeeping, groceries shopping, visiting friends and families, etc.).
Loneliness	C11: Do you constantly feel left out? C12: Do you constantly feel that socializing is meaningless? C13: Do you constantly feel isolated from people? C14: Do you constantly feel that people surrounding you do not care for you? C15: Do you no longer feel intimate with anyone?

In addition to the above-mentioned scale titles, this study also selected three variables as control variables: rural women's age, marital status, and participation in social security. The measurement of these control variables and other independent variables in this study is shown in Table 2.

Table 2. Definition Table of Control Variables and Remaining Independent Variables.

Variables	Variable Codes	Definition
Age	Age	Actual Data
Marital Status	MT	Married rural women = 1, else = 0
Social Security	SC	Rural women with new rural pension insurance = 1, else = 0
Cultivated Land Area	CLA	Land area cultivated by rural women
Cultivated Land Location	CLL	Time needed for rural women to walk to the nearest highway from their cultivated land
Land Cultivation Facilities	LCF	Mechanic cultivation facilities = 1, else = 0
Housing Condition	HC	Number of houses in rural women's household
Cash and Savings	CA	Cash and savings for rural women's household
Farming Income	FI	Proportion of rural women's annual income from participating agriculture production to household's annual income
Farming Time	FT	Rural women's daily time devoted to farming

Source: Authors' own construction.

3.1.2. Source of Data

The survey was conducted in September 2022 in Henan province, Guangdong province, and Hunan province in China. Henan is the number-one labor export province. Since most of the migrant workers are men, this largely means that women do the farm work.

Because farming women are our research subject, we chose Henan Province. Women in agriculture in economically developed areas are also a very important aspect; thus, Guangdong Province, the largest economic province, was included in our study area. Hunan Province is a large agricultural province, which means that there are a relatively large number of farming women. So, we selected Hunan Province as one of our study areas. For each area, 12 villages were randomly selected, and in-person questionnaires were distributed. After eliminating the outliers of 360 collected questionnaires, the final valid samples of this study were 315. We chose 12 villages because, although there are many villages, in some villages, the number of farmers is already low. Thus, after communicating with the local village government, we chose a relatively appropriate number, that is, 12 villages and 10 questionnaires per village. This option proved to be quite feasible. The selected respondents have been farming in the village for many years. Thus, our sample is representative. Since our respondents cover farming women in China's major agricultural, economic, and migrant provinces, the findings can be generalized.

According to statistics for 2021 [47–49], for Henan province, the percentage of population that is male is 50.2%, and female is 49.8%; the number of employed persons in the primary sector accounts for 24.2%; and the grain output is 6544.2 (10,000 tons). For Hunan province, the percentage to population that is male is 51.8%, and female is 48.2%; the number of employed persons in the primary sector accounts for 24.6%; and the grain crops is 3074.4 (10,000 tons). For Guangdong province, the percentage to population that is male is 52.77%, and female is 47.23%; the number of employed persons in the primary sector accounts for 10.6%; and the grain output is 1279.87 (10,000 tons).

3.2. Reliability and Validity Test

Cronbach's α reliability index was adopted to evaluate the internal reliability of the questionnaire of this study. It can be seen from Table 3 that the Cronbach's α coefficients of the six items, i.e., life satisfaction, living environment, infrastructure, farming expectations, exhaustion, and loneliness are close to, or exceed, 0.7, which shows that the internal consistency, reliability, and stability of these scales are satisfactory. Therefore, it supports the credibility of the questionnaire and research results of this study.

Table 3. Cronbach's α Coefficient, KMO Test and Bartlett's Sphericity Test.

		Life Satisfaction	Living Environment	Infrastructure	Farming Expectation	Exhaustion	Loneliness
Cronbach's α Coefficient		0.757	0.773	0.678	0.820	0.854	0.670
KMO Test		0.794	0.754	0.653	0.827	0.821	0.726
Bartlett's Sphericity Test	χ^2 Statistic	368.925	355.815	150.746	599.216	533.06	218.418
	Degrees of Freedom	10	6	3	15	6	10
	Significance Level	0.000	0.000	0.000	0.000	0.000	0.000

Source: Authors' own construction.

At the same time, factor analysis was adopted to test the construct validity of the questionnaire. In factor analysis, KMO test can compare the simple correlation coefficient and partial correlation coefficient between variables, while Bartlett's spherical test can test whether the correlation matrix between variables is a unit matrix, both of which are an important basis for measuring the correlation between different variables. When the KMO test statistic is closer to 1, and the p-value of the Bartlett's spherical test statistic is less than 0.05, it can be concluded that there is a certain correlation between the variables in the scale, which can better indicate the measurement of the same construct, and the validity is good. Table 3 also shows that the KMO test statistics of the questionnaires used in this study are close to, or exceed, 0.7, and the significance level of all shared Bartlett's spherical tests is 0.000. Therefore, the construct validity of this questionnaire and its components can be considered as satisfactory.

3.3. Model Specification

According to the setting of the above-mentioned explained variables, explanatory variables, and control variables, this study comprehensively sets up the following linear regression model:

$$LS = \alpha_0 + \alpha_1 CLA + \alpha_2 CLL + \alpha_3 LCF + \alpha_4 HC + \alpha_5 LE + \alpha_6 Infrastructure + \alpha_7 FE + \alpha_8 Exhaustion + \alpha_9 Loneliness + \alpha_{10} CA + \alpha_{11} FI + \alpha_{12} FT + \alpha_i \sum Control + \varepsilon \quad (1)$$

4. Results

4.1. Descriptive Statistical Analysis

Table 4, below, reports the descriptive statistics of the main variables. They show that the mean value of life satisfaction (LS) of rural women participating in agricultural production is 3.3, and the median is 3.2, which indicate that the life satisfaction of rural women in the sample is mostly at the middle level; the mean value of the cultivated land area (CLA) is 3.84, the median is 3; the mean value of the cultivated land location (CLL) is 9.03, and the median value is 7; the mean value of the housing condition (HC) is 1.14, the median value is 1, and the standard deviation is only 0.48, which shows that the household of most rural women participating in agriculture production in the sample still owns one building as the rigid need of housing; the mean values of the living environment (LE) and public infrastructure (Infrastructure) are 3.9 and 3.4, and the medians are 4 and 3.33, respectively, which show that the living environment of rural women participating in agriculture production in the sample is mostly at the upper-middle level, and most of their public infrastructure in the residential area is at the middle level; the average values of farming expectation (FE), exhaustion (Exhaustion), and loneliness (Loneliness) are 2.92, 2.88, and 2.28, respectively, and the medians are 3.00, 3.00 and 2.20, which indicate that most of the rural women participating in agriculture production in the sample have a moderate level of farming expectations, and their sense of fatigue due to agricultural production activities is also at a moderate level, while the sense of loneliness in the process of agricultural production is relatively low; the average value of cash and savings (CA) is 46,803.82, the median is 20,000.00, and the standard deviation is 58,455.63, which shows relatively large differences among rural women participating in agriculture production for their household cash and savings in the sample; the mean value of farming income (FI) is 0.28, and the median is 0.17, indicating that the proportion of the rural women's annual incomes from participating in agriculture production is relatively low compared to their household's annual income, and there are other sources of income besides farming; and the average daily farming time (FT) is 4.9, and the median is 5.00; in addition, the values of each control variable are within the reasonable range.

Table 4. Descriptive Statistical Analysis.

Variable	Mean	Med	Min	Max	Sd
LS	3.30	3.20	1.80	5.00	0.70
Age	50.22	50.00	27.00	82.00	10.38
CLA	3.84	3.00	0.50	20.00	3.38
CLL	9.03	7.00	1.00	60.00	7.30
HC	1.14	1.00	1.00	6.00	0.48
LE	3.90	4.00	1.50	5.00	0.77
Infrastructure	3.41	3.33	1.00	5.00	0.87
FE	2.92	3.00	1.00	5.00	0.77
Exhaustion	2.88	3.00	1.00	5.00	1.05
Loneliness	2.28	2.20	1.00	4.00	0.57
CA	46,803.82	20,000.00	0.00	400,000.00	58,455.63
FI	0.28	0.17	0.01	1.00	0.30
FT	4.90	5.00	0.50	12.00	2.58

Source: Authors' own construction.

In order to reduce the impact of dimensional differences among variables on the regression results, this study standardized the data of each variable in the data analysis process.

4.2. Basic Regression Results

Based on model (1), multiple linear regression, which can achieve a more effective and realistic prediction of dependent variable through the optimal linear combination of multiple independent variables, is carried out on the research samples, and the results are shown in Table 5. Judging by the goodness of fit, the adjusted R-squared of 0.501 indicates that the regression effect of the model is significant. In light of the key assumptions of the model, both the normality test and the White heteroscedasticity test of the residual cannot reject the null hypothesis, and none of the VIF value of the independent variables exceed 5, which all indicate that the setting of this model is effective.

Table 5. Benchmark Regression Results.

	(1)	(2)	(3)
	LS	**LS**	**LS**
Age	0.022	0.048	0.063
	(0.503)	(1.163)	(1.547)
1.MT	0.196	0.290	0.300
	(0.762)	(1.163)	(1.226)
1.SC	0.400 ***	0.472 ***	0.469 ***
	(3.225)	(3.865)	(3.858)
CLA	0.041	0.040	−0.017
	(0.826)	(0.837)	(−0.328)
CLL	0.133 ***	0.092 **	0.109 **
	(2.968)	(2.082)	(2.492)
1.LCF	0.374 ***	0.330 ***	0.281 ***
	(3.727)	(3.407)	(2.900)
HC	0.172 ***	0.133 ***	0.123 ***
	(3.786)	(2.910)	(2.743)
LE	0.257 ***	0.234 ***	0.222 ***
	(5.545)	(5.098)	(4.932)
Infrastructure	0.292 ***	0.254 ***	0.223 ***
	(6.138)	(5.471)	(4.754)
FE		0.240 ***	0.247 ***
		(5.259)	(5.433)
Exhaustion		0.066	0.080 *
		(1.467)	(1.790)
Loneliness		−0.103**	−0.082 *
		(−2.290)	(−1.854)
CA			0.146 ***
			(2.981)
FI			0.086 *
			(1.835)
FT			−0.107 **
			(−2.326)
_cons	−0.396	−0.481 *	−0.471 *
	(−1.530)	(−1.917)	(−1.912)
N	315	315	315
r2	0.445	0.495	0.522
r2_a	0.428	0.475	0.498
F	27.130	24.662	21.802

Source: Authors' own construction. (1) *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. (2) Standard errors are in parentheses.

Further analysis of the regression results shows that: (1) Hypothesis 1 of this study partially holds. The regression coefficients of cultivated land location, land cultivation facilities and housing condition are 0.109, 0.281, and 0.123, respectively, which are significant

at the 5%, 1%, and 1% levels, indicating that the further the cultivated land is from the highway, the more land cultivations are carried out by mechanical facilities, and the more houses are owned by the household, the higher the life satisfaction of rural women participating in agriculture production would be. (2) Living environment and infrastructure significantly and positively affect the life satisfaction of rural women participating in agriculture production, and this is consistent with the hypothesis 2. (3) Hypothesis 3 of this study holds true. The regression coefficients of farming expectations, exhaustion, and loneliness are 0.247, 0.080, and −0.082, respectively, which are significant at the levels of 1%, 10%, and 10%, indicating that rural-farming women who have higher farming expectations, stronger exhaustion, and lower loneliness during the farming process would have higher life satisfaction. (4) In line with the hypothesis 4, household cash and savings, farming income, and farming time all significantly affect the life satisfaction of rural-farming women, but there are differences in the direction of impact. The regression coefficients of household cash and savings and agricultural income are 0.146 and 0.086, respectively, which are significant at the 1% and 10% levels. The higher the household cash and savings, and the higher the agricultural income, the higher the life satisfaction of rural women participating in agriculture production. The regression coefficient of farming time is −0.107, which is significant at the 5% level, supporting the proposition that long farming times would decrease the life satisfaction of the rural-farming women.

4.3. Robustness Test

4.3.1. Test of Substitution Variables Measurement

First, the factor scores calculated by factor analysis were used to replace the arithmetic mean value to adjust the measurement methods of the six variables, i.e., life satisfaction, living environment, infrastructure, farming expectations, exhaustion, and loneliness, and the model was re-estimated. As shown in Table 6, the regression in column (1) manifests that the basic conclusions of this paper still hold after replacing the corresponding variable measurement methods.

Table 6. Robustness Test.

	(1) **Factor LS**	**(2)** **LS**
Age	0.065 * (1.723)	0.063 (1.544)
1.MT	0.342 (1.504)	0.302 (1.230)
1.SC	0.418 *** (3.706)	0.469 *** (3.853)
CLA	−0.028 (−0.560)	−0.018 (−0.331)
CLL	0.108 *** (2.656)	0.109 ** (2.487)
1.LCF	0.294 *** (3.279)	0.280 *** (2.871)
HC	0.110 *** (2.648)	0.123 *** (2.743)
(Factor) LE	0.246 *** (6.036)	0.223 *** (4.927)
(Factor) Infrastructure	0.261 *** (6.011)	0.223 *** (4.746)
(Factor) FE	0.242 *** (5.581)	0.247 *** (5.425)

Table 6. *Cont.*

	(1) Factor LS	(2) LS
(Factor) Exhaustion	0.074 * (1.777)	0.082 * (1.760)
(Factor) Loneliness	−0.076 * (−1.805)	−0.082 * (−1.853)
CA	0.135 *** (2.984)	0.147 *** (2.956)
FI	0.078 * (1.793)	0.086 * (1.838)
FT	−0.092 ** (−2.167)	−0.106 ** (−2.319)
GE		−0.006 (−0.149)
_cons	−0.530 ** (−2.311)	−0.472 * (−1.912)
Nr2	315	315
r2_a	0.529	0.522
F	0.506	0.497
	22.407	20.374

Source: Authors' own construction. (1) *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. (2) Standard errors are in parentheses.

4.3.2. Test on the Increased Control Variables

Then, since China's rural society is a 'relation-based society' that pays great emphasis to personal connection [50], the social capital of rural residents could affect their life satisfaction [51]. In order to reduce the impact of this factor on the regression results, this study adds one social capital control variable, namely gift expenditure (GE) which is measured by the total expenditure of gifts sent by rural agricultural women in the past year and regressed in the model. From the result of the regression in column (2) in Table 6, after adding the social capital control variable, the basic conclusions of this paper still stand.

4.4. Mediating Effect Analysis

Prime land location allows rural-farming women to concentrate more on agricultural production, and well-equipped facilities can improve agricultural production efficiency of rural women, all of which may increase their farming expectations. Since there is a significant positive impact on women's life satisfaction, farming expectations may play a mediating effect on the impact of cultivated land location and cultivated land facilities on life satisfaction. Consequently, this study further used a stepwise method to test the significance of this effect, and the results are shown in Tables 7 and 8.

Table 7. The Mediating Effect of Farming expectations on the Impact of Cultivated Land Location on Life Satisfaction.

	(1) LS	(2) FE	(3) LS
Age	0.061 (1.105)	−0.091 * (−1.663)	0.093 * (1.795)
1.MT	0.456 (1.389)	−0.456 (−1.399)	0.618 ** (2.001)
1.SC	0.346 ** (2.218)	−0.593 *** (−3.827)	0.556 *** (3.716)

Table 7. *Cont.*

	(1) LS	(2) FE	(3) LS
CLL	0.189 ***	0.189 ***	0.122 **
	(3.401)	(3.423)	(2.299)
FE			0.354 ***
			(6.613)
_cons	−0.495	0.532 *	−0.683 **
	(−1.527)	(1.652)	(−2.239)
N	315	315	315
r2	0.070	0.082	0.185
r2_a	0.058	0.070	0.172
F	5.798	6.910	14.025

Source: Authors' own construction. (1) *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. (2) Standard errors are in parentheses.

Table 8. The Mediating Effect of Farming Expectations on the Impact of Land Cultivation Facilities on Life Satisfaction.

	(1) LS	(2) FE	(3) LS
Age	0.051	−0.094 *	0.081 *
	(1.000)	(−1.717)	(1.665)
1.MT	0.407	−0.479	0.559 *
	(1.321)	(−1.465)	(1.917)
1.SC	0.523 ***	−0.462 ***	0.669 ***
	(3.616)	(−3.014)	(4.839)
1.LCF	0.785 ***	0.363 ***	0.670 ***
	(7.439)	(3.243)	(6.618)
FE			0.317 ***
			(6.287)
_cons	−0.780 **	0.392	−0.905 ***
	(−2.547)	(1.208)	(−3.125)
N	315	315	315
r2	0.181	0.078	0.274
r2_a	0.171	0.067	0.262
F	17.137	6.594	23.318

Source: Authors' own construction. (1) *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. (2) Standard errors are in parentheses.

According to the results in Table 7, the regression in column (1) shows that the location of cultivated land has a significant positive impact on the life satisfaction of rural-farming women, which is consistent with the results of the baseline regression. The regression in column (2) shows that the location of cultivated land has a significant positive impact on the farming expectations of rural-farming women: the further the cultivated land is from the road, the higher the rural-farming women's expectations. The regression in column (3) shows that when farming expectation factors are controlled, the location of the cultivated land still has a significantly positive impact on the life satisfaction of rural-farming women, but the coefficient drops from 0.189 to 0.122. The results of the three regressions jointly prove the partial mediating effect of farming expectations on the effect of farmland location on life satisfaction, and this mediation effect accounted for approximately 35.4% of the total effect of cultivated land location on life satisfaction, indicating that the location of cultivated land not only has a direct positive effect on the life satisfaction of rural agricultural women, but also has an indirect positive effect on the life satisfaction of rural-farming women through farming expectations.

According to the results in Table 8, the regression in column (1) also demonstrates that land cultivation facilities have a significant positive impact on the life satisfaction of rural agricultural women, which is consistent with the baseline regression results. The regression in column (2) presents that the mechanical power of land cultivation facilities,

which increases the farming expectations of rural-farming women. The results of the three regressions jointly prove the partial mediating effect of farming expectations in terms of the impact of land cultivation facilities on life satisfaction; this mediation effect accounts for approximately 14.7% of the impact of cultivated land facilities on life satisfaction.

5. Discussion

5.1. Expanding the Research Perspective of Life Satisfaction and Agricultural Feminization

The results of the study validate the influence of the variables such as land cultivation facilities and living environment on rural-farming women's life satisfaction, which is in line with the results of existing studies on life satisfaction, thus confirming the robustness of this study's findings. However, unlike other studies that have focused on all residents or all farmers, this study focuses on the vulnerable group of rural women who participate in farming and provides a more targeted answer to the question of what kind of rural land conditions can improve their life satisfaction. In this context, on the one hand, the study enriches the research of farmer life satisfaction, and on the other hand, it further fills the gap in the study of life satisfaction, which mainly targets rural-farming women. Simultaneously, the study also expands the research perspectives of the feminization of agriculture, which used to focus mainly on the basic concepts of feminization, its causes, and its impacts on agricultural output.

5.2. Quality Rather Than the Quantity of Cultivated Land Has an Impact on the Life Satisfaction of Rural-Farming Women

According to the baseline regression results of model (1), the area of the cultivated land has no significant impact on the life satisfaction of rural-farming women, but the location of the cultivated land and land cultivation facilities do significantly and positively affect their life satisfaction. This shows that different attributes of rural cultivated land have different impacts on the life satisfaction of rural-farming women. More specifically, the area of the cultivated land represents the attribute of the quantity of cultivated land, while location of the cultivated land and land cultivation facilities both represent the attributes of the quality of the cultivated land. Compared with the quantity of cultivated land, the quality of the cultivated land is more likely to influence the life satisfaction of rural-farming women.

The amount of arable land owned may symbolize a certain identity and status, which means that rural-farming women may be respected more by their fellow villagers when they own a large amount of arable land. However, other than that, it can neither create convenience nor ensure productivity for rural-farming women, so it has no substantial impact on improving their life satisfaction.

On the contrary, the quality of the cultivated land, on the one hand, can be reflected in the good location of the cultivated land, which allows rural women to concentrate more on production activities; on the other hand, such quality can manifest itself in the improvement of farming facilities, which brings convenience to their agricultural production and, at the same time, increases the potential output of the cultivated land. They are all conducive to improving the life satisfaction of rural-farming women.

5.3. Research Limitations and Future Research

This study has several limitations which can be addressed in future studies: (1) This study analyses land-related variables influencing the life satisfaction of rural-farming women only in the cross-section, and fails to effectively identify the dynamic changes in the impact in the long period of time. Future research would identify the impact of dynamic changes in the influencing factors over time. (2) On the basis of hypothesis verification, this study further explores the mediating effect of farming expectations on the influence path of cultivated land location and land cultivation facilities on rural-farming women's life satisfaction, but the interaction mechanism of other land-related variables in the influence path of rural women's life satisfaction has not been explored in depth. In the future further study, we will analyze the moderating effect and mediating effect based on the existing results.

6. Conclusions

Based on the theoretical framework of IAD, this study constructs a multiple linear regression model to explore the factors influencing the life satisfaction of rural-farming women, trying to bridge the gap between the life satisfaction of rural-farming women and land-related variables. The results of this study are as follows. Firstly, the quality of the cultivated land, embodied in the cultivated land location and the land cultivation facilities, has a significantly positive impact on the life satisfaction of rural-farming women. Secondly, better living conditions, as reflected in prime housing conditions, surrounding community, and infrastructure, could also improve the life satisfaction of rural-farming women. Thirdly, the well-being statuses of rural-farming women have different impacts on their life satisfaction, and while higher farming expectation and exhaustion would make rural-farming women more satisfied with their lives, the impact of loneliness is to the contrary. Fourthly, although cash and savings as well as farming income would positively affect rural-farming women's life satisfaction, farming time would negatively affect rural women's life satisfaction. In this study, not only does it provide a new theoretical perspective on life satisfaction and the feminization of agriculture, but it also provides a basis for focusing on vulnerable groups of women in agriculture, thus improving their life satisfaction.

Based on the above conclusions, we put forward the following policy recommendations: (1) Increase policy and financial support for agricultural and rural modernization. Agreeable production conditions and living conditions are important factors to improve the life satisfaction of rural-farming women. Governments at all levels should vigorously introduce and implement agricultural and rural policies such as the comprehensive consolidation of rural land, investment and financing of rural infrastructure, and agricultural mechanization; meanwhile, they could provide women with special subsidy funds for their contributions towards improving land cultivation infrastructure, thereby providing institutional and financial guarantees for improving the production and living conditions of rural-farming women. Only by this can the modernization of agriculture and rural areas be promoted and their life satisfaction be improved. (2) Pay attention to the well-being of rural agricultural women and provide them with needed psychological counseling services. The psychological state of rural women when carrying out agriculture production also has an impact on their life satisfaction. Although some psychological effects are positive and favorable, there are still some psychological effects that are negative and unfavorable. For this reason, local governments and the society should raise awareness to these psychological states (for example, loneliness) impairing the life satisfaction of rural-farming women and provide counseling services for women who encounter psychological struggles to help them identify the issues and solve them accordingly, so that they can carry out agricultural production activities with a better mindset. (3) Implement various means to help rural women in agriculture to improve production efficiency and increase agricultural income. Both farming income and farming time have an impact on rural-farming women's life satisfaction. Therefore, local governments should help rural women to achieve the goal of continuously reducing production time and increase the production income by popularizing agricultural production technology and promoting large-scale agricultural operations.

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