

Assessment of Women Empowerment through Small-scale Dairy Farming: A Study in Kashmir using Structural Equation Modelling

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ABSTRACT: Current thinking is that small-scale dairy farming is one of the best ways for rural women to make the most of their scarce resources and acquire the knowledge and abilities that could lead to greater independence and empowerment. Researchers found that while much research has examined the effects of empowering women in business, few have looked explicitly at the dairy industry. The current study aims to quantify rural women's empowerment in India's Kashmir Region and identify the key success elements that contribute to empowerment. The results from regression analysis (structural equation modelling) show that five factors (Community support scale; family support, creativity, financial access and personality) lead to entrepreneurial success, enhancing empowerment amongst dairy women farmers. This study offers numerous practical and theoretical implications, especially less access to lands, loans and machinery. The current research showed that through small scale dairy farming rural women were able to enhance their confidence and decision-making power besides supporting their family, society as well as to nation in end.

Keywords: Women empowerment, dairy farming, community support scale, family support, creativity, financial access.

INTRODUCTION

Agriculture development is incomplete without participation of women folk. Worldwide, the nature and extent of women involvement in agriculture and allied fields varies greatly. Women contribution to agriculture differs region to region and as per census of 2011, 55 per cent of women were active agriculture labourers while as 24 per cent were cultivators; controlling more than 12.8 per cent of operational holding. In addition women role to agriculture research is very important and contributed in trainings, experiments, publication (Dar *et al.*, 2017; Sangvikar, 2019; Dar *et al.*, 2020; Gajger and Dar 2021; Dar *et al.*, 2021; Popiha, 2021) and have won numerous awards.

The distribution and existence of human races and the progress made put both the genders on the center stage, where, on one hand men have been shown responsible for major part of development and on the other women as deprived and neglected (Singh, 2009). Women are the pillar of agrarian sector in India (Shukla *et al.*, 2022).

According to Anggadwita *et al.* (2017), women have an equal role and position with men to attain prosperity in the economic, social, political, educational, health, legal, and environmental sectors. They also have equal opportunities to take charge of their lives. Additionally, they actively participate in a nation's development

(Asyiek and Mustaffa 2015). Women's empowerment is a practice that has favourable effects on different economic and social sectors (Hatta and Sarkawi 2011). But discrimination still exists in some instances against women, especially rural women (Altman and Lamontagne 2004).

Women have played and continue to play an important role in economic activity, both directly as well as indirectly. The agricultural workforce is primarily made up of women. Women have a significant role in many agricultural operations and household management. Dairy farming as a career matches the definition of rural economic activity extremely well. It fits in with the everyday tasks that women already conduct naturally. According to Seth, (2021) home based catering business is an affordable option and a perfect entrepreneurship which is booming in present scenario, as it saves most of the earned profit from paying rent for the business's location.

Women's participation in the dairy industry will result in a societal change in addition to job opportunities for them. Women play a variety of roles in dairy and cattle farming (Jadav *et al.*, 2014). They engage in a wide range of activities, including feeding, cleaning animal sheds, caring for animals, grazing, and processing milk and livestock products. 90% of families with livestock

employ women to perform indoor tasks like milking, feeding, and cleaning, while men manage male animals and produce fodder (FAO, 2011). 93% of all workers in the dairy industry were women (World Bank, 1991). According to Usharani *et al.* (1993), women play a far larger part in cattle and dairy farming in India where dairy farming.

In fact, rural women have been participating in more economic activities recently, which might encourage the growth of enhanced self-confidence, self-motivation, personal and economic mobility, decision-making capacity, and general autonomy. As a result, rural entrepreneurial cultures in India are transforming. Rural women can overcome customary hurdles and can avoid oppression like domestic abuse that inhibits their empowerment by engaging in income-generating activities like small-scale dairy farming. Because raising dairy animals on individual homesteads is relatively inexpensive, small-scale dairy farms managed by rural women are becoming more common in India (Nath, 2022). Small-scale dairy farming is currently thought to be one of the best methods for these rural women to make use of their limited resources and learn skills that would help them become more empowered. Most of the studies on women empowerment have focussed on other sectors, and limited studies have been conducted on dairy enterprises (Shefner-Rogers *et al.*, 1998). The objective of the current study is to measure rural women's empowerment in India's Kashmir Region and to pinpoint the significant factors of success that lead to empowerment.

LITERATURE REVIEW

Women empowerment. Given the popularity and widespread use of the phrase in academic and general sectors, a generally agreed-upon definition of women's empowerment remains elusive. However, discussions about women's empowerment frequently focus on decision-making positions, economic independence, legal rights to equal treatment, education, and inheritance, as well as protection from discrimination. So, it makes sense to say that women's empowerment is the process by which they gain control over previously taboo parts of their lives (Haque *et al.*, 2011) and take control of their lives to change their inferior status (Keller and Mbwewe 1991). Women's empowerment is also usually understood to be a continuous process in which a woman develops the capacity to specify and effectively pursue personal goals (Kabeer, 1999). According to Page and Czuba (1999), empowerment is a multifaceted process that aids individuals in taking charge of their lives while also fostering empowerment in groups and society (Malhotra and Schuler 2003). While Charmes and Wieringa (2003) note that empowerment is a process that encompasses the development of consciousness, choice, resources, voice, agency, and participation, Kishore and Lekha (2008) contend that empowerment entails a woman's increased control over her life, body, and external environment.

Hashemi *et al.* (1993) identified several areas where women have historically been deprived of autonomy, including physical mobility, financial security, and freedom in social interactions. As Batliwala (1994) pointed out, women's empowerment must therefore include a direct challenge to institutions of power (such as the family, the media, and power structures, such as the legal and economic ones) in order to achieve autonomy.

Dairy farming and women empowerment. Milking, making milk products, and selling milk are all considered domestic tasks extended to dairy farming. These tasks include feeding and watering animals, bringing in field-grown fodder, cleaning animals and barns, making cow dung cakes, protecting animals from disease, and cleaning animals and sheds. India's dairy industry is mostly run by women (Fulzele and Meena 1995). There is no question that women have long worked in the dairy and animal husbandry industries in addition to their regular domestic duties (Belurkar *et al.*, 2003). In India, almost 75 million women work in the dairy industry compared to 15 million men. Along with carrying out their duties as homemakers, women carry out many of the crucial chores in animal husbandry. Although women play a big and important part in raising cattle, their contributions have not received the recognition they merit. They are always unnoticed employees (Chayal *et al.*, 2009).

Factors leading to the success of women entrepreneurs

Community support. Support from the community will help foster networking, which plays a crucial role in corporate operations (Anggadwita *et al.*, 2017) and allows for simpler access than individual accomplishments. Networking is a great way to gain knowledge and advance your career (Mahesh *et al.*, 2020). Participating actively in the community promotes wellbeing and positively impacts others.

Personality. The idea of a personality attribute has become more common among other academics (Greenhalgh *et al.*, 2004). Research on the entrepreneurial personality trait of internal locus of control has grown in significance; Thomas and Mueller (2000) contend that there is a strong relationship between internal locus and entrepreneurial conduct. According to Boashan *et al.* (2009), those who have internal control want to be business owners. Entrepreneurship is portrayed as a risk-taking activity that those with a risk-taking disposition can only undertake since they choose opportunities from the vision (Bruce, 2012). Entrepreneurial success is directly correlated with a number of personality traits, including risk-taking or risk tolerance, control, and ambition, according to one study on the topic conducted by Key (1997).

Creativity. The philosophical relationship between creativity and entrepreneurship was developed from a variety of perspectives and disciplines, such as psychology. According to Matherly and Goldsmith (2006), creativity has a favourable relationship with

company success and is a system for improving the entrepreneurial side of things. Previous research supports the idea that in order to succeed as an entrepreneur, creative thinking and methodical analysis must be combined. They claimed that business owners might be able to spot opportunities other people might mistake for issues and seize them. According to William (2011), creativity is one of the key characteristics that sets female business owners apart from their male counterparts.

Financial Access. There is a prevalent perception that women entrepreneurs have less success in their businesses than their male colleagues, despite the fact that they are crucial to both their families and broader economic development (Akanji, 2011). One major factor that prevents women from starting their own businesses is access to funding. Numerous scholars have documented this issue, including Key (1997); Boashan *et al.* (2009). It was found that banks frequently discriminate against women. While the banks have responded by arguing that the characteristics of the entrepreneurs cause this discrimination, the literature supports this idea. This justification also supports Bruce's (2012) study on women's propensity to borrow money from friends and family or use their own funds to launch a business.

Family Support. Entrepreneurial success depends heavily on family cooperation and support (Guillén, 2013). According to one understanding of women entrepreneurs, women are more likely to choose to become entrepreneurs if their spouses are business owners (Gorchels, 2012). Women from business families are likely to be very confident in their decision to pursue an entrepreneurial career.

Entrepreneurial success. Entrepreneurial success can take many forms, but the simplest definition focuses on the venture's ability to generate income, make a profit, survive, and produce (Carter and Evans 2012). Because there are no universally accepted criteria for determining success, assessing the success aspects of entrepreneurial endeavours is still a contentious topic. The basic definition used by many studies as the success condition for entrepreneurial initiatives is that the business has been operationalized for at least three years (Watson and Wilson 2010).

Women empowerment. A very significant goal in and of itself is the advancement of women's psychological, social, economic, and health conditions, as well as their empowerment and autonomy. Furthermore, it is crucial for achieving sustainable development. In this work, it has been measured with three dimensions. Since everything from standard of life to social standing is determined by income, *women's economic empowerment* is crucial. Economic resources are essential for the sustainable and dignified well-being of all people, especially women. Psychological

empowerment is the way that internal motivation shows up in relation to the cognitive parts of meaning, competence, self-determination, and influence. Having equal influence over their lives, the ability of women to make significant decisions, and access to opportunities are all aspects of social empowerment.

Conceptual Framework. Based on the literature, the following framework has been proposed.

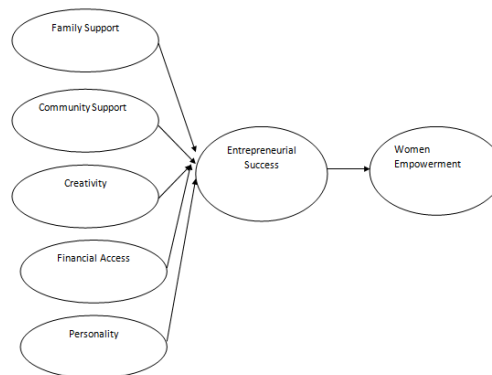


Fig. 1. Conceptual Framework.

RESEARCH METHODOLOGY

Research Design. This investigation used a quantitative and causal design. In this study, a sample of 185 people was used, but only 150 functional questionnaires were present after data cleaning. Data about women dairy farmers in the Kashmir region of the Union Territory of J&K were collected in various districts.

Measures. The community support scale was adapted from the work of Dewi *et al.* (2022). The scale for family support, creativity, financial access, personality, and entrepreneurial success was adapted from Batool and Ullah (2017). The women empowerment scale was adapted from the work of Nikheta *et al.* (2017).

Factor Analysis. “Exploratory factor analysis” (EFA) was done to discover the facto structure in SPSS 26.0. Reliability was calculated using Cronbach's Alpha (Table 1) which was higher than the recommended value of 0.60 (Hair *et al.*, 2006).

Table 1: Reliability.

Cronbach's Alpha	N of Items
.942	27

Moreover, “Kaiser-Meyer-Olkin (KMO)” and “Bartlett's test of Sphericity” scores were greater than recommended values (Table 2).

The Variance explained by seven factors is 85.5 (Table 3).

During EFA, all the factor loadings were higher than 0.50 (Table 4).

Table 2: KMO and Bartlett's Test.

Measure		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.886
Bartlett's Test of Sphericity	Approx. Chi-Square	12746
	Df	351
	Sig.	.000

Table 3: Total Variance Explained.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.109	41.146	41.146	11.109	41.146	41.146	4.465	16.538	16.538
2	2.901	10.743	51.889	2.901	10.743	51.889	3.560	13.183	29.721
3	2.595	9.611	61.500	2.595	9.611	61.500	3.402	12.600	42.321
4	1.919	7.106	68.606	1.919	7.106	68.606	3.363	12.455	54.776
5	1.798	6.660	75.266	1.798	6.660	75.266	3.186	11.800	66.576
6	1.657	6.137	81.402	1.657	6.137	81.402	2.591	9.597	76.173
7	1.119	4.143	85.545	1.119	4.143	85.545	2.530	9.372	85.545
8	.524	1.942	87.487						
9	.454	1.682	89.168						
10	.355	1.313	90.482						
11	.333	1.233	91.714						
12	.278	1.029	92.744						
13	.255	.944	93.687						
14	.231	.855	94.543						
15	.202	.747	95.289						
16	.184	.681	95.970						
17	.174	.645	96.615						
18	.156	.578	97.193						
19	.148	.547	97.740						
20	.125	.462	98.202						
21	.116	.431	98.633						
22	.087	.324	98.957						
23	.086	.320	99.277						
24	.079	.291	99.568						
25	.061	.227	99.795						
26	.039	.143	99.938						
27	.017	.062	100.000						

Extraction Method: Principal Component Analysis.

Table 4: Rotated Component Matrix.

Items	Component						
	1	2	3	4	5	6	7
FS1			.834				
FS2			.826				
FS3			.825				
FS4			.830				
WEM1					.769		
WEM2					.830		
WEM3					.842		
WEM4					.783		
CS1		.896					
CS2		.903					
CS3		.882					
CS4		.883					
ES1				.840			
ES2				.835			
ES3				.882			
ES4				.796			
FA1						.827	
FA2						.878	
FA3						.835	
CRT1							.892
CRT2							.870
CRT3							.852
PS1	.789						
PS2	.906						
PS3	.917						
PS4	.915						
PS5	.845						

Note: CS-Community support scale; family support-FS, creativity-CRT, financial access-FA, personality-PS, entrepreneurial success-PS, Women empowerment scale-WEM.

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

DATA ANALYSIS

Respondent Profile. Table 5 shows the profile of the respondents in terms of demographic variables.

Measurement Model. “Measurement model” (Fig. 2) was produced from CFA (Confirmatory Factor Analysis) in AMOS 26.0 with good values: CMIN/DF= 3.3; CFI = 0.911, GFI= 0.847, RMSR=0.059, NFI =0.931 and RMSEA=0.053.

Reliability and Validity. “CR” (“composite reliability”) was greater than the acceptable 0.60 (see Table 7). “Convergent validity” was established as “AVE” (“average variance extracted”) was above the threshold of 0.50 (see Table 7), and loadings were above 0.50 (see Table 6). And “correlation coefficient” was less than “AVE square root”, which establishes “discriminant validity” (see Table 7) (Fornell and Larcker 1981).

Table 5: Respondent Profile.

Variable	Group	Frequency
Marital Status	Married	119
	Not Married	31
	Separated/Divorced	0
Age Groups (Years)	18-34	67
	35-49	65
	50 years & above	18
Educational Qualification	Primary	70
	Secondary	69
	Graduate and above	11
Annual Household Income (In Rupees)	1-3 lac	105
	3-5 lac	35
	More than 5 lac	10

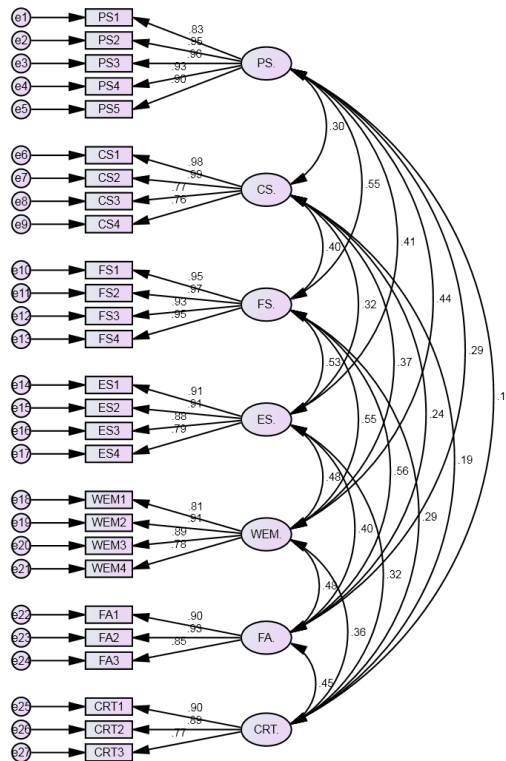


Fig. 2. Measurement Model.

Note: CS-Community support scale; family support-FS, creativity-CRT, financial access-FA, personality-PS, entrepreneurial success-PS, Women empowerment scale-WEM.

Source: Author’s Own

Table 6: Standardized Regression Weights.

Items	Direction	Factor	Estimate
PS1	<---	PS.	.830
PS2	<---	PS.	.946
PS3	<---	PS.	.961
PS4	<---	PS.	.926
PS5	<---	PS.	.901
CS1	<---	CS.	.984
CS2	<---	CS.	.994
CS3	<---	CS.	.771
CS4	<---	CS.	.760
FS1	<---	FS.	.950
FS2	<---	FS.	.973
FS3	<---	FS.	.932
FS4	<---	FS.	.949
ES1	<---	ES.	.913
ES2	<---	ES.	.907
ES3	<---	ES.	.883
ES4	<---	ES.	.790
WEM1	<---	WEM.	.808
WEM2	<---	WEM.	.907
WEM3	<---	WEM.	.890
WEM4	<---	WEM.	.783
FA1	<---	FA.	.898
FA2	<---	FA.	.926
FA3	<---	FA.	.851
CRT1	<---	CRT.	.900
CRT2	<---	CRT.	.893
CRT3	<---	CRT.	.770

Note: CS-Community support scale; family support-FS, creativity-CRT, financial access-FA, personality-PS, entrepreneurial success-PS, Women empowerment scale-WEM.

Table 7: Reliability and Validity.

Factors	CR	AVE	FA.	PS.	CS.	FS.	ES.	WEM.	CRT.
FA.	0.921	0.796	0.892						
PS.	0.962	0.835	0.288	0.914					
CS.	0.934	0.782	0.235	0.301	0.884				
FS.	0.974	0.905	0.564	0.546	0.402	0.951			
ES.	0.928	0.765	0.401	0.410	0.321	0.526	0.875		
WEM.	0.911	0.720	0.478	0.440	0.366	0.554	0.477	0.849	
CRT.	0.891	0.733	0.453	0.187	0.195	0.293	0.318	0.358	0.856

Note1: The values (highlighted) in the above matrix's diagonal are the AVE's square root.

Note: CS-Community support scale; family support-FS, creativity-CRT, financial access-FA, personality-PS, entrepreneurial success-PS, Women empowerment scale-WEM.

Structural Model. The model shows a good fit: NFI=.944. Table 8 shows the results obtained from the path analysis and all six hypotheses are supported. $\chi^2/df=3.24$, GFI=.898, CFI=.923, RMSEA=.052,

Table 8: Structural Model Estimates.

Hypotheses	Predictor	Outcome	Standardize d(β)	Un-Standardized (β)	Std. Error	t-value	P-Value	Result
H1	ES.	FS.	.346	.357	.049	7.229	***	Supported
H2	ES.	FA.	.122	.136	.053	2.535	.011	Supported
H3	ES.	CRT.	.154	.168	.054	3.133	.002	
H4	ES.	CS.	.122	.131	.050	2.613	.009	
H5	ES.	PS.	.186	.223	.057	3.901	***	
H6	WEM.	ES.	.461	.361	.041	8.767	***	

Note: CS-Community support scale; family support-FS, creativity-CRT, financial access-FA, personality-PS, entrepreneurial success-PS, Women empowerment scale-WEM.

P=.001

DISCUSSIONS

H₁ is statistically accepted, which means family support positively influences entrepreneurial success ($\beta=0.35$; $R^2=0.20$). This means having family support is an essential factor that predicts entrepreneurial success. H₂ is statistically accepted, which means financial assistance positively influences entrepreneurial success ($\beta=0.13$; $R^2=0.20$). This means having financial assistance (both from family and government) is an essential factor that predicts entrepreneurial success. H₃ is statistically accepted, which means creativity positively influences entrepreneurial success ($\beta=0.16$; $R^2=0.20$). This means having creativity amongst women (novel ideas) is an essential factor that predicts entrepreneurial success. H₄ is statistically accepted, meaning community support positively influences entrepreneurial success ($\beta=0.13$; $R^2=0.20$). This means having community support (knowledge, positive criticism) is an essential factor that predicts entrepreneurial success. H₅ is statistically accepted, meaning individual personality positively influences entrepreneurial success ($\beta=0.22$; $R^2=0.20$). This means personality (risk-taking abilities) is an essential factor that predicts entrepreneurial success. H₆ is statistically accepted, which means entrepreneurial success positively influences women's empowerment in relation to their social status, economic conditions and psychological improvement ($\beta=0.36$; $R^2=0.21$). These findings are in congruence with the work of Batool and Ullah (2017); Dewi *et al.* (2022).

CONCLUSION

According to the study's findings, access to capital, women's creativity, personality traits, and family and community support are determinants for female dairy entrepreneurs' success leading to their empowerment. The government could implement some policy measures addressing access to credit by providing small loans to women dairy farmers. Programmes could be conducted in rural communities to explain the benefits of dairy farming and enhance the personality of women through training. Community support centres can be established for women dairy farmers.

FUTURE SCOPE

Future researchers may include additional genders in addition to the sample, which now solely includes women. Future studies may also use a larger sample size. Additionally, the study might be expanded to other areas of India, particularly bigger cities and rural areas. Future research can include the mediating and moderating effects of other variables, such as motivations and various demographic aspects.

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