

Livelihood Security of Women Headed Households Practicing Family Farming in Tumakuru District

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ABSTRACT

The present study was conducted during the year 2017-18 in purposively selected Tumakuru district comprising of three agro-climatic zones. From each zone, two taluks and from each taluk, two hoblis were selected. Four to eight villages from two hoblis and two to four respondents from each village were selected through 'snow ball technique', thus making total sample of 160. Data was gathered through structured interview schedule and analyzed by using appropriate statistical tools. The study revealed that majority of the respondents belonged to high category of achievement motivation (33.76%), adjustability (46.88%), deferred gratification (39.38%) and risk orientation (43.12%). Further, in livelihood security, among components namely social security, financial / occupational security, habitat security, educational security, environmental security, health security and food security, the items such as support of Co-operative Societies / Self-Help Groups, saving habits, renovation of house with tiles and concrete structures, accessibility of primary education, pollution free environment, accessibility of good health services and utilization of own family farm produce for balanced nutrition were ranked I under each components respectively. Further, with regard to ranking of different components of livelihood security and social security was ranked I and habitat security was ranked II. In relation to overall livelihood security, 48.12 per cent of the respondents belonged to medium category. Hence, development departments should develop essential infrastructural facilities and organize extension educational programmes to educate women headed households to increase their livelihood security.

Keywords: Livelihood security, Women headed households, Family farming, Snow ball technique

INDIA is predominantly an agriculture dependent nation where almost 58.00 per cent of its population is engaged in agriculture for their livelihood (Anon.,2011). The concept of livelihood is rapidly gaining acceptance as a valuable means of understanding the factors that influence people's lives and well-being. It is more than just a matter of finding or making shelter, transacting money and preparing food to put on the table or exchange in the market place. Livelihoods are the sum of ways in which people make a living. Such options can include various types of production and income generating activities. Thus, each household can have several possible sources of entitlement, which constitute its livelihood. In India more than 85 per cent of farmers belong to small and marginal farmers, majority of them are practicing family farming for their livelihood (Anon., 2012). Family farming is a means of organizing all agricultural and

allied activities which is managed and operated by a family and is predominantly reliant on family labour, including women, men and children (Jose Graziano Da Silva, 2014). In India, women are major producer of food, because agriculture is largely a house hold enterprise. Further, women end up heading household were often found to be absence of a resident male head due to widowhood, divorce, separation, desertion, lack of mature sons to take over the households, migration of male member for long periods or loss of economic function by resident males due to disability and illness. Often family headed women in rural areas lack financial & physical assets and resources to generate their livelihoods. As a result, livelihood insecurity is one of the major problems because households do not produce enough food to last until the next harvest. They also lack adequate cash income to buy food to enhance nutritional security. Further,

they lack appropriate storage facilities and skills to preserve food. Because of difficulties associated with farming, households often pursue more than one different non-agricultural activities to earn cash income.

There are also fewer opportunities for women headed households to diversify income sources in rural areas. Consequently, they depend very much on the natural resource base for food, health remedies and income-generation. Therefore, the livelihood approach was used to provide an explicit focus on what matters to women headed holds in rural areas. The portion of women headed households in India has been raising. According to the census 2011, a total of 23 million, 19.65 lakh and 8412 women headed households exist in rural India, Karnataka and Tumakuru district respectively (Anon., 2011). Hence, there is a need to elevate the women headed households practicing family farming to improve livelihood security. With this background, the present study was taken up to know the profile characteristics of family headed women and to assess the livelihood security of women headed households practicing family farming.

METHODOLOGY

The study was conducted in the purposively selected Tumakuru district of Karnataka state comprising of three agro-climatic zones. From each zone, two taluks were selected namely Sira and Madhugiri from Central Dry Zone, Tumakuru and Gubbi from Eastern Dry Zone and Turuvekere and Kunigal from Southern Dry Zone. From each taluk, two hoblis were selected based on the potential crop farming systems. Further, from each hobli, list of villages having maximum number of women headed households practicing family farming was prepared in consultation with staff of Raitha Samparka Kendras (RSKs), Grama Panchayath, Anganavadi workers and local leaders. Further, the villages were arranged in descending order and top four to eight villages in the list were selected. From each village, list of women headed households practicing family farming was prepared by using snow ball technique. From the list, two to four respondents were purposively selected thus making total sample

of 160. The index developed by Karuna Jeba Mary and Karthikeyan (2013) was used to analyze livelihood security with modification to maintain uniformity in scoring. The index comprising of seven components and 41 items was administered with a three point continuum representing 'High', 'Low' and 'No' with weightage of 3, 2 and 1, respectively. The livelihood security score of a respondent was calculated by adding up the scores obtained by her on all items. Thus, the minimum and maximum score one could get is 41 and 123, respectively. Data was gathered through personal interview method with the help of structured interview schedule. The collected data was quantified and analyzed by using frequencies, percentages, mean and standard deviation.

RESULTS AND DISCUSSION

Profile Characteristics of Family Headed Women

It is observed from the Table 1 that, majority of the respondents belonged to high category of achievement motivation (33.76%), adjustability (46.88%), deferred gratification (39.38%) and risk orientation (43.12%). The possible reasons might be due to the fact that family headed women have strong desire to excel in family and farm management responsibilities, adaptability to working situations in farm with all difficulties and taken risk to adopt profitable technologies. In turn, these factors facilitated the postponement of immediate satisfaction to attain secured livelihood. The findings are in line with the finding of Sowmya (2009), Raksha Rita Goel & Lali Yadav (2012), and Mamathalakshmi (2013).

Further, majority of the respondents belonged to medium category of age (47.50%), family size (83.13%), livestock possession (41.25%), material possession (48.75%), scientific orientation (61.88%) and farming commitment (46.87%). The supporting reason for the findings might be due to the reason that family headed women of middle age group were actively involved in the farm activities with zeal and responsibility. Crop production supplements the livestock, own agricultural implements supplemented timely operations. Due to low education level they might not be updated to use scientific methods and

TABLE 1
Profile characteristics of Family Headed Women (n=160)

Profile Characteristics	Category	Frequency	Per cent	Mean	Standard Deviation
Age (years)	Young age (< 30)	60	37.50	-	-
	Middle age (30 - 50)	76	47.50		
	Old age (> 50)	24	15.00	-	-
Education	Illiterate	8	5.00		
	Primary to middle school (1 st - 7 th)	134	83.75		
	High school (8 th - 10 th)	18	11.25	-	-
	PUC & Graduation	00			
Annual Income	Low (< 0.45)	70	43.75		
	Medium (0.45 - 1.32)	38	23.75	0.88	0.86
	High (> 1.32)	52	32.50		
Land Holding(acres)	Marginal Farmers (< 2.5)	49	30.63		
	Small Farmers (2.50 - 5.0)	86	53.75	1.85	0.66
	Big Farmers (> 5.0)	25	15.62		
Family Size(members)	Small (1 - 3)	5	3.13		
	Medium (4 - 6)	133	83.13	2.10	0.39
	Large (> 7)	22	13.74		
Livestock Possession(No's)	Low (< 3)	30	18.75		
	Medium (3 - 5)	66	41.25	-	-
	High (> 5)	64	40.00		
Material Possession	Low (< 6.95)	26	16.25		
	Medium (6.95 - 8.76)	78	48.75	7.85	1.81
	High (> 8.76)	56	35.00		
Achievement Motivation	Low (< 29.06)	53	33.12		
	Medium (29.06 - 31.62)	53	33.13	30.34	2.56
	High (> 31.62)	54	33.76		
Credit Orientation	Low (< 5.48)	83	51.87		
	Medium (5.48 - 6.39)	36	22.50	5.48	1.80
	High (> 6.39)	41	25.63		
Adjustability	Low (< 11.11)	72	45.00		
	Medium (11.11 - 12.53)	13	8.12	11.11	2.83
	High (> 12.53)	75	46.88		
Mass Media Use	Low (< 5.07)	72	45.00		
	Medium (5.07 - 7.27)	25	15.62	6.16	2.19
	High (> 7.27)	63	39.38		
Deferred Gratification	Low (< 35.81)	45	28.12		
	Medium (35.81 - 42.47)	52	32.50	39.13	6.65
	High (> 42.47)	63	39.38		
Scientific Orientation	Low (< 6.36)	41	25.62		
	Medium (6.36 - 9.26)	99	61.88	7.80	2.90
	High (> 9.26)	20	12.50		
Risk Orientation	Low(<8.49)	44	27.50		
	Medium (8.49 - 9.67)	47	29.38	9.08	1.18
	High (> 9.67)	69	43.12		
Farming Commitment	Low (< 26.03)	48	30.00		
	Medium (26.03 - 30.00)	75	46.87	28.01	3.96
	High (> 30.00)	37	23.13		
Extension Orientation	Low (< 6.32)	59	36.87		
	Medium (6.32 - 11.10)	58	36.25	8.71	4.77
	High (> 11.10)	43	26.88		

essentiality of commitment in farming for sustainable livelihood. Similar findings were reported by Chandrani Saha (2008), Jyoti (2012), Raksha Rita Goel & Lali Yadav (2012), Rokonzamana (2013) and Preethi (2015).

Item wise Livelihood Security of Women Headed Households Practicing Family Farming

Item wise analysis of livelihood security of women headed households is presented in Table 2. In the first component of social security, two items, namely support of co-operative societies / self-help groups and participation in decision making of social activities were ranked I and II, respectively. With respect to occupational/financial security, the items such as saving habits and subsidiary occupation income were ranked I and II respectively. Renovation of house with tiles & concrete structures and own house for the living items of habitat security were ranked I and II respectively. With regard to educational security, the items such as accessibility of primary education and distance to educational institutions were ranked I and II second respectively. In environmental security component, the item such as pollution free environment was ranked I and availability & accessibility of drinking water was II. Further, with respect to health security component, accessibility of good health services was ranked first and travel to distant town for better health services second. Finally, the items such as utilization of own family farm produce for balanced nutrition and food availability throughout the year were ranked I and II respectively with respect to food security.

The possible reason might be due to the fact that family headed women got cooperation & encouragement required for family farming activities as they participated in social activities arranged in villages. Being the member of Self-Help Groups and Milk Producers Cooperative Societies and other social organizations, women developed good social linkages and got community support as and when required. With the establishment of financial institutions, family headed women saved the money and used at the time of emergency. Marketing of milk and milk products

generated good income to the households. Further, due to influence of urban culture, houses in rural areas were renovated with modern facilities like mould, mosaic tiles, sumps, water tank, bathrooms etc. It is also supplemented by housing schemes to habitat security in rural areas by the Rural Development and Panchayat Raj Department, Government of Karnataka. Apart from this, implementation of educational schemes like 'Nali Kali', 'Mid-Day Meal Scheme', 'Vidyasiri Scholarship', 'Reservation of seats to farmers children' and 'Right to Education' provided education security in rural areas. Pollution free environment due to traditional way of living and establishment of water filter units to provide purified drinking water by government and NGO (Sriksheeta Dharmasthala Rural Development Project) through Shudda Ganga Kalyana Yojana. Latest medical facilities like diabetes testing machine and placing nurse in every hobli headquarter were assured health security. With regard to food security, family farming provides required food items such as cereals, pulses, milk, eggs, Fruits and vegetables. Further, distribution of food grains through Public Distribution System by Government also strengthened the food security. Similar findings were reported by Lavanya (2010), Mamathalakshmi (2013), Binkadakatti (2013) and Kumara *et al.* (2015).

Component wise Livelihood Security of Women Headed Households Practicing Family Farming

The results in Table 3 indicated that the component social security ranked I followed by habitat security (Rank II), financial / occupational and environmental security were ranked III, educational & food securities (Rank IV) and health security (Rank V).

The supporting reason for the obtained results might be due to membership of family headed women in social organizations like Self-Help Groups, Co-operative Societies etc. With respect to habitat security, almost every household possessed own house. They have pollution free environment due to traditional way of living. The results are in line with the findings of Lavanya (2010), Savitha *et al.* (2011) and Mamathalakshmi (2013).

TABLE 2
Item wise Livelihood Security of Women Headed Households (n=160)

Components of Livelihood Security	Mean Score	Rank
<i>I. Social Security</i>		
1. Membership and regular touch with social organizations.	1.99	IV
2. Participation in organizing social events.	1.90	VII
3. Participation in decision making of social activities.	2.08	II
4. Social status and recognition of family headed women by social organizations /villagers.	1.98	V
5. Support of Co-operative Societies/ Self-Help Groups.	2.11	I
6. Social organizations encouragement to stay in family farming.	1.93	VI
7. Community support.	2.05	III
<i>II. Financial / Occupational Security</i>		
1. Saving habits.	2.06	I
2. Migration to cities for better job.	1.91	V
3. Main occupation income.	1.94	IV
4. Subsidiary occupation income.	2.03	II
5. Saving accounts in financial institutions / co-operatives.	1.99	III
6. Spending on clothing / health care / social and religious activities.	1.94	IV
7. Accessibility to resources.	1.82	VI
8. Accessibility to technological information.	1.88	V
<i>III. Habitat Security</i>		
1. Own house for the living.	1.94	II
2. Renovation of house with tiles and concrete structures	1.96	I
3. House with all facilities (toilet/water/electricity / road etc.)	1.89	IV
4. Housing problem during rainy seasons.	1.84	V
5. Problems in getting good shelter.	1.93	III
<i>IV. Educational Security</i>		
1. Accessibility of Primary education.	2.00	I
2. Affordability of Higher education.	1.92	IV
3. Information regarding scholarship, fellowships and other opportunities.	1.81	V
4. School dropout.	1.94	III
5. Distance of educational institutions.	1.96	II
<i>V. Environmental Security</i>		
1. Availability and accessibility of drinking water.	1.99	II
2. Water availability for farming.	1.83	IV
3. Soil health depletion over the years.	1.81	V
4. Adoption of eco-friendly farming practices.	1.88	III
5. Pollution free environment.	2.04	I
<i>VI. Health Security</i>		
1. Accessibility of Good health services.	1.96	I
2. Affordability to health care facilities.	1.94	III
3. Travel to distant town for better health services	1.95	II
4. Affordability to private health services.	1.94	III
5. Health service by government hospitals.	1.85	IV
<i>VII. Food Security</i>		
1. Food availability throughout the year.	1.93	II
2. The quality of available food.	1.83	IV
3. Affordability of balanced food to all the family members.	1.76	V
4. Consumption of nutritionally balanced food.	1.89	III
5. Utilization of own family farm produce for balanced nutrition.	2.01	I

TABLE 3
Components Wise Livelihood Security of Women Headed Households (n=160)

Components	Mean Score	Rank
Social Security	2.01	I
Financial / Occupational Security	1.93	III
Habitat Security	1.94	II
Educational Security	1.91	IV
Environmental Security	1.93	III
Health Security	1.89	V
Food Security	1.91	IV

Distribution of Respondents Based on their Level of Livelihood Security Components

1. Social Security

Results pertaining to Social Security are presented in Table 4 which indicated that more than one third of the respondents belonged to high (36.25 %) and low (35.00%) categories of social security. Whereas more than one fourth (28.75 %) of the respondents belonged to medium category of social security.

The possible reason for the observed findings is that family headed women are members in Milk Producers Co-operative Societies and Self-Help Groups and participated in the different activities organized by these

TABLE 4
Distribution of respondents based on their levels of Livelihood Security components (n=160)

Components	Category	Number	Per cent	Mean	Standard Deviation
Social Security	Low (<13.23)	56	35.00	14.04	1.62
	Medium (13.23 - 14.84)	46	28.75		
	High (> 14.84)	58	36.25		
Financial /Occupational Security	Low (<16.35)	53	33.13	17.44	2.19
	Medium (16.35 - 18.53)	63	39.37		
	High (> 18.53)	44	27.50		
Habitat Security	Low (<8.75)	42	26.25	9.57	1.64
	Medium (8.75 - 10.38)	66	41.25		
	High (> 10.38)	52	32.5		
Educational Security	Low (<8.74)	43	26.87	9.63	1.76
	Medium (8.74-10.50)	62	38.75		
	High (> 10.50)	55	34.37		
Environmental Security	Low (<8.73)	41	25.62	9.55	1.64
	Medium (8.73 - 10.36)	76	47.52		
	High (> 10.36)	43	6.87		
Health Security	Low (<8.84)	39	24.37	9.63	1.57
	Medium (8.84 - 10.41)	75	46.87		
	High (> 10.41)	46	28.75		
Food Security	Low (<8.59)	47	29.37	9.43	1.67
	Medium (8.59 - 10.25)	72	45.00		
	High (> 10.25)	41	25.62		

organizations. However, the results are in consonance with findings of Binkadakatti (2013).

2. Financial Security

It is observed from the Table 3 that, 39.37 per cent of the respondents belonged to medium category of financial security. Whereas one third (33.13 %) and more than one fourth (27.5%) of the respondents belonged to low and high categories of financial security respectively.

Generally, women have wise saving habits in post offices, Life Insurance Corporations, SHG's, Banks etc. Subsidiary occupations contributes more to family's income through the sale of poultry birds, egg, milk and its products, manures etc. In case of physically disabled husband and widowhood respondents, handicapped and widow pensions were added additional income to their families. The results are in line with the findings of Sanzidur and Akter (2010) and Binkadakatti (2013).

3. Habitat Security

It is evident from the Table 3 that 41.25 per cent of the respondents belonged to medium category of habitat security. Whereas, 32.5 and 26.25 per cent of the respondents belonged to high and low categories of habitat security, respectively.

Every respondent possessed their own house through housing schemes like 'Indira Awaas Yojana'. Further, many of these houses were renovated with tiles, concrete structures etc. The results are in line with the findings of Karuna Jeba Mary and Karthikeyan (2013).

4. Educational Security

It is clear from the results that more than one third of the respondents belonged to medium (38.75%) and high (34.37%) categories of educational security. Whereas more than one fourth (26.87%) of the respondents belonged to low category of educational security.

In rural areas education facilities available from primary to high school. For PUC and graduation they

need to send children to Taluk level. Family headed women found difficulty to access technical education to their children due to high fee structure. They also have limited access to information regarding educational opportunities. The results of the study are corroborated with the findings of Sanzidur and Akter (2010).

5. Environmental Security

The findings revealed that 47.5 per cent of the respondents belonged to medium category of environmental security. Whereas more than one fourth fall under high (26.87%) and low (25.62%) categories of environmental security.

Farm women have good accessibility and availability of drinking water because of the installation of Shudda Ganga filter unit in rural areas. However, availability of sufficient water for livestock maintenance and irrigation was not there due to decreased ground water level. Declined soil fertility and indiscriminate use of inorganic fertilizers and pesticides lead to environmental pollution (Binkadakatti, 2013).

6. Health Security

The results pertaining to health security component indicated that 46.87 per cent of the respondents belonged to medium category of health security. Whereas 28.75 per cent and 24.37 per cent of the respondents belonged to high and low categories of health security respectively.

The possible reasons for this trend might be due to establishment of primary health centres in rural areas. For the advanced medical facilities and diagnostic services they should depend on private hospitals. The results are in line with the findings of Sanzidur & Akter (2010) and Karuna Jeba Mary & Karthikeyan (2013).

7. Food Security

A glance at Table 4 indicated that that 45 .00 per cent of the respondents belonged to medium category of food security. Whereas more than one fourth of the respondents arrived under low (29.37 %) and high (25.62%) categories of food security respectively.

Family farming provides required food items such as cereals, pulses, milk, eggs, Fruits and vegetables. Further, rice, wheat, ragi, pulses, sugar and cooking oil are distributed through the annabhagya scheme in Public Distribution System based on the number of members in family. This might be the enabling reason for the above results. However, the results are in consonance with findings of Sanzidur and Akter (2010), Binkadakatti (2013) and Karuna Jeba Mary and Karthikeyan (2013)

Distribution of Respondents Based on their levels of Overall Livelihood Security

A bird's eye view of Table 5 exhibited that 48.12 per cent of the respondents belonged to medium category of overall livelihood security. Whereas 27.5 per cent and 24.37 per cent of the respondents belonged to high and low categories of overall livelihood security respectively.

TABLE 5

Distribution of respondents based on their levels of Overall Livelihood Security (n=160)

Overall Livelihood Security	Number	Per cent
Low (< 76.95)	39	24.37
Medium (76.95 - 81.60)	77	48.12
High (> 81.60)	44	27.5
Total	160	100.00

Mean= 79.27 SD= 4.64

The most likely reason for the observed results are due to medium level of financial/occupational security, habitat security, educational security, environmental security, health security and food security components of livelihood security. The results are in line with the findings of Devi and Vijayaraghavan (2010), Lavanya (2010), Lakshmi Narayani *et al.* (2011), and Mamathalakshmi (2013).

It can be concluded from the study results that, majority of the respondents belonged to high category in livestock possession, achievement motivation,

adjustability, deferred gratification and risk orientation. With respect to different components of livelihood security, among components namely social security, financial / occupational security, habitat security, educational security, environmental security, health security and food security, support of Co-operative Societies / Self-Help Groups, saving habits, renovation of house with tiles and concrete structures, accessibility of primary education, pollution free environment, accessibility of good health services and utilization of own family farm produce for balanced nutrition were ranked I under each components respectively. Further, with regard to ranking of different components of livelihood security, social security and habitat security were ranked I & II respectively. About 48.12 per cent of the respondents belonged to medium category of overall livelihood security. Hence, developmental departments should develop essential infrastructural facilities to supplement social, educational, health and habitat securities for women headed households practicing family farming. Further, extension educational programmes such as trainings, exposure visits, demonstrations etc. should be organised to increase their livelihood security.

REFERENCES

- ANONYMOUS, 2011, Socio Economic and Caste Census Report, Press Information Bureau, Government of India, official website. <http://secc.gov.in>
- ANONYMOUS, 2012, Agricultural lands fragment further in five years. *The Hindu*, November, pp : 3.
- BINKADAKATTI, J., 2013, Analysis of Livelihood Security of Rehabilitant Farmers. *M. Sc. (Agri.) Thesis*, Univ. Agric. Sci., Dharwad.
- CHANDRANI SAHA, 2008, A study on sustainability of farming system and livelihood security among rural households in Tripura. *M. Sc. (Agri.) Thesis*, Univ. Agric. Sci., Bangalore.
- Devi, U. And Vijayaraghavan, S. K., 2010, Women in agriculture : A profile. *Asian J. Home Sci.*, 4 (1): 166 - 171.

- JOSE GRAZIANO DA SILVA, 2014, Family Farms are key to feeding the world. *Rural 21-Internatl. J. Rural Dev.*, **48** (2) : 6 - 7.
- JYOTI, N. G., 2012, Farm mechanization expectations of cotton growers. *M.Sc. (Agri.) Thesis*, Univ. Agric. Sci., Dharwad.
- KARUNA JEBA MARY, M.V. AND KARTHIKEYAN, C., 2013, Assessment of Livelihood Security of SHG Women Entrepreneurs in Tank System, *Internatl. J. Extn.Edu.*, **9** : 15 - 18.
- KUMARA, O., BASAVARAJAPPA, D. N., SANNATHIMMAPPA, H. G., DANARADDI, V. AND PATIL, R., 2015, Integrated Farming System model for Bhadra Command Area . *J. Agric. Vet. Sci.*, **8** (4) : 58 - 60.
- LAKSHMI NARAYANI, S., ANAND, T. N., NARAYANA GOWDA, K. AND SHIVAMURTHY, M., 2011, Study on livelihood security of farmers in Virudhunagar district of Tamil Nadu. *Mysore J. Agric. Sci.*, **45** (1) : 111 - 116.
- LAVANYA, 2010, Assessment of farming system efficiency in Theni district of Tamil Nadu. *M. Sc. (Agri.) Thesis*, Univ. Agric. Sci., Bangalore.
- MAMATHALAKSHMI, N., 2013, An analysis of livelihood security among agricultural labourers in Karnataka. *Ph.D. Thesis*, Univ. Agric. Sci., Bangalore.
- PREETHI, 2015, A Study on Perception, Aspiration and Participation of Farm Youth in Agriculture, *Ph.D. Thesis* , Univ. Agric. Sci., Bangalore.
- RAKSHA RITA GOEL AND LALI YADAV., 2012, Constraints faced by rural women in procurement and utilization of credit facilities in Hisar district. *Indian Res. J. Extn. Edu.*, **40** (4) : 29 - 35.
- ROKONUZZAMANA, M., 2013, Training needs of tribal people regarding income generating activities. *Indian Res. J. Extn. Edu.*, **13** (2) : 10 - 16.
- SANZIDUR, R. AND AKTER, S., 2010, Determinants of livelihood security in poor settlements in Bangladesh. *Internatl. Working Paper Series*. Univ. Plymouth, UK, pp: 7 - 11.
- SAVITHA, S. S., 2011, Role of rural women in animal husbandry, *M.Sc. (Agri.) Thesis*, Univ. Agric. Sci., Dharwad.
- SOWMYA, T. M., 2009, A Study on Entrepreneurial Behaviour of rural women in Mandya district of Karnataka, *M.Sc. (Agri.) Thesis*, Univ. Agric. Sci., Bangalore.

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