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## A study on extent of adoption of Home Science Technologies in A.P

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### Abstract

Home Science is a broad subject that includes of positive attitude towards developing the family, acquiring knowledge, skill and service concerned with all available resources by adopting developed technologies. Home Science strengthens every area of women life, to support her family and empower herself in all aspects by adopting livelihood technologies. Home Science technologies supports to quality and wealthy life with good health for all people with planned dietary techniques and technologies like fruit and vegetable preservation. A study was conducted in three randomly selected districts of Andhra Pradesh with sample size of 270 Krishi Vigyan Kendra (KVK) trained respondents with an objective to study extent of adoption of Home Science Technologies by rural women in A.P. Adoption level was measured in seven different areas – Value addition to millets, Nutrition garden, Fruit & Vegetable preservation, Tailoring & Embroidery, Seed bag technology, Vermicompost technology and Backyard poultry. The study revealed that average adoption scores obtained by respondents were medium. nutrition garden was in first place with followed by backyard poultry and vermicompost technology were highly adopted technologies. age, education socio economic status and media usage, value orientation and input availability of the respondents was positively related with the extent of adoption of home science technologies. value orientation and age were positively contributing to the extent of adoption of the respondents.

**Keywords:** Home Science technologies, value orientation, Rural women, Adoption level.

### 1. Introduction

Rural women development is overall development of the country. Because it shows a significant mark on society by adopting home science technologies which leads to financial development and knowledge empowerment. It inspires towards achievement of transformational economic, environmental and social changes required for sustainable development. But women had limited access to credit, health and education which are most important to face the problems and solve them efficiently. The participation of the women is definitely much more than the men in farm and home activities, then also they were capable enough to balance both and they have proved it in many incidents. Krishi Vigyan Kendras, an innovative science based institutions, were thus established mainly to impart training to the farmers and farm women. KVK is imparting training on Home science technologies for rural women as per needs and requirements useful in livelihood development. Home science technologies and Vocational trainings helps rural women to sustain themselves through self-employment and to make them self-reliant economically and thus discourages them to migrate to the urban areas. Profile characteristics certainly plays a key role to adopt the technologies by the rural women. Therefore, a systematic study was conducted in the Andhra Pradesh state to measure the adoption level of the rural women about home science technologies.

### 2. Methodology

The study was conducted in three districts purposively selected from each of the three regions of Andhra Pradesh i.e Nizamabad District from Telangana Region, YSR Kadapa District from Rayalaseema Region and West Godavari District from Coastal Andhra Region where the selected technologies were present. Three KVK's were selected for the study purposively because these KVK's were in operation in the selected districts under the authority of ANGRAU i.e Rudrur, Utukur and Undi K.V.Ks. One village was selected randomly where the KVK conducted activities from each of the selected mandals for the study, i.e Rudrur Village from Varni Mandal Thimmapur Village from Birkur Mandal Hegdoli Village from Kotagir Mandal of Nizamabad District, Bina palli Village from Chinta Komma Dinne Mandal, Kotur

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from Vallure Mandal and Upparpally from Chennur Mandal of YSR. Kadapa District, Adavikolanu Village from Nidamaru Mandal, Undi Village from Undi Mandal and Aakuveedu Village from Aakuveedu Mandal of West Godavari District thus making a total of nine villages for the study. From each village, 30 rural women drawn randomly from trained women and thus, a total of 90 rural women from Coastal region, 90 rural women from Rayalaseema region and 90 rural women from Telangana region thus, a total of two hundred seventy (270) respondents constitute the sample size. Schedule was developed for study to measure respondents' adoption level of selected home science technologies. Adoption levels were measured in seven different areas – Value Addition to Millets, Nutrition Garden, Fruit & Vegetable Preservation, Tailoring and Embroidery, Seed Bag Technology, Vermicompost Technology and Backyard Poultry.

### 3. Results and Discussion

It was observed in the study that the extent of adoption of Home science technologies for a majority i.e. 62.96 percent of the respondents were in medium category. These results are matching with results of Suman *et al.* (2010) [5] that maximum

number of respondents (46.67%) were of medium adopter category followed by low (35.00%) and high (18.33%) adoption category.

**Table 1:** Distribution of respondents based on the extent of adoption of Home science technologies

(n=270)

Sl. No.	Category	Frequency	Percentage
1	Low	33	12.22
2	Medium	170	62.96
3	High	67	24.81
Total		270	100

Mean= 53.73

Standard Deviation=7.18

### 3.1 Technology – wise extent of adoption of Home science technologies by the respondents

It can also be observed from the data that the technologies i.e. Back yard poultry 82.59 per cent and Vermicompost technology (77.78%), Nutrition garden (60.00%), Value added products of millets (46.30%) and Fruit & Vegetable preservation (44.07%) were partially adopted by a majority of the respondents.

**Table 2:** Distribution of respondents (technology-wise) based on the extent of adoption

(n=270)

Sl. No.	Home science technology	Extent of Adoption				
		Full adoption	Partial adoption	Adoption on average	Disconti-nuance	Non adoption
		F (%)	F (%)	(%)	F(%)	F(%)
1	Value added products of millets	66(24.44)	125(46.30)	35.37	11(4.07)	70(25.93)
2	Nutrition garden	88(32.59)	162(60.00)	46.29	2(0.74)	18(6.67)
3	Fruit & Vegetable preservation	40(14.81)	119(44.07)	29.44	9 (3.33)	104(38.52)
4	Tailoring and embroidery	33(12.22)	72(26.67)	19.44	10(3.70)	156(57.78)
5	Seed bag	13(4.81)	101(37.41)	21.11	9(3.33)	147(54.44)
6	Vermicompost	4(1.48)	210(77.78)	39.63	7(2.59)	49(18.15)
7	Back yard poultry	14(5.19)	223 (82.59)	43.89	2(0.74)	31(11.48)

\*The figures in addition indicate percentage.

A negligible percentage of the respondents were found to discontinue these technologies. It is observed to note that majority of the respondents were found not to adopt two technologies with more than half percentage of total number of respondents i.e. Tailoring & Embroidery (57.78%) and Seed Bag (54.44%) out of the seven selected Home science technologies. The reason for this might be due to the low financial status, low demand in rural areas and lack of proper technical knowledge.

Backyard poultry technology adoption rate was very high this result shows that from the generations without the concern of any training knowledge, only with local varieties they were continuing this technology, but now the respondents were supporting this technology by adopting improved varieties along with the local varieties. Based on average values of adoption nutrition garden was in first place with 46.29 percentage followed by backyard poultry with 43.89 percent and vermicompost technology in next place with 39.63 percentage.

Kiran (2007) [3] also revealed in her study reported that majority (42.67%) partially adopted the health and nutritional practices, whereas, few of the respondents were fully adopted the health and nutritional practices.

Veenita (2015) [4] also revealed in her study the extent of adoption of Homestead technologies that a majority (53.33%) of the rural women was in medium adoption category.

### 3.2 Correlation between independent variables and extent of adoption of Home science technologies by rural women

**Table 3:** Relationship of independents variables with the adoption

Sl. No.	Independent Variables	Coefficient of correlation (r) Adoption (Y)
X <sub>1</sub>	Age	0.19979**
X <sub>2</sub>	Education	0.29858 **
X <sub>3</sub>	Family income	0.8130 NS
X <sub>4</sub>	Socio economic status	0.16122**
X <sub>5</sub>	Social capital	0.9858 NS
X <sub>6</sub>	Information source utilization	0.5650 NS
X <sub>7</sub>	Media usage	0.22311**
X <sub>8</sub>	Economic motivation	0.4707 NS
X <sub>9</sub>	Management orientation	0.10824 NS
X <sub>10</sub>	Innovativeness	0.3449 NS
X <sub>11</sub>	Value orientation	0.13259 *
X <sub>12</sub>	Perception about dissemination method	0.5064 NS
X <sub>13</sub>	Input availability	0.15211 *
X <sub>14</sub>	Market facility	-0.05671 NS
X <sub>15</sub>	Institutional support	0.4491 NS

\*Significant at 5% level of significance, \*\* Significant at 1 per cent level of significance, NS= Non-significant

Table 3 showed that the variables age, education socio economic status and media usage were positively related to the extent of adoption at 1 per cent level of significance, value orientation and input availability of the respondents was positively and significantly associated with the extent of adoption of home science technologies at 5 per cent level of significance with extent of adoption of home science technologies by rural women. Rest of the independent variables family income, Social capital, information source utilization, economic motivation, management orientation, innovativeness and perception about dissemination method had not significant association with extent of adoption of home science technologies.

It was found from the results that respondents, who were high in their age, had higher extent of adoption than compare to other respondents. It might be due to that generally middle aged and older people had more freedom and command over the family resources and decision making power than young people, and they have more enthusiasm on technologies like value addition to millets, fruit and vegetable preservation and backyard poultry. Women who were educated had prone to adopt improved technologies where they can prove themselves more productive and eager turn as early adopters. Majority of the home science technologies were home based and can adopt without any limitations with the family income level at home level. Most of the rural women belonged to the neutral families and more than one occupation it might be allowed them to adopt selected home science technologies easily, these are need based technologies which don't need to take any discussions with others to adopt it or not, thus socio – capital did not had influence on adoption level of home science technologies by the rural women.

It was inferred from the results that information sources utilisation not showed any influence to adopt home science technologies because some of the home science technologies like pickle making and vegetable drying, backyard poultry can be adopted without the technical support of KVK. Media was the most influential technology to change the level of acceptance by the individual, because repeated information through various media gives positive results to adopt selected home science technologies. For example, use of vermicompost technology for organic farming.

It was inferred from the results that economic orientation did not show any influence on extent of adoption of home science technologies and this does not involve much management orientation process due to this reason management orientation was not significantly related with adoption level of home science technologies by rural women. adoption of home science technologies mostly starts at home level without risk. So innovativeness was not showing any relation with extent of adoption home science technologies by rural women. value based attributes of an individual have an intension to wellbeing of their family, i.e. home science technologies support these values. Thus value orientation was positively and highly significantly related to the adoption level of home science technologies by the rural women. Most of the rural women expressed that television was the highly used dissemination method to gather credible information, but it is not enough to get information and immediately lead to adoption, need should be there to adopt a technology. Hence perception about dissemination method did not have significant relation with the adoption level of home science technologies by the rural women.

Inputs availability along with need leads to increase adoption levels. Hence input availability shows a significant

relationship with adoption levels. Availability of market facilities was too low to market the product at entrepreneurs level, but rural women is ready to handle this problem with different alternatives and at home level marketing facility was not necessary so it was negative and not had any significant relation with the adoption level of rural women. Need and assets of any technology is understood by the respondents, they were certainly adopting the technology without concern to the support of institution after the training. Hence that institution support does not have any significant relation with the adoption level of rural women to adopt home science technologies.

The variables education and socio - economic status and media usage were positively related to the extent of adoption of home science technologies by the rural women. The women who were educated and had good socio economic status with good media usage levels definitely prone to adopt improved technologies where they can prove themselves more productive and eager turn as early adopters. The variables value orientation and input availability of the respondents was positively and significantly associated with the extent of adoption of home science technologies. Who had more accessibility to inputs and having more value orientation qualities had more acceptance and high extent of adoption.

These results were supported by the study results of Ali *et al.* (2004) <sup>[1]</sup> he reported that there was positive relationship among the level of media usage of rural women and communication exposure influenced their adoption level in goat rearing.

Ferdousi (2007) <sup>[2]</sup> revealed that the results of correlation analysis showed that level of education, homestead size, knowledge on agricultural technologies, training exposure, extension contact, organizational participation and decision making role of the rural women had significant and positive relationship with their adoption of agricultural technologies.

### 3.3 Relative contribution of independent variables towards extent of adoption of Home science technologies by the respondents

It is evident from this table 4 that t-value of partial regression coefficient of independent variables of value orientation and age were statistically significant at 1 per cent level of significance and were positively contributing to the extent of adoption of the respondents.

The independent variables education and media usage were found to be positively significant at 5 per cent level of significance. The variables socio economic status was found to be negatively significant at 5 per cent level of significance. The remaining ten variables under study could not emerge as significant predictors. All the variables collectively explained 22.49 per cent variability towards extent of adoption of the respondents as is evident from the R<sup>2</sup> value.

**Table 4:** Relative contribution of independent variables towards extent of adoption of Home science technologies by the respondents

Sl. No.	Independent variables	b Values	Standard error	t-value
X <sub>1</sub>	Age	0.2117	0.0586	3.610 **
X <sub>2</sub>	Education	0.1559	0.0603	2.584 *
X <sub>3</sub>	Family income	0.0720	0.0609	1.181 NS
X <sub>4</sub>	Socio economic status	-0.1163	0.0663	2.024 *
X <sub>5</sub>	Social capital	0.1011	0.0604	1.673 NS
X <sub>6</sub>	Information source utilization	0.0585	0.0616	0.949 NS
X <sub>7</sub>	Media usage	0.1475	0.0613	2.408*

X <sub>8</sub>	Economic motivation	0.0995	0.0575	1.730 NS
X <sub>9</sub>	Management orientation	0.0017	0.0610	0.027 NS
X <sub>10</sub>	Innovativeness	-0.0070	0.0616	0.115NS
X <sub>11</sub>	Value orientation	0.1966	0.0619	3.178 **
X <sub>12</sub>	Perception about dissemination method	0.1016	0.0654	1.554 NS
X <sub>13</sub>	Input availability	0.0455	0.0650	0.701 NS
X <sub>14</sub>	Market facility	0.0385	0.0596	0.646 NS
X <sub>15</sub>	Institutional support	0.0830	0.0658	1.262 NS
<b>R<sup>2</sup>= 0.2249 F calculated Value= 6.074</b>				

\*Significant at 5% level of significance, \*\*Significant at 1% level of significance,

NS= Non-significant

The 'F' calculated value (6.074) also stood out to be significant which supports that R<sup>2</sup> is significant. The independent variables education and socio economic Status was positively significant at 5 per cent level of significance while age and value orientation were positively and highly significant at 1 per cent level of significance. All the variables together explained 20.49 per cent variability towards extent of adoption of home science technologies by rural women. It can

be inferred from this result that out of the fifteen selected independent variables, only five of them were significantly contributing towards extent of adoption of Home science technologies by rural women.

### 3.4 Prediction of independent variables which contributed for maximum variation of independent variables towards adoption of the respondents.

Step down regression analysis was done to identify the independent variables that accounted for variation in adoption of the respondents. The independent variables age, education, media usage, and value orientation were positively significant at 1 per cent level of significance while socio- capital positive but not significant. All the variables together explained 20.74 per cent variability towards extent of adoption of home science technologies by rural women. Thus the above five variables were crucial in explaining the variation in adoption of rural women. It can be inferred from this result that out of the fifteen selected independent variables, only five of them were significantly contributing towards extent of adoption of Home science technologies by rural women.

**Table 5:** Step down analysis of independent variables towards extent of adoption of Home science technologies by the respondents

Sl. No.	Independent variables	b Values	Standard error	t-value
X <sub>1</sub>	Age	0.2101	0.0574	3.658 **
X <sub>2</sub>	Education	0.1546	0.0590	2.623 **
X <sub>5</sub>	Social capital	0.0957	0.0586	1.632 NS
X <sub>7</sub>	Media usage	0.1719	0.0589	2.919**
X <sub>11</sub>	Value orientation	0.1929	0.0587	3.285 **
<b>R<sup>2</sup>=0.2074 F calculated Value= 9.450</b>				

\* Significant at 5% level of significance, \*\* Significant at 1% level of significance, NS=Non-significant

## 4. Conclusion

This study was projected to show the extent of adoption of home science technologies in Andhra Pradesh to convey the message to the scientists and extension authorities of state agriculture universities and other related state line departments for developing more gender based technologies for livelihood of rural families, in addition concentrate more to improve the adoption levels with more interest. Policy-makers and government should focus on formulation of women benefited schemes to support their all-round empowerment. Thus the problems can be addressed in accessing related information and adoption of technologies and can be rectified in future dissemination activities. This could be achieved by conducting more need assessment studies at baseline of rural women, their opportunities and problem should be checked. So this may ultimately result in increase of adoption levels and reach the expected levels of policy makers and researchers.

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