DIFFUSION AND INNOVATION-DECISION PROCESS OF HOME SCIENCE TECHNOLOGIES

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6. SUMMARY AND CONCLUSIONS

Home science is a science that coordinates the scientific and practical knowledge drawn from different fields and uses the same for the development, welfare and happiness of the individual, family, community and nation at large. The development of new home science technologies is not an end by itself, but dissemination of these technologies by competent persons is equally important. For a technology to be transferred it needs to be diffused in the social system. Diffusion is the spread of ideas from a source to the clients whereas adoption signifies the decision to put an idea into practice. Adoption of an innovation being an individual process does not occur instantaneously. It consists of series of actions which include awareness, interest, trial and adoption. The rate of acceptance of a technology is influenced by the perceived attributes of an innovation like relative advantage, compatibility, complexity/simplicity, trialability and observability.

Roger and Shoemaker in 1971 termed the adoption process as an Innovation-Decision process, and explained it as a process through which an individual passes from first knowledge of an innovation, to forming an attitude towards the innovation, to a decision to adopt or reject, to implementation of the new technology or idea and confirmation of this decision. The present study on diffusion of home science technologies was taken up with the following specific objectives.

1. To introduce home science technologies in the community
2. To study the diffusion process of the introduced home science technologies.
3. To understand the Innovation-Decision process regarding home science technologies.
4. To classify adopters into adopter categories.
5. To develop an Innovation-Decision process model for home science technologies.
6. To study the attributes of the introduced technologies and their influence on adoption.

The study was conducted during 2016-17 by experimental design in two purposively selected villages of Dharwad taluk of Dharwad district *viz*., Varanagalavi and Belur-Heggeri of Karnataka State.

The technologies selected from each of the four departments were balanced diet and weaning foods (Food Science and Nutrition), care and storage practices of clothing and stain removal techniques (Textile and Apparel Designing), boiling water and water softening methods and dust mite control technology (Family Resource Management) and toys for stimulating cognitive development and health and safety practices for women (Human Development and Family Studies). A knowledge intervention programme was planned and the same was disseminated by experts from different departments of the college of Home Science. Diffusion pattern of the disseminated technologies was studied by contacting each and every household in the villages. For the adoption of home science technologies three months time was given. Finally 80 rural women who accepted the home science technologies constituted the sample for the study. Innovation-Decision process of home science technologies was studied after a gap of 4 weeks.

In the light of objectives set for the study, variables such as diffusion, acceptance and Innovation-Decision-Period were studied as the dependent variables and variables such as age, education, farm size, annual income, family size, mass media participation, economic motivation, cosmopoliteness, scientific orientation and risk orientation were the independent variables.

An interview schedule was developed to collect information about home science technologies. The schedule contained statements to measure knowledge, attitude and adoption. Teacher made scales were developed to study the knowledge, attitude and adoption of home science by the rural women. To study the diffusion pattern of home science technologies, procedure developed by the researcher (2017). Adopter categorization was done as per Roger (1962). To study the perceived attributes of home science technologies Mohanty's (2008) scale was used.

The pre tested interview schedule was used to personally collect the data from the respondents. The collected data was tabulated and analysed using frequency,

percentage, class interval, correlation, regression, paired‘t’ test and ANOVA. The major findings of the study are as follows:

1. With respect to diffusion of home science technologies the maximum diffusion was observed for health and safety practices for women (31.65 %). Whereas the technology care and storage practice of clothing was diffused to the extent of 19.27 per cent. In case of balanced diet, stain removal techniques and weaning foods the diffusion was 14.68, 11.47 and 10.69 per cent respectively.

2. Majority of the (43.80 %) respondent rural women belonged to middle age group (36-50 years) followed by young age group up to 35 years. About 69 per cent of the rural women were illiterate, 15 per cent of them were educated up to high school, 12.50 per cent of were educated up to the middle school. The others 1.20 per cent in duded education up to primary school, PUC and graduation.

3. Majority (57.50 %) of rural women were from the families who themselves or family members were involved in subsidiary activities like factory workers, stone cutting, construction workers, maids *etc*. About 16 per cent were from agriculture labour families.

4. About 42.50 per cent of rural women had an annual income of Rs. 17,001 – 34,000/- *i.e*., semi-medium income category, 47.50 per cent of the rural women belonged to medium family size (5-8 members) and 77.50 per cent of the rural women were from families that do not own any land.

5. Most of the respondents (97.50 %) had low mass media participation, majority (83.80 %) of the them had medium cosmopoliteness, most of the them (81.20 %) had medium scientific orientation. Most of the respondents (88.80 %) had medium economic motivation and while 58.80 per cent had medium risk orientation.

6. Up to one week after introduction of balanced diet four respondents had accepted and in the 12^{th} week the cumulative number of respondents accepting balanced diet was 32.

7. In first week of introduction of weaning foods, none of the respondent had accepted it as an implementable technology. However in the 12th week the cumulative number of respondents accepting weaning foods was 22.

8. Soon after introduction of stain removal techniques only 2 respondents had accepted stain removal techniques. In the last week, the cumulative number of respondents accepting stain removal techniques was 25.

9. In the first week of introduction of the technology on care and storage practices of clothing, none of the respondents had accepted the technology. In the 12th week, however the cumulative number of respondents accepting care and storage practices of clothing was 42.

10. In the 1st week, only 4 respondents accepted boiling water and water softening methods. This number remained constant even after 12 weeks.

11. None of the respondent accepted dust mite control technology during all the weeks. The technology was a total rejection.

12. In the first 2 weeks, of introduction of toys for stimulating cognitive development, none of the respondent had accepted the technology but in the 12th week cumulative number of respondents accepting the technology was 17.

13. In the first week, of introduction of health and safety practices for women, none of the respondent had accepted the practices. In the 12th week, however the cumulative number of respondents accepting health and safety practices increased to 69 women.

14. Before knowledge intervention the percentage of women possessing low knowledge was as high as 52.50 per cent for balanced diet, 87.50 per cent for weaning foods, 81.20 per cent for case of care and storage practices of clothing, 67.50 per cent for stain removal techniques, 86.20 per cent for dust mite control technology, 98.80 per cent for use of toys for stimulating cognitive development however medium level of knowledge was possessed by 95 per cent for health and safety practices for women and 63.80 per cent for boiling water and water softening methods.

15. After intervention most women moved from low knowledge category to the medium level category for almost all technologies.

16. Overall attitude index of rural women towards balanced diet was found to be 66.05, for weaning foods it was 68.60, for stain removal techniques it was 59.60, for care and storage practices of clothing it was 70.55, for boiling water and water softening methods it was 54.65, for dust mite control technology it was 51.90, for toys for stimulating cognitive development it was 51.67 and for health and safety practices for women it was 70.80.

17. The overall acceptance index was fairly high (69.75) for health and practices for women, followed by care and storage practices of clothing (44.25) and balanced diet (34.50) for the other technologies it was quite low.

18. After the mental decision to use the selected technologies, respondents implemented/adopted these innovations in order to know their utility. Most of the respondents implemented health and safety practices for women (81.25 %). A fair per cent (40.00 %) of them practiced care and storage practices of clothing and balanced diet (31.25 %). Considerably lower per cent of respondents prepared weaning foods (16.25 %) and practiced stain removal techniques (12.50 %). Only 5 per cent of them continued to implement boiling water. Least per cent of the rural women brought/purchased toys for their children which could help in stimulating cognitive development.

19. Confirmation of adopted technologies was studied up to 4 months at which stage rural women either continue or discontinue the use of innovations. It could be seen that 72.50 per cent of the respondents continued to use health and safety practices and 28.75 per cent of them continued the care and safety practices of clothing. Less per cent of respondents were consuming a balanced diet (15.00 %), preparing weaning foods (10.00 %) and using the stain removal techniques (8.75 %). A very low per cent of them confirmed the use of toys for cognitive development (2.50 %). None of them were using boiling water and water softening methods and preparation of solution for dust mite control by using herbal extract.

20. The relationship between socio-personal characteristics of the rural women with the knowledge and persuasion stage of Innovation-Decision process showed scientific orientation was significantly related with knowledge stage of Innovation-Decision process to the extent of 14.70 per cent. Whereas the independent variables *viz*., economic motivation, scientific orientation and risk orientation were significantly related with persuasion stage to the extent of 60.60 per cent.

21. With respect to care and storage practices of clothing, 2.40 per cent of the rural women were innovators, 14.30 per cent were early adopters, 33.33 per cent of each were early majority and late majority. The last 16.64 per cent who did not adopt these practices were the laggards. Similarly among the adopters of health and safety practices, 2.9 per cent were grouped as innovators, 13.04 per cent were early adopters and 33.33 per cent each were early majority and late majority. The last 17.40 per cent were categorized as laggards.

22. Most of the respondents (62.50 %) perceived balanced diet as advantageous, compatible (68.75 %) easy to understand and use (70.00 %) and trialable (96.25 %). A high per cent (82.50 %) felt that the results of the technology were not observable.

23. With respect to weaning foods 65 per cent of the rural women perceived weaning foods as advantageous, 77.50 per cent of felt it was compatible with their culture, 75 per cent perceived it as difficult to understand and use, 90 per cent of considered it to be trialable and 71.25 per cent said that consumption of weaning food did not show observable results.

24. With respect to stain removal techniques, 52.50 per cent of rural women perceived that they were advantageous, it was compatible to the existing situations (58.75 %), was easy to understand and use (50.00 %), could be tried on small scale (95.00 %) and results were observable (75.00 %).

25. Regarding care and storage practices of clothing, 68.75 per cent of the rural women perceived the technology advantageous, compatible (77.50 %), easy to understand and use (65.00 %), tried on small scale (93.75 %) and observable (71.25 %).

26. With respect to boiling water and water softening methods 62.50 per cent of the rural women perceived these practices as not at all advantageous, was not at all

compatible (57.50 %), was difficult to understand and use (70.00 %), can be tried on small scale (100.00 %) and was least observable (81.25 %).

27. With respect to perceived attributes of dust mite control solution, 80 per cent of the rural women expressed that preparation of the solution for dust mite control using herbal extract was not at all advantageous, 71.25 per cent perceived the technology as not at all compatible, 72.50 per cent perceived it as difficult to understand and use, 88.75 per cent felt that it can be tried on small scale and the benefits of this technology were the least observable (75.00 %).

28. Regarding the perceived attributes of toys for stimulating cognitive development, 60 per cent of the rural women perceived these practices as somewhat advantageous, somewhat compatible (63.80 %), difficult to understand and use (58.75 %), can be tried on small scale (61.25 %) and results as least observable (65.00 %).

29. Regarding the perceived attributes of health and safety practices by the rural women, 62.50 per cent of the women perceived this technology as advantageous (63.80 %), compatible (71.25 %), easy to understand and use (61.25 %), trialability on a small scale (90.00 %) and most observable results (62.50 %).

30. The correlation between perceived attributes of the selected home science technologies and the rate of acceptance was found to be significant at both 0.05 and 0.01 per cent probability level.

Implications

1. The results of adopter categorization of home science technologies namely health and safety practices for women and care and storage practices for clothing were in line with the adopter categorization given by Rogers in 1962. This will help extension functionaries of the state departments and the agricultural universities to effectively target the late majority and laggards by using innovative extension methodologies.

2. The Innovation-Decision process model that has been suggested in the present study includes various steps and relationships and differs from the standard Rogers (1962) model. An attempt was made to study the process right from introduction of

technology in the social system, thus creating a room for home scientists to use this model instead of Roger's model.

3. The diffusion pattern of home science technology except care and storage practices of clothing and health and safety practices for women, followed erratic adoption over a period of time. Extension functionaries diffusing home science technologies could observe the lacunae in the adoption of these home science technologies and find means to overcome the barriers.

Suggestions for the future study

1. The present study was conducted on the diffusion, acceptance and Innovation-Decision process of eight technologies only. Diffusion of other important home science technologies can also be studied.

2. Due to the limitation of time and resources of the student researcher, the study was conducted only in two villages of Dharwad taluk of Dharwad district and with limited variables, there is the fore scope for further study. While organizing intervention programmes to rural people, only lectures, demonstrations were used other newer methods like multimedia can be used to make teaching-learning more effective.

3. The multiple regression values showed that, the effect of independent variables on knowledge stage of Innovation-Decision process was to the extent of 14.70 per cent. So in future studies of Innovation-Decision process other hidden variables contributing to the extent of 83.30 could be identified and studied.