RELATIONSHIP BETWEEN OCCUPATIONAL STATUS OF WOMEN AND THE LABOUR SAVING TECHNOLOGY

CHHAVI LUTHRA* & MEHAK GOYAL**

*Assistant professor, Hindu college, M.D.University.
**Assistant Professor, Delhi School of Professional Studies and Research, I.P.University.

ABSTRACT

The study outlined in this paper is intended to explore whether there is an association between working status of women and the use of household appliances. It is to analyze how increasing trend of electronic appliances have changed their way of doing work. As the number of working women growing by leaps and bound, yet little attention has been paid in examining its implications on their buying behavior pattern. This paper addresses this issue by focusing on role of marketing strategies in influencing their purchasing behaviour. An attempt has also been made to see the role of household appliances in reducing gender inequality. A descriptive research was undertaken using QUESTIONNAIRE as a method for data collection. Data of 150 working and non-working women of 20-50 years age group was analyzed. Further analysis was made with the help of software Nvivo 11, that enhanced the findings. The study revealed that majority of the women whether working or not is of the view that use of these appliances saves time. However, the ownership of household appliances is also influenced by many important factors such as price of the product, age, marital status and income level of women.

Keywords: Household appliances, labour saving, occupational status, buying behavior.

INTRODUCTION

When we look at the interaction between technology and society, we think only about Digital India, extension of metros, shifting from labour to capital intensive manufacturing, 3G to 4G etc. These grand visions have blinded us to an important and rather peculiar technological revolution which has been going on right under our noses: the technological revolution in the home. This revolution has transformed the conduct of our daily lives, but in somewhat unexpected ways. As the number of working women growing by leaps and bound, yet little attention has been paid to examining its implications for shopping behavior patterns and marketing strategies of household appliances. The study outlined in this paper is intended to explore this issue, and in particular whether the wife's employment status is likely to provide a basis for segmenting markets for labour saving technology. An attempt has also been made to find out the cultural and socio-economic impact of development, increasing trend of electronic appliances in the household chores and the impact of mechanized change on their lives.

LITERATURE REVIEW

- Time and home appliances are substitute of each other as mentioned by Greenwood (2005). However Christine and Mary have argued that technology has reduced the physical effort of housework but not the time involved.
- According to Fidelia DAKE (2015), increased household asset ownership is associated with Obesity promoting dietary behavior especially in women of urban area. It makes human existence mechanical. The implication is that created enormous stress and pressure causing disequilibrium between working and family life.
- There is an economic effect on household economy with the purchasing of these new techno appliances. The price of the product, consumption of electricity, cost of repairing and income of family are structural determinants that influence the female workforce participation.
- The changing pattern of lifestyle has led to higher demand for portable food, automatic machines, Vacuum cleaner, dryer, dishwasher etc resulting in showcasing the economic status only.
- Ksrinivasan states that the consumer relationship with instant food and other everyday goods have changed dramatically not only in way they are purchased but also in way they are consumed. Moreover, add to the revenue generation -the portable food sold at convenient locations benefitting impulse retail channels, kiosk and fast food outlet.
There is an environmental and health issue related to this electrification of home appliances. It leads to a bigger problem of increased energy consumption and increase in greenhouse gas emission. Moreover, as new technology emerges, old appliances are transforming into waste even if they are still workable.

Household technological change is predicted to have an ambiguous immediate impact on female employment but lead to increased investment in daughters, i.e., increasing in girls' school attendance, changing parents' mentality, etc. Hence causing a permanent rise in employment of future generation of women.

OBJECTIVES
The research gaps helped us in framing the following objectives:
- To assess the impact of the prices of appliances in raising participation of female workforce by comparing it to other structural determinants such as average male income.
- To understand the impact of advertisement, free sample distribution of domestic appliances on female consumer behavior.
- To find out the role of working women in diffusion of household technology.
- To know whether mechanization and automation of appliances have reduced the dependence on maids and domestic servants.
- To examine how the entry of male and machines in the kitchen is changing the role of men.
- Are there important attitudinal differences within the two groups—working and non-working women which lead to different purchase behavior patterns?

RESEARCH METHODOLOGY:
This descriptive study is based on both primary and secondary sources of data. For primary data a QUESTIONNAIRE was prepared with the sample size of 150 divided into two halves representing working and non-working women. 100 Responses were collected through Google forms and rest in paper form. A five point Likert scale used to find out the degree of agreement for each item on questionnaire. Chi-square, ANOVA, correlation and other tests were used to make the analysis statistically significant.

Secondary data was collected from various online sources including e-journals mainly from the websites such as Google scholar, SSRN and J-store, relevant literature and through discussions. Further analysis was made with the help of qualitative data analysis (QDA) software NVivo 11 by QSR international that enhanced the findings. Major functions used in NVivo word frequency, cluster analysis, sentiment analysis, and identification of theme.

LITERATURE REVIEW ANALYSIS
1. Fifty research papers on the relationship between occupational status of women and labor-saving technology have been analyzed with the help of word frequency query of NVivo software, looking for 100 most frequently used words, which are minimum 3-letter long. The results are presented below in the form of a word cloud.
FINDINGS AND DISCUSSION BASED ON PRIMARY DATA

1. Ques asked: Are you working? How much time do you generally spend on household work?

Crosstabulation

<table>
<thead>
<tr>
<th>Are you working?</th>
<th>How much time do you generally spend on household work?</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>less than 2 hours</td>
<td>between 2-4 hours</td>
</tr>
<tr>
<td>18</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td>NO</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>38</td>
</tr>
</tbody>
</table>

Table -1 Relationship between the working status of women and time spent on household work.

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>14.541</td>
<td>3</td>
<td>.002</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>15.201</td>
<td>3</td>
<td>.002</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>7.035</td>
<td>1</td>
<td>.008</td>
</tr>
</tbody>
</table>

N of Valid Cases 151

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 13.99.

According to the result, since the p-value is less than our chosen significance level $\alpha=0.05$, we accept the null hypothesis. Rather there is enough evidence to suggest an association between working status and time spent on home chores.
2. Ques asked-Rank each factor from 1 to 5, 1 stands for least important and 5 most important.

**Correlation Matrix**

<table>
<thead>
<tr>
<th></th>
<th>Price of appliance</th>
<th>Warranty</th>
<th>Durability</th>
<th>Reliability</th>
<th>Offers and discounts</th>
<th>Product design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price of appliance</td>
<td>1.000</td>
<td>.523</td>
<td>.488</td>
<td>.484</td>
<td>.548</td>
<td>.337</td>
</tr>
<tr>
<td>Warranty</td>
<td>.523</td>
<td>1.000</td>
<td>.648</td>
<td>.669</td>
<td>.576</td>
<td>N 620</td>
</tr>
<tr>
<td>Durability</td>
<td>.488</td>
<td>.648</td>
<td>1.000</td>
<td>.724</td>
<td>.423</td>
<td>.593</td>
</tr>
<tr>
<td>Reliability</td>
<td>.484</td>
<td>.669</td>
<td>.724</td>
<td>1.000</td>
<td>.473</td>
<td>.575</td>
</tr>
<tr>
<td>Offers and discounts</td>
<td>.548</td>
<td>.576</td>
<td>.423</td>
<td>.473</td>
<td>1.000</td>
<td>.545</td>
</tr>
<tr>
<td>Product design</td>
<td>.337</td>
<td>.620</td>
<td>.593</td>
<td>.575</td>
<td>.545</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table -3 correlation matrix of factor considered while shopping new product.

Factor analysis is appropriate when the variables are correlated to each other. In this case the variables are highly correlated as highlighted in the table above.
To determine the suitability of factor analysis we uses KMO test, the higher the KMO value the more appropriate is the factor analysis generally it should be greater than 0.6. In this case result is (0.848>0.6).
According to Bartlett's test we reject the null hypothesis and apply the factor analysis if the value of calculated chi squre is large as here the value is 304.122 so rejecting the null hypothesis i.e variables are uncorrelated.

**KMO and Bartlett’s Test**

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | .848 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 304.122 |
| df | 15 |
| Sig. | .000 |

Table -4 KMO and Bartlett test result

**Component Matrix**

| Component 1 | [Price of appliance] | .698 |
|             | [Warranty]           | .859 |
|             | [Durability]         | .825 |
|             | [Reliability]        | .837 |
|             | [Offers and discounts] | .741 |
|             | [Product design]     | .777 |

Table -5 Extraction Method: Principal Component Analysis.

As per the factor analysis, warranty is the leading factor followed by reliability and durability while purchasing household appliances. Hence the marketer should focus more on the warranty, performance and product life span of appliances as customers value them more.
3. Ques asked-which kitchen appliance would be used according to given factors.
It is evident from the graph that women still prefer gas stove over other means of cooking on given parameters such as easy to cook (54%), healthy (85%), taste of food (80%). However, after considering time taken to cook food, women prefer microwaves (70%). Though the modern technology has evolved women still prefer conventional method of cooking.

4 Ques asked: Are you working? * Are you comfortable using a fully automatic washing machine?

Crosstabulation

<table>
<thead>
<tr>
<th>Are you working?</th>
<th>Not tried yet</th>
<th>Yes, I am</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>7</td>
<td>18</td>
<td>41</td>
</tr>
<tr>
<td>NO</td>
<td>13</td>
<td>43</td>
<td>56</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>61</strong></td>
<td><strong>81</strong></td>
</tr>
</tbody>
</table>

Table - 5 Relationship between working status and comfortability.

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-square</td>
<td>11.901</td>
<td>2</td>
<td>.003</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>12.052</td>
<td>2</td>
<td>.002</td>
</tr>
</tbody>
</table>

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.74.

Table-6 chi square test result

It can be concluded that working women are more comfortable using fully automatic machine than non working women.

5 Ques asked: Do the home appliances reduced the dependence on domestic help?

In the chart, 87% of respondent have hired servants surprisingly out of them 65% women are of the opinion that the use of home appliances have not reduced their dependence on domestic help.

Research Paper
6. Do the influence of free samples and discounts on consumer depends upon their family income

Crosstabulation

<table>
<thead>
<tr>
<th>Annual family income</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 2 lakh</td>
<td>29</td>
<td>11</td>
<td>40</td>
</tr>
<tr>
<td>between 2 lakh to 5 lakh</td>
<td>30</td>
<td>16</td>
<td>46</td>
</tr>
<tr>
<td>between 5 lakh to 10 lakh</td>
<td>22</td>
<td>18</td>
<td>40</td>
</tr>
<tr>
<td>more than 10 lakh</td>
<td>17</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>53</td>
<td>151</td>
</tr>
</tbody>
</table>

Table - 7 Relationship between annual family income and sale promotional activities

<table>
<thead>
<tr>
<th>Question asked</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
<th>Annual family income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do the free samples, advertisements; discounts influence your buying decision of home appliances?</td>
<td>1</td>
<td>.073</td>
<td>151</td>
<td>.073</td>
</tr>
<tr>
<td>Annual family income</td>
<td></td>
<td>.375</td>
<td>151</td>
<td>1</td>
</tr>
</tbody>
</table>

Table -8 correlation matrix
According to the data collected, yes there is a correlation between the influence of free samples and discounts on consumer and their family income.

7. QUES ASKED: Do male members of your family undertake household task that were not formally done by them.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highly agree</td>
<td>20</td>
<td>11.8</td>
<td>13.2</td>
<td>13.2</td>
</tr>
<tr>
<td>Agree</td>
<td>85</td>
<td>50.3</td>
<td>56.3</td>
<td>69.5</td>
</tr>
<tr>
<td>Neutral</td>
<td>15</td>
<td>8.9</td>
<td>9.9</td>
<td>79.5</td>
</tr>
<tr>
<td>Disagree</td>
<td>18</td>
<td>10.7</td>
<td>11.9</td>
<td>91.4</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>13</td>
<td>7.7</td>
<td>8.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>89.3</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>18</td>
<td>10.7</td>
<td>11.9</td>
<td>91.4</td>
</tr>
<tr>
<td>Total</td>
<td>169</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table -9 Frequency table

The new role of women has forced husbands to participate in home making activities and has changed their traditional role as bread earner to that of partner in home making activities. And that it led to gender equity. Nearly 70% of women agree that their family male members undertake household work.

8. Are you working? * According to you, do household appliances save time?

<table>
<thead>
<tr>
<th></th>
<th>According to you, do household appliances save time?</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Are you working? yes</td>
<td>12</td>
<td>54</td>
</tr>
<tr>
<td>Are you working? no</td>
<td>11</td>
<td>74</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>128</td>
</tr>
</tbody>
</table>

Table -10 Relationship between occupational status and time saved by appliances.
Both working and non working women are of view that home appliances save time.

CONCLUSION OF THE STUDY

- Household technology is the engine of liberalization. It is women with some education and little or no domestic help that benefitted the most from the household revolution. Not only the working status of women that has led to inventions of automatic home appliances but these inventions also in turn enables women to take up jobs. Hence, it's a two-way road.

- Housework went from being hard physical labor to being lighter but time-consuming with more time spent in activities such as shopping for different types of food products, search on different sites for domestic appliances.

- Working women plays a vital role in diffusion of the household technology.

- As male members of the society are becoming comfortable in using household appliances this brings a shift from stereotyping to gender equality.

REFERENCES


Acknowledgement

We would like to show our gratitude to the H.K Dangi, Professor Department of commerce, Delhi School of Economics for sharing their pearls of wisdom with us during the course of this research. We thank our colleagues from M.Com who provided insight and expertise that greatly assisted the research. We are also immensely grateful to our respondents for their contribution in filling questionnaire and providing comments that greatly improved the manuscript.
Appendix
Questionnaire

RELATIONSHIP BETWEEN OCCUPATIONAL STRUCTURE OF WOMEN AND LABOUR SAVING TECHNOLOGY

Thank you for agreeing to take part in this important survey evaluating household appliances role in women life. It is an attempt to find out the socio-economic impact of increasing trend of electronic appliances in the household chores and the impact of mechanized change on women lives. It will only take 4-5 minutes to complete. Be assured that all answers you provide will be kept in strict confidentiality.

1 What is your marital status?
   - Married
   - Unmarried

2. Which type of place do you live in?
   - Rural
   - Urban
   - Suburban

3. How many members are there in your family?
   - 1
   - 2
   - 3
   - More than 3

4 Are you working?
   - Yes
   - No

If yes what is your approximate work duration?
   - Full time
   - Part time
   - Self employed

5 How much time do you generally spend on household work?
   - Less than 2 hours
   - Between 2-4 hours
   - Between 5-7 hours
   - More than 7 hours

6 Select the rating from one of the five rating points.
   a. I like doing household work.
      1 2 3 4 5
      Strongly agree
      Strongly disagree

7 Which of the following home appliances you use?
   - Washing machine
   - Microwave
   - Food processor
   - Mope
   - Dishwasher
   - Deep freezer
   - Vacuum cleaner
   - Hair dryer
   - Induction stove
   - Others, please specify

8 In general, who makes the purchasing decision for household appliances in your home?
   - Myself
   - Partner
   - Parents
   - Joint decision
   - Others

9 How often do you buy a home appliance?
   - In a month
   - In a quarter
10 How would you categorize the home appliances?
- Necessity good
- Luxury good
- Comfort good
- Any other

11 Please select the best statement that describes your buying behavior.
- Research in store, buy in store
- Research online, buy online
- Research in store, buy online
- Research online, buy in store

12 Rank each factor given below that you consider while shopping for a new household appliance. 1 means “least important” and 5 means “most important”.

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price of appliance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warranty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offers and discounts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13 Do you watch demo videos before using the home appliances?
- Yes
- No

14 Do the free samples, advertisements; discounts influence your buying decision of home appliances?
- Yes
- No

15 Have you hired any maid or servant?
- Yes
- No

If yes, do you think home appliances have reduced your dependence on them?
- Yes
- No
- don’t know

16 Do male members of your family undertake household task that were not formally done by them.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Highly agree    ○    ○    ○  Highly disagree

17 Are you comfortable using a fully automatic washing machine?
- Yes, I am
- No, I am not
- Haven’t tried yet

18 Choose the best statement that describes the use of a fully automatic machine.
- Labour saving
- Time saving
- Both of the above
- None of the above
19 Given the option to choose, which kitchen appliance you would prefer according to the given factors?

<table>
<thead>
<tr>
<th></th>
<th>Gas stove</th>
<th>Microwave</th>
<th>Induction stove</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to cook</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fast (time saving)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make food tasty</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

20 Choose the major drawback of using home appliances for you -
- Increased electricity cost
- Short product life span
- Repair cost
- Increase time
- Any other, ____________

21 Tick the right options -
With the use of labor saving technology, reduction in work load leads to
- A. reduction in physical efforts
- B. overweight
- C. obesity
- D. stress

22 Do you think excessive use of home appliances adversely affect the environment?

1        2      3         4        5
Strongly agree  ○  ○  ○  ○  ○  strongly disagree

23 According to you, do household appliances save time?

Fig. 1. Yes
Fig. 2. No

Name -
Age -
Annual income - less than 2,00,000
Between 2,00,000-5,00,000
Between 5,00,000-10,00,000
More than 10,00,000

E-mail id -