

APPLICATION OF MRFSV TOOL TO STUDY EFFECTIVENESS OF MARKETING RESEARCH FINDINGS IN PRODUCT DESIGN

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ABSTRACT

Marketing Research is always a debatable topic. Serious questions are raised about the relevance of marketing research in successful introduction of products and services in the society. It has been observed several times that, marketing research studies may also lead to wrong decisions. In the context of product design, the failure may also occur due to ineffective communication of marketing research findings to the designers (Youngchan Kim et al, 2008). In order to validate the idea that Marketing Research needs to consider actual user behaviour, and integrate the same with marketing research for ideation of design solution, a case study of “dishwashing” has been considered. A new method termed “Marketing Research Finding Sensitive Visualisation (MRFSV)” was adopted to communicate the marketing research findings to the design students of IIT Guwahati. The ideas generated from this process were evaluated using quantitative techniques. The study reveals that, unstructured communication of consumer behaviour to the designers may move away the designers from the design objective. The MRFSV method helps the designers in defining design problem. This method helps in establishing a direct relationship of defined design problem to designer’s design solution. The synthesis of all the ideas generated through MRFSV yields wonderful final design ideas.

Keywords: MRFSV, design method, design management, marketing research, idea generation

1 AIM AND OBJECTIVE

The study aims to observe the effectiveness of marketing research findings in generating ideas for design solution. The in-depth study attempts to evolve an effective method of communication of marketing research findings to the design team. The study aims to provide the students of design a tool for idea generation from marketing research findings.

2 EFFECTIVENESS OF THE MARKETING RESEARCH FINDINGS: PRACTICE AND CONTRADICTION

The American Marketing Association definition of Marketing Research (Bennet P.D ,Ed., 1995) tells us that the information provided by marketing research should represent the consumer. AMA definition is normative; that is it tells us how marketing research should be used to ensure the firm is consumer oriented. But what should be done is not always followed. Clancy and Krieg (2000) in their book Counterintuitive marketing: Achieve great results using uncommon sense argue that many failures can be attributed to managers just making “intuitive” decisions. They implore managers to use marketing research in order to make better decisions. These well known authors make a good argument for studying marketing research.

In a few cases marketing research predicted success that turned out to be a failure and in other cases, MR predicted failure that turned out to be success in the society. The reason for the contradiction may be attributed to improper research design and unsuitable use of research methods (Youngchan Kim et al, 2008). As far as the idea generation process in this context is concerned, the power to abstract is very fundamental. When ideas are scarce, a fresh viewpoint makes all the difference (Charles L. Owen, August 2009). Therefore a need is felt to review the marketing research process and critically

examine the various factors contributing the effectiveness of marketing research in formulating design solution.

3 METHODOLOGY

Conclusive research design was adopted for this study. For the consumer behaviour study regarding use of kitchenware and dishwashing, multiple cross sectional design was adopted. Consumers and retailers of kitchenware and dishwashing products were respondents in the survey. Amongst consumers respondents from both rural and urban areas were included. Longitudinal research design was adopted in idea generation process. Ideas were generated by the same group of designers before and after sharing of marketing research findings. The ideas were evaluated by forming focus group. The members of the focus group have fair idea about consumer behaviour and product design.

The entire study was done in three modules. In module 1 and module 2, consumer behaviour data was collected by using structured questionnaires, personal interview and ethnography. Primary data was analysed using various quantitative and qualitative tools with extensive use of various descriptive and inferential statistical tools (SPSS). The marketing research findings were documented. The module 3 has two phases. In the first phase of module 3, designers were asked to generate design ideas for the dishwashing problem on the basis of information obtained from unstructured sharing of marketing research findings. In the second phase of module 3, a new method termed “Marketing Research Finding Sensitive Visualisation (MRFSV)” was adopted to communicate the marketing research findings in a structured way to the design students of IIT Guwahati (Eui-Chul Jung et al 2010). The ideas generated in both the phases of module 3 were evaluated with the help of focus group’s response on the idea screening matrix. The idea screening matrix was formulated considering the criteria viz. Ease of dishwashing in Indian context, Ease of use, Ergonomic considerations, Ease of manufacture and assembly, Aesthetic appeal/ design variety, Economic and financial feasibility and Environment friendliness. The codes used are: “+” for better than existing, “0” for same as existing, “-” for worse than existing (Stuart Pugh, 1990). The response of the focus group was further analysed using quantitative techniques.

3.1 The MRFSV tool

The MRFSV tool has the following format of communicating MR findings and obtaining design ideas specific to each MR finding; through definition of design problems while keeping the focus on the basic design objective.

Table 1. MRFSV model

Marketing Research Findings	Weightage in meeting design objective	Define Design Problem	Marketing Research Findings Specific Visualization (MRFSV)
	(Divide total score 100 amongst the marketing research findings)	(How would you like to define the design problem from the corresponding MR Findings?)	(Description of Designer’s design solution for the design problem)
MR Finding 1 Respondents prefer utensils/cookware made of steel, bell metal, brass, copper and Glass	15	Dishwashing kit should be able to clean utensils made of bell metal, brass, copper along with steel and glass.	Inspiration from Indian traditional designs. Use coir for scrubbing.
MR Finding 2			
MR Finding 3....			

In the first column entitled Marketing Research Findings, MR findings are written in brief. The other three columns are left blank for the individual designers’ responses. Designers first read all the

marketing research findings from the first column. Then in the 2nd column they give weightages to each MR findings out of a total score of 100. The design objective should be well defined to the designers prior to the exercise. Weighted scores represent the usefulness of MR findings in meeting design objective. In the 3rd column designers define the design problems specific to the MR findings. It creates an opportunity for the designers to very minutely observe each and every MR findings and understand the specific design problems. In the 4th column the designers give their ideas as a solution for the specific design problems identified. Adequate paper space is provided in the 4th column. The design ideas are expressed in texts and renderings. Designers may use additional papers for renderings where references of the specific MR findings are to be mentioned properly. The designers arrive at the final design ideas after analysis and synthesis of all the Marketing Research Finding Specific Visualizations obtained from the exercise. The ideas and visualizations are prioritized on the basis of the weighted scores in meeting design objectives. All the designers may sit together to discuss their results and design ideas and thereby arrive at the final design solution.

4 RESULTS AND DISCUSSIONS

4.1 Major findings of module 1

A descriptive study was conducted to understand the consumer behaviour in case of kitchenware. It was found that preference of cookware and utensils largely depends on food habit. Various attributes viz. design and aesthetic look, additional features, safety considerations and ability to save energy effect the purchase decision of kitchenware products. Customer would be happy to have their cultural tradition reflected in the kitchenware products they use. It was observed that respondents prefer serving utensils/ crockery made of stainless steel, bell metal, brass and glass. (Indian traditional designs). Majority of the urban respondents prefer non-stick cookware followed by steel made cookware. A large number of respondents also prefer cookware made of cast iron, brass, bell metal and copper (Indian traditional designs). It has been observed that "Ease of Use" is the foremost important attribute in case of utensils/kitchenware. Consumers are not using modern sophisticated kitchenware because of the following reasons : (1) People find it complex to use especially when the job has to be done by domestic help;(2) Operation process does not match with the traditional/conventional way; (3) Power failures. Occupation and education plays a crucial role in purchasing decision in this context; as they create awareness and the need of an efficient time saving kitchenware.

4.2 Major findings of module 2:

A descriptive study was conducted on the dishwashing behaviour. It was found that in the kitchens of the urban household, dishwashing is normally done in standing position. They need to continuously bend while doing the dishwashing activity. The scrubbing process requires more force in fingers, wrist and palm and therefore stress develops in the entire hand specifically in fingers, palm and the wrist. The scrubbing process comparatively takes a lot of time in the dishwashing process. The continuous bending in this posture while applying pressure with fingers results in back pain, neck pain and fatigue. Domestic helps face problems in holding the scrubber in right position, because due to soap solution, it tends to slip out from the finger grip. Interestingly it was found that many of the domestic helps use the thin metallic foils of used medicine tablets as scrubber instead of iron wire mesh. In rural areas the dependence on domestic help for dishwashing activity is very less. They perform the dishwashing activity in sitting and squatting body posture. They mostly use charcoal, ash and powder detergent for dishwashing. It was observed that most of them use natural coir as scrubber. On being asked to the urban respondents whether they thought that a dishwasher or a washing machine could be a substitute of domestic help; 90% of the respondents strongly disagreed and 10% of them disagreed. The analysis of the urban respondents on use of various scrubbers reveals that majority of the respondents (83%) use coir scrubber followed by 15% for plastic scrubber. Again satisfaction level for steel scrubber is moderately low for 82% of the respondents. The satisfaction level for coir scrubber is the highest (85%) followed by plastic scrubber. Amongst the rural respondents 72.5% prefer coir scrubber over 27.5% for plastic scrubber. It has been observed that the satisfaction level on steel scrubber and plastic scrubber is low. The satisfaction level on coir scrubber is the highest (72.5%).

4.3 Major findings of module 3 (MRFSV)

The marketing research findings of module 1 and module 2 were shared with design students. In the first phase (unstructured sharing of MR findings) altogether eighteen ideas were generated. Out of these, fifteen ideas were considered for ranking in the idea screening process. In the second phase (sharing of MR findings with MRFSV tool) altogether seventeen ideas were generated and all were considered for the idea screening process. The ideas of the last two ranks were eliminated for further inferential and descriptive statistical analysis.

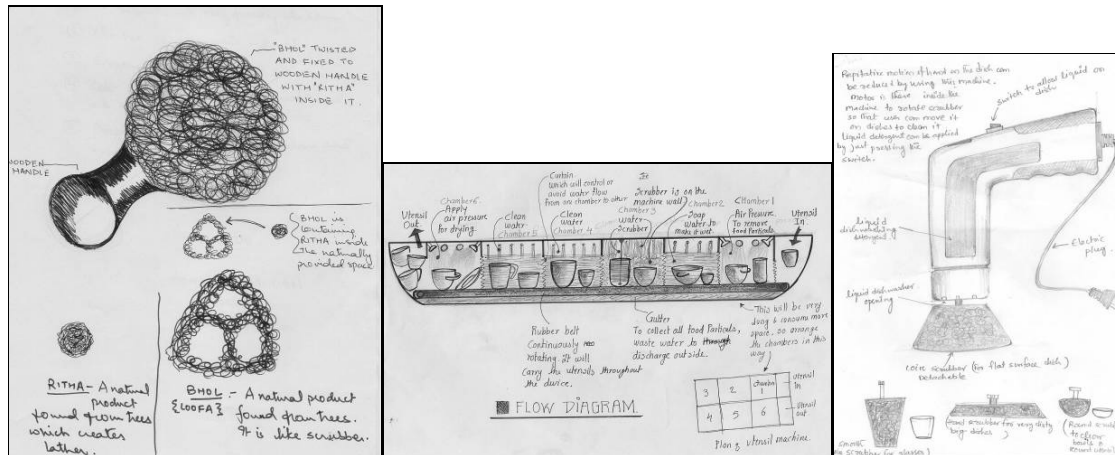


Figure 1. Design ideas generated in the Module 3, 2nd phase (MRFSV)

It has been observed that the design ideas generated in the second phase have substantially improved in terms of ease of dishwashing in Indian context. In the second phase 60.3% response was in favour of “better than existing” over 47.6% that of the first phase. The response in favour of “worse than existing” has substantially decreased to 22.7% in the second phase from 40% in the first phase.

It has been observed that the design ideas generated in the second phase have substantially improved in terms of ease of use. In the second phase 59.1% response was in favour of “better than existing” over 50.6% that of the first phase. The response in favour of “worse than existing” has decreased to 20.9% in the second phase from 33% in the first phase.

It has been observed that the design ideas generated in the second phase have improved in terms of ergonomic considerations. In the second phase 49.4% response was in favour of “better than existing” over 47.6% that of the first phase. The response in favour of “worse than existing” has decreased to 19.1% in the second phase from 27.9% in the first phase.

It has been observed that the design ideas generated in the second phase have just slightly improved in terms of ease of manufacture and assembly. The reason for this marginal improvement may be that marketing research findings did not much emphasise on ease of manufacture and assembly. However the response in favour of “worse than existing” has decreased to 38.2% in the second phase from 43.3% in the first phase.

It has been observed that the design ideas generated in the second phase have substantially improved in terms of aesthetic appeal and design variety. In the second phase 52.7% response was in favour of “better than existing” over 46.7% that of the first phase. The response in favour of “worse than existing” has decreased to 23.0% in the second phase from 30.3% in the first phase.

It has been observed that the design ideas generated in the second phase have substantially improved in terms of economic and financial feasibility. In the second phase 36.4% response was in favour of “better than existing” over 29.4% that of the first phase. The response in favour of “worse than existing” has decreased to 35.8% in the second phase from 48.8% in the first phase.

It has been observed that the design ideas generated in the second phase have substantially improved in terms of environment friendliness. In the second phase 45.5% response was in favour of “better than existing” over 36.4% that of the first phase. The response in favour of “worse than existing” has substantially decreased to 15.8% in the second phase from 25.5% in the first phase.

A series of Pearson chi square tests were conducted to observe the significance of variance in ranking of design ideas generated in the 1st phase and 2nd phase. Following exhibit shows the results of the chi-square tests

Table 2. Results of Pearson chi-square tests

Criteria	Sig (2 sided)	Contingency coefficient
Ease of dishwashing in Indian context	0.019	0.186
Ease of use	0.500	0.100
Ergonomic consideration	0.327	0.118
Ease of manufacture and assembly	0.899	0.057
Aesthetic appeal/ design variety	0.004	0.213
Economic and financial feasibility	0.491	0.101
Environment friendliness	0.002	0.183

It has been observed for a significance level of 0.05 that there is a significance difference of rankings on ease of dishwashing in Indian context, aesthetic appeal/ design variety, environment friendliness in 1st phase and 2nd phase. For other variables variance is not significant. This is because the MR findings have focused mainly on the aforesaid variables. However contingency coefficients are low. A paired sample t-test was conducted to observe the significance of variance in scores of design ideas generated in the 1st phase and 2nd phase. It has been observed for a significance level of 0.05 that the total and average scores of design ideas generated in the 1st phase and 2nd phase varies significantly. The total and average scores of the design ideas generated in the 2nd phase observed significant improvement over scores of the 1st phase.

Table 3. Scores of 1st phase and 2nd phase

Scores	1 st phase	2 nd phase
Total score	15.39	49.91
Average score	1.03	3.33

5 RECOMMENDATION

MRFSV tool may be discussed with the design students in the sessions on “design methods”. The students may conduct consumer behaviour study; and the findings of the consumer behaviour study may be effectively used by the students with MRFSV tool for idea generation.

6 CONCLUSION

The study reveals that, unstructured communication of consumer behaviour to the designers may move away the designers from the design objective. Designers tend to enclose their preconceived thought about the consumer behaviour in their initial ideas for design solutions. The MRFSV method helps the designers in defining design problems. This method helps in establishing a direct relationship of defined design problem to designer’s design solution. The synthesis of all the marketing research finding specific visualizations generates wonderful design ideas, which ultimately lead to a complete design solution to meet the design objective.

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