ANALYSIS OF RELATIONSHIP BETWEEN CRITERIA FOR SELECTION OF TOYS AND DEMOGRAPHIC PROFILE

Salma Shaheen

Computer Engineering Section, Faculty of Engg & Tech., AMU, Aligarh, India.

ABSTRACT

There is cut throat competition among toy designers, manufacturers and marketers in the Indian toy industry these days. In order to survive in the highly competitive toy market and to make their presence felt, it is important to consider the needs of customers in designing the toys. In order to find a solution to this problem, this paper focuses on analysing the effectiveness of demographic profile which includes occupation, age, gender and qualification for selection of toys. This paper will play a key role in analysing whether demographic profile is important for selection of toys or not. In this research paper, four null hypotheses have been prepared, tested and results are compiled by using SPSS (Statistical Package for the Social Science).

KEYWORDS

ANOVA test, Demographic profile, Hypotheses testing, Selection criteria, and Toy designing.

1. INTRODUCTION

A conceptual model has been developed for design of toys. In this model dimensions for criterion for selection of toys has been diagrammatically presented in detail in Figure 1.

This section presents an analysis of the proposed hypotheses using ANOVA and t-tests. In this section, each hypothesis is first listed which is followed by a Table that shows the result of the administered ANOVA (or t-test, wherever appropriate). This is followed by an inference stating whether the hypothesis is supported (accepted) or not supported (rejected).
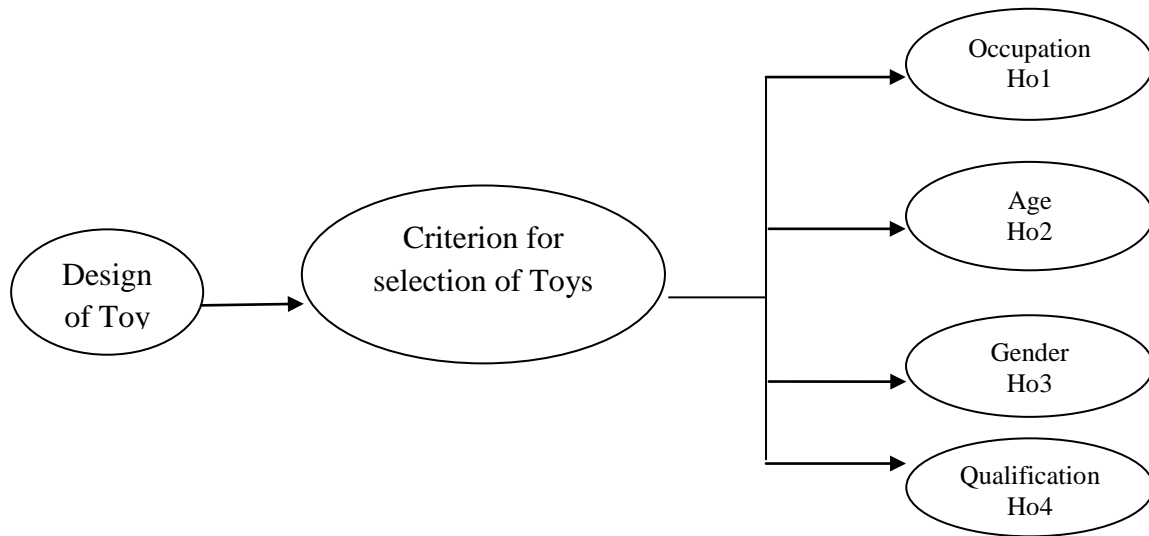
A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories.
International Research Journal of Mathematics, Engineering and IT (IRJMEIT)

1 | P a g e

Figure 1 Conceptual Model

2. FORMULATION OF HYPOTHESIS

The set of four hypotheses have been formulated, analysed and presented. These are hypotheses Ho1 to Ho4.

This section covers the formulation of four null hypotheses as given under:

Ho1: There is no significant relationship between criteria for selection of toys and occupation.

Ho2: There is no significant relationship between criteria for selection of toys and age.

Ho3: There is no significant relationship between criteria for selection of toys and gender.

Ho4: There is no significant relationship between criteria for selection of toys and qualification.

3. Administration of Questionnaire

Two methods were adopted for administering the questionnaire. The first was contacting in person and second was through email.

Questionnaire was distributed in Aligarh city and in the University (to academicians and home makers) in select residential areas of Aligarh. Selection of departments in University and selection of residential areas was purely based on judgement of researcher. Therefore,

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories.
International Research Journal of Mathematics, Engineering and IT (IRJMEIT)

2 | P a g e

methodology adopted was convenience and judgemental. These respondents were contacted personally by the author.

Questionnaire was also sent by e-mail to the addresses on the researcher's e-mail list (address book) as well as connections on Linkedin profile. Therefore, the methodology adopted in this case was census sampling.

A total of 224 questionnaires were distributed. Finally, 118 filled in questionnaire were received. Out of these only 84 were found to be usable.

The response rate is 70% approximately. A response rate of 25% is considered desirable for survey findings (Yu and Cooper 1983 [1]), (Malhotra and Grover 1998 [2]).

As per Gupta, minimum sample size required is based on number of question items in the questionnaire.

Minimum sample size required= four times the number of question items (Gupta 2003 [3]).

As number of questions in questionnaire used by researcher is 16. Therefore, response rate of 64 is satisfactory.

4. HYPOTHESES TESTING AND RESULTS

Ho1: There is no significant relationship between criteria for selection of toys and occupation.

ANOVA Test for testing relationship between Criteria for Selection of Toys and Occupation

Table 1

	N	Mean	Std. Deviation	F	Sig.
Professional/Service	54	3.3179	0.73278	0.910	0.440
Business	11	**3.6818**	0.94120		
Home maker	9	**3.4444**	0.81223		
Any other	10	3.6000	0.78253		
Total	84	3.4127	0.77420		

Table 1 shows the result of ANOVA test, which is run to test the difference across different occupational group on the dimension of criteria for selection of toys. It has been found that the value of F = 0.910 and Sig = 0.440, which is more than 0.05. Hence no difference exists.

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories.
International Research Journal of Mathematics, Engineering and IT (IRJMEIT)

3 | P a g e

Hypothesis Ho1 is supported (accepted); that is, there is no significant relation between criteria for selection of toys and occupation.

The descriptive statistics of the sample along with the mean values and the standard deviation are presented in Table 1. It shows that the highest mean value was for the business sector at 3.6818 followed by home maker which was at 3.4444 and then by professional/service sector which was at 3.3179.

Ho2: There is no significant relationship between criteria for selection of toys and age.

<u>**ANOVA Test for testing relationship between Criteria for Selection of Toys and Age**</u>

Table 2

	N	Mean	Std. Deviation	F	Sig.
Less than 25 years	12	**3.4861**	0.69797	1.857	0.144
25-35 years	29	3.1724	0.86886		
35-45 years	31	3.4785	0.75368		
More than 45 years	12	**3.7500**	0.51981		
Total	84	3.4127	0.77420		

Table 2 shows the result of ANOVA test, which is run to test the difference across different age group on the dimension of criteria for selection of toys. It has been found that the value of F = 1.857 and Sig = 0.144, which is more than 0.05. Hence no difference exists.

Hypothesis Ho2 is supported (accepted); that is, there is no significant relation between criteria for selection of toys and age.

The descriptive statistics of the sample along with the mean values and the standard deviation are presented in Table 2. It shows that the highest mean value was for the age group 'more than 45 years' which was at 3.7500 followed by age group 'less than 25 years' which was at 3.4861 and between 25-35 years at 3.4785. Mean value for age group 35-45 years is much lower at 3.1724.

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories.
International Research Journal of Mathematics, Engineering and IT (IRJMEIT)

4 | P a g e

Ho3: There is no significant relationship between criteria for selection of toys and gender.

t- Test for testing relationship between Criteria for Selection of Toys and Gender

Table 3

Gender	N	Mean	Std. Deviation	T	Sig. (2-tailed)
Male	38	**3.5088**	0.62234	1.034	0.304
Female	46	3.3333	0.87911	1.068	0.289

Table 3 shows the result of independent sample t- test, which is run to test the difference across different gender group on the dimension of criteria for selection of toys. It has been found that the value of T = 1.034 and Sig = 0.304, which is more than 0.05. Hence no difference exists.

Hypothesis Ho3 is supported (accepted); that is, there is no significant relation between criteria for selection of toys and gender.

The descriptive statistics of the sample along with the mean values and the standard deviation are presented in Table 3. It shows that the higher mean value was for the group male which was at 3.5088 followed by female at 3.333.

Ho4: There is no significant relationship between criteria for selection of toys and qualification.

ANOVA Test for testing relationship between Criteria for Selection of Toys and Qualification

Table 4

	N	Mean	Std. Deviation	F	Sig.
Technical/Professional Graduate	26	**3.4679**	0.87308	0.908	0.441
Non-Technical Graduate	19	3.1754	0.70814		
Post Graduate	27	**3.4383**	0.67645		
Any Other	12	3.6111	0.85968		
Total	84	3.4127	0.77420		

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories.
International Research Journal of Mathematics, Engineering and IT (IRJMEIT)

5 | P a g e

Table 4 shows the result of ANOVA test, which is run to test the difference across different occupational group on the dimension of criteria for selection of toys motives for purchase of toys. It has been found that the value of F = 0.908 and Sig = 0.441, which is more than 0.05. Hence no difference exists.

Hypothesis Ho4 is supported (accepted); that is, there is no significant relation between criteria for selection of toys and qualification.

The descriptive statistics of the sample along with the mean values and the standard deviation are presented in Table 4. It shows that the highest mean value was for technical/professional graduate which was at 3.4679 followed by post graduate which was at 3.4383 and then by non-technical which is very low at 3.1754.

5. SUMMARY OF HYPOTHESIS TESTING

This section presents a summary of the results obtained by administering ANOVA and t-tests on the proposed hypothesis. A Table 5 has been constructed to present in brief the various hypothesis and its results.

Table 5 Summary for Hypothesis with Demographic profile

Parameter	Hypothesis	F/T	Sig.	Results
Criteria for Selection & Occupation	Ho1: There is no significant relationship between criteria for selection of toys and occupation	**0.910**	**.440**	**Supported**
Criteria for Selection & Age	Ho2: There is no significant relationship between criteria for selection of toys and age	**1.857**	**.144**	**Supported**
Criteria for Selection & Gender	Ho3: There is no significant relationship between criteria for selection of toys and gender.	**1.034**	**.304**	**Supported**
Criteria for Selection & Qualification	Ho4: There is no significant relationship between criteria for selection of toys and qualification	**0.908**	**.441**	**Supported**

6. CONCLUSIONS

After testing the four null hypotheses that is Ho1-Ho4, it is found the value of F/T and Sig. for these hypotheses is more than 0.05 and hence there exists no significant relationship between criteria for selection of toys with respect to occupation, age, gender and qualification. Therefore, the demographic profiles have no influence on criteria for selection of toys. This study implies that demographic profile does not play any role in selection of

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories.
International Research Journal of Mathematics, Engineering and IT (IRJMEIT)

6 | P a g e

toys. Therefore, it is recommended that toy designers and manufacturers may not consider the demographic profile of customers too seriously.

REFERENCES

[1] J. Yu, H. Cooper, *A quantitative review of research design effects on response rates to questionnaires,Journal of Marketing Research, 20,* 1983, 36-44.

[2] M. K. Malhotra, V. Grover, *An assessment of survey research in POM: from constructs to theory, Journal of Operations Management, 16(17),* 1998, 407- 425.

[3]   S. P.Gupta, *Statistical Methods* (New Delhi, Sultan Chand and sons publishers, 2003).

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories.
International Research Journal of Mathematics, Engineering and IT (IRJMEIT)

7 | P a g e