CONSUMER BEHAVIOUR AND BRAND PREFERENCES FOR REFRIGERATORS

DISSERTATION
SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE Post Graduate Diploma IN Marketing Management

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Certified that Mr. Ejaz Perwez, of Postgraduate Diploma in Marketing Management has completed his dissertation entitled "CONSUMER BEHAVIOUR AND BRAND PREFERENCES FOR REFRIGERATORS", under my supervision.

To the best of my knowledge and belief the work is based on the investigations made, data collected and analysed by him and it has not been submitted in any other University or Institution for award of any degree or diploma.

(Dr. M. Khalid Azam)
Supervisor
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PREFACE

Word has been witnessing numerous, changes, which occur at each and every moment, somewhere or the other. Man has progressed tremendously has reached the moon and is trying to scam beyond it.

The advancement in society opens new vistas.

The advancement in standard of living, the increase in public income has led to generating demand for conceivable product all over the world. Consumer products like refrigerators, television, automobiles, electronic goods etc. have become inseparable items now.

The requirements to having a refrigerator among the middle and upper middle classes are high.

This motivated a large number of manufacturers to produce refrigerators and to compete with each other. Not only this, many foreign companies have entered the Indian market. This has resulted in the stiff competition among the refrigerators manufacturers. Stiff competition in the market has made the purchaser aware of various choices at his disposal. Every company is trying to show
that its product is the best one. In their efforts to show that their product is superior to others, they have launched a tirade of advertisement and other sales promotion, technique to wool the consumers.

Under these circumstances, it becomes an important task to find out the consumer behaviour and brand preference for refrigerator which influences the purchasing decision.
ACKNOWLEDGEMENT

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(EJAZ PERWEZ)

(EJAZ PERWEZ)
CHAPTER I

1. INTRODUCTION

(A) PRODUCT PROFILE:

1.1 REFRIGERATION: The terms "Refrigeration" has been defined by various authors in different ways. A few of them have been given below.

(i) Gunthers R.C. defines Refrigeration as "the process of removing heat from a substance".

(ii) The American Society of Refrigerating Engineers defines Refrigeration "as the Science of providing and maintaining temperatures below that of the surroundings..."

(iii) Robinson and Dickson says that "the Refrigeration is a process in which heat is removed from the surroundings..."

Thus Refrigeration means the process of the cooling of Substance relatively. The art of cooling is achieved by Scientific principles. And hence the controlled removal and addition of heat involves many application of jaws of physics.

1.2 IMPORTANCE: Man from very early period are dynamic. They always try to get new ideas, new things, improvement in existing things etc. After world war II, many
mission oriented and inter-disciplinary research work took place due to social needs and its upliftment therefore they invented many things for social needs among which refrigeration is one of the important outcome of necessity. Prior to the invention of the refrigeration system ice was used for cooling which was not technically scientifically advanced.

The first artificial Refrigeration was designed and patented in England in 1990 by Thomas, Harris and Jhon perkins invented another Refrigeration system which was a hand operated machine. In 1851, Dr. Jhon Gornie of Florida obtain the first American patent for an ice machine.

In 1860, Dr. James Harrison of Australia made the world's first installation of refrigerating equipments in brewery.

The first absorption system refrigeration was invented by Ferdinand Carre in 1941. It was based on the cut-off supply of natural ice. In absorption system and absorber (i.e. either a liquid or Solid medium) is selected which has affinity for the refrigerent any substance that absorbs heat though expansion or evaporation vapour at some lower temperature and the refrigerent vapour which will be separated from the absorber at higher temp.
Thus a pair of such fluids selected is employed in refrigeration unit.

Ferdinand Carré used Ammonia as refrigerant and water as an absorber. The first ever domestic refrigerator was made in 1956. This was the result of the research of British pioneer Lord Kelvin, which fed to its construction. Therefore the first refrigerator was named of the "KELVINATOR!"

Domestic refrigeration is a box on cabinet that contains commodities cool by means of ice. According to Indian Standard Specification, refrigerator is a cabinet which has source of refrigeration and is used for the storage of food at temperature 0°C. In it, food retains its taste, colour, flavour, vitamin contents and keeps for longer period.

1.3. **Configuration of refrigeration:**

   **THE REFRIGERATOR MAY BE DIVIDED INTO THREE PARTS:**

i) Refrigeration system

ii) Insulated steel cabinet

iii) Interior Arrangement.

i) **Refrigeration System:** The refrigeration system consists of four principles components interconnected between themselves by copper tubings.
(a) **Refrigerant**:  

For the operation of refrigeration system a medium is required which is called refrigerant. Any substance which absorbs heat through evaporation or is expansion usually called as refrigerant.

Following are the commonly used refrigerant:

Freon -113 Methyl Chloride Freon-11, Freon-12, Freon-21, Ammonia (717) etc.

(b) **Compressor**:

Compressor is one of the most important component of the system which is considered to be heart of the refrigerator, fitted at the back of the V Cabinet at the bottom.

There are three kinds of compressor which are usually employed in the refrigerator. They are-

- Open type
- Semi boiled type or semi hermatic type
- Welded or sealed hermatic type

c) **Condensor**: It is another important component of the system which is a heat exchanger.
The heat transfer by it causes the refrigerant vapour to condense i.e., condensation occurs at a given temp. It is attached at the back of the cabinet.

(d) **Exaporator or the Frozen Food chest**: It is the topmost system of the refrigerator and allows freezing in all sides which contains ice trays and provide space for the freezing.

(ii) **Insulated steel Cabinet**: The cabinet is made of steel sheets of some specific dimension, which is insulated with Slabs of 2-3" thick glass wool.

(iii) **Interior Arrangement**: The interior arrangement of the refrigerator consists of three parts.

a) **Inner liner**:

This is up of high impact polystyrene and is rust proof. It contains food shelves and other components.

(b) Battle tray

(c) Crisper tray

1.4 **REFRIGERATION INDUSTRY IN INDIA**:

In the beginning, refrigerator producers were quite few in numbers but after the rapid growth of Industrialisation in the country in all dimensions, the air conditions
industry take leap towards self-sufficiency within a short span of time.

Before the independence, India had no manufacturing facilities for airconditioning and refrigeration equipment.

The foreign exchange crisis of 1958 had led to the establishment of manufacturing units, through in a modest way. In fact, those were the assembly units for various makers of imported compressor. It was in 1968 that India actually started manufacturing its own compressors for refrigerators and other components.

At present, India is producing about 700,000 refrigerators. It is important to point out that India is the only developing country which has achieved self-sufficiency in the field of refrigeration and airconditioning.

1.5 THE REFRIGERATOR COMPANIES

Following are the main units in the country which are actually engaged in the production of refrigerators.

2. The Hyderabad Allwyn Metal Works Ltd. Hyderabad.
7. BPL Refrigeration Limited, Bangalore.

1.6 **CAPACITY RANGE OF EACH MANUFACTURER:**

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Brand</th>
<th>Capacities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>286 Lts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Single door)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>300 Lts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(double door)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>380 Lts</td>
</tr>
</tbody>
</table>
4. Voltas Ltd. Opal 165 lts
5. Lloyd Sales Corpn. Zenith 165 lts
Pvt. Ltd.
6. Videocon Appliances Videocone 165 lts Ltd. (Single door)
    166 lts (double door)
7. BPL Refrigeration BPL 185 lts Ltd. (double door)
     250 lts (double door)

Kelvinator Refrigerators providing their excellence every day in over 140 countries all over the world, due to their state of the art, technology, innovative designing superb instruction and of course. Outstanding features. Kelvinator Refrigerators are available in a variety of sizes and models, both in white and a range of eye-catching colours.

Kelvinator of India Ltd. is manufacturing refrigerators of different capacities under three main brand names.

They are as follow-

Kelvinator of India Ltd.

Sponcer & Co. Blue star General equipment
Kelvinator Leonard merchant Germ
B) Consumer behaviour and its application in present study.

It is very difficult to know the human needs because they vary from individual to individual. However there are some common needs of all human being like food, Shelter, air etc. These needs are called primary needs. But there are also secondary needs which are just for status recognition which is more difficult to be satisfied.

Industry has made much progress in helping the consumers satisfaction plans.

A Basic model of Behaviour:

In order to know the common needs of human being, we have to develop a need structure and in developing need structures there is often a delicate balance between dependence and Independence in human behaviour.

- Behaviour is "caused"
- Behaviour is "Motivated"
- Behaviour is "good oriented"

Here I would like to present three assumption in terms of a basic model of behaviour described by Leavitt. Which is
given below stimuli need The person Goal
(Cause) (want)
Tension Discomfort

In this closed circuit model goal eliminates the cause, which in turn eliminates the motive which consequently the behaviour. Behaviour may be an effort to eliminate tensions by seeking goal that balance the cause of tension e.g., a man thinks that he needs a new refrigerator. The more he considers the proposition, the more his tension increase. He explores the market and finds the refrigerator. The more he is influenced by advertisement, the more desire he develops to obtain one. Finally, when arrangements are made to purchase the refrigerator the tension is resolved.

Stages in the buying process:

There are five stages through which a buyer passes. Each of the stages has the potential for a critical turn in the buyer's present or future relationship to the company. As given below.

Felt Prepurchase Purchase Use Post purchase

need activity decision behaviour feelings
Thus buyer is seen going from a felt need to prepurchase activity to a purchase decision to use behaviour to post purchase feelings our model is based on the assumption that buying behaviour is goal oriented. The behaviour is initiated when the buyer is aroused by some stimuli to want somethings he gathers information the information alters his knowledge and attitudes, other factors lead to buying or rejecting the product and he has post decision feeling. His goal seeking behaviour is influenced by the individuals perception of the alternatives open to him.

He is quite selective is the stimuli (advertisement, products, brands etc.) which he expose himself to retains and acts upon this perceptions in turn, are influenced by his learning experiences, attitudes and beliefs personality traits and self image and environmental and social factors.

One of the most important factor in the consumer model is to explain a consumer's brand preferences because refrigerator is a costly things and assumed not to be buy everyone therefore we have to study the motivations, attitudes and personalities of consumers because these groups also influence buying behaviours.
CHAPTER II

2. SURVEY DESIGN AND METHODOLOGY

The present study is based on the survey which is conducted keeping in view the given objectives. The aim of the study is to draw necessary information for the survey regarding the consumer behaviour and brand preference for Refrigerator.

2.1: Problem of Definition:

In any research process the definition of the problem is one of the important tasks and very complex one. It involves to determine what management problem is and also result generated by the research is co-related to the problem so that to give appropriate solution of the problem. The survey was conducted for academic purpose and not for actual management problem. The study was made on the basis of the objective under get hypothesis, in order to make generalization regarding the buying behaviour and attitudes and perception of a particular consumer towards the refrigerator.

The problem is defined as consumer behaviour and brand preference for refrigerator."
2.2 Objectives of the Study:

The study/survey is governed by the following objectives:

1. To study the profile of the respondents who already possess a refrigerator.

2. To analyse and assess the profile of the potential consumers of refrigerator in the city of Delhi.

3. To have an assessment of the proportion of non-users of refrigerators and the likelihood for them to get a refrigerator.

4. To assess the brand preferences for refrigerators and their determinants.

5. To assess the different needs for which a refrigerator is required and determine their order of importance.

6. To assess the impact of various advertising media in the choice of refrigerator.

7. To assess the relationship of income and family size with the choice of a refrigerator.

2.3 Data Collection Approach:

The data used in study is primary. This study is the opinion study by using a prescribe questionnaire. The respondents were contacted personally data is collected by questioning.

2.4 Measurement Technique:

The information required for the study is of
primary type so the "questionnaire could be used as a measurement technique". In the questionnaire, it is assumed to cover the objectives ie to measure demographic characteristic level of knowledge, attitudes and opinion of the respondents. Response rate was almost 100% because of the method employed to collecting information was based on Multiple choice questions, which minimize the error in measurement.

2.5 Universe and Sample:

Since the universe cannot be taken for study, a sample has been chosen to study the consumer behaviour and buying preferences. It is important to take care of the available time and cost, while studying for the same. The broad classification of universe would comprises the various groups of society, in which following groups are included:

1. Business
2. Service
3. Private professionals
4. Teaching.

The category of business group included a few
shopkeepers, factory owners and a few dealers. The service class consists of mainly clerks, Engineers doctors and library staff.

Private professionals include mainly private engineers, lawyers and a few practising doctors. The teaching group includes the teachers from Engineering and Science faculty. The selection on the basis of the above said group will bring a comparative study of behaviour pattern of consumers of different Economic and social set up.

2.6 Sampling Technique:

The sampling unit, the case under study constitutes house holds and the element are the persons who make the purchase.

The method employed here is a type of non-probability sampling known as convenience sampling. The use of random sampling technique was avoided due to lack of time and money.

The survey was stratified so as to represent each group of the population proportionally.

The size of the sample was kept 140, and it was distributed among various groups are as follows:
2.7 **Survey procedure and methodology**: 

This survey is the opinion survey conducted with the help of a suitable questionnaire designed together relevant information for this purpose. The respondents were contacted and informations were gathered on questionnaire. The questionnaire was carefully drafted to meet the objectives of the survey.

The questions were designed to be clear, brief and simple. A total number of 140 questionnaires were used and the response rate was 100%. Great care was taken to remove ambiguity, if any arising out. Great care was taken in contacting the respondents. They were then briefed about the aim of the study in order the remove the hesitations and in turn, to obtain the accurate informations.
2.3 **Accuracy and size of sample:**

As sampling involves less time and money, great attention was required to maintain accuracy of the study because without being accurate, the study would be of little academic value. Accuracy of the sample depends upon the size of the sample. Greater the sample size, greater the accuracy.

It is difficult to achieve cent percent accuracy because of the several constraints in operation through the sincerity. But it could be achieved to a large extent if the respondents chosen are sincere in providing information. They could be sincere after knowing the objectives of the study.

2.9 **Limitations of the Survey:**

The sample size is sufficient for the study but it is not as large as required for a detailed study. This is because of the limitations arising out of the lack of resources, time, money, etc.

It was not possible to follow strictly the technique of random sampling.

Instead, it has been conducted through convenience sampling techniques.
The sample size of the various income groups could not be maintained equal because of the lack of resources.

2.10 Hypothesis:
1. A few refrigerator brands are dominating the market.
2. Some sizes of refrigerator are more common than others.
   Medium size refrigerator better suited to the requirements of respondents.
3. Majority of the refrigerators are in use for the last five years.
4. Persons who do not have a refrigerator are keen to purchase it.
5. There is a difference of opinion about Kelvinator being the best or Godrej being the best.
6. Consumers are exposed to the advertisements of some brands more than the others.
7. The influence of the opinion of the family members varies among different profession groups.
8. Impact of some of mass media are more important in providing information to the people.
9. Majority of the respondents feel that there is significant difference in different brands of refrigerator.
10. Repair of refrigerator has not been a problem for most of the consumers.
11. After sales service is being considered very important. 15% consider less important, & 1.4% consider it not important.

12. People prefer the size of refrigerator according to the size of their family.

13. People purchase refrigerator basically for the preservation of cooked food.

2.11. Need for Survey:

The concept of "Consumer Sovereignty" has been gaining momentum and at the same time becoming complex day by day and posed challenges to the producer all over the world. Existence of "effective demands" - a compound of need well backed up by purchasing power and willingness to exercise it only ensure success of production. Demands again has been subject to vast oscillation depending upon the changing consumer preferences.

The study of consumers is one of the important area in management. Refrigerator can be classified as consumer durable from the point of view of rate of purchase and tangibility. It can also be viewed as shopping good if one considers the consumers buying patterns as it required more time to arrive at a decision to purchase. Various factors govern its demands and consumers pass
through a long process about "inns and outs" before taking a final decision to buy or not buy. An indepth enquiry into the buyers motivations and preferences is called for.

2.12. Research Tools:

For the collection of information questionnaire has been used as a tool which contains a set of questions. It is used to measure the behaviour as well as attitudes and opinion of the consumers in the study.

In the questionnaire every care were taken it included right and relevant question. The biased and loaded questions were avoided in order to minimize error and secure maximum efficiency.

The response format is also very important there are many questions included in the questionnaire which can be put under two categories. They are:

1. Multiple choice questions
2. Dichotomous questions
1. **Multiple choice questions**:
   In this case there are two or more than two questions of alternative are given and there is a need to choose the correct or based one among the given alternatives.

2. **Dichotomous questions**:
   Such questions carry two responses usually "yes-no" type such questions are quicker to answer and reduces the respondents bias. Steps were taken to reduce the errors.

(a) **Surrogate information error** - This kind of error arises when questions included in the questionnaire are not according to the objectives of the study and vague terms were used. Hence the investigator play an important role by defining his objective clearly to which information has been sought.

(b) **Measurement error** - This type of error arises when there is difference between the information needed and the information provided by the measurement tool. This is the most common & serious error. Steps were taken to minimise this error.

(c) **Non-responses error** - To avoid each kind of error precaution was taken not to include embarrassing and personal questions in the study.
The questionnaire comprised of various types of questionnaire such as multiple choice, dichotomous ranking etc. There are two questions in which ranking is used. In these questions consumers were asked to rank the factors according to their importance, which gives a comparative rating sales. Thus, the give the relative importance of each factor.

For some of the questions, percentages were calculated and accordingly analysed.
# CHAPTER III

**TABLE I**

Possession of different Company's brands of refrigerator.

<table>
<thead>
<tr>
<th>Company's Brand</th>
<th>Business</th>
<th>Service</th>
<th>Teaching</th>
<th>Private</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kalivnator</td>
<td>(20)</td>
<td>(26.6)</td>
<td>(33.3)</td>
<td>(20)</td>
<td>(100)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6</td>
<td>10</td>
<td>6</td>
<td>30</td>
<td>28.6%</td>
</tr>
<tr>
<td>Godrej</td>
<td>(27.2)</td>
<td>(36.3)</td>
<td>(18.1)</td>
<td>(18.1)</td>
<td>(100)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td>33</td>
<td>31.6%</td>
</tr>
<tr>
<td>Voltas</td>
<td>(26.6)</td>
<td>(20)</td>
<td>(20)</td>
<td>(33.3)</td>
<td>(100)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>15</td>
<td>14.4%</td>
</tr>
<tr>
<td>Allwyn</td>
<td>(100)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9%</td>
</tr>
<tr>
<td>BPL</td>
<td>(46.6)</td>
<td>(6.6)</td>
<td>(13.3)</td>
<td>(33.3)</td>
<td>(100)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>15</td>
<td>14.4%</td>
</tr>
<tr>
<td>Videocon</td>
<td>(22.2)</td>
<td>(22.2)</td>
<td>(33.3)</td>
<td>(22.2)</td>
<td>(100)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>09</td>
<td>8.6%</td>
</tr>
<tr>
<td>Blue Star</td>
<td></td>
<td>(100)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>01.9%</td>
</tr>
</tbody>
</table>

Figures in brackets shows percentage.

<table>
<thead>
<tr>
<th></th>
<th>29</th>
<th>27</th>
<th>24</th>
<th>24</th>
<th>104</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>140</td>
</tr>
</tbody>
</table>
Hypothesis No.1
A few refrigerator brands are dominating the market.

The most popular brand:
The survey of the respondents to question number -1 of the questionnaire are tabulated in Table-1.

This table shows that Godrej is dominating in the market. Next to Godrej comes Kelvinator followed by Voltas, BPL, Videocon, Allwyn, and Blue Star.

Of the 104 respondents, 31.6 respondents have Godrej brand refrigerator followed by Kelvinator with 26.5% 14.4% 14.4%, 8.6%, 0.9 and 0.9 respondents have voltas, BPL, videocon, Allwyn and Blue star respectively.

TABLE-II
Size of refrigerator that respondent is being.

<table>
<thead>
<tr>
<th>Size</th>
<th>Large</th>
<th>Medium</th>
<th>Small</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>(41.8)</td>
<td>(22.3)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>(16.1)</td>
<td>(31.3)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Teaching</td>
<td>(19.3)</td>
<td>(20.8)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>(22.5)</td>
<td>(25.3)</td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td>7</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
</tr>
<tr>
<td>% age</td>
<td>29.7%</td>
<td>54.3%</td>
<td>5.7%</td>
</tr>
</tbody>
</table>
Hypothesis No. 2

Some sizes of refrigerator are more common than others. Medium size refrigerator better suits to the requirements of respondents.

The most popular size:

Table -II shows that medium size i.e. 160/165 litres capacity refrigerators topped in demand followed by large size i.e. 256/290/300 litres capacity. Of the 104 respondents 64.3% possess medium size refrigerator while 29.7% possess large size refrigerator.

Only a few respondent i.e. 5.7% are having small size refrigerator.

It is thus, medium size refrigerators i.e. 160/165 litres capacity are the most popular size, and that better suits to the needs of consumers.

TABLE -III

3.3 Age of the Refrigerator that respondents possess

<table>
<thead>
<tr>
<th>Age of Refrigerator</th>
<th>No. of Respondent possess</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3 years</td>
<td>62</td>
<td>59.5%</td>
</tr>
<tr>
<td>4-6 years</td>
<td>31</td>
<td>29.7%</td>
</tr>
<tr>
<td>7-9 years</td>
<td>6</td>
<td>5.1%</td>
</tr>
<tr>
<td>10-12 years</td>
<td>4</td>
<td>3.3%</td>
</tr>
<tr>
<td>Above 12 years</td>
<td>1</td>
<td>0.9%</td>
</tr>
</tbody>
</table>
Hypothesis No. 3

Majority of the refrigerators are in use for the last five years.

An analysis of table III shows that the use of refrigerator is increase in recent years. The use of refrigerator in 0-3 years was 59.5%, followed by 29.7% during 4-6 years, 5.1% during 7-9 years, 3.8% during 10-12 years, and above 12 years it is 0.9%.

The table reveals that the use of refrigerator will be increased substantially in future as the rate of use has continuously been on increase.

**TABLE-IV**

purchase intention of non-users.

<table>
<thead>
<tr>
<th>Intention</th>
<th>Number of Respondents</th>
<th>% age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within one year</td>
<td>12</td>
<td>33.3%</td>
</tr>
<tr>
<td>Within two years</td>
<td>5</td>
<td>13.8%</td>
</tr>
<tr>
<td>Within five years</td>
<td>6</td>
<td>16.6%</td>
</tr>
<tr>
<td>Can not say</td>
<td>13</td>
<td>34.9%</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>
Hypothesis No. 4

Persons who do not have a refrigerator are keen to purchase it.

The table IV indicates that out of the 36 respondents who do not have a refrigerator, 33.3% respondents want to purchase it within one year, 13.3% within two years, and 16.6% within five years. A significant number of respondents i.e. 34.9% could not show their keenness to purchase the refrigerator.

The analysis shows that fast changing life style and growing urbanisation have woold persons towards refrigerators.
### Table V

Brand preferences of refrigerator at the moment

<table>
<thead>
<tr>
<th>Company</th>
<th>Frequency in different profession</th>
<th>Total</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Business</td>
<td>Service</td>
<td>Teaching</td>
</tr>
<tr>
<td><strong>Kelvinator</strong></td>
<td>(21.8)</td>
<td>(34.3)</td>
<td>(18.7)</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td><strong>BPL</strong></td>
<td>(26.6)</td>
<td>(20)</td>
<td>(20)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Vedeocon</strong></td>
<td>(24.9)</td>
<td>(16.6)</td>
<td>(16.6)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Voltas</strong></td>
<td>(24.9)</td>
<td>(24.9)</td>
<td>(33.2)</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td><strong>Godrej</strong></td>
<td>(27.7)</td>
<td>(22.2)</td>
<td>(29.6)</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td><strong>Allwyn</strong></td>
<td>(33.3)</td>
<td>-</td>
<td>(66.6)</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

*Figures in brackets show percentage.*
Hypothesis No. 5

There is a difference of opinion about kelvinator being the best or Godrej being the best.

The table V reveals that Godrej has emerged as the most popular brand of refrigerator among the respondents, irrespective of income, occupation and age. 38.3% of the respondents want to purchase Godrej, 22.7% replies are in favour of Kelvinator, 16% prefer voltas 10.6% are in favour of BFL, 8.5% are in favour of Vedicon, and 2.1% prefer Allwyn.

It shows that brand preference at the moment for Godrej are dominated by teaching class having 29.6%, followed by Business, service, and private professional groups.
### Table VI

The brand whose latest advertisement respondents recall.

<table>
<thead>
<tr>
<th>Company's Advertisement</th>
<th>Number of Respondent recall</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kelvinator</td>
<td>16</td>
<td>11.3%</td>
</tr>
<tr>
<td>Godrej</td>
<td>46</td>
<td>32.6%</td>
</tr>
<tr>
<td>Voltas</td>
<td>5</td>
<td>3.5%</td>
</tr>
<tr>
<td>Allwyn</td>
<td>5</td>
<td>3.5%</td>
</tr>
<tr>
<td>Videocon</td>
<td>22</td>
<td>15.6%</td>
</tr>
<tr>
<td>BPL</td>
<td>46</td>
<td>32.6%</td>
</tr>
</tbody>
</table>

**Total** 140 100%
TABLE VII

Advertisement Media which was recalled most as per questionnaire.

<table>
<thead>
<tr>
<th>Media</th>
<th>Number of respondent attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspaper</td>
<td>17</td>
</tr>
<tr>
<td>Magazine</td>
<td>12</td>
</tr>
<tr>
<td>Posters</td>
<td>5</td>
</tr>
<tr>
<td>Radio</td>
<td>4</td>
</tr>
<tr>
<td>Television</td>
<td>98</td>
</tr>
<tr>
<td>Cinema</td>
<td>4</td>
</tr>
</tbody>
</table>

Total    140

Hypothesis No. 6

Consumers are exposed to the advertisements of some brands more than the others.

Table no.VII shows that the most important media on which advertisement of some brands was recalled, has been the television. It has got a score of 98. Next comes the newspaper with a score of 17. Magazine, posters, radio and cinema are the other media getting recalled with a score of 12, 5, 4 & 4 respectively.
Table VI reveals that 32.6% of the recall were by the Godrej's advertisement, and by BPL as well. The others are Videocon, Kelvinator, Alloyn, & voltas with the recall of 15.6%, 11.3%, 3.5% and 3.5% respectively.

TABLE-VIII

Influence of Opinion of different family members in purchase of refrigerator.

<table>
<thead>
<tr>
<th>Family members</th>
<th>Frequency in different profession</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Business</td>
</tr>
<tr>
<td>Father</td>
<td>(30.6)</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Mother</td>
<td>(26.6)</td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Son</td>
<td>(21.4)</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Daughter</td>
<td>(16.6)</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Relatives</td>
<td>(40)</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Friends</td>
<td>(22.2)</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

Figures in brackets shows percentage.
Hypothesis No. 7

The influence of the opinion of the family members varies.

The table VIII indicates that, of the 140 respondent, 34.3% says that father's opinion is important in purchasing a refrigerator while 31.9% favours mother's opinion. The daughter, son relatives and friends opinion matters in 12.7%, 9.9%, 6.3%, & 3.5% cases respectively.

The data shows that opinions of father in purchasing a refrigerator are dominated in business group having 30.6%, followed by the service, teaching and private professional having 26.5%, 26.5% and 14.2% respectively. Mother's opinion dominate in business and teaching group each having 26.6% each, followed by private professional and service group having 23.3% and 22.2% respectively.

From the analysis, it is clear that the opinion of father is most important in purchasing a refrigerator, followed by mother.
TABLE IX

Impact of different sources of information.

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>Very Effect.</th>
<th>Less Effect.</th>
<th>Not Effective</th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspapers</td>
<td>104</td>
<td>83</td>
<td>-6</td>
<td>181</td>
<td>II</td>
</tr>
<tr>
<td>Posters</td>
<td>14</td>
<td>61</td>
<td>-72</td>
<td>3</td>
<td>V</td>
</tr>
<tr>
<td>Radio</td>
<td>46</td>
<td>80</td>
<td>-37</td>
<td>89</td>
<td>III</td>
</tr>
<tr>
<td>Television</td>
<td>270</td>
<td>4</td>
<td>-1</td>
<td>273</td>
<td>I</td>
</tr>
<tr>
<td>Cinema</td>
<td>28</td>
<td>65</td>
<td>-61</td>
<td>32</td>
<td>IV</td>
</tr>
</tbody>
</table>

Hypothesis No. 8

Impact of some of mass media are more important in providing information to the people.

The table IX indicates that television emerges as the most important sources of information and has got 1st rank.
It got a score of 273.

Next importance source of information is newspaper, securing a score of 1st and 2nd rank. Radio has got 3rd rank, with a score of 89 cent and posters 4th & 5th rank with a score of 32 & 3 respectively.

The analysis shows that Television is the most important source of information for refrigerator. It is undoubtedly leader and dominating in mass media. So, advertisement on Television should be respectively.

<table>
<thead>
<tr>
<th>Significant difference</th>
<th>Number of respondents</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>106</td>
<td>75.7%</td>
</tr>
<tr>
<td>No</td>
<td>34</td>
<td>24.3%</td>
</tr>
</tbody>
</table>
Hypothesis No. 9

Majority of the respondents feel that there is significant difference in different brands of refrigerator.

The table X indicates that of the 140 respondents 75.7% felt that there is significant difference in different brands of refrigerator, while the other 24.3% did not feel such difference.
## TABLE XI

Number of repairs in the last one year

<table>
<thead>
<tr>
<th>No. of repairs</th>
<th>Brand Business</th>
<th>Frequency in different profession</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Source</td>
<td>Teaching</td>
</tr>
<tr>
<td>Nil</td>
<td>(61.2)</td>
<td>(70.7)</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>(23.8)</td>
<td>(25.9)</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>(13.6)</td>
<td>(3.7)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>(100)</td>
<td>(100)</td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>27</td>
</tr>
</tbody>
</table>
Hypothesis No. 10:

Repair of refrigerator has not been a problem for most of the consumers.

It is observed from the table XI, of the 104 respondents having refrigerator 62.4% says that the repair in last one year was nil.

The other 24% and 13.4% says that the number of repairs in the last one year were 1 and 2 times.

The data shows that out of the 29 businessman 61.2% reported that there were no need of repairs in the last one year. Similarly, 70.7% of service, 41% of teaching, and 73.8% of private professional responded about nil repairs in the last one year.

It may be concluded that repair of refrigerator is not problem for most of the respondents.
TABLE XII

Importance of After Sales Service responsibility of the Co.

<table>
<thead>
<tr>
<th>Importance</th>
<th>Number of respondents</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very important</td>
<td>117</td>
<td>83.5%</td>
</tr>
<tr>
<td>Less important</td>
<td>21</td>
<td>15%</td>
</tr>
<tr>
<td>Not important</td>
<td>2</td>
<td>1.4%</td>
</tr>
<tr>
<td>Total</td>
<td>140</td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis No.11

After sales service is being considered very important 15% consider less important, and 1.4% consider it not important.

The analysis reveals that majority of the consumers are in favour of after sales service which they consider an important responsibility of the company.

So, marketing effort for any company's product is required to provide after sales service.
TABLE-XIII

Relation of family size with the refrigerators size preferred.

<table>
<thead>
<tr>
<th>Family size</th>
<th>Large</th>
<th>Medium</th>
<th>Small</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4 members</td>
<td>(19)</td>
<td>(65.1)</td>
<td>(21.7)</td>
<td>(100)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>15</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>5-7 members</td>
<td>(24.8)</td>
<td>(73.1)</td>
<td>(1.38)</td>
<td>(100)</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>53</td>
<td>1</td>
<td>72</td>
</tr>
<tr>
<td>8-10 members</td>
<td>(43.1)</td>
<td>(48.2)</td>
<td>(7.6)</td>
<td>(100)</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>19</td>
<td>3</td>
<td>39</td>
</tr>
<tr>
<td>11 members onwards</td>
<td>(33.2)</td>
<td>(66.4)</td>
<td>-</td>
<td>(100)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>91</td>
<td>9</td>
<td>140</td>
</tr>
</tbody>
</table>

Figure in brackets shows percentage.
Hypothesis No.12:

People prefer the size of refrigerator according to the size of their family.

The table XIII indicates that of the 140 respondents, 23 respondents fall under 0-4 family size of which 13% prefer large size, while 65% prefer medium size and 21.7% prefer small size.

Of the 72 respondents who belong to the 5-7 members family size, 24.3% prefer large size while 73.1% and 2.6% prefer medium and small size respectively.

Among the 39 respondents who belong to the 8-10 member family size 43.1%, 48.2% and 7.6% prefer large, medium and small size of refrigerators respectively.

Among the 6 respondents belonging to more than 11 members size group, 33.2% prefer large size while 66.4% prefer medium size.

The analysis concludes that 0-4, 5-7 and 8-10 members family size prefer medium size refrigerator. As the size of family increases, the preference for large size refrigerator increases.
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Needs</th>
<th>1st rank (7)</th>
<th>2nd rank (6)</th>
<th>3rd rank (5)</th>
<th>4th rank (4)</th>
<th>5th rank (3)</th>
<th>6th rank (2)</th>
<th>7th rank (1)</th>
<th>Total</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cold Water</td>
<td>58x7=406</td>
<td>35x6=210</td>
<td>14x5=70</td>
<td>11x4=44</td>
<td>14x3=42</td>
<td>2x2=4</td>
<td>4x1=4</td>
<td>780</td>
<td>II</td>
</tr>
<tr>
<td>2.</td>
<td>Gold Drink</td>
<td>6x7=42</td>
<td>12x6=72</td>
<td>28x5=140</td>
<td>19x4=76</td>
<td>20x3=60</td>
<td>29x2=58</td>
<td>25x1=25</td>
<td>473</td>
<td>V</td>
</tr>
<tr>
<td>3.</td>
<td>Preservation of milk</td>
<td>6x7=42</td>
<td>29x6=183</td>
<td>36x5=180</td>
<td>34x4=136</td>
<td>24x3=72</td>
<td>9x2=18</td>
<td>3x1=3</td>
<td>634</td>
<td>III</td>
</tr>
<tr>
<td>4.</td>
<td>Preservation of fruit</td>
<td>1x7=7</td>
<td>26x6=156</td>
<td>26x5=130</td>
<td>31x4=124</td>
<td>32x3=96</td>
<td>16x2=32</td>
<td>6x1=6</td>
<td>551</td>
<td>IV</td>
</tr>
<tr>
<td>5.</td>
<td>Preservation of cooked food</td>
<td>65x7=455</td>
<td>29x6=153</td>
<td>29x5=145</td>
<td>14x4=56</td>
<td>7x3=21</td>
<td>1x2=2</td>
<td>2x1=2</td>
<td>834</td>
<td>I</td>
</tr>
<tr>
<td>6.</td>
<td>Ice preparations</td>
<td>4x7=42</td>
<td>9x6=54</td>
<td>6x5=30</td>
<td>27x4=108</td>
<td>28x3=84</td>
<td>51x2=102</td>
<td>14x1=14</td>
<td>434</td>
<td>VI</td>
</tr>
<tr>
<td>7.</td>
<td>Other requirement</td>
<td>0x7=0</td>
<td>0x6=0</td>
<td>1x5=5</td>
<td>4x4=16</td>
<td>15x3=45</td>
<td>32x2=64</td>
<td>86x1=86</td>
<td>216</td>
<td>VII</td>
</tr>
</tbody>
</table>
Hypothesis: 13

People purchase refrigerator basically for the purpose of preservation of cooked food.

An analysis of this table shows that people need a refrigerator for different needs which are more common than others for which a refrigerator is required.

The table XIV shows that preservation of cooked food has got the highest score and emerges as a 1st rank. It got a score of 834 and it is therefore a most common need of human beings. The next most important need is cold water, which got 780 scores and ranked second. Preservation of milk is the third important need having the score of 634. Preservation of fruit is the fourth important need having a score of 55%. Cold drink and ice preparations are the fifth and sixth important needs having the scores of 473 and 434 respectively. Other requirements are the least important need getting the score of 216 only.

The analysis shows that.
CONCLUSION

The conclusions drawn from survey conducted in Delhi regarding the brand preferences for refrigerators are as follows:

1. **Godrej refrigerators** are most popular in Delhi. It has the largest market share in Delhi.

2. Next to Godrej, Kelvinator has the second largest share in Delhi.

3. **Medium size refrigerators** i.e. 160/165 litres capacity are the most popular size and better suits to the needs of consumers.

4. The use of refrigerators will be increased substantially in future as the rate of use has continuously been on increase. Most of the potential consumers want to purchase it within a year.

5. The fast changing life-style and growing urbanisation have wooled persons towards refrigerators.

6. The liking for refrigerators is higher than the actual market share. There is a potential demand for refrigerator
and if company can tap it, it can increase its sales.

7. Most of the consumers have been influenced by the opinion of father in the purchase of refrigerator, followed by monthly.

8. Television is the most important source of information for refrigerator. It is undoubtedly leader and dominating in mass media. So advertisement on television should be repetitive.

After television, newspaper, radio, cinema and posters got the second, third, fourth and fifth place.

9. Majority of the consumers feel after sales services as an important responsibility of the company.

10. Preservation of cooked food and cold water are the most important things for which a refrigerator is required.

11. Repairing of refrigerator is not a problem for most of the respondents.

12. Consumer choose a particular size of the refrigerator according to the size of their family.

13. Most of the consumers feel that there is a significant difference in different brands of refrigerators.
SUGGESTIONS:

Following suggestions can be made on the basis of analysis:

1. Manufacturers should concentrate on the medium size and large size brands. The advertisement should be made in consonance with it.

2. Manufacturers should produce the product which can easily meet the needs of consumers.

3. Advertisement should mainly focus on the greater fulfilment of need—preservation of cooked food and cold water.

4. After-sales service should be provided by the manufacturer/dealer at least for 3-4 years.

5. Complaints should be attended by well-skilled mechanics.

6. Special attention should be paid towards the improvement of the Technical know-how because people generally wish to purchase the new and modified products.
7. The outlook, storage capacity and electric consumption should be highlighted through advertisement in different mass media. The advertisement should also be made on durability, freezing time and innerlining.

8. Those features of the refrigerator should be highlighted which caters most of the needs of the consumers.

9. Product quality of refrigerator, their size and colour should also be highlighted.

10. Advertisement campaign should be directed towards high income groups.
Dear respondent,

I am conducting a survey on "Consumer Behaviour and brand preference of refrigerator". Please supply the following information. These informations will be used for academic purposes and will be kept strictly confidential.

Thanking you,

Sincerely yours

(EJAZ PERWAZ)
P.G. Diploma in Marketing Management Deptt. of Business Administration, AMU, Aligarh.

QUESTIONNAIRE

1. Do you have a refrigerator at your home ?
   Yes ( )
   No ( )

   If yes,
   a) Name the company's brand ............
   b) the size :
      large ( )
      medium ( )
      small ( )
   c) How old it is .........
If no, when do you intend to purchase one:
within six months ( )
within a year ( )
within 2 years ( )
within 5 years ( )
can not say ( )

2. Which company's refrigerator do you consider to be the best.

-----------

3. Which of the latest advertisement, you have come across for refrigerator.
company's name media

-----------
Newspaper ( )
Magazine ( )
Posters ( )
Radio ( )
Television ( )
Cinema ( )

4. Whose opinion is being considered more reliable in your family, regarding the purchase of refrigerator
Father ( )
Mother ( )
Son ( )
Daughter ( )
Relations ( )
Friends ( )
5. How far do you consider the following media to be effective in providing information about the refrigerator? (Please put a tick mark in appropriate column for each media).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspaper</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Posters</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Radio</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Television</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Cinema</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

6. Do you feel significant difference in the different refrigerator's brands.

Yes ( )
No ( )

7. How many times during the last one year did you require to get your refrigerator repaired and how much money did you spend on it.

Number of times for repairing .............
Approximate expenditure ....................

8. Do you consider, after sales service should be an important responsibility of the company:

Very important ( )
Less important ( )
Not important ( )
9. Please provide your priority rank for the following needs for which refrigerator is required:
   a) Cold water ( )
   b) Cold Drink ( )
   c) Preservation of milk ( )
   d) Preservation of fruit ( )
   e) Preservation of cooked food ( )
   f) Ice preparations ( )
   g) Other requirements ( )

10. What size of refrigerator is suitably for your requirements:
   Large ( )
   Medium ( )
   Small ( )

11. Which of income groups (per month), your family falls (under).
   Below Rs. 5000 ( )
   Rs. 5000-7000 ( )
   Rs. 7,000-9000 ( )
   Rs. 9000-11000 ( )
   Rs. 11000 above ( )

12. Your occupation, please
   Service ( )
   Business ( )
   Teaching ( )
   Private Professional practice ( )

13. Number of members in your family: .........
Refrigerator
"It's the coolest one."
Efficiency acquires a new elegance

165 LITRES REFRIGERATOR

Kelvinator Refrigerators —
At home, everywhere!

- Superior ABS door liner.
- Spacious door storage.
- Freezer chest made of spacious aluminum tube and sheet chest freeze food perfectly for preservation.
- Moisture-seal crisper keeps fruits and vegetables garden fresh.
- Self-sealing magnetic door keeps out dust and insects. Prevents leakage of cold air. Reduces electricity consumption.
- Conveniently located thermostat with nine settings for temperature control.
- Super automatic defrost system.
- Adjustable glider screws for levelling.

All Kelvinator Refrigerators are guaranteed for a year. Their sealed-in system for an additional four years.

Sold & Serviced by Expo Machinery Limited

Pragati Tower, 6th floor, 26 Rajindra Place,
New Delhi - 110 008

Branches: Bombay, Calcutta, Delhi, Madras,
Ahmedabad, Bangalore, Bhopal, Chandigarh, Cochin,
Chennai, Hyderabad, Jaipur, Kanpur, Kundli, Patna & Vijayawada.

Total Volume: 165 litres
Shelf Area: 0.493 sq. m.
Door Shelf Area: 0.11 sq. m.
Fresh Food Storage Capacity: 130 litres
Compressor: 1/6 HP, 50 Cycles, 160-260 volts, AC
Gross Weight: 88 Kgs.
Dimensions (Approx.): 570 mm (D) X 630 mm (W) X 1060 mm (H)

Specifications are subject to change without notice for product improvement.
286 Litres Refrigerator
Total Volume: 286 Litres.
Shelf Area: 1.35 Sq. m.
Doors Shelf Area: 0.13 Sq. m.
Fresh Food Storage Capacity: 221 Litres
Dimensions (Approx.): 610mm (D) x 750mm (W) x 1405mm (H).

165 Litres Refrigerator
Total Volume: 165 Litres.
Shelf Area: 0.493 Sq. m.
Door Shelf Area: 0.11 Sq. m.
Fresh Food Storage Capacity: 130 Litres
Dimensions (Approx.): 570mm (D) x 650mm (W) x 1060mm (H).

135 Litres Refrigerator
Total Volume: 135 Litres.
Shelf Area: 0.368 Sq. m.
Door Shelf Area: 0.055 Sq. m.
Fresh Food Storage Capacity: 100 Litres
Compressor: 1/8 HP, 50 Cycles, 220-230 Volts, AC. Gross Weight: 80 Kg.
Dimensions (Approx.): 570mm (D) x 595mm (W) x 860mm (H).
REFRIGERATORS

STYLE. ECONOMY. CONVENIENCE. DEPENDABILITY.

That is the promise of a Kelvinator refrigerator. And you can bank on it, because every Kelvinator refrigerator is designed with imagination and manufactured under the strictest quality control.

Quality Construction Features:

Polarsphere Cold Making Unit
The world's finest cooling unit. Most economical, most dependable, trouble-free and exceptionally quiet. Consumes 30% less electricity and takes the severest voltage fluctuation in its stride.

Lifetime Construction
Tough, one-piece construction seals out air and moisture. Having resin bonded glass wool insulation on all five sides with styro-foam at the bottom. Interior lining of one-piece high impact polystyrene does not rust, chip, discolor or absorb food odours.

All Space Storage Design
Corner-to-corner and top-to-bottom storage design with no storage space wasted.

Spacious Door Storage
Sufficient in-the-door storage space for keeping dairy products, bottles and cans.

The Freezer Chest
Spacious aluminium tube and sheet chest for perfect storage of frozen food at safe sub-zero temperatures. Accessories include a Baffle Tray and Ice Trays.

Moisture-Seal Crisper
Keeps salads and vegetables tasty and garden fresh.

Self-sealing Magnetic Door
A self-sealing device to keep out dust and insects. Prevents leakage of cold air. Reduces electricity consumption. The door locks with a gentle turn of the key.

Cabinet Shelves
Sturdy, reinforced, easily removable, cleanable, rust-resistant plasticised shelves. Centre-bracing prevents the shelves from sagging.

Temperature Control
Conveniently located thermostat. Nine settings for a wide range of temperatures.

Light bulb
Opening the refrigerator door switches on the light.

Super Automatic Defrost System
Incorporated in the 165 and 286 litres models for efficient and effective defrosting. You just press a red button located at the centre of the thermostat and defrosting starts. The defrost water is automatically drained out into a tray at the bottom of the refrigerator where the heat of the compressor evaporates it. The big advantage is that while defrosting you need not take out the stored articles from the refrigerator.

Levelling device
The refrigerators have adjustable glider screws for levelling.

Warranty
The refrigerators are warranted for one year and their sealed-in systems carry five years guarantee.

After-sales-service
The best available should you ever need it.
REFRIGERATORS

Alvinator Refrigerators. Proving their excellence everyday in over 140 countries all over the world. Thanks to their state-of-the-art technology, innovative designing, superb construction, and of course, outstanding features.

Alvinator Refrigerators. A wide range of refrigerators. In a variety of sizes and models in both white and a range of eye-catching colours. So there’s one just right for you!

Alvinator Refrigerators. Available conveniently close to you. Through a network of over 600 dealers. So step right in and take “the coolest one” home.

<table>
<thead>
<tr>
<th></th>
<th>254 Litre</th>
<th>165 Litre</th>
<th>165 Litre</th>
<th>165 Litre</th>
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<tbody>
<tr>
<td>Shelf Area</td>
<td>1.45 sqm</td>
<td>0.493 sqm</td>
<td>0.493 sqm</td>
<td>0.493 sqm</td>
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<tr>
<td>Door Shelf Area</td>
<td>0.165 sqm</td>
<td>0.11 sqm</td>
<td>0.1092 sqm</td>
<td>0.12 sqm</td>
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<tr>
<td>Fresh Food</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Storage Capacity</td>
<td>261 litres</td>
<td>140 litres</td>
<td>144 litres</td>
<td>140 litres</td>
</tr>
<tr>
<td>Compressor</td>
<td>1.6 HP, 50 cycles</td>
<td>1.8 HP, 50 cycles</td>
<td>1.6 HP, 50 cycles</td>
<td>1.8 HP, 50 cycles</td>
</tr>
<tr>
<td></td>
<td>100 200 volts</td>
<td>220 240 volts</td>
<td>100 200 volts</td>
<td>220 240 volts</td>
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<tr>
<td>Freezer</td>
<td></td>
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<td></td>
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<tr>
<td>Storage Capacity</td>
<td>65 litres</td>
<td>35 litres</td>
<td>52 litres</td>
<td>35 litres</td>
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Sold and serviced by

Expo Machinery Limited

Phones: 5712911, 5712686, 57112608, 5715151, 5716995, 5719884

Branches:
- NEW DELHI • BOMBAY • CALCUTTA • MADRAS • AHMEDABAD
- AWAR • BANGALORE • Bhopal • BURJANABAD • CHANDIGARH
- COCHIN • DAKHABAD • GHAZIABAD • GIWARAT • HYDERABAD
- JAIPUR • KANPUR • KUNDLI (HARYANA) • PATNA • PUNE • RAIPUR
- VIJAYAWADA • VISAKHAPATNAM
Presenting the affordable, convenient - size revolution.
Features:
Frost-free interiors. No defrosting ever
- Advanced technology is used to keep the interiors free of frost.
- No messy defrosting saves precious time and ensures that food does not go bad.

Polyester pre-coated metal cabinet
- Highly scratch resistant. Rust free.
- ABS inner liner for higher gloss and longer life.
- Hot freon gas pumped around the cabinet prevents water condensation on the exterior surface.

Tropicalised, Higher Energy Efficiency Ratio Compressor
- Specially tropicalised to suit Indian conditions.
- Performs efficiently even in ambient temperatures of 43°C.

Superior integrated PUF insulation
- Complete insulation with integrated PUF cabinet design.
- Form-fitting magnetic gaskets prevent entry of pests.

Big -18°C Freezer
- International 4-star rating. Preserves food for long periods while retaining their flavours and nutritive values.
- Corner Freezer at -19°C - Allows you to place food directly in it.
- Free-fall ice cubes. Ice stores 80-100 ice cubes.

Extra large egg rack
- Holds up to 16 eggs.

Flexible rack
- Stores even tall containers without a problem.

Extra large vegetable crisper
- Keeps vegetables fresh for twice the normal time.

Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>BR 1852</th>
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<tbody>
<tr>
<td>DOORS</td>
<td>2 DOOR</td>
</tr>
<tr>
<td>CAPACITY</td>
<td>185 LITRES</td>
</tr>
<tr>
<td>FREEZER COMPARTMENT</td>
<td>43</td>
</tr>
<tr>
<td>REFRIGERATOR COMPARTMENT</td>
<td>142</td>
</tr>
<tr>
<td>COMPRESSOR</td>
<td>120W</td>
</tr>
<tr>
<td>DIMENSIONS</td>
<td></td>
</tr>
<tr>
<td>HEIGHT</td>
<td>1332 mm</td>
</tr>
<tr>
<td>WIDTH</td>
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</tr>
<tr>
<td>DEPTH</td>
<td>599 mm</td>
</tr>
</tbody>
</table>

Note: Typical temperature values stated here may vary slightly by the frequency of opening closing of doors and also by the volume of food stored in the Refrigerating System. Specifications subject to change without notice.

Essence of modern living
BPL Refrigeration Limited, 11, Palace Road, Bangalore 560 001, India. Tel. 226 0154, 226 0192, 226 3621. CABLE: PHISLAB. Fax 91-80-2251936.
There is a pocket that suits them perfectly.

No matter what your needs.

4 corner hanging finish

and

superวกี

more neighborly

extra-strength

lower electrostatic

beneath four corners

Frost-Free

Next year to come

Frost-Free that keeps your refrigeration looking

peachy keen in your refrigerator.

for the international

Frost-Free

LARGEST SELLING.

AND ALSO THE
LAST YEAR IN ALIGARH
MORE THAN 750 FAMILIES
CHOSE Godrej REFRIGERATORS

THIS YEAR IN `ALIGARH

Godrej REFRIGERATORS
WILL ENTER MORE THEN 1,00,0 HOMES
AND EVERY HOME WILL GET
THE GODREJ ASSURANCE OF
1. Superior technology
2. Superior quality
3. Competitive price
4. Efficient and prompt after sale service

The Godrej is undoubtedly India’s best refrigerator.

Godrej has worked to perfect its 290 and 165 litre models so that today, you can buy one with your eyes closed. And be absolutely sure you’re getting the best value for your money.

THE GODREJ IS TODAY THE LARGEST SELLING REFRIGERATOR IN THE COUNTRY
Times change. Technologies change. Unfortunately, the world of conventional refrigerators hasn’t altered much in a long, long time...

But now there’s JETMATIC. To put the latest Japanese technology at your fingertips. And open up a world of convenience and sophistication for you. As you read through the following features, you’ll discover the many advantages JETMATIC offers over conventional models:

**JETMATIC DEFROSTING SYSTEM**

If you’ve ever had to deal with unwanted freezer water in your chiller compartment, you’d give anything for the new JETMATIC defrost system. Just the push of a button, and your problems are solved. A sloping defrost pan, placed strategically between the freezer and chiller compartment, directs stale, defrosted water to a concealed drainpipe at the back of the refrigerator. From here, the water flows into a collector pan at...
the bottom of the refrigerator, and is completely evaporated. No hassle. No fuss. When your refrigerator is defrosted, it restarts by itself.

And your chiller compartment, of course, stays completely dry.

**JETMATIC FREEZER**

Take a look at any ordinary refrigerator. Then pull open the door of a new Videocon JETMATIC. You'll be amazed at how large the freezer compartment is. That's because the JETMATIC incorporates a unique design, where the walls of the freezer are flush with the walls of the refrigerator. You have 20% more space to store your meat, fish and ice-cream.

There's more. Incorporating the latest, energy-efficient roll-bond technology, the JETMATIC freezer provides uniform cooling on all sides. Keeping your foods equally frozen all around.

**JETMATIC CHILLER COMPARTMENT**

Forget about the fuddy old chillers you've been used to. Here's a new, transparent chiller compartment.

With a unique double tray design. So you can be sure the insides stay completely dry. Your perishables never have to get wet or soggy again.

**STUNNING LOOKS WITH CLEAN BACK**

Unlike other refrigerators, this one is aesthetically designed on all four sides. There are no ugly condenser coils behind the machine. Only concealed mullion dryer pipes which keep the sides and back of the refrigerator warm, and prevent moisture formation on the surface.

In the long run, your JETMATIC stays dry and rust-free for years; even through the worst of monsoons. A clean-back design facilitates easy cleaning, and allows the refrigerator to be placed in even tight corners. While a handle-cum-sash design and choice of three elegant shades, allows the new JETMATIC to blend in with any decor...

**ADVANCED COMPRESSOR**

All said and done, it is finally the compressor which is the heart of a refrigerator.

The JETMATIC has an imported, energy-efficient compressor that works silently and is even tropicalised to Indian conditions.

**SUPER PROTECTION WITH SUPER PUF**

A Super PUF insulation system ensures that atmospheric heat cannot get through to the inside of your refrigerator, and coldness is not dissipated to the outside. In addition, Super PUF also helps keep pests away.

**UNMATCHED QUALITY**

This Refrigerator, the first of its kind in India, is manufactured in technical design and drawing collaboration with Matsushita Refrigeration Co., Japan, manufacturers of The National Refrigerator. You get a five year Warranty on the sealed system. And all the service and attention you'd expect from a technological giant.

Yes, dear customer, you have finally found what you've been looking for. Do ask the dealer for a demonstration of this excellent new model.

And yes, be ready for a big surprise when he tells you the price.
### VNR A16AM Specifications

**A. Cabinet**

1. **Freezer**
   - Storage capacity — 37 Ltrs. With two ice trays; With unique shelf.

2. **Chiller**
   - Transparent sliding chiller with inner tray, Storage capacity — 9 Ltrs.

3. **Shelves**
   - Two adjustable wire shelves one glass shelf.

4. **Crisper**
   - Storage capacity — 11.5 Ltrs. Transparent Crisper. 165 Ltrs.

5. **Total Capacity**
   - 165 Ltrs.

**B. Door Panel**

1. **Egg racks**
   - 16 eggs

2. **Free Shelf**
   - For butter, cheese, chocolates, etc.

3. **Bottle Shelves**
   - Two Shelves for 8 large bottles.

**C. External Dimensions**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>Height</strong></td>
<td>1174 mm</td>
</tr>
<tr>
<td><strong>Width</strong></td>
<td>524 mm</td>
</tr>
<tr>
<td><strong>Depth</strong></td>
<td>545 mm</td>
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</tbody>
</table>

**D. Weight**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross</strong></td>
<td>36 Kgs</td>
</tr>
<tr>
<td><strong>Net</strong></td>
<td>34.5 Kgs</td>
</tr>
</tbody>
</table>

NEW Sterling
THE ULTIMATE REFRIGERATOR
Sterling
THE 165 LITRE PREMIUM QUALITY REFRIGERATOR
STYLED IN EUROPE. ENGINEERED IN AMERICA.

100% PUF INSULATION
Polyurethane Foam insulation in the cabinet and door compartments improves energy efficiency by reducing heat loss. And thinner walls give Sterling a more compact look.

ACCESSORIES MADE OF SUPERIOR SAN MATERIAL
Vegetable Tray, Bottle Trays and Butter/Cheese Chest are made of the superior, transparent SAN material which is longer lasting and scratch resistant.

A UNIQUE DRIP TRAY INSIDE A LARGE CHILL TRAY
A large Chill Tray with a unique Drip Tray for easy removal of defrosted water. It also gives ample space to chill food items that require low temperatures like meat, poultry, milk products etc., and yet keeps them totally dry.

REMOVABLE EGG SHELF
A boon for vegetarians. Simply remove the extra capacity egg holders from the egg tray and you have an additional tray for bottles.

WORLD FAMOUS ‘POWER-SAVER’ COMPRESSOR
The internationally acclaimed ‘Power-Saver’ compressor ensures fast cooling and faster ice formation. Maintains low cabinet temperatures, even under high atmospheric conditions. Consumes minimal electricity and withstands wide voltage fluctuation. It holds the honour of being the only Indian refrigerator compressor to be exported worldwide.

OTHER STERLING ADVANTAGES
* All-steel construction and tough ABS liner.
* Extra large crisper.
* Table top and top lock.
* Defrost indicator.
* A wide range of attractive colours.

AFTER-SALES SERVICE
Sterling is backed by a dependable after-sales service of Kelvinator dealers all over India.

Sold and serviced by
Expo Machinery Limited
Pragati Tower, 26 Rajindra Place, New Delhi-110 008

BRANCHES: *New Delhi *Bombay *Calcutta *Madras *Ahmedabad *Bangalore *Bhopal
*Bhubaneswar *Chandigarh *Kochi *Chandigarh *Ghaziabad *Gওতা *Jaipur *Kanpur
*Kundli (Haryana) *Patna *Pune *Raipur *Secunderabad *Vijayawada *Visakhapatnam
compressor

Single, silent.

Do not fill entire space.

Deep freezer has a lot

of lemonade. The size is possible at a

freezer. So larger the deep

refrigerator. Poorly can be stored

food, fresh meat and

un-packaged frozen

refrigeration, Ice cream,

the feel of the

freezer independent of

the double door

The double door
• Your Zenith operates on 220 volts 50 cycle AC supply (Wherever voltage is subject to wide fluctuation below 150 volts or over 260 volts, use an appropriate automatic voltage correcting transformer of a good quality to provide protection to your appliance.)

* Our guarantee will be effective only if the refrigerator is properly installed and connected by our authorised dealer or a competent engineer.

**OPERATION**

Your Zenith is cleaned well before despatch but during transport or storage it may have collected dust or dirt. Clean the cabinet, the freezer and the shelves with a soft cloth moistened in soap and water. Do not use strong detergents for cleaning as they may damage the finish.

Now your Zenith is ready for operation. Plug in the wire and switch on. The interior light will light up on opening the door.

Turn the thermostat knob to the desired position or number 4 average. You may select a different setting, say position 2 in winter when the outside temperature is low or position 4 in summer. Only when you need fast freezing of ice or ice-creams you can place thermostat on the maximum 8 position but remember to switch it back to position 4 or lower as soon as your purpose is served. Continuous operation on position 8 of the thermostat may cause damage to the compressor.

**STORAGE**

Zenith refrigerator comprises five essential food storage zones, each separately and automatically balanced at the optimum temperature for its particular food storage function.
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3. Modern Refrigeration and Airconditioning - By Althouse and Turnquist.
5. Marketing Research - By Donald S. Tull & Del. I Howkins