Chapter 3

Research Objectives and Methodology

Chapter Overview

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Research Objectives and Methodology

Chapter Overview

Every research needs a methodology to direct its way towards a cogent and comprehensive goal. Thus, a research methodology is the strategy, plan of action, process, or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes (Crotty, 1998).

This chapter details the statement of purpose, scope of the study, research objectives, research hypotheses and work plan for meeting research objectives. It also covers the essentials like method of structuring determinants, questionnaire development, sampling method and tools used for analysis.

3.1 Statement of Purpose

The study primarily aims to assess the challenges and opportunities for Islamic banks in India. For a large number of Muslims, interest-free banking may be a matter of their faith, but for the non-Muslims, it has to address real issues like security, risk minimization, profitability etc. This study aims to find out the determinants of Islamic banking and prospects of Islamic banking in India. Further, it also aims to identify the determinants shaping the consumer attitude towards Islamic banking, which in turn will help the marketers to decide appropriate marketing strategy for Islamic banking in a multicultural country like India. The study also aims to measure the attitude of prospective consumers towards Islamic Banking in India.

3.2 Scope of the Study

The present study has been conducted keeping in view the recent developments with respect to the Islamic Banking around the globe. On one hand new Islamic banks are being
setup while the existing conventional banks are also coming up with Islamic banking windows to cater to the growing demand for Islamic banking products. This study is confined to look into the following aspects of Islamic banking.

➢ Different factors affecting Islamic banking in India
➢ Attitude of prospective consumers towards Islamic banking in India
➢ Determinants in the implementation of Islamic banking in India
➢ Acceptance level for Islamic banking in India

3.3 Research Objective

Primarily this research aims to explore and study the challenges and opportunities for Islamic banking in India for the sake of gaining clarity on the subject the study has been has been divided into in two parts.

Part I: Qualitative study to identify the determinants of Islamic banking in India

Part II: Empirical study to gauge the attitude of Indian consumers towards Islamic Banking.

Based on this division the objectives of this study can be grouped into two categories:

Category- I

The first objective of this research is to identify the determinants of Islamic banking in India.

This part of study has the following specific objectives:

➢ To identify and rank the determinants of Islamic Banking in India
➢ To find out the interaction among the identified determinants of Islamic banking in India.
The second objective of this study is to explore the attitude of Indians about Islamic Banking.

This part of study has the following specific objectives:

➢ To develop an instrument for the measurement of attitude of consumers towards Islamic banking in India.

➢ To explore the differences in the attitude of respondents across demographic variables.

➢ To come up with suggestions for the potential marketers of Islamic banking in India.

3.4 Methodology

![Research Design Diagram]

Fig 3.1 Research Design

Source: Developed by the researcher
3.4.1 Qualitative Study to find the Determinants of Islamic Banking in India

A key task for the marketers is to diagnose those drivers and barriers for Islamic banking which would be crucial to the introduction and survival of Islamic banking in India. Many determinants inhibit the adoption and implementation of Islamic Banking in India. Because of these barriers, organizations are reluctant to introduce Islamic Banking in India. On the other hand, there are certain enablers which are helpful in the inception of Islamic Banking in India. Hence, the business managers in Islamic Banks are now required to identify, analyze and manage these barriers and enablers for the effective introduction of Islamic Banking in India. These determinants (i.e. barriers and enablers) not only affect the implementation process of Islamic Banking in India but also influence one another. Therefore, it is important to understand their nature and their mutual relationships.

This part of the study utilizes the Interpretive Structural Modelling (ISM) technique to understand the mutual influences among the determinants of Islamic banking in India are identified.

Interpretive Structural Modelling technique has been involved for analyzing the various barriers and enablers. Interpretive Structural Modelling is a methodology for identifying and summarizing relationships among specific elements, which define a problem or an issue (Warfield, 1974; Sage, 1977). It provides some means by which order can be imposed on the complexity of such elements (Ravi and Shankar, 2005).

In this part of research, through ISM methodology, an attempted has been made to:

- Prepare the ISM-based models of important determinants impacting the introduction and operation of Islamic banking in India for establishing the relationship among these elements.
- Ascertain the driving power and dependence of different determinants for their respective categorization and implications in introduction and operation of Islamic banking in India.

The insight gained from these models is likely to smoothen the adoption and operations of Islamic banking in India. By analyzing the determinants, this model may extract crucial
drivers which may affect Islamic Banking activities in India. It may be observed that there are some drivers, which have both high driving power and dependency, thus needs more attention by the decision makers.

3.4.1.1 Identification of Determinants of Islamic Banking in India

After a review of existing literature, personal interviews of the subject experts were conducted by the researcher through personal visit. Wherever personal visits were not possible interviews were conducted through e-mail or telephone. A mix of judgmental and snowball sampling was used for choosing experts.

The following issues were discussed with the experts:

➢ Islamic banking its advantages and disadvantages

➢ Positive and negative factors for Islamic banking in India.

➢ Their experience with current commercial banks

➢ Prospects, expected consumer base, acceptance by different segments, most feasible formats for Islamic banking in India.

➢ The factors affecting consumers, regulators and other stake holders.

➢ Economic, political, regional, religious issues related to such type of banking.

➢ Their perception about Islamic banking.

Determinants already identified by the review of literature, were also discussed in detail with experts. Based on literature review and opinions of experts, top 12 determinants were selected for further analysis by Interpretive Structural Modelling (ISM) technique.

3.4.1.2 Interpretive Structural Modelling Methodology

In today's dynamic business world, individuals or groups are required to deal with various complex issues or systems. The intricacy of the issues or systems is due to the presence of a large number of mutually interacting variables. The presence of directly or indirectly
related variables complicates the structure of the system. It becomes difficult to deal with such a system in which structure is not clearly defined. Hence, it calls for a methodology, which aids in identifying a structure within a system. Interpretive structural modelling (ISM) is one such a methodology. Which helps to bring order and direction on the complex relationships among the variables of a system (Warfield, 1974; Sage, 1977). In this methodology, the value added is structural and information added (by the process) is zero (Farris and Sage 1975; Raj et al., 2007). Its most vital function is organizational. The ISM process transforms unclear, poorly articulated mental models of systems into visible and well defined models. ISM is an interactive learning process whereby a set of different, directly and indirectly related variables are structured into a comprehensive systemic model. The model so formed portrays the structure of a complex issue or problem in a carefully designed pattern implying graphics as well as words (Singh et al., 2003, Ravi and Shankar 2005).

The important characteristics of ISM are: a) interpretive b) structural c) modelling technique d) imposing order and direction and e) a group learning process. These characteristics are explained as follows:

(a) *Interpretive*: The methodology is interpretive, because of the fact, that the group of experts decides whether and how the variables are related to each other.

(b) *Structural*: It is structural too, as on the basis of relationship; an overall structure is extracted from the complex set of variables.

(c) *Modelling* technique: The methodology is a modelling technique in which the specific relationships of the variables and the overall structure of the system under consideration are portrayed using digraph and words.

(d) *Order and direction*: It helps to impose order and direction on the complexity of relationships among various elements of a system (Sage, 1977).

(e) *Group learning process*: ISM is primarily intended as a group learning process, but it can also be used by individuals.
In addition to the above characteristics, the ISM approach has two basic concepts, the concept of transitivity and reachability, which are essential to understand the ISM methodology (Raj et al., 2007). The concept of transitivity can be explained with the following example. If a variable $p$ is related to $q$ and $q$ is related to $r$, then transitivity implies that variable $p$ is necessarily related to $r$. The same is shown in Figure 3.2. Transitivity is the basic assumption in ISM and is always used in this modelling approach (Farris & Sage 1975, Sharma et al., 1995).

![Figure 3.2: Concept of Transitivity](source)

The reachability concept is the building block of ISM methodology. The identified variables are compared for their interrelation on a paired basis. This information is represented in the form of binary matrix. If variable $p$ influences another variable $q$, then entry in the cell $(p, q)$ of the reachability matrix is 1 and if variable $p$ does not influence $q$, then entry in the cell $(p, q)$ of the reachability matrix is 0. ISM methodology, mainly involves following two tasks:

- Development of ISM model
- MICMAC\(^1\) analysis

\(^1\) Matrice d'Impacts croises-multiplication applique' an classment (cross-impact matrix multiplication applied to classification) is abbreviated as MICMAC.
3.4.1.3 Steps involved in Development of ISM Model

Various steps involved in the ISM methodology for development of model for different variables are as follows:

Step 1: Variables affecting the system under consideration are identified and listed, which can be objectives, actions, individuals, etc. A survey or group problem solving technique can be used for identification of the variables related to the defined problem.

Step 2: From the variables identified in the first step, a contextual relationship is established among variables with respect to which the pairs of variables would be examined.

Step 3: A structural self-interaction matrix (SSIM) is developed for variables, which indicates pair-wise relationships among variables of the system under consideration.

Step 4: Initial reachability matrix is developed from the SSIM and the matrix is checked for transitivity to arrive at final reachability matrix.

Step 5: The final reachability matrix obtained in step four is partitioned into different levels.

Step 6: Subsequently, the final reachability matrix is converted into its conical form, i.e. with most zero (0) variables in the upper diagonal half of the matrix and most unitary (1) variables in the lower half.

Step 7: Based on the relationships given above in the final reachability matrix, a directed graph (digraph) is generated by considering a set of points or elements and their interconnection according to a contextual relation.

Step 8: After obtaining the digraph structural model corresponding to a given set of elements and a contextual relation, each point is replaced by a description of the point for the interpretive purposes and the result is denoted an Interpretive Structural Model (Sage and Smith, 1977).

Step 9: Finally, the ISM model developed in the eighth step is reviewed to check for any conceptual inconsistency and necessary modifications are made.
The flow diagram for the construction of an ISM-based model is given as Fig 3.3.

![Flow Diagram for ISM-based Model](image)

(Source: Adapted from Attri et al., 2012)

**Figure 3.3: Flow Diagram for ISM-based Model**

### 3.4.1.4 MIC MAC Analysis

The MICMAC principle is based on multiplication properties of matrices (Sharma et al., 1995; Raj et al., 2007). The objective of the MICMAC analysis is to analyze the driving power and the dependence of the variables (Mandal and Deshmukh, 1994; Faisal et al., 2006). This is done to identify the key variables that drive the system in various categories. Based on their driving power and dependence power, the variables in the present case, are classified into four categories as follows:
1. **Autonomous variables:** These are the variables having weak driving power as well as weak dependence. These variables are relatively disconnected from the system, with which they have only a few links, which may not be strong.

2. **Dependent variables:** This category includes those variables which have strong dependence but weak driving power.

3. **Linkage variables:** Variables which have strong dependence as well as strong driving power are known as linkage variables. These variables are unstable also. Any action on these variables will have an effect on others and also a feedback effect on themselves.

4. **Independent variables:** They have strong driving power but weak dependence power. It is generally observed that a variable with a very strong driving power called the 'key variable' falls into the category of independent or linkage variables.

The process of ISM is based upon the one-to-one correspondence between a binary matrix and a graphical representation of a directed network. The fundamental concepts of the process are an "element set" and a "contextual relation." The element set is identified within some situational context, and the contextual relation is selected as a possible statement of relationship among the elements in a manner that is contextually significant for the purposes of the enquiry. The elements correspond to the nodes on a network model, and the presence of the relation between any two elements is denoted by a directed line (or link) connecting those two elements (nodes). In the equivalent binary matrix representation, the elements are the contents of the index set for the rows and columns of the matrix, and the presence of the relation directed from element $i$ to element $j$ is indicated by placing a 1 in the corresponding intersection of row $i$ and column $j$. 
3.4.2 Empirical study to gauge the attitude towards Islamic Banking of Indian Consumers

Since consumers are going to use Islamic banking services and invest their money into Islamic banks it. Therefore, an empirical study into consumer’s attitude and willingness with respect Islamic banking is a prerequisite for marketing related activities. The empirical framework of the study attempts to bring out consumers’ attitude vis-à-vis various variables of affecting Islamic Banking in India. The Steps followed are outlined in Fig. 3.4.

Choice of survey method and valuation techniques

Development of research instrument

Choice of target population and identify sample frame population using probability sampling

Finalising the methods of data collection

Data collection through survey

Analysis of data collected

Conclusion on consumers attitude towards Islamic banking in India

(Source: Adapted from Malhotra, 2008)

Fig. 3.4 Work Plan for the Survey
3.4.2.1 Survey Method

The decision to choose a survey method may be based on a number of factors which include sampling, type of population, question form, question content, response rate, costs and duration of data collection (Aaker et al., 2008). Owing to the nature of study it was decided to personally administer the research instrument developed for the study.

3.4.2.2 Research Instrument

Consumer's attitude towards Islamic Banking was assessed using a questionnaire developed by researcher for the study. The final version of the questionnaire is in Annexure. Following a pilot study of 40 respondents, some modifications to the items were made to adequately capture the concepts in the Indian context. The main benefits of the structured questionnaire are listed below:

- The questions can be answered by tick mark the proper response format and with the interviewer present respondent could seek clarity on any question (Aaker et al., 2008; Boyd et al., 2003).
- The respondents are more motivated to respond as they are not obliged to admit their confusion or ignorance to the interviewer (Hayes, 1998; Boyd et al., 2003).
- A higher response rate can be assured since the questionnaire are collected immediately once they are completed (Malhotra, 2008).
- This method is offers the highest degree of control over sample selection (Malhotra, 2008).

The Structured questionnaire was designed to have four major sections as follows

Part –A: This section constituted twenty two questions about Islamic banking. A five-point bi-polar Likert scale was used to gauge the response of the respondents, where 5 represented strongly agree and 1 represented strongly disagree. Scales were scored in such a way so that higher values represented greater positive attitude.
Part –B: This section constituted questions on specific conditions. Five multiple choice questions were asked and respondents were required to give their most preferred option.

Part –C: This section constituted one dichotomous question about the referring Islamic banking to reference group.

Part –D: This section constituted personal details like age, income, gender, education, occupation, religion and present city of residence of the respondents.

The questionnaire was translated into the local languages Urdu and Hindi. There are a number of approaches for translating questionnaires (Brislin, 1970). Here the method adopted is forward and then back translation (Roland & Fairbank, 2000). Questionnaire was first translated from source language to target language with the help of an expert (forward translation) and then again translated back from target language to source language with the help of another expert (back translation). Then the two source language versions were compared to try to find out if there were any discrepancies in the target language text. Then both versions in source language were compared and errors were rectified. Each back-translation is intended to reveal or amplify mistakes in each forward translation (Guillemin, 1995).

3.4.2.3 Reliability and Validity of the Research Instrument

To validate the results empirically, appropriate reliability and validity tests of the measurement were taken. Indeed, reliability refers to the instrument’s ability to prove consistent results in repeated uses, whereas validity refers to the degree to which the instrument measures the concept the researcher wants to measure. This provides confidence that the empirical findings accurately reflect the proposed constructs (Flynn et al., 1994). Measures of variables should have validity and reliability (Cronbach, 1971; Nunally, 1978) in order to draw valid inferences from the research.

Reliability of a scale refers to how consistent or stable the ratings generated by the scale are likely to be (Malhotra, 2007). The most commonly used approach to measure internal consistency of a scale is Cronbach’s alpha (Cronbach, 1951; Warner, 2008). Cronbach’s alpha tends to be high if the scale items are highly correlated (Hair, et. al. 1998). According
to Schuessler (1971), a scale is considered to have good reliability if it has an alpha value greater than 0.60.

To estimate the reliability of the scale, Cronbach’s Alpha value is calculated for over all scale and for each dimension. This has been found that the overall reliability of the scale is quite high as the value of Cronbach’s alpha is 0.907, which is an indication of high reliability. Next, dimension wise Cronbach’s alpha is calculated which indicates that almost all dimensions have Cronbach’s alpha more than 0.6.

Table 3.1 Reliability Comparisons (Cronbach's alpha)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideology</td>
<td>.820</td>
</tr>
<tr>
<td>Awareness about Features</td>
<td>.863</td>
</tr>
<tr>
<td>Knowledge about Benefits</td>
<td>.794</td>
</tr>
<tr>
<td>Prospects in India</td>
<td>.795</td>
</tr>
</tbody>
</table>

Validity of a measurement scale is the extent to which the scale fully captures all aspects of the construct to be measured (Parasuraman et al., 2004; Hayes, 1998; Garson, 2002). In a general sense, a measurement scale is considered to be valid if it measures what it is intended to measure. Three types of instrument validity are generally considered for researches. They are content validity, convergent validity and discriminant validity.

Content validity also known as face validity, is defined as the extent to which the content of a measurement scale appears to tap all relevant facets of the construct it is attempting to measure (Parasuraman et al., 1991; Ding & Hershberger, 2002; Malhotra, 2008; Warner, 2008). It refers to the degree that the construct is represented by the items that cover the domain of meaning for the construct (Garver et al., 1999; Malhotra, 2008). Content validity is a subjective agreement among concerned professionals (Parasuraman et al., 1991).

Convergent validity is a form of construct validity which refers to the degree to which multiple attempts to measure the same concept are in agreement (Garson, 2002; Warner, 2008). It deals with the question “do the items intended to measure a single latent construct statistically converge together” (Garver et al., 1999). Operationally, convergent validity is
assessed by the extent to which the latent construct correlates to items designed to measure that same latent construct.

Discriminant validity is assessed by the extent to which the items representing a latent construct discriminate that construct from other items representing other latent constructs (Garver et al., 1999; Warner, 2008). It is also a form of construct validity but it represents the extent to which measures of different concepts are distinct (Malhotra, 2007). Convergent validity and discriminant validity together form the construct validity.

In this research, the content validity of the measurement instrument was assessed by requesting subject experts to provide feedback. The expert panel of 14 members included faculty members and scholars from the disciplines of Marketing, Consumer behavior, Banking, Economics and Islamic jurisprudence. After they reviewed the questionnaire, based on their feedback changes were made to clarify and eliminate ambiguous statements.

The study employs widely used method of measuring content validity developed by C. H. Lawshe (1975). It is essentially a method for gauging agreement among raters or judges regarding how essential a particular item is. Lawshe (1975) proposed that each of the Subject Matter Expert raters (SMEs) on the judging panel respond to the question for each item: "Is the skill or knowledge measured by this item 'essential', 'useful, but not essential', or 'not necessary' to the performance of the construct?" According to Lawshe (1975), if more than half the panelists indicate that an item is essential, that item has at least some content validity.

Greater levels of content validity exist as larger numbers of panelists agree that a particular item is essential. Using these assumptions, Lawshe developed a formula termed the content validity ratio: $CVR = (n_e - N/2)/N/2$, where $CVR$ = content validity ratio, $n_e$ = number of SME panelists indicating "essential", $N$ = total number of SME panelists. This formula yields values which range from +1 to -1; positive values indicate that at least half the SMEs rated the item as essential. The mean CVR across items may be used as an indicator of overall test content validity. The minimum values of the CVR to ensure that agreement is unlikely to be due to chance can be found in the table 3.2:
Table 3.2: Minimum Content Validity Ratio (CVR) Requirements

<table>
<thead>
<tr>
<th>Number of Panelists</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Value</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>0.9</td>
<td>0.8</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.5</td>
<td>0.5</td>
<td>0.4</td>
<td>0.4</td>
<td>0.3</td>
<td></td>
</tr>
</tbody>
</table>

(Adapted from: Lawshe, 1975)

Any item, which is perceived to be essential by more than half of the panelists, has some degree of content validity and as more panelists (beyond 50%) perceive the item as essential, the degree of content validity increases. CVR for most items in the present study ranged from 0.57 to 0.71. Items with CVR below 0.5 were therefore dropped from the questionnaire.

3.4.2.3 Sampling and Data Collection

Sampling is that part of statistical practice concerned with the selection of a subset of individual observations within a population of individuals intended to yield some knowledge about the population of concern, especially for the purpose of making predictions based on statistical inference. Sampling is an important aspect of data collection. Researchers rarely survey the entire population for two reasons (Ader, Mellenbergh, & Hand, 2008): the cost is too high and the population is dynamic where in the individuals making up the population may change over time. The three main advantages of sampling are that the cost is lower, data collection is faster, and since the data set is smaller it is possible to ensure homogeneity and to improve the accuracy and quality of the data.

Table 3.3 Cities selected for the Survey

<table>
<thead>
<tr>
<th>Type of City</th>
<th>Name of City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro</td>
<td>Delhi, NCR</td>
</tr>
<tr>
<td>Class A</td>
<td>Lucknow, Kanpur, Patna, Aligarh, Agra, Allahabad, Patna</td>
</tr>
<tr>
<td>Class B</td>
<td>Sharanpur, Barabanki, Balia, Gonda, Azamgarh, Bahraich, Rampur</td>
</tr>
<tr>
<td>NRI</td>
<td>Cities in Middle East countries</td>
</tr>
</tbody>
</table>

For this research the sample was chosen in such a way so that there would be adequate representation across all types of cities in India. The cities are selected by judgment of researcher on the basis of Muslim population, businesses owned by different communities, institutes of Islamic learning historical and political importance. Cities selected for the
survey are given in Table 3.3. Villages located near class B and other cities were also covered for the survey. Data was collected during the period between January 2012 and July 2012.

Though, all possible efforts were made by the researcher to personally administer the questionnaire to the respondents, due to time constraints on the part of respondents, sometimes the questionnaire was left with the respondents to be collected later. As a rule of thumb, data from at least 300 cases is considered comfortable, 500 is considered as very good and 1000 is considered excellent (Comrey & Lee, 1992 and Tabachnich et al., 2012). Thus, it was decided to target at least 500 respondents. Keeping in mind the nature of the study, a response rate of 40-45% was anticipated and thus, it was decided to administer 1600 questionnaires on the respondents in proportion to their representation in the study.

People in rural areas were approached for the purpose of administering questionnaires in their respective villages with reference person, local branches of gramin banks and places at districts headquarters like the office of the district magistrate, district court and post offices; while people in class A & B cities were contacted in banks, markets, and offices. For contacting people in metros, people were contacted in malls, banks, special events and university campuses. An online version of questionnaire was also used to collect data using google docs. Of the total 1600 questionnaires administered, only 884 questionnaires were returned by the respondents. Due to incomplete and illegible responses, only 756 questionnaires were found suitable for analysis purpose which amounts to an effective response rate of 47.25% which was considered satisfactory (Comrey & Lee, 1992 and Tabachnich et al., 2012).

3.4.3 Factor Analysis

3.4.3.1 Exploratory Factor Analysis

Initially, exploratory factor analysis was conducted followed by confirmatory factor analysis conducted using AMOS 16 software. Table 3.4 shows the result of KMO and Bartlett’s test, which is run to know the significance of factor analysis. This has been found
that KMO value is .848 which is greater than 0.6 and sig. is .000 which is less than 0.05. These values indicate that factor analysis is significant.

Table 3.4: KMO and Bartlett's Test

<table>
<thead>
<tr>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</th>
<th>.848</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td></td>
</tr>
<tr>
<td>Approx. Chi-Square</td>
<td>10772.67</td>
</tr>
<tr>
<td>Df</td>
<td>231</td>
</tr>
<tr>
<td>Sig.</td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 3.5: Total Variance Explained

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigen values</th>
<th>Extraction Sums of Squared Loadings</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>1</td>
<td>8.031</td>
<td>36.505</td>
<td>36.505</td>
</tr>
<tr>
<td>2</td>
<td>2.829</td>
<td>12.86</td>
<td>49.364</td>
</tr>
<tr>
<td>3</td>
<td>2.062</td>
<td>9.374</td>
<td>58.738</td>
</tr>
<tr>
<td>5</td>
<td>1.105</td>
<td>5.025</td>
<td>70.031</td>
</tr>
<tr>
<td>6</td>
<td>0.817</td>
<td>3.712</td>
<td>73.742</td>
</tr>
<tr>
<td>7</td>
<td>0.718</td>
<td>3.266</td>
<td>77.008</td>
</tr>
<tr>
<td>8</td>
<td>0.667</td>
<td>3.033</td>
<td>80.041</td>
</tr>
<tr>
<td>9</td>
<td>0.593</td>
<td>2.695</td>
<td>82.736</td>
</tr>
<tr>
<td>10</td>
<td>0.505</td>
<td>2.294</td>
<td>85.029</td>
</tr>
<tr>
<td>11</td>
<td>0.452</td>
<td>2.056</td>
<td>87.085</td>
</tr>
<tr>
<td>12</td>
<td>0.445</td>
<td>2.023</td>
<td>89.107</td>
</tr>
<tr>
<td>13</td>
<td>0.374</td>
<td>1.701</td>
<td>90.809</td>
</tr>
<tr>
<td>14</td>
<td>0.364</td>
<td>1.653</td>
<td>92.462</td>
</tr>
<tr>
<td>15</td>
<td>0.323</td>
<td>1.466</td>
<td>93.928</td>
</tr>
<tr>
<td>16</td>
<td>0.254</td>
<td>1.156</td>
<td>95.084</td>
</tr>
<tr>
<td>17</td>
<td>0.242</td>
<td>1.102</td>
<td>96.186</td>
</tr>
<tr>
<td>18</td>
<td>0.218</td>
<td>0.99</td>
<td>97.176</td>
</tr>
<tr>
<td>19</td>
<td>0.186</td>
<td>0.843</td>
<td>98.019</td>
</tr>
<tr>
<td>20</td>
<td>0.173</td>
<td>0.784</td>
<td>98.803</td>
</tr>
<tr>
<td>21</td>
<td>0.146</td>
<td>0.663</td>
<td>99.466</td>
</tr>
<tr>
<td>22</td>
<td>0.117</td>
<td>0.534</td>
<td>100</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Variance table 3.5 shows the percentage of variance explained by the extracted factors. The analysis extracted four factors having percentage cumulative variance of 65.006%. This indicates that four factor framework explained nearly 65% variations in this study. The results of the factor loading are calculated and all statements have factor loading more than .4 and are clubbed in any of the four factors. On basis of this variables are clubbed into four factors. The high factor loading gives us an idea that no statement is dropped and hence considered. Factor loading for ideology is 0.695, for awareness about features is .615, for knowledge about benefits is 0.879 and for prospects in India it is 0.696.

3.4.3.2 Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) was used to examine the reliability and validity, whether the measures of a construct were consistent with the researcher's understanding of the nature of that construct (or factor). The measurement model included 22 items describing four latent constructs: Ideology (IDE), awareness about Features (FER), knowledge about Benefits (BFT) and Prospects, of Islamic banking in India (PRS).

Table 3.2 lists the results of measurement model CFA. The overall model fit was assessed in terms of six common measures: chi-square/degree of freedom, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), non-normed fit index (NNFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA) (Schumacker & Lomax, 2004).

The CFA indicated that the measurement model fitted the data, as listed in Table 3.6. All the model-fit indices exceed the respective common acceptance levels indicated by previous research (Chau and Hu, 2001), demonstrating that the measurement model exhibited a fairly good fit with the data collected. Global fit measures such as the chi square test and RMSEA are assessed. RMSEA should not exceed 1.0 (Schumacker & Lomax, 2004). Kline (1998) recommends a value of 3.0 for the chi square statistic (CMIN/DF) to be acceptable. Other fit indices, such as NFI, GFI, TLI and CFI are also assessed. For these indices, values close to 1.0 indicate a good fit. Smaller values, which are close to .00 indicate a poor fit (Schumacker & Lomax, 2004).
Fig 3.5 Confirmatory Factor Analysis
The results from analyzing the model indicate a good fit of the four dimensions of consumer’s attitude. The value of CMIN/DF was 2.56, below the recommended value of 3.0. The RMSEA for the measurement model was 0.083. Other fit indices also point to a fair and acceptable model fit (NFI = .802, GFI = .901, CFI = .987). Table 3.6 provides the results for each of the fit indices of the CFA Measurement Model. Figure 4.1 depicts the CFA Measurement Model.

<table>
<thead>
<tr>
<th>Model-fit index</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-square/degree of freedom</td>
<td>2.56</td>
</tr>
<tr>
<td>Goodness-of-fit index (GFI)</td>
<td>.901</td>
</tr>
<tr>
<td>Adjusted goodness-of-fit index (AGFI)</td>
<td>.295</td>
</tr>
<tr>
<td>Non-normed fit index (NNFI)</td>
<td>.802</td>
</tr>
<tr>
<td>Comparative fit index (CFI)</td>
<td>.987</td>
</tr>
<tr>
<td>Root mean square error of approximation (RMSEA)</td>
<td>.083</td>
</tr>
</tbody>
</table>

### 3.5 Hypotheses Based on Demographics

One of the major set of factors relating to consumer’s attitude towards Islamic banking is the consumer’s demographic attributes (Omer, 1992, Haron et al. 1994, Zainuddin & Ramayah, 2004, Gerrard & Cunningham, 1997). Different hypotheses were developed with related to consumer’s attitude towards Islamic banking and their demographic attributes. These hypotheses are further divided into four sub hypotheses, based on four factors of consumers’ attitude. All four sub hypotheses are tested for significance using appropriate statistical tools and if more than two sub hypotheses are accepted then the main hypothesis is accepted.

In order to explore differences in attitude vis-à-vis consumer demographics, the following hypotheses were framed, where ‘H₀’ refers to the null hypothesis; ‘G’ stands for gender, ‘Ag’ stands for age group, ‘O’ stands for occupation, ‘E’ stands highest academic qualification, ‘In’ stands for income bracket, ‘R’ stands for religion ‘C’ stands for present

3.5.1 Hypotheses based on Religion

1. **H₀RA:** Significant differences do not exist in consumer’s attitude towards Islamic banking with respect to their religion.

Following four sub hypotheses are developed for four factors of attitude.

1.1) **H₀RI:** Significant differences do not exist in consumer’s Ideology towards Islamic banking with respect to their religion.

1.2) **H₀RF:** Significant differences do not exist in consumer’s awareness about features of Islamic banking with respect to their religion.

1.3) **H₀RB:** Significant differences do not exist in consumer’s knowledge about benefits of Islamic banking with respect to their religion.

1.4) **H₀RP:** Significant differences do not exist in consumer’s view about prospects of Islamic Banking in India with respect to their religion.

3.5.2 Hypotheses based on Gender

2. **H₀GA:** Significant differences do not exist in consumer’s attitude towards Islamic banking with respect to their gender.

*Following four sub hypotheses are developed for four factors of attitude.*

3.1) **H₀GI:** Significant differences do not exist in consumer’s Ideology towards Islamic banking with respect to their gender.

3.2) **H₀GF:** Significant differences do not exist in consumer’s awareness about features of Islamic banking with respect to their gender.
3.3) **H₀GB**: Significant differences do not exist in consumer’s knowledge about benefits of Islamic banking with respect to their gender.

3.4) **H₀GP**: Significant differences do not exist in consumer’s view about prospects of Islamic Banking in India with respect to their gender.

### 3.5.3 Hypotheses based on Age Group

3. **H₀AgA**: Significant differences do not exist in consumer’s attitude towards Islamic banking with respect to their age group.

*Following four sub hypotheses are developed for four factors of attitude.*

3.5) **H₀AgI**: Significant differences do not exist in consumer’s Ideology towards Islamic banking with respect to their age group.

3.6) **H₀AgF**: Significant differences do not exist in consumer’s awareness about features of Islamic banking with respect to their age group.

3.7) **H₀AgB**: Significant differences do not exist in consumer’s knowledge about benefits of Islamic banking with respect to their age group.

3.8) **H₀AgP**: Significant differences do not exist in consumer’s view about prospects of Islamic Banking in India with respect to their age group.

### 3.5.4 Hypotheses based on Occupation

4. **H₀OA**: Significant differences do not exist in consumer’s attitude towards Islamic banking with respect to their occupation.

*Following four sub hypotheses are developed for four factors of attitude.*

4.1) **H₀OI**: Significant differences do not exist in consumer’s Ideology towards Islamic banking with respect to their age group.

4.2) **H₀OF**: Significant differences do not exist in consumer’s awareness about features of Islamic banking with respect to their age group.
4.3) **H₀OB**: Significant differences do not exist in consumer's knowledge about benefits of Islamic banking with respect to their age group.

4.4) **H₀OP**: Significant differences do not exist in consumer's view about prospects of Islamic Banking in India with respect to their age group.

### 3.5.5 Hypotheses based on Educational Qualification

5. **H₀EA**: Significant differences do not exist in consumer's attitude towards Islamic banking with respect to their educational qualification.

Following four sub-hypotheses are developed for four factors of attitude.

5.1) **H₀EI**: Significant differences do not exist in consumer's Ideology towards Islamic banking with respect to their educational qualification.

5.2) **H₀EF**: Significant differences do not exist in consumer's awareness about features of Islamic banking with respect to their educational qualification.

5.3) **H₀EB**: Significant differences do not exist in consumer's knowledge about benefits of Islamic banking with respect to their age group.

5.4) **H₀EP**: Significant differences do not exist in consumer's view about prospects of Islamic Banking in India with respect to their educational qualification.

### 3.5.6 Hypotheses based on Monthly Income

6. **H₀INA**: Significant differences do not exist in consumer's attitude towards Islamic banking with respect to their monthly income.

Following four sub-hypotheses are developed for four factors of attitude.

6.1) **H₀INI**: Significant differences do not exist in consumer’s Ideology towards Islamic banking with respect to their monthly income.

6.2) **H₀INF**: Significant differences do not exist in consumer's awareness about features of Islamic banking with respect to their monthly income.
6.3) **H₀NB**: Significant differences do not exist in consumer’s knowledge about benefits of Islamic banking with respect to their monthly income.

6.4) **H₀NP**: Significant differences do not exist in consumer’s view about prospects of Islamic Banking in India with respect to their monthly income.

### 3.5.7 Hypotheses based on City of Residence

7. **H₀RA**: Significant differences do not exist in consumer’s attitude towards Islamic banking with respect to their city of residence.

*Following four sub hypotheses are developed for four factors of attitude.*

7.1) **H₀RI**: Significant differences do not exist in consumer’s Ideology towards Islamic banking with respect to their city of residence.

7.2) **H₀RF**: Significant differences do not exist in consumer’s awareness about features of Islamic banking with respect to their city of residence.

7.3) **H₀RB**: Significant differences do not exist in consumer’s knowledge about benefits of Islamic banking with respect to their city of residence.

7.4) **H₀RP**: Significant differences do not exist in consumer’s view about prospects of Islamic Banking in India with respect to their city of residence.

*(Note: Only the null hypotheses are mentioned for all the sub-sections on hypotheses formulation).*

### 3.6 Techniques of Analysis

For analyzing the data generated through questionnaire survey, mainly ANOVA procedure is used. However to be sure of the results of ANOVA, independent sample t test is also performed on the data. A brief theoretical outline of these two techniques is given as under:

**ANOVA**: Analysis of variance is a straight forward way to look at differences among more than two groups of responses measured on interval or ratio scale. It is used for examining the differences in the mean values of dependent variable associated with the effect of
controlled independent variables. The null hypothesis, typically, is that all means are equal (Malhotra, 2008). At the heart of ANOVA is the notion of variance. The basic procedure is to derive two different estimates of population variance from data, then calculate a statistic from the ratio of these two estimates. One of these estimates (between-groups variance) is a measure of the effect of independent variable combined with error variance. The other estimate (within groups variance) is of error variance by itself. The F-ratio is the ratio of between groups variance to within groups variance. A significant F-ratio indicates that the population means are probably not equal and the null hypothesis is rejected (Coakes & Steed, 2009).

A post hoc analysis (Scheffe’s method) is also performed on the data, which involves hunting through the data for any significance; that is, doing multiple comparisons. These tests are stricter than planned comparisons, so it is harder to obtain significance.