# Chapter - 4

## RESEARCH METHODOLOGY

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Chapter 4

Research Methodology

Empowered individuals “would be expected to feel a sense of control, understanding their socio-political environment, and become active in efforts to exert control”

-Zimmerman and Warschausky, 1998

4.1 Introduction

After a detailed discussion on the review chapter 3 (Retailing and Women), five important retail store activities such as Retail Store Atmosphere/Environment (coded as RSI), Expansion and control over choice (coded as EFC), Store Convenience (coded as SC), Relevant Communication (coded as INFO), Consumer Involvement (coded as CINV) are considered as the five exogenous latent variables/constructs (independent) which are used to measure the endogenous latent variables/constructs ‘Consumer Empowerment’ (coded as CONEMP), Customer Satisfaction (coded CSAT), Value Co-creation (coded as VCOC) in the study.

Further, due to the unavailability of the existing marketing scale to directly measure ‘consumer empowerment’, another set of five latent variables Viz., Product Expertise (coded as PE), Confidence (coded as CON), Consumer Power (coded as CP), Freedom of Movement inside store (coded as FOM), and Attitude to Choose the Best (coded as ACB) are used. Whereas the well defined ‘customer satisfaction (CSAT)’ and ‘value co-creation (VCOC)’ are measured with the help of established marketing scales.

So by understanding the underlying degree of complexity existing in the data collection, a thorough market research process was developed as given below. Wherein a three stage information identifying components from three different areas such as retail stores information, consumers’ demographics / psychographics and
products categories shopped by women consumers are developed and displayed in the following flow chart.

### 4.2 Marketing Research Process

#### 4.2.1 Identifying the Information needed

As already explained, Component 1: which carries the data on store related information is further divided into four parts such as, Information on Merchandises, Physical Environment of the outlet, Store Personnel and information related to Store policies are gathered.

#### Component I: Store Information related to the following factors are collected

<table>
<thead>
<tr>
<th>Component</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merchandise</td>
<td>Quality, Assortment, Variety (choice), Price Factor</td>
</tr>
<tr>
<td>Physical Aspects</td>
<td>Visual Merchandising (Exteriors, store layout, store interiors, displays)</td>
</tr>
<tr>
<td>Store Personnel</td>
<td>Counselling, Informative and Knowledgeable, Communicative, Courteous,</td>
</tr>
<tr>
<td></td>
<td>Consoling and problem solving, Inspiring confidence, Service oriented</td>
</tr>
<tr>
<td>Store Policies</td>
<td>Customer loyalty programs, Reliable billing and transactions, Credit</td>
</tr>
<tr>
<td></td>
<td>Facilities, Store operating hours, Parking facility, Service promises</td>
</tr>
<tr>
<td></td>
<td>(Return, adjustable, altering, repair), Right merchandise availability</td>
</tr>
<tr>
<td></td>
<td>and delivery, Pre and post sales facility</td>
</tr>
</tbody>
</table>

Component II: Customer Information

Information on the standard demographics is obtained from the respondents. Based on the buying/shopping behaviour of the women respondents relevant psychographic characters are obtained.

Demographic details: Identification (name, address, telephone), Age, education level, marital status, no. of children, family type, family members, working status, income

Psychographic details: Store loyalty, credit use, appearance consciousness, and combining shopping with eating and entertainment. Information on AIOs (Activities - Free time activities such as golfing, book reading, and travelling, shopping, etc., Interests- Electronic items possessed, pets, wardrobe collections
etc., and opinions- about shopping, memberships in spa/clubs etc.,) of the women consumers was gathered.

Component III: Information on six product categories such as Grocery/Vegetables, Apparels, Furniture, Home decorative, Home appliances/Electronic gadgets and Jewellery are gathered. The respondents were further asked whether they have bought these product categories at Traditional and/or Modern/Organized outlets.

4.2.2 Analytical Models (verbal, graphical, mathematical models)

The information collected is presented in three basic models such as Verbal Model, Graphical Model and Mathematical Model, in order to understand the flow, relevance and compatibility of the information collected from both qualitative and quantitative research perspective.

A. Verbal Models

Once the customer gets awareness of the store, it's the retailer's job to create interest in the customer by providing choices, pleasant shopping environment, effective communication (product and market information), and convenience in shopping, counselling to build confidence in decision making and provide sufficient service to empower the customer. Empowered customer brings life time business to the store.

B. Graphical Models

Customer first visits the store - Awareness

Retailing activities - Creates interest and desire by providing pleasant environment (visual merchandising), choices, effective communication (product and market knowledge), convenience, services and counselling (Personnel)

Customer becomes knowledgeable and confident as well independent in decision making

Empowered customer - brings lifetime value to the retail business

- Merchandise mix
- Physical Aspects
- Store Personnel
- Store Policies- (pre & post)
C. Mathematical Models

Structural equation modelling takes a confirmatory, rather than an exploratory, approaches to the data analysis. Whereas traditional multivariate procedures are incapable of either assessing or correcting for measurement error, SEM provides explicit estimates of these parameters. Whereas the former methods are based on observed measurements only, SEM can incorporate both unobserved and observed variables (Byrne 1998: 3-4) observed or manifest variables serve as indicators of the underlying constructs (latent variables or factors) that they are presumed to represent.

Components

Structural Model: $\eta = B \eta + \gamma \zeta + \zeta$, in the proposed converged model with 66 items the structural equations look as given below

\[
(CSAT) \eta_1 = \gamma_{11} \xi_1 + \gamma_{12} \xi_2 + \zeta_1,
\]

\[
(VCOC) \eta_2 = \gamma_{23} \xi_3 + \beta_{21} \eta_1 + \zeta_2
\]

\[
(CONEMP) \eta_3 = \beta_{32} \eta_2 + \gamma_{34} \xi_4 + \gamma_{35} \xi_5 + \zeta_3
\]

Which specifies the causal relationships among the latent endogenous ($\eta$) and exogenous ($\zeta$) variables, describes the causal effects, and assigns the explained and unexplained variance (disturbance term). Latent variables (hypothetical constructs) are underlying causes of multiple observed behaviours.

Measurement Model: $y = A \eta + \epsilon$ and $x = Ax \xi + \delta$, which specifies how latent variables (hypothetical constructs) depend upon or are indicated by the observed variables.

The hypothesized model, for example, has three $\eta$ s, five $\xi$ s . $\eta_1$ is explained by six $Y$s ($Y1,Y2,Y3,Y5,Y6$), $\eta_2$ associated with five $Y$s ($Y7,Y8,Y9,Y10,Y11$), and $\eta_3$ is associated with 22 $Y$s ($Y12,Y13,...Y22$). Similarly, $\xi_1$ is associated with twelve $X$s ($X1,X2,...X12$), $\xi_2$ is associated with five $X$s ($X13,X14,...X17$), $\xi_3$ is explained by four $X$s ($X18,X19,X20,X21$), $\xi_4$ is explained by five observed variables ($X22,X23,...X26$), and $\xi_5$ is associated with the remaining seven $X$s or the observed variables ($X27,X28,...X33$).
Notations

$\eta$ (eta) is a $m \times 1$ random vector of latent dependent, or endogenous, variables

$\xi$ (ksi) is a $n \times 1$ random vector of latent independent, or exogenous, variables

$y$ is a $p \times 1$ vector of observed (endogenous) indicators of the dependent latent variables $h$

$x$ is a $q \times 1$ vector of observed (exogenous) indicators of the independent latent variables $x$

$\varepsilon$ (epsilon) is a $p \times 1$ vector of measurement errors in an observed endogenous variable $y$

$\delta$ (delta) is a $q \times 1$ vector of measurement errors in an observed exogenous variable $x$

$\Lambda y$ (lamda y) is a $p \times m$ coefficients matrix of the regression of $y$ on $h$

$\Lambda x$ (lamda x) is a $q \times n$ coefficients matrix of the regression of $x$ on $x$

$\gamma$ (gamma) is a $m \times n$ coefficients matrix of the $x$ in the structural relationship

$B$ (beta) is a $m \times m$ coefficients matrix of the $y$ in the structural relationship. (B has zeros in the diagonal, and $I - B$ is required to be non-singular)

$\zeta$ (zeta) is a $m \times 1$ vector of equation errors (residual) in the structural relationship between $\eta$ and $\xi$.

Table No: 4.1. LISREL codes and their explanation

<table>
<thead>
<tr>
<th>Matrix</th>
<th>Elements</th>
<th>Type</th>
<th>Greek</th>
<th>LISREL</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\Lambda x (q \times n)$</td>
<td>$\Lambda x$</td>
<td>REG Coefficients</td>
<td>Lambda $x$</td>
<td>LX</td>
<td>FU, F1</td>
</tr>
<tr>
<td>$\Lambda y (p \times m)$</td>
<td>$\Lambda y$</td>
<td>REG Coefficients</td>
<td>Lambda $y$</td>
<td>LY</td>
<td>FU, F1</td>
</tr>
<tr>
<td>$\Theta (q \times q)$</td>
<td>$\Theta$</td>
<td>Variance-Covariance</td>
<td>Theta delta</td>
<td>TD</td>
<td>DI,FR</td>
</tr>
<tr>
<td>$\Theta (p \times p)$</td>
<td>$\Theta$</td>
<td>Variance-Covariance</td>
<td>Theta epsilon</td>
<td>TE</td>
<td>DI,FR</td>
</tr>
<tr>
<td>$\Gamma (m \times n)$</td>
<td>$\Gamma$</td>
<td>REG Coefficients</td>
<td>Gamma</td>
<td>GA</td>
<td>FU, FR</td>
</tr>
<tr>
<td>$B (m \times m)$</td>
<td>$B y$</td>
<td>REG Coefficients</td>
<td>Beta</td>
<td>BE</td>
<td>ZE, FI</td>
</tr>
<tr>
<td>$\Phi (n \times n)$</td>
<td>$\Phi y$</td>
<td>Variance-Covariance</td>
<td>Phi</td>
<td>PH</td>
<td>SY, FR</td>
</tr>
<tr>
<td>$\Psi (m \times m)$</td>
<td>$\Psi$</td>
<td>Variance-Covariance</td>
<td>Psi</td>
<td>PS</td>
<td>DI,FR</td>
</tr>
<tr>
<td>$\Theta (p+q...)$</td>
<td>$\Theta$</td>
<td>Variance-Covariance</td>
<td>Theta delta</td>
<td>TH</td>
<td>ZE, FI</td>
</tr>
</tbody>
</table>

Source: Adapted from Byrne 1998.
* Matrix Forms: FU (Full), SY (Symmetric), DI (Diagonal), ID (Identity), and ZE (Zero)

** Matrix Estimation Modes: FI (Fixed) and FR (Freely estimated)

Once the research problem is clearly defined graphically, verbally and mathematically it is now important to make some of the important assumptions related to the study. Relevant assumptions are made in line with respect to each and every objective of the research. Also the assumptions regarding the model fit are made while performing Confirmatory Factor Analysis (CFA) and Structured Equation modelling (SEM). The following table 4.2 gives the list of assumption made in the study.

### 4.2.3 Hypotheses

Consumer Empowerment is a promising research area. The very purpose of this research work is to understand the subjective experience of empowerment among the women consumers. In this regard, following assumptions are made and the same is provided as a conceptual model (Fig. 4.1) representing the relationship between exogenous and endogenous latent variable in the following section.

**Table No: 4.2.**

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Main Objective</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Retail factors causing experience of consumer empowerment such as RSI, SC, INFO, EFC, CINV)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Ho: Pleasing retail store environment significantly impact the consumer empowerment among women shoppers.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Ho: Store convenience does not significantly impact the consumer empowerment among women shoppers</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ho: Relevant communication provided by the retailer has no positive influence on women consumer empowerment.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Ho: Control provided over Choice set selection and the consumer empowerment is independent of each other.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Ho: Consumer involvement has nothing to do with the feeling of subjective experience of consumer empowerment among the women shoppers.</td>
<td></td>
</tr>
</tbody>
</table>
Objective 1A A. Supporting Hypotheses related to Demographics and shopping as consumers' best free time activity:

6 Ho: Marital status has nothing to do with the considering shopping as their best free time activity

7 Ho: Educational qualification of the respondents and considering shopping as best free time activity is independent of each other

8 Ho: Working status of the women shoppers has no significant influence in considering shopping as their best free time activity

9 Ho: Monthly Household income and shopping as best free time activity of women shoppers are independent of each other

10 Ho: Age of the women shoppers and considering shopping as best free time activity are independent of each other

Objective 1B B. Supporting Hypotheses related to Psychographics and shopping as consumers' best free time activity:

11 Ho: Using of credit card for the shopping and shopping being best free time activity of women are independent of each other

12 Ho: Using own transport means for shopping and shopping being best free time activity are independent of each other

Objective 2.A Supporting hypotheses relating to women consumers (demographics) and nature of outlets

13 Ho: Age of the women shoppers has no significant influence on the nature of outlet selected for shopping

14 Ho: Marital status of the women respondents has nothing to do with the nature of outlet selected for shopping

15 Ho: Qualification of the respondents has nothing to do with the outlets selected for shopping

16 Ho: Working status of the has no significant influence on the nature of outlet selected for shopping

17 Ho: Monthly Household income of the respondents has no significant influence on the nature of outlet selected for shopping

Objective 2.B Supporting hypotheses relating to women consumers (psychographics) and nature of outlets

18 Ho: Use of credit cards by the shoppers has no significant influence on the nature of outlet selected for shopping

19 Ho: Use of vehicle used for shopping and nature of outlet selected for shopping are independent of each other
Objective 5. Supporting Hypotheses related to Consumer empowerment and its latent variables (PE, CON, CP, FOM, ACB)

20 Ho: Consumer Empowerment and Product Expertise (PE) of women shoppers are independent of each other
21 Ho: Consumer Empowerment and Consumer Confidence (CON) in purchase decision making are independent of each other
22 Ho: Consumer Empowerment and Consumer awareness (CP) of her rights are independent of each other
23 Ho: Consumer Empowerment and Freedom of Movement (FOM) provided to the consumers are independent of each other
24 Ho: Consumer Empowerment and Attitude to choose the best (ACB) as a nature of the women shopper has nothing to do each other.

Objective A. Demographics of respondents (Age, Marital status, Qualification, Working status and monthly Household income) and consumer empowerment

25 Ho: Women consumers' age has nothing to do with feeling of subjective experience of empowerment while shopping.
26 Ho: Marital status of the women shoppers has no significant influence on the experience of empowerment while shopping
27 Ho: Qualification of women consumers has no significant influence on the experience of empowerment while shopping.
28 Ho: Working status of the women consumers has no significant influence on the experience of empowerment while shopping.
29 Ho: Monthly Household salary of the women consumers has no significant influence on the experience of empowerment while shopping

Objective B. Psychographics (use of credit card, vehicle possession) and Consumer empowerment

30 Ho: The use of credit cards by the women shoppers for shopping and feeling of subjective experience of consumer empowerment are independent of each other.
31 Ho: Use of own transport system for shopping and feeling of subjective experience of consumer empowerment are independent of each other.
Once the relationship variables are identified and the relationship between them is assumed, the next step in the research process is to develop the research design as given below.

**4.3 Research Design Formulation**

**4.3.1 Research Design**

Exploratory research is used to provide insights into, and an understanding of, the problem confronting. Exploratory research is one type of research design, which has as its primary objective the provision of insights into, and comprehension of, the problem situation confronting the researcher.
4.3.2 Data Collection Method

Both qualitative and quantitative data collection method is adopted in order to gain rich insights that can help formulating successful marketing strategies.

**Qualitative data:** A *depth interview* is planned to conduct using *laddering* technique as a means of collecting qualitative information from 5-10 respondents.

**Quantitative data:** *Structured direct survey* method is planned to be employed by hiring of professional field executives of reputed research agency. A well structured questionnaire with *fixed alternative questions* that require the respondents to select from a predetermined set of responses is developed and circulated to the respondents.

4.3.3 Mode of Administration

Survey questionnaire was administered to the respondents (women shoppers) while they were coming out of the retail outlets after shopping. In other terms *shop exit interview* was conducted taking the permission from the outlet management.

4.3.4 Questionnaire Design

In the process of designing a fully structured questionnaire, utmost care has been taken in order to gather relevant and accurate information from the respondents. Numerous literatures from both marketing and social science reviewed gave lot of input while developing the questionnaire. Also established (tested and verified for reliability and validity) scales from marketing scales handbook are used to develop the items to measure the constructs. The scales used in the first part of the questionnaire such as Product Expertise, Confidence, Consumer Power, Freedom of Movement inside the store and Attitude to Choose the Best are tested against reliability zonal wise and found reliable to South, North and Central zones in the city. These scales when tested for reliability and Chronbach’s alpha was found to be south (0.589), North ((0.630), Central (0.622), East (0.469), and for the West Bangalore (0.540). (Refer Table No.3)

In the second part of the questionnaire which contained questions related to Retail Store Atmosphere, Store Convenience, Relevant Communication, and Expansion &
Control over Choice Set and Consumer Involvement scored very significant Chronbach alpha value, indicating the reliability of the scales used. The alpha value when tested for the reliability zone-wise was found significant as follows South Zone (0.788), North Zone (0.706), Central (0.786), East (0.646), and West zone (0.727).

4.3.5 Contents of the Questionnaire

The questionnaire is mainly divided into four parts. First part carried the questions pertinent to factors influencing and determining consumer empowerment. Five major factors determining consumer experience of empowerment are Product Expertise (four items), Consumer Power (seven items), Freedom of Movement (five items), Confidence (generalized) (three items) and Attitude to choose the best (three items with three sub items in the last question (no.22). Over all first part carried 22 main items (with two sub items (20 & 21) in reverse coding) in the five point Likert Scale type questions where, where 1 represents Strongly Disagree (SDA), 2 represents Disagree (D), 3 represents neither agree nor disagree (N), 4 represents Agree (A) and 5 represents Strongly Agree (SA). These 22 items also provide the information about the characteristics of the empowered consumer.

The second part of the questionnaire carried the items related to the retailing activities influencing the consumer empowerment. Four established marketing scales viz. Retail store image (12 items), Store convenience (five items), Relevant information (five items), and Consumer involvement (six items) are used to measure ‘Retailing activities’ construct resulting in experiential feeling of consumer empowerment. As the researcher could not locate a scale measuring ‘Consumer control’, developed a seven item scale following established scale development procedures (De Vellis 2003; Netemeyer, Bearden, and Sharma 2003). The second part carried 35 items in the five point Likert Scale form where, 1 represents Strongly Disagree (SDA), 2 represents Disagree (D), 3 represents neither agree nor disagree (N), 4 represents Agree (A) and 5 represents Strongly Agree (SA). Only one item (question no. 33) is reverse coded.

Part three of the questionnaire carried only three questions. The first question is to understand how much percent of the time consumers spend per week on shopping activities. This question was provided with six options (<10%, 10-20%.....>50%) and the respondents were asked to select one among them. It was very important for the researcher to understand the consumer store preference (traditional or modern outlet)
for buying the listed six product categories (groceries/vegetables, apparels/accessories, furniture, home decorative, major appliances/electronic items, Jewellery) considered in the study. Third question was to understand the role of women in her family purchase decision making while shopping for herself and for her family members. Six product categories (groceries/vegetables, apparels/accessories, furniture, home decorative, major appliances/electronic items, Jewellery) are selected for the study based the literature (Ferber, Robert 1974) and some of the products (such as Jewellery, vegetables, major home appliances) are added to suit the Indian consumer market scenario and study objective. Question number 2 and 3 are also pretested by the researcher on reliability test in a study carried out by the researcher (Murugaiah and Vishvas Radhika 2008). (Appendix E)

In the last part of the questionnaire the demographic details (age, marital status, family size, education qualification, working status, monthly Household income, etc) of the respondents were asked. This part also carried questions such as office working hours (in case of working women) was asked to mention along with number of working das/week, in order to understand the free time left out for them to shop and their preference towards weekend shopping. Also question on transport means to shop was asked to understand the willingness of the consumer to drive an extra mile to go for shopping in the preferred outlet. Women respondents were also enquired about the use of the credit card for shopping with given four options (always, often, rarely, never) to study the relationship between the shopping card usage and consumer empowerment factor. Since grocery and apparels are the most frequently bought product categories in general, the frequency of purchase per month was asked. Last but not the least consumers were asked to mention four frequently visited modern outlets of their preference.

4.3.6 Pilot Survey

A pilot study was conducted in order to establish the face validity of the survey instrument. The pilot survey was carried out in the Bangalore city which is the sample city under study. The pilot study was intended to gain the feel of the consumer response and feedback on the questionnaire. In case of pilot survey ten expert women consumers (respondents) were interviewed. An in-depth interview of nearly one and a half hours was carried out in the residence of the respondents over a span of ten days.
During the pilot survey the respondents were given with the list of retail store factors that are collected from numerous literature reviews. Respondents were asked to rank the retail factors based on their shopping experience which, they consider as most important for their experiential shopping experience. Based on the expert opinion, five major retail store factors viz. Retail Store Image (Wu, Bob T.W. and Susan M. Petroshius 1987), Freedom of Choice Set (Wathieu et al, 2002), Relevant Information (Mishra, Umesh and Stem 1993) Convenience while shopping (Kelly et al 1967) and Consumer Involvement (Hunter & Garnefeld, 2008) are considered for the study. These factors are studied to understand their influence on experience of consumer empowerment while shopping by the women consumers.

4.3.7 Expert Opinion Survey

In order develop a marketing scale that measures consumer empowerment in the Indian retail context, literature on empowerment (social science studies) and consumer empowerment (specific focus to retailing) are reviewed. The review results revealed 13 empowerment factors / determinants (along with their respective existing marketing scales) which are listed in Appendix C for reference. Then the prepared list carrying the determinants name, definition of the determinants (as in the marketing scale handbook), number of items, scale size / type and source information is provided to 12 experts in order to get their expert opinion about the determinants of consumer empowerment. These 12 experts identified for the expert opinion survey are the eminent scholars, professors and corporate experts with more than 15-20 years of experience from the areas of social science (empowerment, gender studies), marketing, consumer behaviour, retailing, corporate strategy (with focus on retailing). The experts were contacted and only after the experts’ showed willingness to take part in the survey the meeting time was and the researcher contacted them and briefed the research work along with the objectives before handing over the questionnaire and beginning the discussion. Instruction was provided to select only those major empowerment determinants (out of 13 determinants provided) which they consider as the most appropriate ones based on their vast experience and expertise. Apart from this the discussion of the expert with the researcher lasted for more than 20 minutes and the duly filled questionnaires (listed determinants) were collected then and there
by the researcher. Important suggestions and comments were noted down and are implemented while developing the questionnaire for the consumers.

After collecting all the 12 duly filled questionnaires, the data was placed in the excel sheet for analysis. Ten out of twelve experts have opined - product expertise (Mishra et al, 1993), consumer power (Lambert & Zarrel, 1980), freedom of movement (Unger & Lynene S. 1981), confidence (generalized) (Lumpkin et al 1989) and attitude to choose the best (Cooper Martin, 1993) as the five major factors that can determine the consumer empowerment characteristics. The remaining two experts also marked two more factors along with these five factors and they are Innovativeness (Raju, 1980) and shopping competitiveness (Lnchenstein et al 1990). In the second round of discussion the experts agreed to stick back to the former five factors mentioned as these points were very well addressed by the product expertise and freedom of movement factors. The reason given being an expert shopper with her product knowledge obviously visits different stores and she knows where to buy what. Second reason being it is more important to have freedom of movement as a consumer to select a product or visit a store of her Choice and not because of retailers’ force or obligation. This forms the basis for empowerment and once the consumer is free to select a product or store on her own and backed by her consumer power she does bargaining (given chance of bargaining – not in fixed price stores) which is her natural activity. Hence the experts agreed on those previously selected five factors that comprehensively covered all the requirements of consumer empowerment.

4.3.8 Measurement and Scaling Procedures

Established marketing and empowerment related non comparative itemize interval scaling such as five point Likert scaling is used. Some of the scales are used with a slight modification on the size of the scale and the reliability was test was conducted and found reliable to suite Indian retail context. Also one item was reduced in case of retail store image scale and the theoretical justification for the item reduction is provided along with testing the reliability. In order to ease the respondents scale size is uniformly maintained as between 1-5 where 1 indicates strongly disagree and 5 denote strongly agree. Two scales on control over Choice set with 7 items (1-5) and consumer involvement in shopping scale with 4 items (1-5) was constructed and tested for reliability and found significant when tested zone wise in the sample city.
The satisfied consumer value creation scale with 11 items (1-5) was found significant with a reliability of 0.996 in split zone wise sample study.

The following table gives the list of all the scales used in the development of the scheduled questionnaire.

**Table No: 4.3.**

**Marketing scales used for the study**

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Scale Name</th>
<th>Explanation of the scale</th>
<th>Modification</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part I</strong>&lt;br&gt;Scales used for Consumer Empowerment measure (items)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Product expertise (4) (1-7)</td>
<td>The scale measures the degree of knowledge and experience a person reports having about a specified product class.</td>
<td>Items are not modified but the size of the Likert scale is taken as from 1-5</td>
<td>Markg. Scale No: 200, Pg.No: 501, Mishra et al(1993).</td>
</tr>
<tr>
<td>2</td>
<td>Self confidence (measures person’s confidence in the judgment made)(3) (1-6)</td>
<td>The scale provides the certainty with which a consumer perceives she has been able to accurately reflect her evaluation of a brand.</td>
<td>Items are not modified but the size of the Likert scale is taken as from 1-5</td>
<td>Markg. Scale 40, Pg.No: 117/ Markg. Scale 237, Pg.No: 582, Lumpkin &amp; Hund (1989)</td>
</tr>
<tr>
<td>3</td>
<td>Consumer power (7) (1-5)</td>
<td>The scale measuring a consumer’s sense of ineffectiveness in getting a company to respond to her needs.</td>
<td>No Modification</td>
<td>Markg. Scale 189, Pg.No: 425, Lambert (1980)</td>
</tr>
<tr>
<td>4</td>
<td>Freedom of movement (5) (1-5)</td>
<td>It is the degree to which a person would willingly engage in an activity without coercion or obligation.</td>
<td>No Modification</td>
<td>Markg. Scale 107, Pg.No: 250, Unger &amp; Lynene S.(1981)</td>
</tr>
<tr>
<td>Sl. No</td>
<td>Scale Name</td>
<td>Explanation of the scale</td>
<td>Modification</td>
<td>Reference</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>Attitude to choose the best (3) (1-5)</td>
<td>The scale measures person’s description of her intention in a recently completed consumption-related Choice activity to select the best product alternative among those available.</td>
<td>No Modification</td>
<td>Mrkg. Scale 135, Pg.No: 342, Cooper-Martin (1993)</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Part II</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scales used for Retail Store Activities measure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Retail Image (13) (1-7)</td>
<td>Store image (Overall)</td>
<td>One item is dropped and scale size modified to 1-5.</td>
<td>Markg. Scale 285 and 264Pg.No:699 and 582, Kerin et al (1992); Wu and Petroshius (1987).</td>
</tr>
<tr>
<td>3</td>
<td>Information relevance (5) (1-7)</td>
<td>The scale used with regard to the relevance of some information in distinguishing between alternative brands as part of a decision task</td>
<td>No items were dropped but the size of the scale is modified to 1-5</td>
<td>Markg. Scale 133, Pg.No:337, Mishra et al (1993)</td>
</tr>
<tr>
<td>4</td>
<td>Influence on Family Decision Making</td>
<td>The scale tries to measure the percentage of women shoppers decision making with respect to product categories given with the spouse and other family members</td>
<td>Modified with respect to product categories to suite the Indian retail context. Scale found reliable.</td>
<td>Corfman, Kim P. (1994)</td>
</tr>
</tbody>
</table>
Part III
Developed scales for the study

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Scale Name</th>
<th>Explanation of the scale</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Control over Choice set (7) (1-5)</td>
<td>This scale is developed to measure the control given by the retailer to women shoppers in deciding Choice set selection, delivery channel decision, in store improvement opinion and in deciding on correct pricing for decision related aspects.</td>
<td>Developed scale and tested for reliability and found significant</td>
</tr>
<tr>
<td>6</td>
<td>Consumer Involvement (4) (1-5)</td>
<td>This scale measures the consumer involvement while shopping</td>
<td>Developed scale and tested for reliability and found significant</td>
</tr>
<tr>
<td>7</td>
<td>Satisfied customer value creation to firm (11) (1-5)</td>
<td>The scale tries to measures the value created by the customer when satisfied with the retail activities.</td>
<td>Developed scale and tested for reliability and found significant</td>
</tr>
</tbody>
</table>

4.4 Sampling Process and Sample Size

4.4.1 Target Population

Bangalore, the state capital of Karnataka State is renowned as ‘Silicon City’ of India. The city being the hub of major IT and BT companies enjoys the well built infrastructure. The city is well connected with rail, road and air transport facilities to major parts of the country. The total population of the city is recorded as 57,01,456 (Census, 2001) and as per the study estimation of IISC (2007), the population of the city is around 70,00,000. Women comprises to 47.5% of this total population, indicating an almost equal gender distribution in the city (Wikipedia, 2010). The target population i.e women individuals of the study being so large i.e 33,25,000 (47.5% of 70 Lakh) and exhaustive challenges the researcher. Also it is not viable to study all the women of the city from the study objective point of view. After reviewing literatures related to the ‘target population’ study, the researcher has decided to confine the study to ‘women shoppers’ of Bangalore city based on the definition of ‘female shopper’ as defined in similar studies of Dabholkar, Thorpe and Rentz, 1996; Boshoff and Terblanche, (1997). That means the ‘women shoppers’ are
those women respondents [who are well educated (minimum of SSLC passed), above 18 years (maximum 50 years), both married and single, either working or housewife] who shop from the six different retail formats viz. Department Stores, Malls, Hypermarkets, Exclusive Brand Showrooms, Supermarkets and Traditional Stand Alone shops located in Bangalore city. Understanding the practical challenges in considering the population study, sampling study was decided. The sample study was systematically carried out in the following way as given in the sampling procedure.

4.4.2 Sampling Procedure and Technique

As discussed previously, retail sector comprises of organised and unorganised retail formats (definition provided in chapter 1). In order to study both the formats in detail, the sample city i.e. Bangalore is geographically divided into five zones viz. North, East, Central, South and West, based on the Census (2001) city division wise study.

Further, in order to study the various retail stores and store formats in the study ‘State Government released database on retail stores and commercial establishments KSCE-AR 2000’ was studied. A thorough study of the database (KSCE-AR 2000) released 10 years back (that’s the only recent state database released available) was found obsolete in revealing the information on organised retail growth that has mushroomed in the past five years. The contribution of organised retail formats is significant in the cause ‘retail revolution’ in the city. Also, from the study quintessence view point it becomes necessary to study modern retail formats.

As a result, it became vital for the researcher to study and look for the new and updated databases that provided recent information on both organised and unorganised store formats existing in the city. In this direction ‘TATA Yellow Pages ‘Just Dial Software Database’ was found reliable (Misra Ashish, 2009) and most updated with the information on existing retail store formats in the city. Hence, it was decided to consider this database as ‘sample frame’ for studying the various retail formats in this empirical study.

In the database, the total sample city is classified based on the five divisions in accordance with the Census (2001) area classification. And further, major areas of the city are classified zonal wise as given in the following flow chart (Fig 4.2).
There are 34 major areas listed from five different zones (Appendix D) based on the retail shop density in the database considered for the study. There are totally 65 modern retail stores of various formats such as superstores, hyper markets, bazaars, marts etc., and 19 malls (totally 74 outlets) are listed in the database. A national retail study conducted by Government of India (Ministry of Consumer Affairs, Food and Public Distributions) in collaboration with ICRIER (2001) was carried out an exploratory study considering 1200 retail outlets as sample size. So considering the ‘sample size selection’ in the national level studies and referring to similar studies concept for selecting a store sample size (Kaul Shubhashini, 2007), researcher has well thought-out 30 retail outlets of six different formats (accounting to 41% of the total retail shops listed in the database i.e 74) from 15 major areas (out of 34 listed i.e nearly 50% of the areas) listed in the database (sample frame) for the study.

In this research, ‘Purposive Sampling’ [i.e Subjects are selected because of some characteristic or we sample with a specific purpose in mind (Patton 1990)]
procedure is adopted to collect the samples for the study. In this case of research samples are selected based on the two specific cases viz. **Criterion** and **Theory based or operational construct**. Firstly, ‘women shoppers’ are the specific criterion explaining the ‘perception of consumer empowerment while shopping’. Secondly, there are specific retail constructs developed based on the theories which are assumed to cause the ‘perception of consumer empowerment’ among women shoppers. As a result, finding manifestations of a theoretical construct of interest so as to elaborate and examine the constructs is of primary focus which makes the researcher take up ‘purposive sampling study’. Based on this sampling, 660 samples were selected from the sample city Bangalore. The sample size selection is explained in detail in the next section after defining the ‘sampling unit’ of the study.

### 4.4.3 Sampling Unit

In accordance with the ‘Purposive Sampling’ requirement, **individual woman shoppers** of the age group 18-45, married/single, working/homemaker and with minimum 10th grade (SSLC) passed, who shop from six major retail format categories (as defined 4.4.2 retail sector study) in the city are considered as sampling unit.

### 4.4.4 Sampling Size

The issue of sample size is the issue of number of elements to be included in the study. A detailed review of literature revealed different perspectives on the appropriate sample size. However, there are two important criterions addressed in this case and they are as given below.

Primarily, the ‘women shoppers’ are considered as specific sampling unit based on the purpose and criterion of the study (Patton 1990) and they are randomly selected and interviewed in a situation of ‘mall intercept’(Parikh Darshan, 2006) while exiting after shopping.

Secondly, the sample size of the defined sample unit were taken care to meet the stringent or ideal **item-respondent ratio scale of 1:10** (Hinkin 1995 and Heir et al 2006) in order to carry out the multivariate statistical technique SEM for the observed dataset.
Hence, the study by considering the above mentioned criterion and the relevant literature related to testing CFA and SEM (Heir et al 2006), an ideal (higher) item-respondent ratio of 1:10 has been considered to draw a sample size of 660 (i.e 66 items*10 respondents=660 sample size) for the study. However, considering the fact that SEM is very sensitive to missing data, 75 incomplete responses of the respondents were discarded from the study and finally a sample size (N) of 585 is considered for carrying out further research and statistical testing.

4.4.5 Time and Day of Survey Conducted

In general 4 pm- 8 pm is generally considered as prime time for shopping for both by the working and non working women shoppers (based on the focus group survey). The information is collected all through the week evenly from 33 outlets of six different formats

4.4.6 Span of Research Study

The research was commenced on October 15, 2005 with a start of literature studies in the decided area. Once the concept was clear it took two years for the researcher to work on various activities such as questionnaire development, pilot testing, research methods, publishing (three articles related to three chapters of thesis) in line with the research. Finally, the report writing was commenced and final synopsis was presented in the month of February 2010 and the thesis draft by May 2010.

4.5 Structural Equation Modelling (SEM)

One of the primary objectives of multivariate techniques is to expand the researcher’s exploratory ability and statistical efficiency. Multiple regressions, factor analysis, multivariate analysis of variance, Discriminant analysis and the other techniques discussed in previous chapters all provide the researcher with powerful tools for addressing a wide range of managerial and theoretical questions. But they all share one common limitation: each technique can examine only a single relationship at a time. Even the techniques allowing for multiple dependent variables, such as multivariate analysis of variance and canonical analysis, still represent only a single relationship between the dependent and independent variables.
SEM is an extension of several multivariate techniques, most notably multiple regression and factor analysis. SEM modelling examines a series of dependence relationships simultaneously. It is particularly useful when one dependent variable becomes an independent variable in subsequent dependence relationships. This set of relationships, each with dependent and independent variables, is the basis of SEM. The basic formulation of SEM in equation form is

\[ Y_1 = X_{11} + X_{12} + X_{13} + \ldots + X_{1n} \]
\[ Y_2 = X_{21} + X_{22} + X_{23} + \ldots + X_{2n} \]
\[ Y_m = X_{m1} + X_{m2} + X_{m3} + \ldots + X_{mn} \]

(metric) \hspace{1cm} (metric, nonmetric)

SEM modelling has been used in almost every conceivable field of study, including education, marketing, psychology, sociology, management, testing and measurement, health, demography, organizational behaviour, biology, and even genetics. The reasons for its attractiveness to such diverse areas is twofold (1) it provides a straightforward method of dealing with multiple relationships simultaneously while providing statistical efficiency, and (2) its ability to assess the relationships comprehensively and provide a transition from exploratory to confirmatory analysis. This transition corresponds to greater efforts in all fields of study toward developing a more systematic and holistic view of problems. Such efforts require the ability to test a series of relationships constituting a large-scale model, a set of fundamental principles, or an entire theory. These are tasks for which structural equation modelling is well suited. SEM techniques are distinguished by two characteristics: (1) estimation of multiple and interrelated dependence relationships, and (2) the ability to represent unobserved concepts in these relationships and account for measurement error in the estimation process.

4.5.1 Stages in SEM

There is a seven-stage process followed to ensure that both the models viz. structural and measurement models are correctly specified and the results are valid when they are simultaneously used but playing distinct roles in the overall analysis.
Stage 1: Developing a theoretically based model

SEM is based on causal relationships, in which the change in one variable is assumed to result in a change in another variable. The casual relationships can take many forms and meanings, from the strict causation found in physical processes, such as a chemical reaction, to the less well-defined relationships encountered in behavioural research, such as the "causes" of educational achievement or the "reasons" why we purchase one product rather than another. The strength and the conviction with which the researcher can assume causation between two variables lies not in the analytical methods chosen but in the theoretical justification provided to support the analyses. The "requirements" for asserting causation have deep roots in various views of philosophy of science. There is general agreement with at least four established criteria for making causal assertions: (1) Sufficient association between the two variables, (2) Temporal antecedence of the cause versus the effect, (3) Lack of alternative causal variables, and (4) A theoretical basis for the relationship.

Although in many instances all of the established criteria for making causal assertions are not strictly met, causal assertions can possibly be made if the relationships are based on a theoretical rationale. Also one should be careful in considering all the variables affecting the dependent variable. The omission of one or more predictive variables results in the problem of "specification error". On the other hand the desire to include all variables, however, must be balanced against the practical limitations of SEM. The researcher should not omit a concept solely because the number of variables is becoming large but one has to recognize the benefits of parsimonious and concise theoretical models.

Stage 2: Constructing a path diagram

A path diagram is more than just a visual portrayal of the relationships because it allows the researcher to present not only the predictive relationships among constructs (i.e. dependent-independent variable relationships), but also associative relationships (correlations) among constructs and even indicators.

Stage 3: Converting the path diagram into a set of Structural and Measurement Models

Once the theoretical model is developed and the path diagram is portrayed the next step is to specify the model in more formal terms. This is done through a series of
equations that define (1) the structural equations linking constructs, (2) the measurement model specifying which variables measure which constructs, and (3) a set of matrices indicating any hypothesized correlations among constructs or variables. The objective is to link operational definitions of the constructs to theory for the appropriate empirical test.

**Stage 4. Choosing the input matrix type and estimating the proposed model**

As shown with the prior stages, much more is required of the researcher using SEM in terms of specifying the model to be estimated than with any other multivariate technique, with the possible exception of conjoint analysis. Now the researcher must address the actual process of estimating the specified model, including the issues of inputting the data in the appropriate form and selecting the estimation procedure. The decisions made in these areas have profound impacts on the results achieved.

**Stage 5: Assessing the identification of the structural model**

**Degrees of Freedom:** For purposes of identification, the researcher is concerned with the size of the covariance or correlation matrix relative to the number of estimated coefficients.

**Stage 6: Evaluating Goodness-of-fit criteria**

Once the model is established as providing acceptable estimates, the goodness-of-fit must then be assessed at several levels: first for the overall model and then for the measurement and structural models separately.

**Stage 7. Interpreting and Modifying the Model**

Once the model is deemed acceptable, the researcher should first examine the results for their correspondence to the proposed theory. Are the principal relationships in the theory supported and found to be statistically significant? Are all of the relationships in the hypothesized direction (positive or negative)? All of these and many more questions can be addressed from the empirical results. In the course of addressing these questions, the researcher may find the need to consider two issues of interpretation: the use of the standardized versus unstandardized solutions and model respecification.
4.5.2 Developing a Modelling Strategy

SEM provides the researcher with a powerful analytical tool appropriate for many research objectives. But the objectives have to be defined using the guidelines provided in the modelling strategy. In case of SEM, the ultimate outcome is always the assessment of a series of relationships. SEM encompasses an entire family of models known by many names, among them covariance structure analysis, latent variable analysis, confirmatory factor analysis, and often simply LISREL (software package) analysis. However for the sake this study, three distinct strategies in the application of SEM has been defined as under:

Confirmatory Modelling Strategy: The most direct application of SEM is a confirmatory modelling strategy, whereas the researcher specifies a single model, and SEM is used to assess its statistical significance. Here the researcher is saying, "It either works or it doesn’t". Even though this model is not a most rigorous application, it tries to confirm the proposed model is one of several possible acceptable models. Several different models might have equally acceptable model fits. Thus, the more rigorous test is achieved by comparing alternative models.

Competing Models Strategy: Obtaining an acceptable level of fit for both the overall model and the measurement and structural models does not assure the researcher that the "best" model has been found. Numerous alternative models may provide equal or even better fits. As a means of evaluating the estimated model with alternative models, overall model comparisons can be performed in a competing models strategy. The strongest test of a proposed model is to identify and test competing models that represent truly different hypothetical structural relationships. When comparing these models, the researcher comes much closer to a test of competing "theories" which is a much stronger test than just a slight modification of a single "theory."

Model Development Strategy: The model development strategy differs from the prior two strategies in that although a model is proposed, the purpose of the modelling effort is to improve the model through modifications of the structural and/or measurement models. In many applications, theory can provide only a starting point for development of a theoretically justified model that can be empirically supported. Thus, the researcher must employ SEM not just to test the model empirically but also to provide insights into its respecification. One note of caution is the researcher must
be careful not to employ this strategy to the extent that the final model has acceptable fit but cannot be generalized to other samples or populations. Moreover, the respecification of a model must always be made with theoretical support rather than just empirical justification.

4.6 Data Analysis and Interpretation

Once the observed and collected data are statistically tested the next stage in research process is to analyse and interpret the results. The analysis and the interpretation of the statistical results are should be given in a simple legible manner to make the reader understand the total research work. The analysis and interpretation of the outcomes of the work are significant in arriving at the conclusion and in suggesting managerial implications. Hence the researcher has to be doubly careful in providing the actual results related to the outcomes with due responsibility. The data analysis and interpretation of the research work are provided in the next chapter.

4.7 Report Preparation

Report generation is the last activity of the research process. A vital care has to be taken to put the findings of the research in a most presentable way without affecting the essence of the study. The report carries a series of information in the form of chapters and sub chapters such as – introduction, need for the study, scope of the study, limitations, literature review, research approach, the research design, data collection, data analysis and findings, suggestions and conclusions, followed by managerial implications if any. Also the report carries scope for further research and discusses the various research opportunities available in the same or extend field.

4.8 Summary

This chapter discusses in depth the entire research methodology adopted in carrying out this exploratory study. Various research steps and the most advanced SEM statistics using LISREL has been discussed. The observed data are derived in the form of structured equations. Also there is a discussion on the data analysis and interpretation with the report generation as final activity.
References

Text Books referred


Databases referred

State Government Database KSCE-AR 2000 on retail shops and commercial establishments in Karnataka state.

TATA yellow pages 'Just dial database' a commercial database on classification and retail stores in the city of Bangalore.

Journal articles


Articles referred to create questionnaire


Freedom of movement- Unger & Lynene S. 1981

