A Confirmatory Factor Analysis of Teenage Consumer Styles Inventory: Evidence from India

Sarita Chaudhary* and Ajay Kumar Day

1 Birla Institute of Management Technology, Greater Noida, Uttar Pradesh

INTRODUCTION

Globalisation and a fast growing economy have led to the resurgence of the Indian consumer market. The Indian market is flooded with national and international brands and a variety of retail channels. The large number of shopping choices makes it difficult for consumers to exercise option. The study of literature suggests that consumers approach shopping with certain decision making traits that combine to form decision making styles which are more permanent than shopping behaviours.

Teenage shoppers are an emerging age group that is recognized as a meaningful market segment, yet there is lack of extant research explicit to this group especially in India. The teenagers are part of a large young consumer market in India with nearly 245 million (One India News, 2011) individuals aged between 10-19 years. The teenagers are heavy users of mobile phones, restaurant service (for fast food) and branded apparels (Majumdar, 2010). The high acceptability of new products in the fast food category among the younger generation of India is leading to a heightened competition (Goyal and Singh, 2007). In order to succeed in this competitive environment, marketers need to understand decision making orientations of young consumers and segment them accordingly (Lyonski, Durlasula and Zotos, 1996). Age of the consumer has an effect on the consumer decision making styles (Khare, 2012). Thus the mental orientation of

The purpose of this paper is to determine the consumer decision making styles of Indian teenagers by testing the validity and reliability of revised Sproles and Kendall’s Consumer style inventory scale. Applying multistage cluster sampling responses of 1216 students of 13 to 18 years of age studying in six CBSE schools in NCR were collected. Factors were extracted through exploratory factor analysis. The reliability of the scale was tested through Cronbach’s alpha. The unidimensionality and construct validity (convergent and discriminant) of the scale was tested through confirmatory factor analysis. As compared to Sproles and Kendall’s (1986) findings, Indian teenagers displayed different characteristics of consumer decision making styles. Although most of the studies across cultures are mere replication of the Sproles and Kendall’s (1986) eight factor CSI, none have questioned the validity and reliability in Indian context. This study contributes to the body of literature by testing whether this scale can be applied for measuring the consumer decision making styles of teenagers in India. It has practical implications for marketers who wish to optimise outcome by devising marketing strategies aligned to the decision making styles of teenagers as consumers.

Key words: Consumer decision making styles, Indian teenagers, Consumer Style Inventory, Confirmatory factor analysis, exploratory factor analysis

*Corresponding author.
teenagers is completely different from that of adults. A few recent studies conducted on Consumer
decision making styles in India have been on young
adult consumer segment (Mishra, 2010; Khare, 2012;
John and Batchelor, 2015) and the teenage segment has
not received adequate attention. Marketers of
products and services intending to serve this large
segment are more likely to succeed if they have a
good understanding of the decision making styles of
teenagers. Recent studies by the authors show that
socialisation agents have an impact on the consumer
decision making styles of Indian teenagers
(Chaudhary and Dey, 2015). Further these
socialisation agents also influence the materialism
of teenagers (Chaudhary and Dey, in press). Thus it
becomes imperative to establish the consumer
decision making styles of Indian teenagers.

Both marketers and researchers have been interested in the consumer decision making styles (CDMS)
predominately because they are useful in segmenting
the consumers and devising marketing strategies for
them. CDMS enable researchers to determine the
consumer behaviour of these segments as the styles
remain unchanged over time. Researchers (Mokllis
and Salleh, 2009; Chi and Lovett, 2010) across
different cultures have studied the decision making
styles with the help of the Consumer style inventory
devised by Sproles and Kendall (1986). The CDMS
have been defined as “a mental orientation
characterizing a consumer’s approach to making
choices” (Sproles and Kendall, 1986). These choices
relate to choosing between alternative products. The
decision making styles measure the cognitive and
affective characteristics of the consumer through the
consumer style inventory (CSI), consisting of eight
eight characteristics: (1) “Perfectionist, High quality
conscious consumer” – searches for the best quality
in products; (2) “Brand conscious, price equals
quality consumer”- buys more expensive, well
known brands; (3) “Novelty-fashion conscious consumer”- are variety seeking and have the
products of latest styles; (4) “Recreational and
hedonistic shopping consciousness”- find shopping
pleasant and shop just for the fun of it; (5) “Price
conscious and value for money” consumer- look for
value for money and are comparison shoppers; (6)
“Impulsive, careless consumer”- do not plan their
shopping; (7) “Confused by over choice”- have
difficulty in making choices from many brands and
stores due to information overload; (8) “Habitual
and brand-loyal” – stick to favourite brands and
stores due to habit.

This paper aims to profile teenagers in India on the
basis of CDMS by testing the reliability and validity
of the revised consumer style inventory. In the past
researchers focused on the decision making styles of
Indian young consumers belonging to a higher age
group (Naranag and Mishra, 2014; Tanksale, Neelam
and Venkatachalami, 2013; Singh and Tripathi 2012;
Mishra, 2010; Canabal, 2002; Lyonski, Durvasula
and Zotos, 1996). The area of decision making styles
of Indian teenagers is still under researched as no
systematic study has been conducted to understand
them from a decision-making perspective using the
CSI.

LITERATURE REVIEW
The teenage segment
Although, researchers denote the selection of
teenagers as qualified respondents for any CDMS
study citing the reason that they have limited
exposure to markets and hence their CDMS are
evolving, the motivations to study teenagers as a
segment for consumer research are many. During
the transition from teenager to early adult-hood, they
evolve their own behaviour patterns, attitudes, and
values and form their own consumption patterns
(Holbrook and Schindler, 1989; Fanini, 1994); brand
loyalty is developed at an early age that lasts well
into adulthood, and therefore they constitute a
future market (McNeal, 1992) and they influence
decision making of family and friends (Kaur and
Medury, 2011; Chaudhary and Gupta, 2012; Singh
and Agarwal, 2012).

The eight factor CSI
To measure CDMS this study has used the consumer
characteristics approach (Sproles and Kendall, 1996)
which seems to be the most powerful and
explanatory since it focuses on the mental
orientation of consumers in making decisions
(Lyonski, Durvasula and Zotos, 1996).

Some researchers confirmed the validity of the eight
factor model, even though these were different from the
original Sproles and Kendall (1986) (Hafstrom,
Chae and Chung, 1992; Durvasula, Lyonski and
Andrews, 1993; Leo, Bennett and Hartel, 2005;
Mokllis, 2009). However, other researchers could
not confirm the reliability of eight factor model
(Lyonski, Durvasula and Zotos, 1996; Fan and Xiao,
1998; Bakewell and Mitchell, 2003; Mokllis and
Salleh, 2009; Chi and Lovett, 2010). Only Siu and Hui
(2001) confirmed the same eight factors as the
original Sproles and Kendall (1986) in China which
was in contrast to the other Chinese studies. In India
there were disparities reported in findings of
consumer decision making styles for adult
consumers. The number of factors extracted varied
from the maximum of ten to the minimum of five.
reported nine, Ravindran, Ram and Kumar (2009)
identified six while Naranag and Mishra (2014) five.

The literature review leads to research questions: Do
Indian teenagers display CSI containing eight
dimensions? Will these factors be same as Sproles
and Kendall (1986)?

Reliability and validity of the CSI
The CSI as designed by Sproles and Kendall (1996)
had low reliability (below 0.6) for four factors out of
eight factors.

The reliability and validity of the CSI in measuring
the consumer decision making styles had been
questioned by a few researchers. Durvasula, Lyonski
and Andrews (1993) stated that the scales of
‘price-value consciousness’ and ‘habitual brand
loyalty’ required to be further refined. Fan and Xiao
(1998) identified the problem of overlapping in the
model of Sproles and Kendall (1986). The overlapping
was on account of three parameters: Firstly, price-value consciousness consisted of
“Price” and “quality” dimensions & “value” means
“paying the lowest price for highest quality”.
Secondly, there was overlapping of impulsiveness
with habitual, brand - loyalty orientation towards
shopping. Both were opposite to each other.
Impulsive consumers buy different brands without
thinking while habitual consumers buy certain
products according to their liking. Thirdly, the
new dimension “time-energy conserving” of
Hafstrom, Chae and Chung (1992) was overlapping
with the recreational shopping consciousness. Leo,
Bennett, & Hartel (2005) stated that the CSI was more
skewed towards fashion.

The confirmatory factor analysis (German data) to
test the eight factor model proposed by Sproles and
Kendall (1986) resulted in lack of identification of
model establishing the need for an EFA. The results
indicated a seven factor model which was validated
with a confirmatory factor analysis (Walsh, Mitchell
and Thurai, 2001).

In India, researchers using the CSI also found low
reliabilities in the scale. Lyonski, Durvasula and
Zotos (1996) established seven factors for the Indian
sample (size 73) out of which three (Recreational
shopping conscious, Impulsive and Habitual brand
loyal) had low Cronbach’s alpha (below 0.6). Further
they found that an eight factor solution as proposed
by Sproles and Kendall (1986) was problematic.
Canabal (2002) in a study of 173 college students in
south India found that out of eight consumer
decision making styles only five (Brand conscious
style, High quality conscious/Perfectionist style,
Confused by over choice style, Impulsive/Brand
indifferent style, Recreational shopper style) had
values of Cronbach’s alpha above 0.4 while three factors (Time Conscious; Price/Value Conscious; Dissatisfied/Careless) were even below this.

Another study (Tankasale, Neralam and Venkatachalam, 2013) on 254 undergraduate college students in Pune, India confirmed only six styles (Recreational; Hedonistic; Perfectionist; high-quality conscious; Novelty fashion conscious; Brand conscious and confused by over choice) with adequate reliability (Cronbach’s alpha 0.6 and above) but the new seventh style (shopping avoidance- time saver) had low reliability (Cronbach’s alpha=0.46).

The above review of literature shows that there is a need to determine the CSI with adequately large and homogeneous sample and test its reliability and validity for Indian consumers in general and teenagers in particular. This paper fills the research gap in literature by identifying the CSI as a tool for measuring the CDMS of teenagers. In addition, there was a call for establishing the validity of the scale across populations by Sproles and Kendall (1986). In India there is no study which validates the CSI for measuring the CDMS of the teenage segment. This research also establishes the validity of the instrument.

Review of Methodology
Most of the researchers have used Exploratory Factor Analysis (EFA) for extracting the factors of CDMS (Sproles and Kendall, 1986; Lyonski, Durvasula and Zotos, 1996; Mokhlis and Salleh, 2009; Roe, Fynn and Lee, 2010) but they did not confirm these factors. A few researchers have confirmed the factors through Confirmatory Factor Analysis (CFA) (Durvasula, Lynsonski, and Andrews, 1993; Walsh, Mitchell & Tharou, 2001; Potgieter, Wiese, and Strateb, 2013). So the question emerges: Can the CDMS characteristics be confirmed by CFA?

RESEARCH OBJECTIVES AND HYPOTHESES
The above review of literature, research gaps and corresponding research questions lead us to the objective of this research paper in the context of Indian teenagers:
- To revise the eight factors consumer style inventory of Sproles and Kendall (1986) and test its reliability and validity.
- To identify the Consumer decision making styles of Indian teenagers.

For the segment of Indian teenagers the Hypothesis that can be proposed from this objective is:
H1: The latent constructs of CDMS are different from the original eight factor Sproles and Kendall’s (1986) CDMS

METHODOLOGY AND SAMPLING
Instrument
An instrument of 49 items was developed by the researchers consisting of two sections. The first section contained 5 close ended questions that provided data concerning the demographics of the respondents. These demographics included questions on gender, age, product category, Father’s education, Mother’s education and Father’s occupation. The second section contained 44 items, 5 point Likert scale measuring the consumer decision making styles based on the Sproles and Kendall (1986) scale.

Pilot study
A pilot study (sample size 200) was conducted for school children in the age group of 13 to 18 years studying in classes 8 to 12. Students completed the questionnaire in their class rooms under the supervision of the researcher and teacher during the school hours. Each statement was tested by t test of difference of means to check if it could produce significant differences between responses of people ‘who wish to agree’ and ‘who wish to disagree’. All statements qualified for EFA. This data of the pilot study was not included in the final analysis.

Final study
For the final study, a multi stage cluster sampling was used. Out of 25 short listed schools, permissions were obtained from six schools. The study yielded 1216 (mean age 16, standard deviation = 1.5) filled responses out of 1286 data set. The teenagers were from educated families and about 50% belonged to business class family. The sample characteristics are presented in Table 1.

Table 1: Summary Statistics on Sample

<table>
<thead>
<tr>
<th>Sample Characteristics</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>698</td>
<td>57.40</td>
</tr>
<tr>
<td>Girls</td>
<td>518</td>
<td>42.60</td>
</tr>
<tr>
<td>2. Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 years</td>
<td>241</td>
<td>19.82</td>
</tr>
<tr>
<td>14 years</td>
<td>271</td>
<td>22.29</td>
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<td>15 years</td>
<td>246</td>
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<tr>
<td>16 years</td>
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<tr>
<td>17 years</td>
<td>201</td>
<td>16.53</td>
</tr>
<tr>
<td>18 years</td>
<td>62</td>
<td>5.10</td>
</tr>
<tr>
<td>4. Father’s education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>75</td>
<td>6.25</td>
</tr>
<tr>
<td>Graduate</td>
<td>558</td>
<td>45.72</td>
</tr>
<tr>
<td>Post graduate</td>
<td>584</td>
<td>48.03</td>
</tr>
<tr>
<td>5. Mother’s education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>108</td>
<td>8.88</td>
</tr>
<tr>
<td>Graduate</td>
<td>650</td>
<td>54.28</td>
</tr>
<tr>
<td>Post graduate</td>
<td>448</td>
<td>36.84</td>
</tr>
<tr>
<td>6. Father’s occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>814</td>
<td>50.49</td>
</tr>
<tr>
<td>Service</td>
<td>422</td>
<td>34.35</td>
</tr>
<tr>
<td>Professional</td>
<td>160</td>
<td>13.16</td>
</tr>
</tbody>
</table>

Table 2: EFA results of revised CSI

<table>
<thead>
<tr>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach’s Alpha</td>
<td>Eigen Value</td>
<td>Variance Explained</td>
<td>Item Loading</td>
<td>Cronbach’s Alpha</td>
</tr>
<tr>
<td>0.82</td>
<td>0.82</td>
<td>0.82</td>
<td>0.82</td>
<td>0.82</td>
</tr>
<tr>
<td>2.37</td>
<td>2.37</td>
<td>2.37</td>
<td>2.37</td>
<td>2.37</td>
</tr>
<tr>
<td>0.85</td>
<td>0.85</td>
<td>0.85</td>
<td>0.85</td>
<td>0.85</td>
</tr>
<tr>
<td>0.85</td>
<td>0.85</td>
<td>0.85</td>
<td>0.85</td>
<td>0.85</td>
</tr>
</tbody>
</table>

Item Loading

5.1 Shopping is not a pleasant activity to me. 0.796
5.2 Shopping makes my time. 0.687
5.3 Shopping is one of the enjoyable activities of my life. 0.630

Factor 2: Confused by over choice (cboe)
Cronbach’s Alpha 0.89
Eigen Value 2.08
Variance Explained 13.73

Item Loading

7.1 I have many brands of product to choose from. 0.779
7.2 All the information I get on different product confuses me. 0.703
7.3 The more I learn about product, the harder it is to choose the best. 0.747

Factor 3: Brand Consciousness (brc)
Cronbach’s Alpha 0.46
Eigen Value 1.14
Variance Explained 12.73

Item Loading

12.1 The most expensive brands of product are my choice. 0.757
12.2 I prefer buying the best selling brands of product. 0.779
12.3 The well known brands of product are the best to me. 0.729

Factor 4: Perfectionist high quality consciousness (phc)
Cronbach’s Alpha 0.09
Eigen Value 1.31
Variance Explained 8.32

Item Loading

3.1 When it comes to purchase product, I try to get the best. 0.600
3.2 In general, I usually try to buy the best overall quality of product. 0.670

Factor 5: Price value consciousness (pvc)
Cronbach’s Alpha 0.05
Eigen Value 1.14
Variance Explained 7.61

Item Loading

4.1 I would not buy without cost to the order. 0.641
4.2 I consider price first. 0.694

Factor 6: Hedonistic Brand loyal Consumer (hbc)
Cronbach’s Alpha 0.50
Eigen Value 1.11
Variance Explained 7.36

Item Loading

6.1. I have behaviours of product to buy over and over. 0.785
6.2 I once find a product or brand I like I stick with it. 0.884
Factor one: Recreational/Hedonistic (rec) had a high Cronbach's alpha (0.845) and explained 19.11% of variance with an Eigen value of 2.867. The reliability of the original scale was much lower at Cronbach's alpha= 0.75. As compared to Sproles and Kendall's CDMS three out of five items loaded on this factor with very high factor loadings (0.8 and above). This factor characterised that the Indian teenagers found “shopping to be a pleasant activity”; “did not waste their time” and “was one of the most enjoyable activities of their lives”.

Factor two: Confused by over choice (cbc), explained 13.73% variance with adequate Cronbach's alpha (0.68) and Eigen value (2.06). In contrast to Sproles and Kendall's scale, three out of four factors loaded on this factor. The factor loadings were higher (0.7 and above) than the original study. The reliability of this factor was higher than the one in Sproles and Kendall’s study, which had a Cronbach's alpha of 0.55. The characteristics of Indian teenagers were that they have many brands to choose from and they feel confused; “all the information they get on different products confuses them”; “the more they learn about products, the harder it is to choose the best”.

Factor three: Brand consciousness (brd) also had adequate reliability with Cronbach's alpha of 0.66, Eigen value of 1.91 and explained variance 12.72%. Three items out of seven items loaded on this factor with factor loadings higher than 0.7 (as compared to the original scale of factor loadings 0.4 and above). This factor was characterized as teenagers “making choice of expensive brands”; “prefer best selling brands” and feel that “well known brands are best for them”.

Factor four: Perfectionist high quality consciousness (phq) was characterised by two items with high reliability (Cronbach's alpha =0.66), Eigen value above 1 and 8.22% of the variance explained. The original scale had 6 items with Cronbach's alpha of 0.74. This can be attributed to the large number of items in the factor. This factor explains that Indian teenagers try to “purchase products which are best” and with “best overall quality”.

Factor five: Price value consciousness (pvc) was measured by two items which determined that the teenage consumer “carefully watched how much they spend” and “considered price first”. These items were different from the original CSI and better indicator of the factor as the Cronbach’s alpha was 0.65 in contrast to 0.48 in the original CSI. This factor had an eigen value of 1.14 and variance explained was 7.61%.

Factor Six: Habitual Brand loyal Consumer (bbi) had a relatively low Cronbach's alpha of 0.38 but it was slightly higher than 0.53 of the original CSI. The Eigen value of 1.10 was above 1 and it explained 7.56% of the variance. Two items were loaded on this factor which explained that the teenagers had “favourite brands they buy repeatedly” and “once they find a product they stick with it”. The Indian teenagers were not found to be “Novelty fashion conscious consumer” and “Impulsive, careless consumer”. Thus suggesting that “HI: The latent constructs of CDMS are different from the original eight factor Sproles and Kendall’s (1996) CDMS could be held true. The factors extracted were given the nomenclature according to their characteristics (Table 2). CFA was carried out to prove the hypothesis.

**Table 3: Comparison of Cronbach’s alpha of revised Scale with CSI**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Number of Items</th>
<th>Cronbach’s alpha</th>
<th>Number of Items</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1: Recreational/Hedonistic</td>
<td>3</td>
<td>0.84</td>
<td>5</td>
<td>0.76</td>
</tr>
<tr>
<td>Factor 2: Confused by over choice</td>
<td>3</td>
<td>0.68</td>
<td>4</td>
<td>0.55</td>
</tr>
<tr>
<td>Factor 3: Brand Consciousness</td>
<td>3</td>
<td>0.66</td>
<td>7</td>
<td>0.75</td>
</tr>
<tr>
<td>Factor 4: Perfectionist High Quality consciousness</td>
<td>2</td>
<td>0.66</td>
<td>8</td>
<td>0.74</td>
</tr>
<tr>
<td>Factor 5: Price value consciousness</td>
<td>2</td>
<td>0.65</td>
<td>3</td>
<td>0.48</td>
</tr>
<tr>
<td>Factor 6: Habitual Brand loyal Consumer</td>
<td>2</td>
<td>0.58</td>
<td>4</td>
<td>0.53</td>
</tr>
</tbody>
</table>

**Scale reliability**

The internal consistency reliabilities of the scale were assessed. The scale reliability is concerned with consistency, accuracy and predictability of the scale. Cronbach’s Alpha for each of the construct should be at least 0.60 for primary data collection (Hair; Black, Babin and Anderson, 2010). The results indicated that the internal consistency for all the factors in CDMS were appropriate (0.6 and above), except Habitual brand loyal Consumer’ factor was found to be marginally low in reliability (Cronbach’s alpha= 0.58). The comparison of the Cronbach’s alpha of the revised scale with the Sproles and Kendall’s (1986) CSI is presented in Table 3.

However, there are certain limitations associated with using Cronbach’s Alpha, the values get inflated as large numbers of items are included in the scale (Sekaran, 2000) and it does not determine the unidimensionality of the scale (Gerbing and Anderson, 1987). Thus confirmatory factor analysis was used to test the unidimensionality of the scale.

**Confinatory Factor analysis**

If investigators wish to explore patterns in the data or to test explicitly stated hypotheses, CFA proves to be helpful. On the other hand Confirmatory factor analysis is.
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analysis (CFA) is theory or hypothesis driven. With CFA it is possible to place substantively meaningful constraints on the factor model. Researchers can specify the number of factors or set the effect of one latent variable on observed variables to particular values. CFA allows researchers to test hypotheses about a particular factor structure.

In CFA, the planning of the analysis is driven by the theoretical relationships among the observed and unobserved variables. When a CFA is conducted, the researcher uses a hypothesized model to estimate a population covariance matrix that is compared with the observed covariance matrix. Technically, the researcher wants to minimize the difference between the estimated and observed matrices.

Confirmatory factor analysis was conducted using Analysis of Moment Structure (AMOS) software for establishing the consumer decision making styles of Indian teenagers. The measurement model fit with the data was checked with model fit indices.

Items with loadings of 0.5 and above (Hair, Black, Babin and Anderson, 2010) in the rotated component matrix were carried forward to the CFA stage. CFA was performed to determine the appropriateness of the six factor CDMS EFA result. The model was recursive. The notes for the model indicated that minimum was achieved (Chi Square =155.889, df =75, p =0.00). If the appropriate distributional assumptions are met and if the specified model is correct, then the value is the approximate probability of getting a chi-square statistic as large as the chi-square statistic obtained from the current set of data. The factor loadings are listed as regression weights in the maximum likelihood estimates. Maximum likelihood estimates were calculated from the covariance matrix and model fit indexes were computed.

The measurement model validity was assessed by overall Chi-square, P-value, absolute fit measures-Goodness-of-fit index (GFI), Root mean square error of approximation (RMSEA), Standardised root mean residual (SRMR) and Incremental fit indices-Comparative fit index (CFI). Since this model was not compared with another, the Parsimony Fit indices were not reported (Table 4).

The reliability of the experiment was confirmed by test-retest. The data set was split into two equal halves of 608 respondents each. The CFA model fit indices of first half and second half were found to be very close (Table 4).

**Conduct Validity**

Based on the final model the construct validity was tested in terms of convergent and discriminant validity (Hair, Black, Babin and Anderson, 2010). The construct validity is the extent to which the measured items reflect the latent constructs that those items are designed to measure. Convergent validity indicates that the items of a particular construct should converge or share a high proportion of variance in common. The convergent validity was tested by several methods, including factor loadings, average variance extracted and construct reliability. Discriminant validity refers to the extent to which a construct is truly distinct from other constructs. This was tested by comparing the variance extracted values for a construct with the squared inter construct correlation associated with that construct (Fornell and Larcker, 1981). Further if there are no cross loadings between the constructs discriminant validity is established, indicating that one individual measured item should represent only one latent construct (Hair, Black, Babin and Anderson, 2010). Face validity was not tested as this scale is an already well established in other countries.

**Factor loadings**

The standardised factor loadings for construct validity should be at least 0.5 (Hair, Black, Babin and Anderson, 2010). In the revised scale all the standardised factor loadings were found to be above 0.5 except item 3.2 in perfectionist high quality conscious and item 6.2 in habitual brand loyal consumer were below the accepted level. However the factor loading estimates for 3.2 and 6.2 were significant at 0.01 level. These items were retained in the scale as they were considered to be important indicators. Moreover, further removal of items would lead to too few items (less than two per construct) and model identification problems may arise (Table 5).

**Average Variance Extracted and Composite Reliability**

The Average Variance Extracted (AVE) and Composite Reliability (CR) were calculated manually by formulas given by Fornell and Larcker (1981) using Microsoft excel. The average variance extracted should be 0.5 and above for adequate convergent validity. The composite reliability should exceed 0.7 for adequate construct/ composite reliability (Hair, Black, Babin and Anderson, 2010). The AVE and CR of all the factors were found to be within range (Table 5). This indicates good reliabilities among the items to measure the constructs or factors.

**Discriminant validity**

The discriminant validity was determined as the variance extracted value of the constructs exceeded the squared inter-construct correlations associated with other constructs. The correlation estimates were squared and found to be less than the AVE value (Table 6). Moreover the measurement model did not contain any cross loading among the measured variables, thus proving Discriminant validity.

<table>
<thead>
<tr>
<th>Table 1: Summary Statistics on Sample</th>
</tr>
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<tbody>
<tr>
<td>Factor and Items</td>
</tr>
<tr>
<td>Factor 1: Recreational/Hedonistic (rec)</td>
</tr>
<tr>
<td>Item 5.1</td>
</tr>
<tr>
<td>Item 5.2</td>
</tr>
<tr>
<td>Item 5.3</td>
</tr>
<tr>
<td>Factor 2: Confused by over choice</td>
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<tr>
<td>Item 7.1</td>
</tr>
<tr>
<td>Item 7.2</td>
</tr>
<tr>
<td>Item 7.3</td>
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<tr>
<td>Factor 3: Brand Consciousness</td>
</tr>
<tr>
<td>Item 1.2</td>
</tr>
<tr>
<td>Item 1.3</td>
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<tr>
<td>Item 1.4</td>
</tr>
<tr>
<td>Factor 4: Perfectionist high quality consciousness</td>
</tr>
<tr>
<td>Item 3.1</td>
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<tr>
<td>Item 3.2</td>
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<tr>
<td>Factor 5: Price value consciousness</td>
</tr>
<tr>
<td>Item 4.1</td>
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<tr>
<td>Item 4.2</td>
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<tr>
<td>Factor 6: Habitual Brand loyal Consumer</td>
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<tr>
<td>Item 6.1</td>
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<td>Item 6.2</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 4: CFA Model Fit Parameters</th>
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</thead>
<tbody>
<tr>
<td>No.of Respondent s</td>
</tr>
<tr>
<td>CMDS</td>
</tr>
<tr>
<td>First Half CMDS</td>
</tr>
<tr>
<td>Second Half CMDS</td>
</tr>
<tr>
<td>Good fit criteria: χ²/df ≤2, GFI ≥0.90, CFI ≥0.90, RMSEA ≤0.05, SRMR ≤0.08</td>
</tr>
<tr>
<td>Acceptable Fit: χ²/df ≤0.95, CFI ≥0.90, SRMR ≤0.10, GFI ≥0.90, RMSEA ≤0.08</td>
</tr>
</tbody>
</table>

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The results indicate that the measurement model had adequate reliability and validity. This led to proving the hypothesis H1: The latent constructs of CDMS of Indian teenagers are different from the original eight factor Sproles and Kendall’s (1986) CDMS to be true. Further the revised and validated CSI has proved to be a better measuring tool for assessing the consumer decision making styles of Indian teenagers.

CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

To conclude, this research identifies six constructs (Recreational/Hedonistic, Confused by over choice, Brand Connoisseur, Paladin, High quality consciousness, Consciousness, Price value consciousness, and Habitual Brand loyal Consumer) of consumer decision making styles in the context of Indian teenagers which are different from the eight constructs of original Sproles and Kendall’s (1986). Thus proving that generalisation of the consumer decision making styles across different cultures can be misleading. Marketers focusing on this segment would need to devise separate strategies for different segments and countries. Future research should be conducted in identifying CDMS of different product categories.

There is a need to replicate the study in other parts of the country in order to gain an insight into the behaviour of these young consumers. Additional qualitative research may prove to be useful in exploring other influencers which may not have been anticipated. In this paper EFA, CFA and SEM have been used for analysing the data. Although these methods provide reliable results, other methods could have been explored. The use of AMOS puts a constraint that only reflective constructs can be measured. India is a vast country and to make generalisation on the basis of urban population alone may not be appropriate. A comparative study of urban and rural teenage consumers would provide useful insights.

REFERENCES


BRIEF PROFILE OF THE AUTHORS

Saraje Choudhary is a research scholar and a faculty of Marketing. Her areas of interest include research in Consumer behaviour particularly consumer decision making styles, socialisation and materialism of the teenager India.

Ajoy K. Dey, Ph.D is a practising management expert and professor. He is a member of the Editorial Advisory Boards of many leading International Management Research Journals and a regular reviewer of AOM annual meetings. A University Rank holder, Dr. Dey has a blend of corporate, consultancy and academic experience.