A Structural Equation Model: Socio Cultural Influence on Body Image of Pakistani Consumers

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Abstract

The aim of this paper is to ascertain the media and sociocultural effects on body image of Pakistani consumers. Theoretical grounding for this study is based on the theoretical framework of McCabe & Ricciardelli (2001) and Social Comparison Theory.

This conceptual framework is inclusive of three exogenous models including exposure to media, parent feedback, peers feedback and one endogenous model of body image dissatisfaction. Valid sample size was 193. Quota sampling technique was used for allocating samples to different segments. The constructs used in this study have established reliabilities and validities. After ascertaining the normality of data, a typical multiple step procedure was adopted for this study which is inclusive of (1) Exploratory Factor Analysis (2) Reliability Analysis (3) Validity Analyses (4) CFA for all constructs (5) Testing overall Model (through SEM) (6) Testing the derived hypotheses based on Standardized Estimates and Critical Ratios.

The proposed model was found to be relevant in understanding consumer attitude and behavior towards body image. It was found that media’s exposure has an effect on body image (body image dissatisfaction). However, a negative influence was found between peers’ feedback and body image dissatisfaction.

This is one of the few studies that have successfully extended McCabe & Ricciardelli (2001), framework in Pakistan. It has also looked beyond the context of the West and tested the model in Pakistan for understanding media and socio cultural influence on body image.

Keywords: Social Comparison Theory, Media Exposure, Parent Feedback, Peers Feedback and Body Image Dissatisfaction.

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Background
A few years ago Pakistani consumers had limited access to media and hence body image dissatisfaction was not an issue. Due to change in Pakistani media environment, local population now has access to numerous electronic and print media (Media Pakistan, 2009). This media explosion has completely changed the cultural norms and attitudes towards body image (Kamran, 2008). Thin and pretty media models are now being internalized by all, due to which the concern for body image has increased significantly in Pakistan. Literature on this issue is not sufficiently available.

The objectives of this study are: (1) Extending McCabe & Ricciardelli (2001) framework for understanding socio-cultural impact on body image (2) empirically test the proposed model through Structural Equation Modeling (SEM) test (3) ascertain which of the factors (Media exposure, parents feedback, and peers feedback) are more relevant in Pakistan's context for understanding consumer behavior towards body image.

Literature Review
Media's exposure and socio-cultural feedback has changed the perceptual definition of body image. Previously, it was considered as a self-image of body in an individual’s mind (T.F. Cash, 2004). The horizon of this definition has broadened by inclusion of physical and visual aspects of body parts (T.F. Cash, 2004; T. F. Cash & Pruzinsky, 2004). Other additions to the conceptual definition of body image are perceptual and cognitive behavior and affective domains (T.F. Cash & Deagle III, 1997). Exposure to media and socio-cultural factors feedbacks are adversely affecting consumers’ attitude and behavior towards body image. Despite its significance a few studies on Pakistani and Indian consumers have been undertaken (Kapadia, 2009). Syntheses of a few such studies are discussed in the following paragraphs.

In early nineties, body image concerns (eating disturbances) was not an issue in India (Khandelwal, Sharan, & Saxena, 1995). In a comparative study between Caucasian and Asian girls, it was found that on an overall basis the Asian females were found to be more happier and content with their body image as compared to British Caucasians (Wardle, Haase, & Steptoe, 2005). Interestingly in another study in the United Kingdom, it was found that despite the same exposure to media in England the white females had a higher level of body dissatisfaction and calories concern as compared to the Indian and Pakistani living in the same country (Ogden & Elder, 1998). Contrarily, others found that both Indian and Pakistani females immigrants living in the United Kingdom were highly dissatisfied with their body images and shapes (Mumford & Choudhry 2000).

Young Chinese, Indian and European females living in Canada are more concerned about their weight. Indians have more positive body image in comparison to the Chinese, and lesser body image as compared to European students (Kennedy, Templeton, Gandhi, & Gorzalka, 2004). University students in Delhi are of the opinion that negative body image and maladjustment are highly correlated. However, they also feel that self-esteem acts as a moderator between negative body image and maladjustment (Menon, and Pant 2007, Kapadia, 2009). In a comparative study on Indian and Caucasian students it was found that both the groups feel that for improving the body image necessary remedies are dieting, self-induced vomiting, use of laxative and water tablets (Button, Reveley, & Palmer, 1998). In another cross culture study on Indian, Tibetan, French and American students no correlation was found between socio-economics status, media and body image (Rubin, Gluck, Knoll, Lorence, & Geliebter, 2008).

Thus there seems to be significant inconsistency on the body image studies on the consumers of Indian, Pakistani and other Asian countries. Moreover, most of the studies are on those Pakistani and Indian who are settled in the Western countries.

Conceptual Framework
Social Comparison Theory (Festinger, 1954) and the conceptual framework of McCabe & Ricciardelli (2001) has been extended in the domain of Pakistani culture for understanding how socio-cultural factors including media, parents, and peers affects body images (Milkie & Peltola, 1999).

The three components of the Social Comparison Theory are: One is Self-Evaluation Comparison in which individuals tends to gather information on their skills, attributes and social expectation as compared with aspects and traits of others (Wood, 1989; Wood, Giordano-Beech, Taylor, Michela, & Gaus, 1994). Second is Self-improvement in which individuals make a deliberate efforts to improve personality traits or strive for solution to an existing problem (Wood, 1989). Third is, Self-Enhance Mechanism in which individuals have tendencies to ignore irrelevant information and pay attention to those who are perceptually inferior to them (Kray, Ingledew, & Iphofen, 2008; Wood, 1989).

Individuals due to socio cultural factors are forced to lose weight and internalize the thin and pretty model being portrayed by media. These pressures lead to adverse attitude towards their body perception (image) (Bearman, Presnell, Martinez, & Stice, 2006; Leech, Barrett, & Morgan, 2005; McCabe & Ricciardelli, 2012). Media is not only a source of upward comparison but physical attributes of the model being portrayed are unattainable (Folger & Reeb, 2010; Schooler & Schreiber, 2004; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999).

The conceptual framework of this study as mentioned above is an extension of McCabe & Ricciardelli (2001) framework in the domain of Pakistan’s culture which is depicted in Figure-1.

Figure-1: Conceptual Framework

- Magazine
- Television
- Exposure to Media
- Parents Feedback
- Peers Feedback
- Body Image Dissatisfaction

H1
H2
H3
Influence of Media and attitude towards Body Image Perception

The media images are significantly thinner than most of the individuals in the real world, as a consequence it is one of the major sources of body dissatisfaction (Mason, 2012). These pretty media images have become a benchmark for prettiness and attractiveness to most people in society due to which incidents of body dissatisfaction have increased. Constructs such as internalization, awareness, and aspiration to slimness have significantly affected the attitude towards body image (Cafri, Yamamiya, Brannick, & Thompson, 2005). Researchers have empirically validated that over exposure to media adversity effects the attitude and behavior towards body image (Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002). This relationship was again revalidated in experimental studies by others (Folger & Reeb, 2010). These authors in their study formed two groups. One group was exposed to thin media models and the other to normal models. The authors concluded in their study that over exposure to pretty and slim models result in significantly higher body image dissatisfaction. Comparatively exposure to normal model and neutral image had no effect on body image dissatisfaction (Folger & Reeb, 2010). The above discussions thus lead to the following proposition.

H1: Media’s exposure has a positive influence on body image dissatisfaction.

Parent’s Feedback and Body Image

Low physical intimacy between children and parents results in increased body dissatisfaction and eating disorder (Babio, Arija, Sancho, & Canals, 2008). Parent’s lack of emotional support and positive feedback to their children adversely affect their attitude towards body image. This effect would be more significant in those children who are unsecure and are more concerned about their physical image (Thompson & Heineberg, 2002). Other longitudinal studies have also validated this phenomenon of parents and body image relationship (Bearman, et al., 2006). Fathers generally give feedback to their male children and mothers to the female children. However, the feedbacks of both are different. Father’s feedback is more towards building muscles and mothers towards losing weight (K. Davison, Markey, & Birch, 2000; Ericksen, Markey, & Tinsley, 2003; M. P. McCabe & Ricciardelli, 2005). If parents’ feedback to the children is explicit and clear about losing weight and dietary programs then children response will be positive as a result they will not feel guilty about their body image (M. P. McCabe & Ricciardelli, 2005; M. P. McCabe, Ricciardelli, & Finemore, 2002). If parents themselves are not satisfied with their body image and are always concerned and complaining then the same will pass on to the children as a consequence they would also feel unsatisfied with their own body (Eisenberg, Neumark-Sztainer, Haines, & Wall, 2006; Fisher, Sinton, & Birch, 2009; Haines, Neumark-Sztainer, Hannan, & Robinson-O’Brien, 2008). It has been observed that parents’ feedback does not affect body image of children but others believe if these feedbacks are positive and encouraging then the impact on body image would be positive (M. P. McCabe & Ricciardelli, 2005). Thus the following hypothesis has been developed.

H2: Parents positive feedback adversely effects body image dissatisfaction

Peers Feedback towards Body Image

Individuals exchange and give feedback to each other on their body image which plays an important role on their perception and attitude towards body image (Carlson Jones & Crawford, 2006; Clark & Tiggesmann, 2006; M. P. McCabe & Ricciardelli, 2003). Females as compared to males have stronger tendencies to compare themselves with the same gender or with idealized model. This social comparison adversely affects the body image of both males and females (Carlson Jones, 2004; Jones, 2001). Males as compared to females are more vulnerable to peer pressure which affect their perception towards their body image (Carlson Jones & Crawford, 2006). It has been argued that girl friends have a stronger effect on the body image of their boyfriends which are found to be stronger than the parents influence and feedbacks (Hutchinson & Rapee, 2007; M. P. McCabe & Ricciardelli, 2005; Shroff & Thompson, 2006). Negative feedback from peers plays a strong role in changing the attitude towards body perception. Females are generally teased more for being over or underweight as compared to males (T.F. Cash, 1995; Leech, et al., 2005). Consequently, this teasing not only affect their self-esteem and body dissatisfaction but also play a significant role in changing their attitude towards their body (T.F. Cash, 1995; K. K. Davison & Birch, 2002; Lunde, Frisén, & Hwang, 2006; Markey, 2010). Thus the following hypothesis has been developed.

H3: Peers negative feedback has an adverse effect on body image dissatisfaction

3 Methodology

3.1 Measures and Scale

Media Exposure Scale

For this study, exposure to media was measured through the media consumption scale MCS (Stice & Shaw, 1994). The original scale had seven questions. Four were related to TV programs and three related to magazines. The reported reliability for media as a whole was 0.73, and for TV and magazine were 0.69 and 0.67, respectively (Varnado, 2000). The same measure was used in this study with a few modifications. Since original questionnaire was recall dependent which generally is not recommended, therefore, they were converted to seven points Likert scale. Seven in the scale indicates very high exposure to media and one very low exposure.

Body Image Dissatisfaction Scale

Body image dissatisfaction scale administered by French & B.Terrell (2005) in their study was used in this study. In all there were 16 items, seven were on inspiration to be thin and nine items were on person’s negative emotions about different parts of the body. The original scale was Likert type with a reported reliability of 0.94, which was converted to seven point Likert scale. Again seven in the scale shows very high body im-
Peers and Parents Feedback Scale
For measuring the effect of parents and peers feedbacks body image scale developed by McCabe & Ricciardelli (2001) was used with slight modifications. Original scale had three factors mother, father feedback, and peers. This scale/measure has five points and type was Likert with a reported reliability of 0.96. In this study mother and father feedbacks were merged as parent’s feedback. Thus this scale is now based on two factors and six items all based on seven point Likerts.

3.2 Sample Size and Sampling Technique
There is no consensus on sample size issue. For example a sample of 30 per variable is sufficient in multivariate analysis (Sekaran, 2003). While, 30 samples per cell for factorial design is appropriate (Hair Jr., Anderson, Tatham, & Black, 2007). For small SEM model a minimum of two hundred respondents has been suggested (Byrne, 2001), while others are of the opinion that a minimum sample size of 100 to 150 will be sufficient in SEM analysis (Anderson & Gerbing, 1988). The valid sample in this study is 193, which is consistent to what has been suggested by Anderson & Gerbing (1998). Since probability sampling requires a sample framework which is not available in this case therefore quota sampling was used in this study. The survey was carried out in the five affluent malls of Karachi.

3.3 Outliers and Normality
One of the requirements for Structural Equation Modeling (SEM) is that the data should have normal tendencies. Therefore, box plot method was used for identifying and removing outliers. It may be pointed out that those cases which are radically different than the collected samples are considered as outliers and must be recoded or removed (Hair Jr., et al., 2007). Thus all the cases were converted to standardize z-Score and it was found that all the cases were within the prescribed range of ± 2.5. Skewness and kurtosis tests were also used for assessing the normality of data and it was found that both of them were within the prescribed limit of ± 1.5. (Leech, et al., 2005).

SPSS version 19 has been used for normality of data, Exploratory Factor Analysis (EFA) and Reliability Analyses. Another software AMOS 18 was employed for assessing the overall fitness of the proposed model and testing the developed hypotheses. Structural Equation Model (SEM) has been used because of its efficiency in multivariate approach for assessing theories (Hair Jr, Black, Babin, Anderson, & Tatham, 2010).

3.4 Research Procedure
A typical six stage procedure for SEM was employed in this study (Hair Jr, et al., 2010). Exploratory Factor Analysis (EFA) is recommended for reducing the number of items which was also used in this study. Subsequently, reliabilities of each construct were obtained through Cronbach Alpha, which should be at least 0.70 (Leech, et al., 2005). Validities of the constructs were based on two techniques which are convergent and discriminant. Convergent validity was used to measure the convergent of items on single construct (Steenkamp & Van Trijp, 1991), while discriminant validity test was used to measure the uniqueness and distinctiveness of each measure as compared to others (Hair Jr., et al., 2010). Finally CFA for all the exogenous models, endogenous model and overall models were worked out which are discussed in the subsequent sections.

4 Results
4.1 Outliers
After dropping the incomplete questionnaires the sample size became 193. The outliers were within 1% range hence none of them were dropped (Meyers, Gamst, & Guarino, 2006). Subsequently, all the 193 cases were converted to standardize Z-Score. The summarized results shows that all the cases were within the prescribed limit of ± 2.5(R. B. Kline, 2010) as depicted in Table-2.

Additionally the following statistics were also employed for ascertaining the overall fitness of the model which is depicted in Table-1.

4.2 Descriptive and Reliability of Initial Constructs
All the constructs used in this paper have been used by others in the context similar to this paper and have proven reliability and
validity which were again ascertained in the case of Pakistan. Refer to Table-3 for the summarized results.

### Table-3: Reliability and Descriptive Analysis

<table>
<thead>
<tr>
<th>Construct</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body image</td>
<td>4.360</td>
<td>0.926 0.062 -0.251 0.751</td>
</tr>
<tr>
<td>Peers Feedback</td>
<td>5.151</td>
<td>1.284 -0.571 -0.679 0.680</td>
</tr>
<tr>
<td>Media Exposure</td>
<td>4.790</td>
<td>0.877 0.268 -0.403 0.805</td>
</tr>
<tr>
<td>Parents Feedback</td>
<td>4.487</td>
<td>0.703 -0.102 -0.388 0.542</td>
</tr>
</tbody>
</table>

Internal consistency also known as reliability was highest in case of media exposure (α=.805, M=4.790, SD= 0.877) followed by body image dissatisfaction (α=.751, M= 4.360, SD= 0.926), peers feedback (α=. 680, M= 5.151, SD= 1.284) and parent feedback (α=.542, M= 4.487, SD= 0.703). Since the reliability (Cronbach's alpha) in case of parents' feedback is 0.52, which is considered as low but it was not dropped, since researchers are of the opinion that of the several constructs if one construct is on the lower side it is not necessary to drop them at initial stage (Leech, et al., 2005). Thus on an overall basis all the constructs meet the requirements of internal consistency.

Table-3 also shows that the data has normal tendency since skewness and kurtosis results do not exceed the prescribed limits of ±1.5.

### 4.3 Exploratory Factor Analysis

Exploratory Factor Analysis in this paper is based on Varimax Rotation. As required it was ensured that the variables have moderate correlation, and linear relationships. Decisions on retaining the items were based on: (1) The Bartlett’s Test of Sphericity must be significant P < .05) (2) Kaiser-Meyer Olkin Measure of sampling should be greater than 0.50 (3) Items should not have a cross loading of 0.40 or more. After dropping those items which were not fulfilling these criteria, the exploratory factor analyses were carried out again, and the final results are summarized in Table-4.

### Table-4: Exploratory Factor Analysis (EFA)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Original Kaiser- Bartlett's Chi Square</th>
<th>Degree of Freedom</th>
<th>Probability</th>
<th>CMIN/df</th>
<th>AGFI</th>
<th>CFI</th>
<th>RMESA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents Feedback</td>
<td>3</td>
<td>508.737</td>
<td>62.145%</td>
<td>0.007</td>
<td>0.966</td>
<td>0.965</td>
<td>0.143</td>
</tr>
<tr>
<td>Body Image</td>
<td>16</td>
<td>1.000</td>
<td>100%</td>
<td>1.000</td>
<td>0.999</td>
<td>1.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Peers Feedback</td>
<td>3</td>
<td>127.509</td>
<td>61.920%</td>
<td>0.003</td>
<td>0.979</td>
<td>0.979</td>
<td>1.000</td>
</tr>
<tr>
<td>Exposure to Media</td>
<td>7</td>
<td>694.615</td>
<td>69.415%</td>
<td>0.000</td>
<td>0.905</td>
<td>0.905</td>
<td>1.000</td>
</tr>
</tbody>
</table>

The Table-4 above shows that all the items of parents and peers feedbacks were retained as they fulfilled the prescribed criteria. However for the rest of the constructs at least one item had to be dropped as they were not fulfilling the prescribed requirements.

### 4.4 Validities of the Final Constructs

Since all the factors loaded appropriately (were at least 0.40) and goodness of fit indices were within the prescribed limit therefore convergent validity requirements have also been met (Hsieh & Hwang, 2004; Shammass, 2007).

Discriminant validity shows the uniqueness of the variables (Hair et al. 2010). Discriminant validity was established through correlation of the entire final constructs on one to one basis. In order to fulfill the discriminant validity, the correlations on one to one basis must be less than 0.85 (T. Kline, 2005; Shammout, 2007). The summarized results show that all the pairs of correlations are within the prescribed limit of 0.85. Refer to Table-5.

### Table-5: Inter item Correlation

<table>
<thead>
<tr>
<th>Construct</th>
<th>Body Image</th>
<th>Peers Feedback</th>
<th>Media Exposure</th>
<th>Parents Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Image</td>
<td>1.000</td>
<td>0.000</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Peers Feedback</td>
<td>-0.077</td>
<td>1.000</td>
<td>0.000</td>
<td>-0.072</td>
</tr>
<tr>
<td>Media Exposure</td>
<td>0.336</td>
<td>-0.047</td>
<td>1.000</td>
<td>-0.331</td>
</tr>
<tr>
<td>Parents Feedback</td>
<td>-0.077</td>
<td>0.027</td>
<td>-0.072</td>
<td>1.000</td>
</tr>
</tbody>
</table>

### 4.5 Confirmatory Factor Analysis(CFA)

Confirmatory Factory Analysis (CFA) is used for empirically testing and measuring theories (Hair et al, 2006, p. 747). In CFA, the specified number of factors and items (indicators) are initially developed on theory thereafter required statistical analyses are carried out. The summarized CFA results are shown in Table Number 6.

Factor loading for each observed variable is at least 0.40 and hence meeting the minimum requirement of factor loading of 0.40. Moreover, standardized residual were below ±2.58 (Hair Jr. et al., 2007). All the Fit indexes for each of the exogenous model and endogenous are within/close to the prescribed limit (See Table-5). Based on these results the overall model through SEM was tested which is discussed in subsequent section.

### 4.6 Overall Model

The overall SEM model comprise of three exogenous models namely, exposure to media, parents feedback, peer feedback and one endogenous model body image dissatisfaction. The CFA result of each exogenous model has been discussed in earlier section, the overall final model is depicted in Figure-2.
Figure-2 for the overall model shows that factor loading for each observed variable is at least 0.40 and hence meeting the minimum requirement of factor loading of 0.40. Moreover, standardized residual were below ±2.58 (Hair Jr., et al., 2007). Goodness of fit indexes is within the prescribed limits which are discussed in the following paragraph.

The Chi Square value (Absolute Fit Indices) was significant (χ² = 99.902, DF = 62, p = .003< 0.05). The CMIN/df (Relative χ²/df) was 1.565< 5. The Root Mean Square Error of Approximation (RMSEA) = 0.054< 0.08 meet both the absolute of goodness-of-fit and badness-of-fit criteria. Goodness of Fit Index (GFI) = 0.935< 0.90, Adjusted Good of Fitness Index AGFI = 0.905> 0.900 and CFI=0.940>0.90 meet the criteria. In sum, the CFA results indicate that the overall exogenous model is a good fit.

The McCabe & Ricciardelli (2001) framework was successfully extended in Pakistan and was found to be relevant in understanding consumer attitude and behavior towards body image in Pakistan. On an overall basis it was found that media exposure has the strongest effect on body image dissatisfaction followed by peers, while parent feedback had non-significant relationship with body image. These findings are consistent to some earlier studies and in-consistent with others which are discussed in the following paragraphs.

### 4.7 Hypotheses Results

The SEM model depicted in Figure-2 above shows the relationship of all the three developed hypotheses. Of the three hypotheses, two were substantiated and one was rejected. The summarized results are presented in Table-7

<table>
<thead>
<tr>
<th>Hypothesized Relationship</th>
<th>Researcher of Evidence</th>
<th>Positive or Negative</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media exposure and Body Image Dissatisfaction</td>
<td>0.381</td>
<td>3.879</td>
<td>Yes</td>
</tr>
<tr>
<td>Peers Feedback and Body Image Dissatisfaction</td>
<td>-0.263</td>
<td>-2.348</td>
<td>Yes</td>
</tr>
<tr>
<td>Parents Feedback and Body Image Dissatisfaction</td>
<td>-0.191</td>
<td>-1.618</td>
<td>No</td>
</tr>
</tbody>
</table>

### 4.8 Discussions and Conclusion

The hypothesis that positive feedback of the peers will adversely affect body image dissatisfaction was substantiated. In essence it means that peers feedback would have positive influence on body image. Contrarily, it has been found that both males and females compare themselves with peers which results in adverse body image (Carlson Jones, 2004; Jones, 2001). Moreover, it has also been found that the negative feedback from peers plays a strong role in changing the attitude towards body image. Females are generally teased more for being over or underweight as compared to males (T.F. Cash, 1995; Leech, et al., 2005). Consequently, this teasing not only affect their self-esteem and body dissatisfaction but also play a significant role in changing their attitude towards body image (T.F. Cash, 1995; K. K. Davison & Birch, 2002; Lunde, et al., 2006; Markey, 2010).

### 4.9 Limitation and Future Research

The study was undertaken in the affluent areas of Karachi therefore the findings are more related to the upper strata. Future studies could be based on the entire income groups of Karachi. Since Pakistan has diversified ethnic culture therefore a comparative study on different ethnic groups would also bring further insight on the issue.

References


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