Self-Drive and Women's Pursuit of Physical Attractiveness: A Segmentation Study on Bangkok's University Students in a Breast Enlargement Context

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Introduction

> *Beauty is worth spending time, money, pain, and perhaps life itself. Beauty hurts, and it appears that modern women are willing to go to extreme lengths to improve and transform their bodies to meet the cultural requirements of femininity* (Davis, 1995 : 41).

Recent years have seen news episodes on young women abusing their bodies for the sake of physical attractiveness frequently hitting the headlines in the Thai mass media. In a striking case, a young female businesswoman admitted to getting "addicted" to cosmetic surgery and weight-loss pills to the extent that her physical and mental health were at risk (*Thairath*, 2006). Indeed, there is a legitimate public concern that obsession with physical attractiveness among the young women population could become so prevalent that it could threaten the health of future society. However, it is equally legitimate to pose a basic question: Are these news episodes covered in the media actually an existing social phenomenon, or are they merely rhetoric of the few? It is possible that similar news episodes are few exceptions sensationalized by the media rather than norms being held among the real population. This observation leads to a few more specific questions: Can we identify segments in the young women population on the basis of differing degrees of desire for beauty? Do segments most vulnerable to the culture of beautification really exist? How large are the sizes of these vulnerable segments? Are they large enough to pose threats to a healthy society? What are the characteristics of the vulnerable segments?

This study attempts to provide answers to these questions. The study aims to identify segment structure, segment sizes, and psychological and behavioral inclinations of members in these groupings with regard to differing degrees of self-drive toward the pursuit of physical attractiveness in a demographically homogeneous sample of female university students in Bangkok, using a case of aesthetic breast enlargement as its study context. To that end, following sections are organized as follows. Theoretical background of the study is first explored in the form of literature review by tracing social psychological roots of the pursuit of physical attractiveness and by laying theoretical foundations that form the basis for a segmentation problem. Clustering variables, used for grouping studied subjects based on their motivations, are next introduced in the light of relevant theories. Research methodology is then discussed with an emphasis on representativeness of the sample. Preliminary data analysis follows, discussing processes undertaken to make the data set readily available for analysis. Results obtained from a combination of hierarchical and non-hierarchical cluster analyses along with an external validity test are then illustrated. The article ends with discussions on the results and implications for social policy-makers.

Theoretical Background

Physical attractiveness is a natural pursuit among women. Women generally see their bodies as more central to their identities than men do (Belk, 1988). The underlying social psychological reasons seem clear: being physically attractive is socially advantageous. Compared to their less attractive counterparts, physically attractive women are seen to be more intelligent (Kanazawa and Kovar, 2004), possess more competence and ability (Lewis and Walsh, 1978), have higher potential for achievement (Umberson and Hughes, 1987), and even be more likely to be chosen for a job (Adams, 1977).

Research has shown that the self is a major drive toward the pursuit of physical attractiveness (e.g., Domzal and Kernan, 1993; Schouten, 1991). The self-driven approach to physical attractiveness can trace its theoretical basis to social comparison theory, which posits that humans have an innate drive to evaluate their opinions,

abilities, and personal attributes, and that comparison with other people is an important basis of evaluation (Festinger, 1954; Wood, 1989). To function effectively, people must know their capacities and limitations and must be accurate in their opinions of objects and other people (Jones and Gerard, 1967). People often meet the need for *self-evaluation* by measuring their attributes against objective standards. When objective standards are unavailable, individuals compare themselves with other people. Social comparison theory's "similarity hypothesis" holds that individuals prefer to compare themselves with similar others. However, similar others are not always the comparison target. For example, people with *self-improvement* interests may make comparisons with superior others who are seen as better in some way; these are called upward comparisons (Wheeler, 1966). People with *self-enhancement* interests may make comparisons with inferior others who are seen as lesser in some way; these are called downward comparisons (Wills, 1981).

Using perspectives of social cognition and self, Wood (1989) provided insights into the social comparison process. She found that an individual is not always an unbiased self-evaluator but may seek many goals or motives (such as self-improvement) through social comparisons. She found that an individual's social environment is not always passive or inactive but that it may impose comparisons. Finally, Wood showed that the social comparison process involves more than simply selecting a comparison target and instead takes three forms based on an individual's goals or motives—self-evaluation, self-improvement, and self-enhancement.

Social comparison theory has been applied extensively in the studies of physical attractiveness. An important finding is that people compare themselves with idealized images present in the mass media and advertisements rather than with their peers. For example, Richins (1991) found that idealized advertising images are comparison targets for female college students and that these images both raise comparison standards for attractiveness and lower satisfaction with the subjects' own attractiveness. Her findings reflect social demands for women's attractiveness (Cash, Ancis and Strachan, 1997), the tendency for young women to be involved in upward social comparisons, and the impact of social environments—for example, an

environment overwhelmed with idealized advertising images—in shaping self-perceptions. Such prevalent and potent type of social comparisons may be those that were not sought but arrive passively and unbidden (Brickman and Bulman, 1977). A consequence often is negative body-image evaluations (e.g., Heinberg and Thompson, 1992). Martin and Kennedy (1994) found that upward social comparisons are motivated by self-evaluation and self-improvement. Their evidence also indicated that the tendencies of female adolescents to compare themselves to models in advertisements increase with age and that these tendencies are greatest for female adolescents having low self-perceptions of physical attractiveness and/or self-esteem.

Clustering Variables

As discussed above, evidence in the literature provides strong support that the self is a major motivational drive in the pursuit of physical attractiveness. Self-drive to pursue physical attractiveness can be traced to two sources, each serving as a clustering variable for the study. First, self-drive can be attributed to discrepancies between individuals' ideal end-states and their actual states (ideal-actual discrepancy). Second, self-drive also can be attributed to the degrees of importance that the pursuit of physical attractiveness is to individuals (self-attributed motivation). As selection of clustering variables is among the most important decisions needed to secure cluster validity (Punj and Stewart, 1983; Singh, 1990), this section discusses the underlying theoretical justifications for the two clustering variables selected for this study.

Ideal-Actual Discrepancy as a Clustering Basis

Ideal-actual discrepancy finds its theoretical basis in self-discrepancy theory. The essence of self-discrepancy theory is that different types of self-state representations produce different types of negative psychological situations associated with different kinds of emotional discomfort. Emotional discomfort depends on discrepancies between the ideal self-states and the actual self-states within an individual's own perceptions and leads individuals to undertake or avoid certain activities (Higgins, 1987).

Self-discrepancy theory suggests that desired end-states create a gap between a person's ideal self and actual self. Such a gap often creates unstable states of mind—negative and perhaps dejection-related emotions—in such a way that actions must be taken to recover psychological well-being. A woman's evaluation of the self as less than desirable will motivate her to behave in such a way as to recover and maintain psychological well-being. While self-evaluation of a specific aspect of self can be either positive or negative, only negative self-evaluations have important motivational consequences (Wicklund, 1979). For example, Schouten (1991) found that in almost all cases studied, subjects' dissatisfaction with a particular body part motivated them to undergo aesthetic plastic surgery.

The present study defines ideal-actual discrepancy as respondents' desirable incremental cup sizes compared with their current cup sizes. In the context of the urban society of Bangkok where consumers are surrounded by images provided by the mass media, young women often face negative body image created by influences of these media and make upward comparisons with regard to physical attractiveness when exposed to idealized images. Thus, it is predicted that Thai women who state that their ideal breast sizes are larger than their current sizes would have inclinations toward enlarging their breasts. Furthermore, it is expected that the greater ideal-actual discrepancy, the greater the tendencies of respondents to have had past augmentation experience that was unsuccessful (see more in Section 4. Variables to Examine External Validity of Cluster Segments).

In conceptualizing ideal-actual discrepancy, two assumptions must be made. First, it is assumed that all respondents in this study have moderate to high levels of exposure to the mass media portraying physical attractiveness. Second, it is assumed that respondents make comparisons with their motives for self-evaluation or self-improvement and not for self-enhancement. In other words, it is assumed that respondents would either strive to be accurate in their views about themselves (self-evaluation), or attempt to improve themselves by making upward comparisons (self-improvement), but would not harbor unrealistically positive views of themselves and

bias information in a self-serving manner (self-enhancement) when making a comparison.

Self-Attributed Motivation as a Clustering Basis

Self-attributed motivation concerns the degree to which the self is represented by the body, coined as "corporal experiencing" (Domzal and Kernan, 1993). People who value and are eager to pursue physical attractiveness are inclined to have a high corporal experiencing or sense that they are represented by their bodies. To experience corporality is to be aware of and understand the salience of one's body in one's sense of self (Domzal and Kernan, 1993). The pursuit of physical attractiveness is stimulated by high corporal experiencing in the form of fantasies that physical attractiveness can bring about. To be likable, to command more power and status (as Bourdieu (1984) called "physical capital"), or to preen narcissistically are examples of "rational" fantasies that stimulate demands for physical attractiveness.

The theoretical basis of self-attributed motivation also is founded on identity self-importance. The self-importance that a person has with a given identity is one critical individual difference variable that may influence identity salience (Reed II, 2004). Self-importance refers to the potency or "depth" by which a person affiliates with a particular identity. For example, if a woman has a strong identification with her physical appearance, she will be more likely to be engaged in activities that make herself look physically sound. Therefore, self-drive toward the pursuit of physical attractiveness is also influenced by the degree to which a woman senses that physical attractiveness is personally significant, meaningful, and highly important to how she views herself.

The present study uses the degree of importance that the pursuit of breast enlargement is to a woman to measure self-attributed motivation. It is expected that the greater the degree of self-attributed motivation, the greater the tendency for the respondent to pursue physical attractiveness.

In sum, the present study focuses on self-drive as the ultimate motivation to undergo breast enlargement. Self-drive is conceptualized as having two elements that serve as clustering variables—ideal-actual discrepancy and self-attributed motivation. It is posited that the pursuit of physical attractiveness is motivated by the discrepancy between the desired ideal state and actual state (ideal-actual discrepancy) on the one hand, and by the degree of importance that performing a bodily task for the purpose of physical attractiveness is to oneself (self-attributed motivation) on the other. People differ in their underlying motivations behind the pursuit of physical attractiveness. These differences partly reflect differing degrees to which bodies constitute a sense of self.

Variables to Examine External Validity of Cluster Segments

To demonstrate that segments derived from cluster analysis is theoretically valid, external validity tests are conducted to verify the true existence of the final cluster solution, using actual behavioral variables or other criterion variables external to the clustering procedure itself. A test of external validity in the present study will be conducted using an actual behavior variable relevant to the context of breast enlargement as the criterion test variable. The use of past behaviors for testing external validity has been suggested by Punj and Stewart (1983) and Singh (1990), but has been adopted by few empirical studies.

Depending on the intensity of their motivations, women's past behavioral experiences with breast enlargement activities will vary considerably. It is expected that past behavioral experience will differ across segments derived using the two clustering variables. More specifically, it is predicted that women seeking breast enlargement will have a high level of self-driven motivation for physical attractiveness. The level of this motivation is represented by the two clustering variables identified earlier. A *combination* of these two elements of self-drive, defined as combined self-driven motivation, is posited as bases for clustering respondents into meaningfully distinct groups.

Methodology

Six hundred and eighty-seven self-administered questionnaires were distributed to undergraduate and graduate female students enrolled in a pool of nine targeted programs in three major universities in Bangkok. The targeted programs were obtained through a cluster sampling procedure (Schaeffer, Mendenhall and Ott, 1979), which used a sampling frame consisting of lists of targeted schools' courses. Self-administered questionnaires are an appropriate way to collect data considered private and sensitive, and are the most widely used method for measuring attitudes toward the body (Ben-Tovim and Walker, 1991).

Data were collected in the form of in-class field survey. With an introduction letter, research assistants approached the director of a selected program, explained the objectives of the study, and requested cooperation. Once permission was secured, research assistants contacted the program's administrative staff who then decided on which instructor to approach. This procedure was completely under control of the administrative staff. Once a targeted instructor was decided, he/she would be contacted and requested for permission. Five of the 15 instructors approached refused to cooperate. If an instructor agreed to cooperate, an agreement on specific classes and their schedules was reached; otherwise, another instructor would be contacted. Although program selection was judgmental, selection of universities, instructors, and classes was completely random under this sampling procedure. In addition, as no prior notification was given to the targeted classes about the survey, student attendance also was at random. Although random sampling is less of an issue in the homogeneous population of the present study in comparison with a more heterogeneous one, the procedure discussed thus far adds to the random nature of sampling employed in this study.

Ideal-actual discrepancy, one of the clustering variables, was measured by a Likert-type scale statement asking the respondent's ideal breast size as compared to the current size: three cup-size larger, two cup-size larger, one cup-size larger, just right, one cup-size smaller, two cup-size smaller, three cup-size smaller. Self-attributed motivation, the other clustering variable, measured the degree of importance that having enlarged breasts would be for oneself, asking the respondent to rate from six-point response categories using anchors such as "strongly important," "quite important,"

"somewhat important," "somewhat unimportant," "quite unimportant," and "not at all unimportant." Six-point response categories were used because Thai people are thought likely to mark scale midpoints even when they hold a non-neutral position (Brown, 2003). Indeed, Likert-type scales in general tend to bias respondents toward center points of response categories because respondents implicitly assume that the center point is the normal or average (Harrison and McLaughlin, 1993). Therefore, the use of even-numbered response categories with no midpoint removes the impact from central tendencies, thus increasing the variance of responses. And finally, past enlargement experience, the variable used to examine external validity, asked whether the respondent had ever tried to enlarge her breasts using dichotomous (Yes/No) scale.

Preliminary Analysis

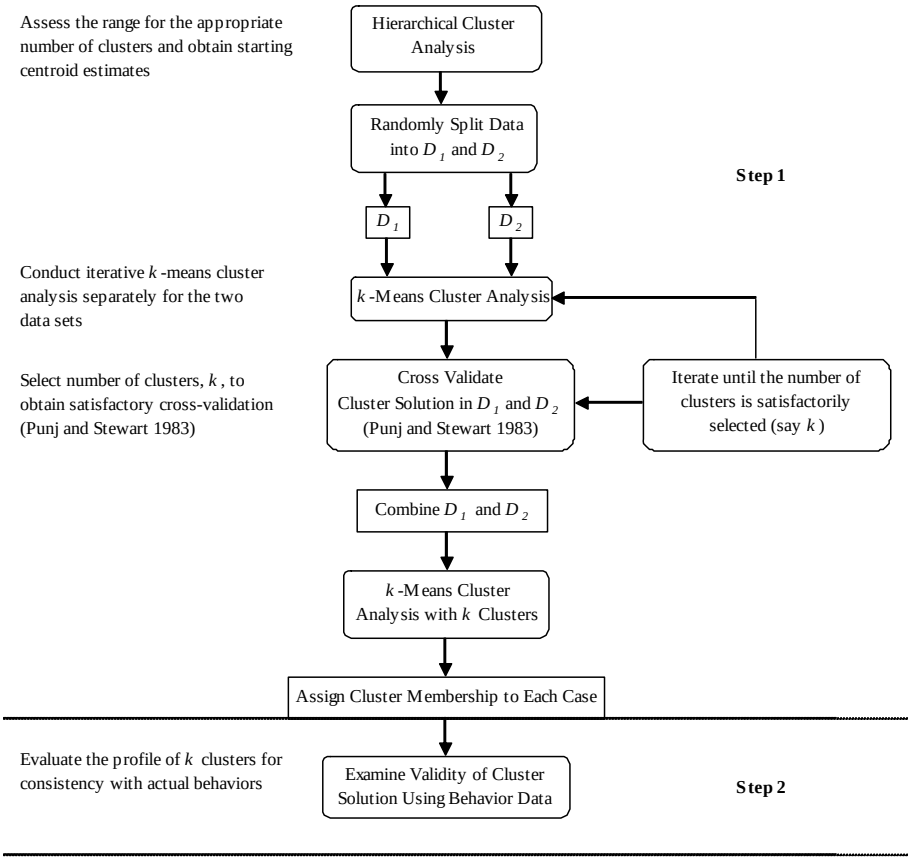
The 687 cases obtained were subjected to preliminary data analysis. One hundred and twenty-five cases which did not meet the scope of interest of the study (e.g., cases that desire smaller breasts) were excluded. Three cases were deleted on the basis of missing data in past enlargement experience, the cluster validation variable. In addition, 44 cases were removed because of missing data in self-attributed motivation, one of the two clustering variables. Finally, multicollinearity between clustering variables was assessed. The correlation between the two clustering variables was small at 0.15 ($p < 0.01$), indicating that each variable provided near-unique information about respondents and that multicollinearity was not a concern in performing cluster analysis. A series of preliminary data analyses finally brought the number of usable cases to 515. Taking into account representativeness of the sample, a necessary condition for performing cluster analysis, it was agreed that this was an acceptable level of sample size.

Results

This study employs a two-step approach shown in Figure 1 to perform cluster analysis. In Step 1, a combination of hierarchical and non-hierarchical (*k*-means or iterative) cluster analyses is used to derive the optimal cluster solution and its internal validity is assessed based on the derived cluster solution's stability and reproducibility. Step 2 aims to establish external validity by comparing the derived cluster segments to the respondents' actual behavior. The two-step approach draws upon the advantages

and balances out the disadvantages originating from each approach. Hierarchical cluster analysis, requiring no starting centroids, is used to generate possible alternative cluster solutions, produce starting centroids, and identify outliers. *k*-means cluster analysis, on the other hand, uses starting centroids that are passed over from hierarchical clustering procedure to derive, internally validate, and address the instability of a chosen cluster solution (Punj and Stewart, 1983; Singh, 1990).

Figure 1: The Two-Step Flow of Analysis Method Utilized in the Study



Note: Adapted from Punj and Stewart (1983) and Singh (1990)

Hierarchical Cluster Analysis

Ward's method was chosen as the hierarchical method of clustering for this study. Although the method is biased toward production of clusters with approximately the same number of observations, this is considered appropriate given statistical power attending the resulting cluster solution.

First, an analysis of agglomeration coefficients produced by Ward's method was conducted in order to determine the optimal cluster solution range. Conceptually, a large increase in the agglomeration coefficient between any *k* and a *k+1* cluster solution indicates the merger of two very different clusters (Hair Jr., et al., 1998). Therefore, changes in the agglomeration coefficient serve to indicate the optimal number of clusters. According to an analysis of agglomeration coefficients for the Ward's method cluster analysis presented in

Table 1, the agglomeration coefficient showed large increases when moving from two clusters to one (61.8 percent), from three clusters to two (23.4 percent), from four to three (10.3 percent), from five to four (9.7 percent), from six to five (12.3 percent), from seven to six (10.9 percent), and from eight to seven (11.3 percent). On this basis, a cluster solution range of two to eight clusters was considered optimal. However, given the fact that a percentage change in agglomeration coefficient when moving from two clusters to one is usually large, the optimal cluster solution was finally adjusted to a range of three to eight clusters.

Table 1: Analysis of Agglomeration Coefficient for Hierarchical Cluster Analysis (*n* = 515)

Number of Clusters	Agglomeration Coefficient	Change in Agglomeration Coefficient to Next Level	Percentage Change in Coefficient to Next Level
9	129.46	3.88	3.0%
8	133.35	15.07	11.3%
7	148.42	16.18	10.9%
6	164.59	20.25	12.3%
5	184.84	17.93	9.7%
4	202.77	20.89	10.3%
3	223.65	52.34	23.4%
2	275.99	170.56	61.8%
1	446.55		

Thus, alternative cluster solutions ranging from three to eight clusters were identified along with column vectors of means associated with each cluster in each solution. These column vectors would be used as starting centroids to initiate *k*-means clustering procedures, in which clusters are built around these pre-specified points. Results of the final hierarchical clustering in terms of cluster sizes are shown in Table 2 for the three to eight cluster solutions. Frequency distributions of the two clustering variables for each cluster solution indicated that no outliers existed as targets for deletion.

Table 2: Cluster Sizes for Final Hierarchical Clustering Results, Three to Eight Cluster Solutions (*n* = 515)

Cluster	Number of Cases for Each Cluster Solution					
	3	**4**	**5**	**6**	**7**	**8**
1	106	106	106	64	64	64
2	221	124	124	124	67	67
3	188	188	59	59	59	59
4		97	97	97	57	57
5			129	42	97	97
6				129	42	42
7					129	64
8						65

k-means Cluster Analysis

The last procedure in Step 1 uses *k*-means clustering, a non-hierarchical procedure. The *k*-means cluster procedure serves two purposes: to adjust or "fine-tune" results obtained from the hierarchical procedure and to internally validate a chosen cluster solution.

The sample was randomly split into two data sets, D_1 and D_2, containing approximately 60 percent and 40 percent of the total number of cases respectively (Singh, 1990). The split resulted in D_1 containing 280 cases and D_2 235 cases respectively. D_1 was designated as the test sample and D_2 the internal validation sample. The D_1 test sample used six starting centroids from Ward's hierarchical

clustering from the three to eight cluster solutions to drive a set of six "constrained" scenarios for *k*-means clustering of the D_2 internal validation sample. Column vectors of means associated with each cluster for the range of three to eight cluster solutions produced by *k*-means clustering on the D_1 test sample then were used to select the optimal solution among possible alternatives based on cluster stability and reproducibility using two scenarios for the D_2 internal validation sample: constrained and unconstrained. The constrained scenario classified all cases in D_2 based on analysis results from the D_1 test sample. The proximity approach based on Euclidean distances among cases was applied to assign each case to its respective cluster. By contrast, the unconstrained solution posed no restrictions. Table 3 provides numbers of cases belonging to each cluster solution under both constrained and unconstrained scenarios for the D_2 sample.

Table 3: Summary of Number of Cluster Members for D_2 Constrained and Unconstrained Scenarios (n = 235)

Cluster	Number of Cases for Each Cluster Solution											
	3		4		5		6		7		8	
	C	U	C	U	C	U	C	U	C	U	C	U
1	55	40	39	40	39	40	32	35	26	28	22	25
2	97	97	70	76	70	70	54	54	23	23	23	23
3	83	98	83	76	27	26	27	24	26	24	26	24
4			43	43	43	43	43	43	38	38	30	27
5					56	56	23	23	43	43	23	18
6							56	56	23	23	23	18
7									56	56	32	44
8											56	56

Note: **C** denotes constrained and **U** unconstrained scenario.

Next, the chance corrected coefficient of agreement, *Kappa*, was computed for the two scenarios—constrained and unconstrained—of D_2 cases for each cluster solution. *Kappa* tests whether agreement between constrained and unconstrained scenarios exceeds chance levels. The maximum value of *Kappa* identifies which cluster solution is the most stable under both constrained and unconstrained scenarios.

The optimal cluster solution is chosen so as to maximize *Kappa*. Based on this criterion, the optimal cluster solution selected is the five-cluster solution (see Table 4).

Table 4: Cluster Solution and Chance Corrected Coefficients of Agreement (*n* = 235)

	Cluster Solution					
	3	**4**	**5**	**6**	**7**	**8**
Kappa[a]	0.87	0.94	0.97	0.95	0.96	0.95

[a] All chi-square statistics are significant at 0.001 level

Once the optimal five-cluster solution was determined, the data (D_1 and D_2) were pooled and input into a final *k*-means cluster analysis to complete step one of the procedure.

Table 5 contains mean values of clustering variables for the final *k*-means cluster solution, along with each cluster's respective number of cases.

Table 5: Mean Values of Clustering Variables (*n* = 515)

Cluster	Ideal-Actual Discrepancy[a] (*IAD*)	Self-Attributed Motivation[b] (*SAM*)	Number of Cases	Percentage of Respondents
1	1.22	3.48	86	16.7
2	1.31	1.62	55	10.7
3	3.12	6.00	28	5.4
4	2.21	4.64	128	24.9
5	1.29	5.74	218	42.3
Mean	1.60	4.66		

[a] Based on raw data scores. 1 signifies just right; 2 one cup-size larger; 3 two cup-size larger; and 4 three cup-size larger.

[b] Based on raw data scores. 1 signifies not at all important; 2 quite unimportant; 3 somewhat unimportant; 4 somewhat important; 5 quite important; and, 6 strongly important.

External Validity Test

Step 2 of the analysis subjects the optimal cluster solution uncovered by *k*-means clustering to external validation. Given the final *k*-means cluster solution, actual behavior in a practical setting can be used to assess cluster validity. If variability of actual behavior across derived clusters is confirmed, it follows that external validity of the solution is supported, suggesting that the derived cluster solution is practically valid.

To facilitate predictions of past behavioral experience as the external validity test variable for derived segments, the present study used a multiplicative approach for information contained in the two clustering variables. The approach was based on a similar multiplicative approach used extensively in research studies based on expectancy-value theory (Fishbein, 1967; Rosenberg, 1956). In the present study, a combined self-drive measure of motivation to pursue breast enlargement is identified as *IAD-SAM* and measured as a multiplicative function of the two clustering variables as found in each derived segment—the discrepancy between ideal state and actual state in terms of breast cup sizes (ideal-actual discrepancy) and the degree of importance that breast enlargement is to oneself (self-attributed motivation). Table 6 contains values of *IAD-SAM* for each derived cluster. For the cluster solution to be valid, the proportion of respondents with past enlargement experience should be highest in the cluster whose members perceive their ideal breast sizes to be substantially larger than their current sizes while, at the same time, viewing pleasing themselves as a strongly important basis for embarking on breast enlargement. Similarly, the proportion of respondents with past enlargement experience should be lowest among those who feel satisfied with their current breast sizes and do not perceive pleasing themselves as an important basis for enlargement. In other words, the cluster with the highest value of *IAD-SAM* should witness the largest proportion of respondents with past enlargement experience, followed by the cluster with the next highest value of *IAD-SAM*, and so on.

Table 6 presents results for the analysis of external validity. Variation across the five clusters is significant for past enlargement experience ($\chi^2 = 23.6$, $p < 0.001$) and the expected pattern is strongly supported with one exception. Past enlargement

experience in terms of percentage of respondents is largest in Cluster 3 (the cluster with the highest value of *IAD-SAM*) at 46.4 percent. As expected, Cluster 4 has the next highest proportion of respondents with past enlargement experience, followed by Cluster 5. However, contrary to expectations, Cluster 1 has a lower proportion of those with past enlargement experience compared to Cluster 2. However, this difference is very small, with 15.1 percent for Cluster 1 versus 16.4 percent for Cluster 2. Based on these analyses, the derived five-cluster *k*-means solution can be considered externally validated.

Table 6: Validity Check for the Cluster Solution (*n* = 515)

Validity Check Variable	Cluster					Chi-Square Value (Probability)[a]
	1	2	3	4	5	
Past Enlargement Experience	13	9	13	45	44	23.6 (0.000)
Number of Cluster Members	86	55	28	128	218	NA
Percent of Respondents with Past Enlargement Experience	15.1	16.4	46.4	35.2	20.2	
IAD-SAM	4.25	2.12	18.72	10.25	7.40	

[a] Tests the null hypothesis that the validity check variable (i.e., past enlargement experience) is independent of cluster membership.

Description of Derived Cluster Solution

Table 7 summarizes means of ideal-actual discrepancy and self-attributed motivation, along with the multiplicative composite variable between them, *IAD-SAM*, employed to describe the clusters. Other variables considered in Table 7 include percentage of past enlargement experience and percentage and number of respondents for each cluster. Based on these variables, the five clusters are described as "status quos," "passives," "keen pursuers," "active searchers," and "prospects" as follows.

Table 7: Key Variables Employed to Describe Clusters

Key Variables	Cluster				
	1	2	3	4	5
	Status Quos	Passives	Keen Pursuers	Active Searchers	Prospects
Ideal-Actual Discrepancy[a,d] (*IAD*)	1.22	1.31	3.12	2.21	1.29
Self-Attributed Motivation[b,d] (*SAM*)	3.48	1.62	6.00	4.64	5.74
IAD-SAM[c]	4.25	2.12	18.72	10.25	7.40
Percentage of Past Enlargement Experience	15.1	16.4	46.4	35.2	20.2
Percentage of Respondents	16.7	10.7	5.4	24.9	42.3
Number of Respondents	86	55	28	128	218

[a] Based on raw data scores. 1 signifies just right; 2 one cup-size larger; 3 two cup-size larger; and 4 three cup-size larger.

[b] Based on raw data scores. 1 signifies not at all important; 2 quite unimportant; 3 somewhat unimportant; 4 somewhat important; 5 quite important; and, 6 strongly important.

[c] Expressed as the product between *IAD* and *SAM*.

[d] Expressed as mean values for each cluster.

Status Quos (Cluster 1). Status quos comprise women who are satisfied with their current breast sizes and are neutral in terms of the extent to which having enlarged breasts is important to oneself (self-attributed motivation). Status quos have the second lowest *IAD-SAM* score, followed only by the passives. Made up of approximately 17 percent of the sample, the cluster has the lowest proportion of subjects with past enlargement experience.

Passives (Cluster 2). Passives are typified by women who are satisfied with their current breast sizes and present almost no self-attributed motivation toward breast enlargement. Passives have the lowest *IAD-SAM* score; they are among the lowest scores on ideal-actual discrepancy, and improvement of breast sizes for their own purposes is almost completely unimportant for them. Made up of approximately 10 percent of the total sample, the cluster has one of the lowest proportions of subjects with real past enlargement experience.

Keen Pursuers (Cluster 3). Keen pursuers are best characterized by considerable concern over ideal-actual discrepancy and strong self-attributed motivations compared to any other cluster. Keen pursuers have the highest *IAD-SAM* score; they have the largest ideal-actual discrepancy and improvement of breast sizes for their own purposes is strongly important for all of them. Despite being the smallest cluster with only five percent of the total sample, keen pursuers have the highest proportion of respondents experiencing breast enlargement activities in the past.

Active Searchers (Cluster 4). Active searchers are best characterized by active search for physical attractiveness. Active searchers have the second highest *IAD-SAM* score; they have moderate concern over ideal-actual discrepancy and moderate self-attributed motivations. Made up of approximately 25 percent of the total sample, the cluster has among the highest proportions of subjects with past enlargement experience, second only to keen pursuers.

Prospects (Cluster 5). Prospects are characterized by satisfaction toward their current sizes but have great self-attributed motivations. Prospects have the third highest *IAD-SAM* score; although they do not see any ideal-actual discrepancy on their own breast sizes, they perceive breast enlargement as a way to satisfy themselves as strongly important. Made up of approximately 40 percent of the total sample, prospects are the biggest cluster. The cluster has a moderate proportion of subjects with real past enlargement experience.

Discussions

This study identifies five segments with differing levels of the combined self-drive toward breast enlargement in a sample of young urban female university students. External validity test results indicate that these derived segments are practically valid.

External validity test results are particularly noteworthy. The five derived segments were found to differ in terms of the respondents' past enlargement experience

(χ^2 = 23.6, p < 0.001). These results indicate that, to the extent that past enlargement experience is concerned, the derived five-cluster solution is practically valid. Specifically, the cluster with the highest value of *IAD-SAM* (the multiplicative effect of *IAD* and *SAM*) was expected to witness the largest proportion of respondents with past enlargement experience, followed by the cluster with the next highest value of *IAD-SAM*, and so on. The results are entirely consistent with expectations, suggesting that the five-cluster solution indeed reflects differences in actual behavior. Correspondence between the cluster solution and actual behavior is especially noteworthy in view of the fact that behaviors represent actions taken for a specific past episode. Thus, the five clusters uncovered in this study appear to be a reasonably valid solution.

A few issues regarding past enlargement experience should be noted. First, past enlargement experience in the present study was not limited to any particular breast enlargement procedure. The respondents were free to think of any enlargement experiences they had had in the past, whether it was an established procedure such as implant surgery, one or more temporarily effective methods such as silicone pads or special bras, or time-consuming methods such as herbal creams and herbal pills. Second, among individuals with enlargement experiences, those experiencing ineffective methods were more likely to try several alternatives in the past, whereas those satisfied with a method may have had only a single successful experience. The study, however, treats all people with enlargement experience—whether single or multiple—on an equal basis. In other words, whether or not an individual had only one single effective experience or many ineffective experiences, all were treated equally, with each individual receiving one count when calculating the percentage of respondents with enlargement experience. From these reasons, the number of actual enlargement experiences in any cluster, although not a concern to this study, should exceed the number of respondents with enlargement experience in that same cluster.

The overall derived segment characteristics are also noteworthy. Segments that are moderate in terms of the combined self-drive (i.e., status quos, active searchers, and prospects) account for more than 80 percent of the entire sample (see

Table 7), suggesting the moderately self-motivated nature of the overall sample. Accounting for slightly over 15 percent, two extreme segments are the two smallest groupings, with keen pursuers on one extreme and passives on the other. Keen pursuers have the highest proportion of members who had breast enlargement experiences, whereas similar proportions are lowest in status quos and passives.

Some relevant results with policy implications emerged. Referring to Table 7, those who perceive having enlarged breasts as somewhat important to strongly important to themselves (i.e., keen pursuers, active searchers, and prospects segments) account for 72.6 percent of all respondents surveyed. This result reflects a predominantly positive view that young urban female university students have toward breast enlargement in relation to themselves. While positive perceptions toward breast enlargement dominate at 72.6 percent, the proportion of respondents who actually reported ideal-actual size discrepancies (i.e., keen pursuers and active searchers) is much lower at 30.3 percent. This seems to be an inconsistency, because positive perceptions toward breast enlargement should be commensurate with reported ideal-actual discrepancies. The inflated positive view toward breast enlargement seems to reflect an inclination in favor of breast enlargement when in fact these women may not really need it. To be specific, while prospects perceive virtually no ideal-actual discrepancy with regard to their breast sizes (as reflected by almost non-existence of ideal-actual discrepancy; see Table 7), they view having enlarged breasts as somewhat to quite important to themselves (as reflected by high scores (4.64) on self-attributed motivation). The positive perceptions of prospects toward breast enlargement—when in fact they perceived their current breast sizes to be just right—perhaps reflects a biased view of prospects in favor of breast enlargement. Prospects, the largest segment, represent such bias. Therefore, prospects could be the target of exploitation caused by misleading advertisements that promise breast enlargement but do not deliver, thus the most vulnerable segment. Results along this line have policy implications. For example, in a campaign to protect most vulnerable individuals against false advertisements and publicity, public policy makers may identify segments most vulnerable to false products and services in a practical setting, estimate the size of vulnerable segments, and allocate budgets to establish accessible and effective communication channels accordingly.

One last relevant result of this study should be discussed for the sake of suggesting future research possibilities. It should be noted that even the least motivated clusters (i.e., status quos and passives) contain moderate levels of percentages of respondents with past enlargement behavior at 15.1 and 16.4 percent respectively. This suggests plausible existence of other motivational forces in addition to the self. Indeed, research shows that social environment (often in the form of peer influence) has a significant impact on social comparison (e.g., Marsh and Parker, 1984). For example, those having more frequent contacts with a woman with favorable breast enlargement surgical outcomes may hold more positive attitudes toward enlargement surgery than those having less frequent contacts. It would be of interest to future studies to identify social-driven impacts in the form of the perceived discrepancy between ideal- and actual-self either from the viewpoint of significant others or of peers. The suggested studies would answer an interesting question: Do young women pursue physical attractiveness because of social pressure to conform to beauty standards or do they pursue it for themselves? Researchers could identify the relative importance between social pressure and personal drive in stimulating the pursuit of physical attractiveness among young women. This will not only contribute to a better understanding of female adolescents' behavior but also will identify motivations leading to the pursuit of physical attractiveness. Studies along this line also would assist policy makers in forming public policies that aim to protect female adolescents against vulnerable body-related products and services.

One limitation of this study concerns its narrow focus on breasts as representing women's physical attractiveness. That is, the present study can be criticized for focusing narrowly on one particular body part instead of evaluating various body parts in an interrelated fashion. It should be noted that breasts are not the only body part salient to overall body image evaluation; to a large extent the balance between all parts of the body considered to be representations of women's physical appeal can be as salient or even more salient to the general body image assessment. For example, body, breast, and waist-to-hip ratio were found to interactively influence judgments of attractiveness and femininity (Furnham, Dias and McClelland, 1998).

Research on other parts of a woman's body may or may not replicate in a similar way found in this research.

In conclusion, the segment structure obtained from the results provides a good general understanding of the composition of segments in the target population of young urban female university students with respect to breast enlargement. Information that can be obtained from the results of this study includes the comparative size and the motivational drive of each segment. The existence of vulnerable segments provides evidence that young women's preoccupation with physical attractiveness—breast enlargement in this case—is not mere rhetoric, but an existing social phenomenon that warrants serious public attention. This study has shown that this warning sign is indeed materializing among young female urban population. What are the causes and effects of young women's preoccupation with beauty? What are the implications of preoccupation with beauty for young women themselves, or for Thai society as a whole? These questions pose an enormous academic challenge for theorists and empiricists from various disciplines.

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