Tracking the elusive actual-ideal discrepancy model within latent subpopulations

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Abstract

This substantive methodological synergy applies mixture modelling to verify whether the elusive, yet widely endorsed, actual-ideal discrepancy (AID) model might be verified in specific subgroups. Relations between Actual and Ideal Appearance, Physical Self-Concept (PSC), and Global Self-Esteem (GSE) were assessed with Mixture Structural Equation Models in a large sample of youth (*N* = 1693). The results revealed three profiles, one of which (25.7%) supported the predicted negative effect of Ideal Appearance on PSC. The relations seem to be more complex than assumed, such that the effects of Actual Appearance on PSC/GSE increases as ideal standards increase, and that the negative effects of ideal standards on PSC are only apparent when these standards are lower. These results suggest the need for a revised AID model where ideals play a weighting role in the relations between Actual Appearance, PSC and GSE.

Keywords: profiles, mixture-SEM, self-concept, actual-ideal, discrepancies.

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Shavelson, Hubner and Stanton (1976) represented self-concept as a pyramid, with global self-esteem (GSE) at the apex and more specific constructs (e.g., academic or physical selves) at the next-lower level. Specificity increases downward, with domain-specific self-conceptions (e.g., appearance, math). This conception assumes that within-person changes in specific components will in turn affect higher-order constructs (Shavelson et al., 1976). However, a question that remains is how the effects of specific components on more global components (e.g., GSE, or global physical self-concept – PSC) depend on framing factors such as ideals. One mechanism that has been hypothesized to affect global self-conceptions is Actual-Ideal Discrepancies (AID), reflecting the discrepancy between actual self-conceptions and ideal standards in specific domains, such as physical appearance (Harter, 1996). This model goes back to James (1890) who posited that GSE depends on a comparison between successes and aspirations. Thus, successes matching (or exceeding) aspirations should contribute positively to GSE, whereas accomplishments falling below ideals should contribute negatively to GSE. Therefore, when actual self-concept and ideal standards in one domain are simultaneously considered as predictors of global self-conceptions, the relation between actual self-concept in one domain and global self-conceptions should be positive; whereas the relation between ideals in the same domain and global self-conceptions should be negative, reflecting the negative impact of personal standards surpassing actual accomplishments (Marsh, 1999; Scalas & Marsh, 2008).

The AID model has long fascinated researchers. Ideals take part in self-regulation processes (Carver & Scheier, 1998) as self-guides (Higgins, 1987) that motivate people to enhance their self. Multiple seminal classics (Horney, 1950; Rogers, 1961) and models (Harter, 2012; Higgins, 1987) can be traced to James (1890), and the AID model is often considered as a well-established fact in introductory textbooks (Coon & Mitterer, 2008; Schacter, Gilbert, Wegner, 2009). Nevertheless, a careful examination of research shows, at best, mixed results regarding the negative effect of specific ideals on global self-conceptions.

Here, we specifically focus on the physical self-concept, where some support for the negative effect of ideals comes from studies using silhouette matching tasks (Marsh, 1999) or artificial experimental manipulations (Hannover, Birkner, Pöhlmann, 2006). However, most non-experimental research using typical self-reported measures reported ambiguous results. The effects of ideal selves on GSE or PSC are generally weak and much lower than the effect of their actual counterparts (Marsh, 1999; Scalas & Marsh, 2008). Even when a significant contribution of discrepancies between actual and ideal selves was found (Pelham & Swann, 1989), it disappeared once the effects of actual selves were controlled for (Marsh, 1993).

Moreover, this area is plagued with methodological issues associated with single-item measures, and manifest discrepancy indices (based on the simple subtraction of scale scores on measures of actual and ideal selves) that are associated with poor psychometric properties (e.g., low reliability and the untested constraint that actual and ideal selves have the same weight in opposite directions; for further discussions, see Byrne, 2002; Edwards, 2002). Scalas and Marsh (2008) proposed a multiple-item latent framework based on Structural Equation Models (SEM). Figure 1 illustrates this approach with the constructs considered here. To avoid problems typically associated with discrepancy indices, this model treats the Actual and Ideal Appearance as separate constructs affecting PSC and GSE, so that the relative contribution of each can be determined. Moreover, the model provides empirical weights for both actual and ideal components, making it possible to examine if ideals make a unique (and negative) contribution to PSC/GSE, beyond what can be explained by the actual self. This aspect is inherent to multiple regression models that directly estimate the independent main effects of the predictors and in doing so implicitly partial out the shared variance among the predictors. In other words, this approach directly models the effects of the ideals net of what they share with the actual selves (Edwards, 2002; Scalas & Marsh, 2008). An alternative operationalization of the AID based on latent discrepancy scores, which could not, unfortunately, be implemented in this study, is discussed in the online supplements.

Within this framework, it is easy to test AID predictions that: (a) Actual Appearance will have positive effects on PSC and GSE, and (b) Ideal Appearance will have negative effects on PSC and GSE over and above the effects of Actual Appearance. Incorporating multidimensional/hierarchical conceptions of self-concept, our model assumes that the relations between actual self-concept and ideal standards in one subdomain (e.g., physical appearance) on GSE will be at least partially mediated by their effects on global PSC (Fox & Corbin, 1989; Marsh, Richards, Johnson, Tremayne, 1994). Based on this model, Scalas and Marsh (2008) found a significant but very weak negative effect of Ideal Appearance on PSC and GSE, casting doubts on its practical significance.

An alternative interpretation of the elusive nature of the AID model comes from a person-centred perspective. *Variable-centred* analyses (e.g., regression, SEM) present a synthesis (averaged estimate) of the relations observed in the sample, without considering the possibility that the relations may differ across subgroups (Marsh, Lüdtke, Trautwein, & Morin, 2009). *Person-centred analyses* identify distinct profiles of participants. Many theoretical perspectives have alluded to the possibility that psychological processes associated with discrepancies may differ as a function of individual differences (North & Swann, 2009; Rogers, 1961). For example, it has been noted that individual differences in the relevance of self-guides can affect the association between self-discrepancies and affects (Higgins, 1999). A person-centred perspective thus suggests that ideals may not work in the same way for everybody and that average variable-centred effects thus represent a crude synthesis of subsample-specific effects. Furthermore, if the AID model only worked for a specific subsample, this would explain the tiny average estimate obtained in the total sample.

Mixture models are naturally suited to person-centred analyses, being based on categorical latent variables inferring the presence of subpopulations without a priori knowledge. Mixture models identify subgroups differing on specific relations among variables (Muthén, & Muthén, 2011) and can be used to extract profiles differing from one another on any part of a more or less complex model (Morin, Maïano, Nagengast, Marsh, Morizot, & Janosz, 2011). In particular, mixture SEM (Henson, Reise, & Kim, 2007) extract profiles differing on the relations between constructs, providing a direct test of the AID model applied to latent subpopulations. In this study, we rely on mixture SEM to explore whether subgroups exist for which the AID predictions are appropriate. This study will contrast the extracted profiles in relation to age and gender, in order to provide some preliminary evidence of their construct validity.

Indeed, the literature has highlighted gender and age differences in relation to actual and ideal selves (Lamb, Jackson, Cassiday, & Priest, 1993; Marsh, 1989). More precisely, research shows that females develop stronger self-guides (Higgins, 1989), particularly in relation to ideal selves in the physical appearance area (Lamb et al., 1993; Meleddu & Scalas, 2003), which may have negative implications for self-evaluations (Higgins, 1989). In relation to age, self-concepts apparently decline from childhood to preadolescence, and then remain stable or gradually increase through at least early adulthood (Marsh, 1989; Morin, Maïano, Marsh, Janosz, & Nagengast, 2011). Conversely, research focusing on relations between self-concept domains demonstrates invariance across age (Morin, Maïano, Marsh et al., 2011; Scalas & Marsh, 2008). In relation to ideals, research has mainly focused on their effects on body satisfaction. Cafri, Thompson, Ricciardelli, McCabe, Smolak, Yesalis' (2005) meta-analysis showed that age does not moderate this relation, while Esnaola, Rodríguez, and Goñi (2010) showed that the negative effects of ideals were significant only during adolescence for males, but remained significant over the lifespan for females – although stronger in adolescence. Lamb et al. (1993) found age differences in ideals, with older men and women endorsing heavier ideal figures than their younger counterparts.

Method

Participants

To facilitate comparison with previous results, we base our analyses on data used in Scalas and Marsh's (2008) study. The sample includes 1693 participants from Sardinia, Italy, including 797 adolescents (399 men, 398 women; aged 14-19) and 896 young adults (435 men, 461 women; aged 24-35). Questionnaires were administrated in counterbalanced order in group sessions occurring at school (for the adolescents) or University (for part of the adults); whereas the remaining adults completed the questionnaires individually. For additional information on sample composition and data collection see Scalas and Marsh (2008).

Measures

Actual and Ideal Appearance self-concept. Participants completed a brief Italian version of the Actual Appearance scale of the Physical Self-Description Questionnaire (PSDQ, Marsh et al., 1994; Meleddu, Scalas, & Guicciardi, 2002) including four positively worded items (e.g., "I am good looking"). An Ideal version of the same items was constructed (e.g., "Ideally, I would like being good looking"). Participants rated both actual and ideal items on a 6-point scale.

Physical self-concept. Participants completed a 4-item Italian version of the PSDQ global PSC scale (Marsh et al., 1994; Meleddu et al., 2002), composed by positively worded items (e.g., "I feel good about who I am physically") rated on a 6-point scale.

Global Self-Esteem. The five positively worded items from the Italian version (Prezza, Trombaccia, & Armento, 1997) of the Rosenberg (1965) Self-Esteem Inventory were used (e.g., “Overall, I am satisfied with myself”). As in the original, a 4-point- scale was used.

Only positively worded items were retained to avoid adding complexity to already complex models due to the method factors associated with item wording. Research suggests that retaining only the positively-worded items is unlikely to bias parameter estimates (Marsh, Scalas, & Nagengast, 2010). Preliminary Confirmatory Factor Analyses confirmed the adequacy of the measurement model including these four constructs (χ^2= 769.33, df = 109; CFI = .94, TLI = .93, RMSEA = .06), with moderate latent correlations suggesting no multicollinearity problems (*r*= -.17 to .60), sufficient variance to support further analyses (Actual= .724; Ideal=.770; PSC= .798; GSE=.222; keeping in mind that GSE is rated on a 4, rather than 6, point answer scale), and adequate reliability estimates based on McDonald’s ω (1970) and Cronbach α [(Actual ω= .84, α= .84); (Ideal ω= .89, α= .89); (PSC ω= .94, α= .94); (GSE ω= .75, α= .77)].

Analysis

All models were estimated with Mplus 6.11 (Muthén, & Muthén, 2011) robust maximum likelihood estimator (MLR), using 5000 random sets of start values, 300 iterations, and retaining the 100 best solutions for final optimisation (Hipp & Bauer, 2006). Mixture SEM (Henson et al., 2007) were specified based on Figure 1, allowing the predictive paths between the normally-distributed continuous factors to be freely estimated in all profiles, as well as the correlation between the two exogenous predictors (Actual and Ideal Appearance). All models were estimated as fully latent, and thus estimates are corrected for measurement errors. The latent variables means (but not the variances) were freely estimated in all classes for both the predictors and outcomes. The free estimation of the outcomes’ means is typical in mixture SEM (and mixture regression). These means reflect the intercepts of their regressions on the predictors, making them necessary to estimate class-specific regression equations (Henson et al., 2007; Wedel, 2002). The free estimation of the predictors’ means (e.g., saturated mixture SEM, or cluster-weighted SEM) provides additional flexibility and practical utility for the classification of current and later cases with incomplete information (Ingrassia, Minotti, & Vittadini, 2012; Wedel, 2002). Such models also reveal potential interactions among the predictors, resulting in profiles in which the relation among constructs may differ as a function of predictors levels (Bauer, 2005; Bauer & Shanahan, 2007). Alternative models where the variances of the latent factors were freely estimated in all profiles (Morin, Maïano, Nagengast et al., 2011) converged on improper solutions or did not converge, suggesting their inadequacy (Bauer & Curran, 2003; Chen, Bollen, Paxton, Curran, & Kirby, 2001; Henson et al., 2007). We finally compared the gender (males, females) and age (adolescents aged 14-19, young adults aged 24-35) composition of the profiles using Mplus AUXILLIARY (e) function, which relies on a Wald test of significance based on pseudo-class draws (Asparouhov & Muthén, 2007) without having to directly integrate the covariates into the model. The procedure used to determine the optimal number of profiles and the input for the final model are reported in the online supplements.

Results

The fit indices for the models with 1 to 5 latent profiles are reported in Table 1. The AIC, CAIC, BIC, and SABIC kept on decreasing for models including 1 to 4 profiles where they reached their lowest point. Although these results apparently support 4 profiles, this model converged on an improper solution, suggesting that it may have been overparameterised (Bauer & Shanahan, 2007; Chen et al., 2001). Furthermore, the LMR supported the 3-profile solution, which also yielded better classification (entropy = .981 versus .939) accuracy than 4 profiles.

The latent means and intercepts estimates from this retained 3-profile model are reported in Table 2 and graphed in Figure 2. The main mean differences relates to highly diverging Ideal Appearance standards (in terms of non-overlapping confidence intervals – CIs - between the profiles), with the highest standards found in decreasing order amongst participants from profiles 2, 1, and 3. Furthermore, profile 3 shows a slightly higher level of Actual Appearance than profile 1 and 2. No differences were found between the profiles regarding levels of PSC, and GSE, although for PSC this can be explained by the larger standard errors.

These profiles also differed on the basis of the relations between constructs, reported in Table 3. The relations between PSC and GSE are positive, significant, and similar in magnitude across profiles. The first two profiles fail to support the AID model. In both profiles, Actual Appearance positively predicts PSC and GSE, showing evidence that the relation between Actual Appearance and GSE is partially mediated by PSC (indirect effect = .166 in profile 1 and .303 in profile 2, with 95% bootstrapped CIs = .099/.234 for profile 1 and .250/.356 for profile 2). However, the relations between Ideal Appearance, and PSC or GSE are non-significant in these two profiles, in contrast with the AID proposal. In fact, the only difference between these profiles is that the relation between Actual Appearance and PSC (but not GSE) is stronger in the second and largest profile (56.2% of the sample) than in the first and smaller profile (18.0% of the sample). Interestingly, the level of Ideal Appearance is much higher in the second profile than in the first one, suggesting that the magnitude of the relation between Actual Appearance and PSC might depend on (i.e., be moderated by) the magnitude of Ideal standards: the greater the ideals, the greater the effects of Actual Appearance on PSC.

The third profile characterised participants (25.7%) with the lowest Ideal Appearance and the highest Actual Appearance. In this profile, the results support the AID model in showing negative relations between Ideal Appearance and PSC. In this profile, the relations between Actual and Ideal Appearance and GSE are completely mediated by PSC (indirect effects = .199 for Actual and -.079 for Ideal, with 95% bootstrapped CIs = .124/.274 for Actual and -.140/-.019 for Ideal), with no residual direct relation between Actual or Ideal Appearance and GSE.

In summary, the results revealed a complex interaction (Bauer, 2005) between Actual Appearance, Ideal Appearance, PSC and GSE. When Ideal Appearance standards are high, then the relationship between Actual Appearance and PSC is positive and much higher than when these standards are moderate or low in magnitude. High or moderate Ideal Appearance has no effect on either PSC or GSE. However, low ideal standards have a negative relation with PSC, in line with the AID. Furthermore, for people with low ideal standards, Actual and Ideal Appearance present no direct relation with GSE independently of their mediated effect through PSC. It is interesting to note that the third profile also corresponds to participants showing slightly higher levels of Actual Appearance, suggesting that people who perceive themselves to be better looking tend to present lower Ideal standards, but also to be more sensitive to the negative effects of these standards on PSC.

Comparing these profiles based on gender and age (Table 4) reveals that the second profile (with the highest Ideal Appearance) includes a higher proportion of females than the other profiles, in conformity with previous studies suggesting that these standards tend to be greater for females (Lamb et al., 1993). Similarly, this profile also includes a greater proportion of adolescents (versus young adults) than the first profile (with moderately high ideals). The third profile (with low ideals) presents the highest proportion of young adults.

Discussion

This study relied on a mixture SEM approach to evaluate predictions from a theoretical model of self-concept formation dating back to James (1890). Although the possibility that individual differences might influence the psychological processes associated with self-discrepancies has been considered previously (Higgins, 1999; North & Swann, 2009), the hypothesis that the AID model only holds in specific subgroups has never been investigated. Globally, our results are in line with classical theories (Shavelson et al., 1976), which posit positive and significant relations between PSC and GSE, and stronger relations between subdomains (Appearance) and domains (PSC) than between subdomains and GSE. More specifically, three profiles emerged and one of them was in line with the AID proposal. In this profile, Ideal Appearance had a substantial negative effect on PSC. In contrast, in the other profiles, this effect was non-significant. The fact that the AID model holds only for a small portion of the sample (25.7%), explains why previous studies generally failed to support it when basing estimates on total samples. Further investigations should attempt to replicate this result, test its generalizability and, more importantly, investigate the characteristics that distinguish this profile.

The results also suggest that the relations between actual self-concepts, ideal standards, and global self-conceptions might be more complex than anticipated. Ideal standards seem to play a weighting role in the relation between Actual Appearance, PSC and GSE. Moderate to high ideal standards were associated with partially mediated relations between Actual Appearance and GSE, with stronger effects and mediation of Actual Appearance observed for higher ideals: The greater the ideals, the greater the effects of Actual Appearance on PSC. Conversely, low ideals were associated with no direct effect of Actual Appearance on GSE, and no residual effects of Actual or Ideal Appearance on GSE once their effects on PSC were taken into account.

Interestingly, the third profile, which provided apparent support for the AID model in terms of a negative relation between ideals and PSC, also presents the lowest ideal standards, the highest

Actual Appearance, and a fully mediated relation between Actual and Ideal Appearance, PSC, and GSE. Thus, not only do lower ideals reduce the positive effect of Actual Appearance on PSC, they also activate their own negative effect on PSC, and deactivate direct relations between Actual Appearance and GSE. Given that physical appearance is not part of these individuals' ideal standards, which may be related by their slightly higher levels of Actual Appearance, it is to be expected that Actual Appearance would have no direct effects on GSE, once its effects on PSC are taken into account. Conversely, their higher levels of Actual Appearance apparently make them more sensitive to the negative effects of variations in ideals standards. Although this complex relationship helps to further qualify the AID model and to explain its elusive nature (i.e., the model was only supported for 25.7% of the sample), more studies are needed to understand if these results generalise to other self-domains and subdomains, and to other samples, populations, and measures. In particular, we relied on shortened measures including only positively worded items to keep the estimated models as simple as possible. Although this is unlikely to have biased the results (Marsh et al., 2010), this remains to be investigated and may explain the slightly lower level of variability noted for the GSE scale.

Furthermore, although the AID model ascribes a causal role to domain-specific actual and ideal selves in the prediction of more global self-concepts, this study remains cross-sectional and cannot support directional, or causal, interpretations. Longitudinal studies are needed to more precisely disentangle the directionality of the associations and see whether our results replicate longitudinally. Future research is also needed to explore the reasons why the negative effects of ideals are limited to a subsample of individuals presenting low ideal standards.

To further examine the meaningfulness of the profiles, we verified their age and gender composition. Results revealed patterns of associations that are consistent with previous studies showing that younger females tend to present higher Ideal Appearance than male and that elevated Ideal Appearance standards tend to fade out with age (Lamb et al., 1993). For females, pubertal changes tend to be associated with an increment in body weight, contrasting with the "thin ideal" of Western societies (e.g., Morin, Maïano, Marsh et al., 2011). Thus desired body shape standards are not usually met in reality. In contrast, in males, pubertal changes are associated with the emergence of socially-valued physical characteristics (e.g., muscularity). Regarding age, appearance is crucial to self-definition in early adolescence (Harter, 2012) when puberty makes these physical aspects more salient (Meleddu & Scalas, 2003) – particularly among females (Morin, Maïano, Marsh et al., 2011). However with time, older adolescents and young adults tend to better integrate these facets into more coherent self-definitions, based on more realistic ideal standards (Harter, 2012). The comparisons conducted here implicitly assumed that the nature of the profiles, as well as the relations between constructs, remained the same across gender- and age-related groups. Given the complexity of the models considered, it was not possible to directly probe this assumption (due to convergence issues) but future studies should more directly test for the invariance of profiles solutions across gender- and age-related subgroups (Eid, Langeheine, & Diener, 2003).

In conclusion, a person-centred approach identified a specific subgroup of participants for whom the predicted negative effect of Ideal Appearance on PSC was significant. Although this subgroup was substantial, including 25.7% of the participants, it remained small enough to explain contrasting results found by previous variables-centred studies in which estimates represent the average relation obtained on the total sample. Nevertheless, much still needs to be done in order to better understand the characteristics of the people for whom the AID model does or does not work, and the reasons for these differences. More importantly, our results suggest the need to revise the AID model by incorporating a more complex picture through which ideals play a weighting role in the relations between Actual Appearance, PSC and GSE.

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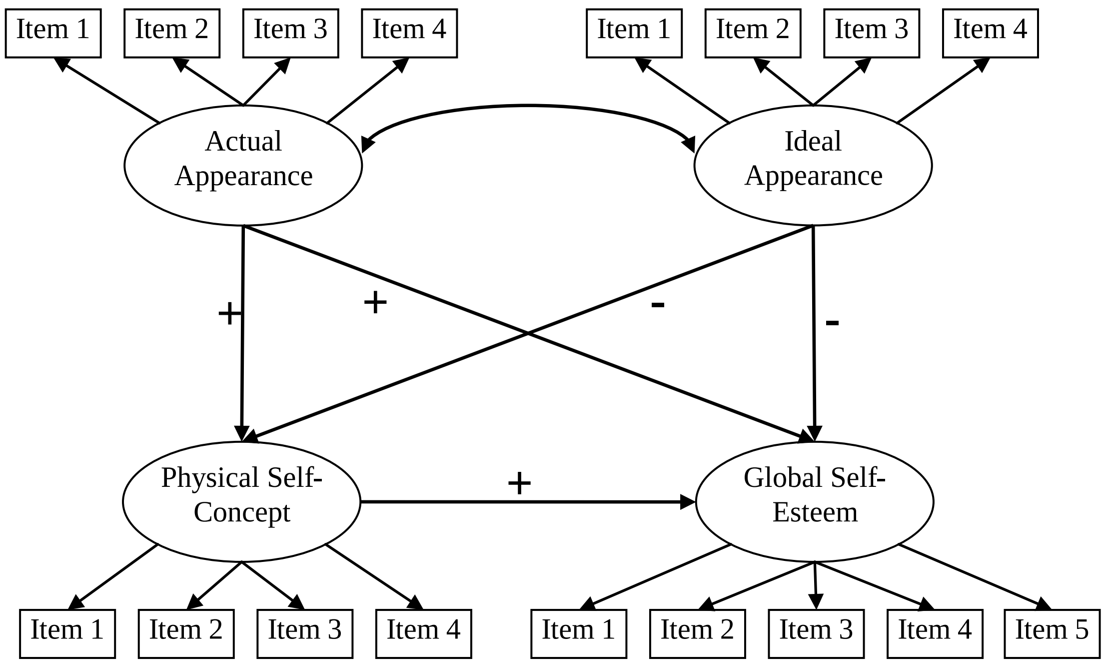
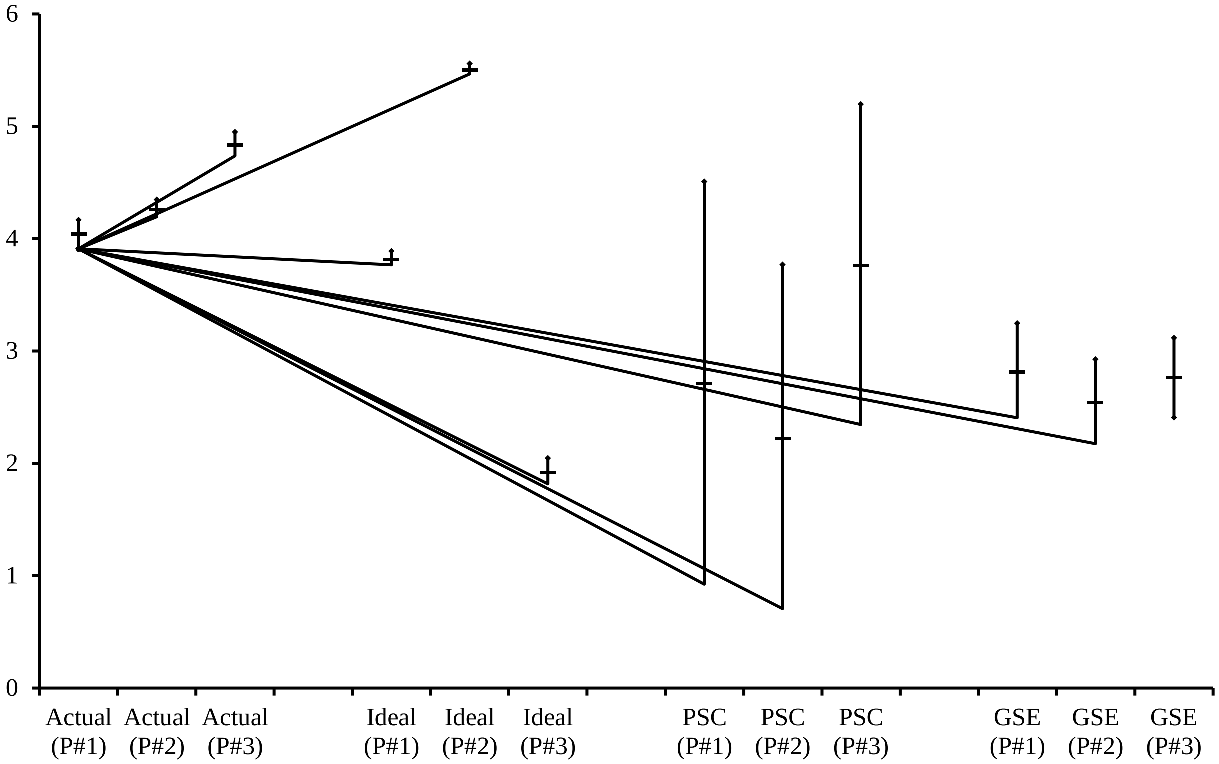


Figure 1. Pattern of relations examined in the mixture SEM



Note. Actual = Actual Appearance (Mean); Ideal = Ideal Appearance (Mean); PSC = Physical Self-Concept (Intercept); GSE = Global Self-Esteem (Intercept); P#: Profile number.

Figure 2. Latent Means/Intercepts (with 95% Confidence Intervals) for the Final Mixture SEM

Table 1.

Fit Indices for the Mixture SEM

K	LL	SCF	FP	AIC	CAIC	BIC	SABIC	LMR	BLRT	Entropy
1	-39951	1.481	57	80016	80383	80326	80145	NA	NA	NA
2	-39505	1.435	68	79146	79583	79515	79299	<.001	<.001	.935
3	-39152	1.361	79	78462	78970	78891	78640	<.001	<.001	.987
4	-38914	0.011	90	78009	78588	78498	78212	=.239	<.001	.939
5	-39152	1.065	101	78506	79156	79055	78734	=.141	1.000	.964

Note. K = Number of profiles; LL = Loglikelihood; SCF: Scaling correction factor; FP= Number of free parameters; AIC = Akaïke information criterion; CAIC = Consistent AIC; BIC = Bayesian information criterion; SABIC = Sample-size adjusted BIC; BLRT = Bootstrap likelihood ratio test.

Table 2.

Latent Means/Intercepts with 95% Confidence Intervals for the Final Model

	Actual appearance (1-6 scale)		Ideal appearance (1-6 scale)		Physical self-concept (1-6 scale)		Global self-esteem (1-4 scale)	
	Mean (s.e.)	95% CI	Mean (s.e.)	95% CI	Intercept (s.e.)	95% CI	Intercept (s.e.)	95% CI
Profile 1 (18.0%).	4.04 (0.07)	3.91/4.17	3.81 (0.04)	3.74/3.89	2.71 (0.92)	0.90/4.51	2.81 (0.22)	2.38/3.25
Profile 2 (56.2%).	4.26 (0.05)	4.17/4.35	5.50 (0.03)	5.44/5.56	2.22 (0.79)	0.68/3.77	2.54 (0.20)	2.15/2.93
Profile 3 (25.7%).	4.83 (0.06)	4.71/4.95	1.92 (0.07)	1.79/2.05	3.76 (0.73)	2.32/5.20	2.76 (0.18)	2.41/3.12
Mean comparisons	1 = 2< 3		3 < 1< 2		1 = 2= 3		1 = 2= 3	

Note. s.e. = Standard error; CI = Confidence interval.

Table 3.

Standardized Estimates for the 3-Class Model

	AA→PSC		IA→PSC		PSC→GSE		AA→GSE		IA→GSE	
	Estimate (s.e.)	95% CI	Estimate (s.e.)	95% CI	Estimate (s.e.)	95% CI	Estimate (s.e.)	95% CI	Estimate (s.e.)	95% CI
Profile 1	0.36 (0.07)*	0.23/0.49	-0.00 (0.06)	-0.11/0.11	0.46 (0.05)*	0.36/0.56	0.19 (0.08)*	0.03/0.34	-0.03 (0.06)	-0.13/0.08
Profile 2	0.61 (0.03)*	0.55/0.66	-0.05 (0.03)	-0.11/0.02	0.50 (0.04)*	0.42/0.58	0.19 (0.05)*	0.10/0.28	0.02 (0.03)	-0.04/0.09
Profile 3	0.44 (0.06)*	0.32/0.56	-0.17 (0.06)*	-0.29/-0.06	0.46 (0.07)*	0.32/0.59	0.16 (0.09)	-0.01/0.33	0.02 (0.07)	-0.11/0.15

Note. * $p \leq .05$; AA= Actual Appearance; IA= Ideal Appearance; PSC = Physical Self-Concept; GSE = Global Self-Esteem; s.e. = standard error; CI = Confidence Interval.

Table 4.

Gender and Age Composition of the Profiles.

	% Females	Significance	% Young adults	Significance
Profile 1	45.7%		56.2%	
Profile 2	56.1%	1 = 3 < 2	46.0%	3 > 1 > 2
Profile 3	42.4%		65.8%	