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Psychometric Properties of a Bahasa Malaysia (Malay) Translation of the Body and
Appearance Self-Conscious Emotions Scale (BASES): An Assessment using Exploratory
Structural Equation Modelling

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Abstract

The Body and Appearance Self-Conscious Emotions Scale (BASES) measures self-conscious emotions in relation to the body and appearance. While scores have been shown to support a hypothesised 4-factor model consisting of facets of shame, guilt, authentic pride, and hubristic pride, previous studies are limited in their sole reliance on confirmatory factor analysis. Here, we assessed the psychometric properties of a novel Bahasa Malaysia translation of the BASES using an exploratory structural equation modelling (ESEM) framework. Malaysian adults ($N = 1,049$) completed the BASES along with measures of body appreciation, psychological well-being, and secure non-striving. The results of exploratory factor analysis and ESEM in separate split-half subsamples supported a 2-dimensional model consisting of Shame-Guilt and Authentic-Hubristic Pride. This 2-dimensional model was broadly invariant across ethnicity, gender, and age, had adequate internal consistency, and evidenced adequate construct validity in relation to the Authentic-Hubristic Pride subscale. We interpret our findings as consistent with the view that cultural factors shape the way in which body and appearance-related self-conscious emotions are manifested. Our results also highlight the importance of considering alternative conceptualisations of body and appearance-related self-conscious emotions, which previous studies may have obscured through their reliance on confirmatory factor analyses.

Keywords: Self-conscious emotions; Body appearance; BASES; Exploratory structural equation modelling; Malaysia; Test adaptation

1. Introduction

According to attributional models (Tracy & Robins, 2004, 2007), self-conscious emotions are the result of social judgment processes whereby events relevant to one's identity goals are attributed to causes within the individual (for a review, see Sznycer, 2019). In this view, guilt is experienced when events that are incongruent with one's identity goals are attributed to specific, unstable, or controllable aspects of the self, whereas shame is experienced when attributions are made to global, stable, uncontrollable aspects of the self (Tangney, 1990). On the other hand, outcomes that are congruent with one's identity elicit pride when they are attributed to specific and unstable aspects of the self or hubris when they are attributed to global or stable aspects of the self (Tracy & Robins, 2014). This model of self-conscious emotions has been applied to a wide range of everyday settings (e.g., Bynum & Artino, 2018), but they have been most widely studied in the context of body image and physical activity (for a review, see Sabiston et al., 2019).

More specifically, events that are incongruent with one's identity and that are attributed to specific, unstable, or controllable aspects of the self (e.g., consumption of fatty foods) are thought to trigger guilt, whereas those that are attributed to global, stable, and uncontrollable aspects of the self (e.g., failure to attain internalised ideals of appearance) trigger feelings of shame (Castonguay et al., 2012). Conversely, authentic pride is experienced when an individual undertakes specific behaviours or achieves goals that are consistent with internalised social standards (e.g., exercising regularly), whereas hubristic pride involves more global and less controllable aspects of the self (e.g., being a physically attractive person; Castonguay et al., 2013). Because body and appearance-related self-conscious emotions regulate affective experiences and motivate behaviours, they have important implications for physical and psychological health outcomes, such as exercise motivations and behaviours (e.g., Huellemann et al., 2021).

The most widely used instrument to measure self-conscious emotions in relation to body and appearance is the Body and Appearance Self-Conscious Emotions Scale (BASES; Castonguay et al., 2014). To develop the BASES, Castonguay et al. (2014) initially developed a pool of 24 items measuring body and appearance-related shame, guilt, authentic pride, and hubristic pride. With data from a Canadian adult sample, eight items were omitted based on low item variance and high inter-item correlations, resulting in a 16-item instrument. Confirmatory factor analysis (CFA) indicated that a hypothesised 4-factor model of BASES scores had adequate fit, with subscales scores evidencing adequate internal consistency. Additionally, Castonguay et al. (2014) reported that scores on the BASES had adequate concurrent validity (e.g., scores were related to other measures of body-related self-conscious emotions), convergent validity (e.g., scores were related to depressive symptoms, social physique anxiety, and self-esteem), and discriminant validity (i.e., scores were moderately correlated with generalised self-conscious emotions), as well as adequate test-retest reliability after two weeks.

Several studies have assessed the factorial validity of translated versions of the BASES. Based on the results of CFAs, the 4-factor model of BASES scores has been supported in Polish (Razmus et al., 2019) and Iranian samples (Zemestrani et al., 2021). Similarly, Alcaraz-Ibáñez and Sicila (2018) reported – based on exploratory factor analysis (EFA) – that a 4-factor model of BASES scores had adequate fit, though they neglected to report whether fits of other non-hypothesised models (e.g., 2-, 3-, or 5-factor models) were examined. They further noted that one item (Item #7) hypothesised to load on the Guilt subscale in fact loaded onto the Shame subscale. The results of a subsequent CFA showed that the original 4-factor model, a model with Item #7 loading onto the Shame subscale, and a model that omitted Item #7 all had adequate fit indices. Because of the ambiguity of the loading of Item #7, Alcaraz-Ibáñez and Sicilia (2018) recommended computing BASES

subscale scores with the item omitted. Similar findings have also been reported in a sample of Brazilian adolescents (Chiminazzo et al., 2021), where a model without Item #7 had adequate fit.

Beyond issues of factorial validity, two studies have that BASES dimensionality (with Item #7 omitted) was invariant across gender (Alcaraz-Ibáñez & Sicilia, 2018; Chiminazzo et al., 2021), which in turn allowed the authors to compute between-group differences. Whereas Alcaraz-Ibáñez and Sicilia (2018) reported that women had significantly higher scores than men on body and appearance-related guilt (Cohen's $d = 0.65$) and shame ($d = 1.02$), as well significant lower scores on authentic pride ($d = 1.02$) and hubristic pride ($d = 1.06$), Chiminazzo and colleagues (2021) only found a significant difference favouring boys on hubristic pride ($d = 0.25$). In addition, test adaptation studies have also generally supported the convergent validity of BASES scores, insofar as subscale scores were significantly associated with constructs such as body dysmorphic disorder, body appreciation, and social physique anxiety (Alcaraz-Ibáñez & Sicilia, 2018; Chiminazzo et al., 2021; Zemestrani et al., 2021; see also Alcaraz-Ibáñez et al., 2019; Mendia et al., 2021).

1.1. Reconsidering the Dimensionality of BASES Scores

One concern with the literature on the factor structure of BASES scores is that most studies have relied solely on CFA to assess score dimensionality. As emphasised in recent reviews (Swami & Barron, 2019; Swami, Todd et al., 2021a), however, CFA is most useful for determining whether an *a priori* hypothesised model fits the data; it is less useful for determining whether alternative non-hypothesised models fit the data better. In all previous studies reporting on the dimensionality of the BASES, researchers have not considered (or not reported on) the possibility of alternative modelling of scores (e.g., based on the results of unconstrained EFAs). This is particularly important when considered in light of research suggesting some conceptual ambiguity in how facets of self-conscious emotions should be

conceptualised, and the extent to which these facets are truly distinct (Holbrook et al., 2014a, 2014b).

Furthermore, CFA only allows items to load on their respective hypothesised latent factors, with cross-loadings forced to be zero (Marsh et al., 2009; Morin et al., 2016, 2020). That is, this method assumes that items associated with each BASES factor are “pure” indicators of that factor and there will be no associations between items and non-target conceptually related constructs. However, based on the results of the EFA by Alcaraz-Ibañez and Sicilia (2018), the assumption of zero cross-loadings is highly unlikely (for theoretical discussions, see Asparouhov & Muthén, 2009; Asparouhov et al., 2015; Marsh et al., 2011, 2014). Moreover, BASES factors of common valence (i.e., the shame and guilt versus the authentic and hubristic pride subscales, respectively) are often moderately-to-strongly inter-correlated ($\sim |.60|-.80|$; Alcaraz-Ibañez & Sicilia, 2018; Castonguay et al., 2014; Chiminazzo et al., 2021), which is very likely due to the non-estimation of cross-loadings. It is, therefore, possible that alternative models of BASES scores (e.g., two broad, orthogonal dimensions of shame-guilt and hubristic-authentic pride) will emerge when alternative, exploratory methods are utilised.

Not altogether unrelated is the possibility that cultural factors may shape the dimensionality of BASES scores. To wit, although scholars have generally assumed that body and appearance-related experiences will trigger one of four discrete and universally recognisable self-conscious emotions (Castonguay et al., 2014; Razmus et al., 2019), such an assumption is highly unlikely to be tenable. Within broader research on self-conscious emotions, for instance, it is generally accepted that the form, expression, and meaning of self-conscious emotions varies across cultures (Eid & Diener, 2009; Goetz & Keltner, 2007; Lewandowska-Tomaszczyk & Wilson, 2014). As one example, not all cultures include distinct words for many self-conscious emotions, such as shame and guilt (Edelstein &

Shaver, 2007). While this may reflect possibly impoverished lexicons, it is also equally possible that some cultures view some self-conscious emotions (e.g., shame and guilt, or various conceptions of pride) as essentially identical in phenomenology (Robins & Schriber, 2009).

Indeed, based on self-construal theory (Markus & Kitayama, 1991), it has been suggested that self-conscious emotions may play very different phenomenological functions in interdependent versus independent cultures (Mesquita & Karasawa, 2004). For instance, in the former, both shame and guilt are consistent with cultural norms of modesty; that is, showing shame and/or guilt is consistent with aligning one's self with social rules and expectations, a central goal in interdependent contexts. Conversely, forms of pride (or shamelessness) are viewed negatively in interdependent contexts (Mesquita & Karasawa, 2004), as they are inconsistent with the goals of interdependency. In interdependent contexts, therefore, it is quite possible that individual experiences of self-conscious emotions – including those related to the body and appearance – will be phenomenologically different to that reported or expected in independent contexts, triggering multiple appraisals and multiple self-conscious emotions simultaneously (see Mu & Berenbaum, 2019). Most practically, this means that alternative factorial models of BASES scores will emerge, possibly reflective of two orthogonal dimensions tapping combined shame/guilt and pride facets.

1.2. The Malaysian Context

As a contribution to these discussions, we report on psychometric properties of a novel Bahasa Malaysia (Malay) translation of the BASES in Malaysian adults. Unlike most previous contexts in which the psychometric properties of the BASES have been assessed, Malaysia is a multi-ethnic nation undergoing a nutritional and lifestyle transition in tandem with rapid industrialisation, political and economic fluctuations, and an increasing rate of overweight (for a fuller discussion, see Swami, 2020). Importantly, Malaysia can be

classified as a *prima facie* context in which the self is interdependent (Bochner, 1994), that is, where the self is inherently connected to other people and is part of ongoing relationships with others, which may in turn affect the way in which body and appearance-related self-conscious emotions are experienced and manifest themselves.

More specifically, in the Malaysian context and in the Malay language, the concept of shame (*malu*) is broad in its epistemological meaning, encompassing related emotions such as guilt and propriety, and viewed essentially as a “social good” (Goddard, 1997, p. 187). Compared to its use in English, however, the notion of *malu* is less specific, and often elicited in relation to one’s body, appearance, and sexuality (Collins & Bahar, 2000; Goddard, 1996; Lee, 1981). Malaysian cultural values facilitate expressions of shame and/or guilt for departures from societal standards of appearance and even minimal bodily expression (Aloysius & Syed Jamaludin, 2018; Collins & Bahar, 2000), which in turn restores social harmony through the enforcement of social etiquette and consensus. Indeed, in relation to the body, *malu* is often pre-emptive: one is expected to experience and demonstrate a normative sense of *malu* (i.e., both shame and guilt) in relation to one’s body and appearance, and various social practices (e.g., tricking children into exposing themselves and then teasing them for doing so; Collins & Bahar, 2000; Peletz, 1996) are designed to elicit this form of shame-guilt (Lee, 1981; Maeda, 1975).

In a similar vein, pride (*bangga*) can be viewed as the converse of shame in Bahasa Malaysia (Goddard, 1996), with similar connotations for one’s body and appearance. For instance, although one may take pride in one’s appearance, doing so is perceived as a violation of social norms and is often proscribed. To take pride – whether authentically or hubristically – in one’s appearance or body is akin to a moral transgression (Goddard, 1996), and the policing of public expressions of such emotions ensures communal cohesion and consensus. For instance, even minimal expressions of body pride are typically described in

very negative terms, such as *angkuh* or *sombong* (which roughly translate as excessive hubris) or the idiomatic phrase *hidung tinggi* (literally “high-nosed”, meaning someone who has an excessively high opinion of themselves). Moreover, as has been suggested in independent cultures (Holbrook et al., 2014a, 2014b), it is unclear to what extent authentic expressions of pride and hubristic pride are truly distinct phenomenologically in Malaysia, as both contravene social norms (Goddard, 1996).

These accounts have important implications for the manifestation of body and appearance-related self-conscious emotions in Malaysia. For instance, one likely possibility is that, in the context of Malaysia, body and appearance-related shame and guilt are experienced as phenomenologically similar (e.g., in terms of the situations that produce these emotions and the functions they play). Likewise, given the negative connotations of all forms of pride in Malaysia, it is possible that both hubristic and authentic pride are experienced as similar in their phenomenology. The most direct implication is that the 4-factor structure of the BASES reported in previous work may not apply to the Malaysian context; rather, it may be more likely that a 2-factor structure emerges, which combines shame-guilt and authentic and hubristic pride, respectively. We note tangentially that this 2-dimensional factor structure may also offer improved accounting of BASES dimensionality in other cultural contexts, but previous studies have neglected to test for the possibility.

1.3. The Present Study

In view of the discussions above, we conducted a full assessment of the factorial validity of BASES scores in the Malaysian context. To deal with concerns about the use of CFA and to consider the possibility of alternative dimensionality to that proposed in the original study (Castonguay et al., 2014), we utilised both EFA and exploratory structural equation modelling (ESEM). The use of EFA ensures that we are able to arrive at an appropriate data-driven model of the BASES factor structure that is not constrained by

modelling limitations. The use of ESEM, meanwhile, is useful for understanding the factor structure of the BASES because it is an analytic strategy that relaxes constraints assumed by independent clusters modelling by incorporating aspects of EFA (i.e., allowing for cross-loadings) and CFA (i.e., the use of advanced statistical methods; Marsh et al., 2013, 2014; Morin et al., 2013). Indeed, ESEM has been shown to result in improved fit and less strongly correlated factors than CFA solutions (e.g., Morin & Maïano, 2011; Swami, Maïano et al., 2021) and has been recommended for the assessment of multidimensional body image instruments (Swami et al., 2021a). ESEM is particularly useful in relation to the BASES because it allows for a more realistic accounting of the likely way in which BASES items cross-load (i.e., allows for items to inter-relate across emotions) compared to a CFA approach.

In addition to an assessment of factorial validity, we also assessed the invariance of BASES factor structure across gender, ethnicity, and age. In terms of the former, we expected that the BASES factor structure would demonstrate full gender invariance, which would be consistent with previous work (Alcaraz-Ibáñez & Sicilia, 2018; Chiminazzo et al., 2021). In terms of ethnicity, we assessed invariance across Malaysian Malays and Chinese, who represent the two largest ethnic groups in Malaysia at about 55% and 23% of the national population, respectively (Department of Statistics Malaysia, 2018). Although Malaysian Malays and Chinese have somewhat different historical and ethno-religious trajectories (for a discussion, see Swami, Zahari et al., 2020), previous work has shown that they have similar body and appearance-related attitudes and behaviours, likely a function of their inhabitation of the same national-cultural context (see Swami, 2020). As such, we hypothesised that the BASES factor structure would be invariant across ethnicity. Finally, for exploratory purposes, we also considered the extent of age invariance, though no specific hypotheses were formulated in this regard.

Finally, as an examination of the construct validity of BASES scores, we examined associations with facets of positive body image (i.e., body appreciation), psychological well-being (i.e., subjective happiness and self-esteem), secure non-striving (i.e., the degree to which individuals feel secure with their social position and feel acceptance from others, rather than feeling under pressure to compete), body mass index (BMI), and age. These variables were selected on the basis of significant associations reported in previous work (e.g., Castonguay et al., 2014; Zemestrani et al., 2021) and based on the availability of validated instruments in Bahasa Malaysia. Convergent validity would be supported insofar as BASES scores are moderately correlated with body appreciation, subjective happiness, and self-esteem, whereas divergent validity would be supported through weak correlations with secure non-striving, BMI, and age. We also assessed the invariance of correlations between the measures used for construct validity as a function of participant ethnicity and gender, with the expectation that we would obtain full invariance (indicative that construct validity is supported in Malay women, Malay men, Chinese women, and Chinese men, respectively).

2. Method

2.1. Participants

The initial dataset consisted of 1,182 participants, but we excluded participants who consented but did not respond to any item ($n = 10$), who were missing substantial portions of data ($n = 92$), and who did not meet inclusion criteria (see Section 2.4; $n = 31$). The final dataset, therefore, consisted of 1,049 Malaysian citizens, of whom 525 were women and 524 were men. These participants ranged in age from 18 to 65 years ($M = 32.55$, $SD = 9.93$) and in self-reported BMI from 13.25 to 48.88 kg/m² ($M = 23.68$, $SD = 5.04$). Of the total sample, 729 self-reported their ethnicity as Malay and 320 as Chinese. In terms of marital status 46.3% were single, 49.7% were married, 2.6% were divorced, and 1.4% had another status. In terms of education, 1.1% had completed primary education, 28.7% had completed

secondary education, 43.0% had an undergraduate degree, 17.2% had a postgraduate degree, and 10.0% had another higher qualification. Following Malaysian constitutional law, all Malays were considered Muslims, whereas the majority of the Chinese participants were Buddhists (71.6%; Christian = 20.9%, Muslim = 1.9%, another religion = 5.6%).

2.2. Materials

2.2.1. Body and appearance self-conscious emotions. Participants were asked to complete a novel Bahasa Malaysia translation of the 16-item BASES (Castonguay et al., 2014). All items were rated on a 5-point scale ranging from 1 (*never*; Bahasa Malaysia translation: *tidak pernah*) to 5 (*always*; Bahasa Malaysia translation: *sentiasa*). The translation method is reported in Section 2.3 and the items of the BASES in English and Malay are reported in Appendix 1.

2.2.2. Body appreciation. Body appreciation was assessed using the Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015; Bahasa Malaysia translation: Swami et al., 2019). This is a 10-item instrument that measures acceptance for one's body, respect and care for one's body, and protection of one's body from unrealistic beauty standards. All items were rated on a 5-point scale, ranging from 1 (*never*) to 5 (*always*), and an overall score was computed as the mean of all items. Scores on the Bahasa Malaysia version of the BAS-2 have been shown to be unidimensional, with adequate internal consistency and good convergent and incremental validity (Swami et al., 2019). In the present study, McDonald's (1970) ω for BAS-2 scores was .93 (95% CI = .92, .94).

2.2.3. Subjective happiness. To assess subjective happiness, we used the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999; Bahasa Malaysia translation: Swami, 2008). This is a molar measure of the extent to which individuals believe they are happy or unhappy people. The SHS consists of 4 items, two of which ask respondents to characterise themselves based on absolute ratings and ratings relative to peers and two of which ask

respondents to rate the extent to which descriptions of happy and unhappy individuals are accurate of themselves. All items were rated on 7-point scales and an overall score was computed as the mean of all items. Scores on the Bahasa Malaysia version of the scale evidence adequate internal consistency, good patterns of construct validity, and good test-retest reliability over a 4-week period (Swami, 2008). In the present study, McDonald's (1970) ω for SHS scores was .80 (95% CI = .76, .84).

2.2.4. Self-esteem. Self-esteem was measured using the 10-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965; Bahasa Malaysia translation: Swami, 2011). This instrument measures participants' overall sense of self-worth, with items rated on a 4-point scale ranging from 1 (*Strongly disagree*) to 4 (*Strongly agree*). In its English version, five items are reverse-coded prior to analysis. In the Bahasa Malaysia form, however, one of these reverse-coded items loads negatively, possibly due to interpretation issues. Swami (2011) recommended inclusion of this item in its non-reversed format, which is what we did here. An overall RSES score was, therefore computed following reverse-coding of four items, with higher scores reflecting higher self-esteem. The Bahasa Malaysia version of the RSES has adequate internal consistency, good test-retest reliability after 5 weeks, and good patterns of convergent and discriminant validity (Swami, 2011). In the present study, McDonald's (1970) ω for RSES scores was .80 (95% CI = .70, .80).

2.2.5. Secure non-striving. To assess secure non-striving, participants completed the Secure Non-Striving subscale of the Striving to Avoid Inferiority Scale (SAIS-SNS; Gilbert et al., 2007; Bahasa Malaysia translation: Swami et al., 2021b). This is a 12-item instrument that assesses the degree to which individuals feel secure with their social position and feel acceptance from others, rather than feeling under pressure to compete. All items were rated on a 5-point scale ranging from 1 (*never*) to 5 (*always*). Previous work has shown that the Bahasa Malaysia version of the SAIS-SNS has a unidimensional factor structure with

adequate internal consistency and convergent validity (Swami et al., 2021b). McDonald's (1970) ω for SAIS-SNS scores in the present study was .94 (95% CI = .92, .96).

2.2.6. Demographics. Participants provided information about their gender (*jantina*, used in Bahasa Malaysia to refer to both sex and gender), age, marital status, highest educational qualification, and religion. They also self-reported their height and weight, which we used to compute BMI as kg/m^2 . Improbable BMI values (i.e., < 12 or $> 50 \text{ kg/m}^2$; $n = 12$) were treated as missing values and replaced using the mean replacement method.

2.3. Instrument translation

The BASES was translated into Bahasa Malaysia using the 5-stage test adaptation methodology developed by Beaton et al. (2000) and recommended for the test adaptation of body image-related instruments (Swami & Barron, 2019). First, two translators – one informed about the study and the other uninformed – independently forward-translated the BASES items from English to Bahasa Malaysia. Second, the two translations were examined by a third translator, uninformed about the study objectives; minor discrepancies between the two translations were resolved, producing a synthesised translation. Third, two new independent translators who were naïve to study back-translated the synthesised translation into English. Fourth, the forward- and back-translations were submitted to a committee consisting of all aforementioned translators, a psychometrician, a linguist, and two bilingual and Malaysian authors of the present study. The committee discussed semantic, idiomatic, experiential, and conceptual equivalence of the instruments and considered discrepancies between the translations, which were resolved these through a consensual approach. In a final step, a pre-final version of the BASES was pilot tested in a sample of 41 individuals (women = 68.3%) who broadly matched the target sample. Participants in the pilot study were asked to rate each of the BASES items for comprehension on a 5-point scale (1 = *do not understand at all*, 5 = *understanding completely*) and to provide, based on open-ended questions,

feedback on improvements that could be made to each item to enhance comprehension. The mean responses for each item ($M = 4.12$, $SD = 0.65$) and all qualitative feedback were then returned to the committee, who consensually made very minor adjustments to items (e.g., minor grammatical and word choice corrections).

2.4. Procedures

Ethics approval was obtained from the Institutional Review Board at Perdana University. Potential participants who met inclusion criteria (being ≥ 18 years of age, a citizen and resident of Malaysia, of Malay or Chinese ancestry, and fluent in Bahasa Malaysia) were invited to complete an online survey via a QualtricsTM research panel. All data were collected in March 2021, with the study being advertised as a survey on “attitudes toward the body”. After providing digital informed consent, participants were asked to complete the instruments described above, which were presented in a counterbalanced order for each participant. The survey package also included a Bahasa Malaysia translation of the Body Acceptance by Others Scale-2 (Swami et al., 2021b), which is not assessed here. IP addresses were checked to ensure that no participant completed the survey more than once. In exchange for completing the anonymous survey, participants received one of a range of incentives (e.g., vouchers, gift cards) based on the length of the survey, their specific panellist profile, and other factors determined by QualtricsTM.

2.5. Analytic Strategy

2.5.1. Data treatment. There were no missing responses in the dataset (participants were prompted to respond to all items). To examine the dimensionality of BASES scores in the present study, we used an EFA-to-ESEM approach. To ensure adequate subsample sizes¹, the dataset was first split by ethnicity (i.e., Malay and Chinese); next, the larger Malay subsample was split using a computer-generated random seed, resulting in a split-half that we retained for EFA (total $n = 364$; women = 189, men = 175). The remainder of the dataset

(total $n = 685$; Malay women $n = 195$, Malay men = 170, Chinese women = 141, Chinese men = 179) was retained for ESEM. There were no significant differences between the EFA and ESEM subsamples in terms of all basic demographics, nor were there significant differences between the Malay and Chinese subsamples (details available from the corresponding author).

2.5.2. Exploratory factor analysis, gender invariance and differential item functioning by age. EFAs with the first split-half subsample were performed using Mplus 8.5's (Muthén & Muthén, 2019) robust maximum likelihood estimator (MLR). In a first step, six EFAs with one to six correlated latent factors were examined – henceforth Models 1-1 to 1-6 – using Mplus's ESEM capabilities. The decision to select a unidimensional model as the lower limit and a 6-factor model as the upper limit was exploratory. That is, although no previous study has provided evidence that the BASES is unidimensional or consists of more than four factors, we selected these limits to at least rule out these models in the present dataset. As recommended by Marsh et al. (2009, 2014), the EFAs were estimated with an oblique geomin rotation and an epsilon value of .5. The optimum number of factors to retain was determined based on Horn's (1965) parallel analysis using 50 randomly generated datasets.

As recommended by Swami and colleagues (2021a), parallel analysis was complemented by examining the following fit indices: the Steiger-Lind root mean square error of approximation (RMSEA) and its 90% CI (values $\leq .08$ indicate acceptable fit; $\leq .06$ indicates good fit), the standardised root mean square residual (SRMR; values $< .09$ indicate good fit), the Tucker-Lewis index (TLI; values $\geq .90$ indicate acceptable fit and $> .95$ indicate good fit), and the comparative fit index (CFI; values $\geq .90$ indicate acceptable fit and $> .95$ indicate good fit) (Hu & Bentler, 1999; Marsh et al., 2005; Steiger, 2007). The composite

reliability of scales from the optimal factor solution was estimated using McDonald's (1970) ω , with values greater than .70 reflecting adequate internal reliability (Nunnally, 1978).

In a second step, the measurement invariance of this EFA model was examined across gender using the following sequence (Millsap, 2011): (i) configural invariance; (ii) weak invariance (loadings); (iii) strong invariance (intercepts); (iv) strict invariance (uniqueness); (v) invariance of the latent variances/covariances; and (vi) invariance of latent mean factors. Model comparisons (i.e., the preceding model served as comparison) were based on changes (Δ) in CFIs, TLIs, and RMSEAs. A sequence was considered as invariant when Δ CFIs- Δ TLIs were $\leq -.010$ and Δ RMSEAs $\geq .015$ or Δ SRMR $\geq .30$ for loading invariance and Δ SRMR $\geq .10$ for all other forms of invariance (Chen, 2007; Cheung & Rensvold, 2002).

In a third step and for exploratory purposes, a hybrid multiple indicators multiple causes (MIMIC) multiple-group model (Morin et al., 2018) was used to examine: (a) associations between age and the BASES latent factors; (b) probable differential item functioning (DIF), that is, the direct association between age and BASES item responses over-and-above the associations of age with the BASES latent factors; and (c) the invariance of these associations across gender. These models were developed from the most invariant multiple-group model identified in the second step, to which the age was included.

These hybrid MIMIC models were estimated in the following sequence (Marsh et al., 2013; Morin et al., 2013): (a) null effects model (the paths from age to the BASES latent factors and item responses were constrained to be zero); (b) saturated model (the paths from age to BASES item responses were freely estimated, while the paths from age to BASES latent factors were constrained to be zero); and (c) factors-only model (the paths from age to the BASES latent factors were freely estimated, while the paths from age to BASES item responses were constrained to be zero). A substantial improvement in model fit (Δ CFIs- Δ TLIs $> .01$ and Δ RMSEAs $> .015$) in the factors-only and saturated models relative to the

null effects model provides support for an association between age and the BASES item responses. These models were first examined with all relations freely estimated across women and men. Then, the most appropriate model was retained and compared to an alternative model in which all relations were constrained to be invariant across men and women participants.

2.5.3. Exploratory structural equation modelling and invariance across ethnicity and gender. The optimal EFA solution obtained from the first split-half subsample was examined using ESEM with the second split-half subsample. As recommended (e.g., Asparouhov & Muthén, 2009; Browne, 2001), we used confirmatory target rotation (i.e., all cross-loadings were “targeted” to be as close to zero as possible). The analyses were performed using Mplus 8.5’s (Muthén & Muthén, 2019) MLR estimator, and model fit indices were assessed using the fit indices reported in Section 2.5.2. In a second step, the optimal ESEM model retained in the first step was used to examine measurement invariance across ethnicity and gender (i.e., Malay women, Malay men, Chinese women, Chinese men). The same sequence as that reported in the second step of Section 2.5.2 was used.

2.5.4. DIF and latent mean differences as function of age. A hybrid MIMIC multiple-group model (Morin et al., 2018) was used to examine DIF and latent mean differences as function of age and the invariance of these associations across ethnicity and gender. These models were developed from the most invariant multiple-group model across ethnicity and gender subsamples identified in Section 2.5.3, to which the age was included. For these hybrid MIMIC multiple-group model the same sequence as that reported in the third step of Section 2.5.2 was used.

2.5.5. Construct validity and invariance of correlations across ethnicity and gender. The invariance of correlations between the measures used for construct validity was examined as a function of participants’ ethnicity and gender (i.e., Malay women, Malay men,

Chinese women, Chinese men) using the total sample. Analyses were performed using a structural equation model (SEM) in which the BASES factor structure was estimated based on the ESEM model retained with the second split-half subsample. In this model, the latent factors of the BASES and the observed scores (i.e., mean scores) of body appreciation, subjective happiness, self-esteem, secure non-striving, BMI, and age were all correlated. In order to test the equivalence of the correlations between the measures, observed scores (i.e., mean scores) of body appreciation, subjective happiness, self-esteem, secure non-striving, BMI, and age were standardised prior the analyses. These analyses were estimated using the three following steps (Little, 2013; Millsap, 2011). In a first step, the invariance of the BASES factor structure across ethnicity and gender (i.e., Malay women, Malay men, Chinese women, Chinese men) using the total sample was examined following the same sequence as that reported in the second step of Section 2.5.2. In the following step, the most invariant model from the first step was retained as the configural model. In this model, all correlations (between the BASES latent factors and the observed scores of other measures, and between the observed scores of other measures) were freely estimated across ethnicity and gender. In a final step, all correlations were constrained to be invariant across ethnicity and gender subsamples. Correlations were considered as invariant if ΔCFIs - ΔTLIs and ΔRMSEAs between the configural and the invariant models were $\leq -.01$ and $\leq -.015$, respectively (Chen, 2007; Cheung & Rensvold, 2002). Based on Cohen (1992), values $\leq .10$ were considered weak, $\sim .30$ were considered moderate, and $\sim .50$ were considered strong correlations.

3. Results

3.1 Exploratory Factor Analysis, Invariance Across Gender, and DIF as a Function of Age

3.1.1. Exploratory factor analysis. Six EFA models (Models 1-1 to 1-6) with one to six factors were examined (see Table 1). The results showed that fit indices for the

unidimensional model of BASES scores (Model 1-1) were uniformly unsatisfactory (CFI-TLI $< .90$; RMSEA $> .10$, SRMR $> .09$). For models with two to five factors (Models 1-2 to 1-5), all fit indices were acceptable (CFI-TLI $> .90$ or $> .95$; RMSEA $< .08$; SRMR $< .09$). The six-factor EFA model (Model 1-6) failed to converge.

Examination of EFA models indicated that the 2-factor solution consisted of two valenced factors: one grouping items from the Guilt and Shame dimensions (8 items) and second grouping items from the two pride dimensions (8 items). In contrast, the 3- to 5-factor solutions proposed models in which one factor comprised all items from the Authentic and Hubristic Pride dimensions (8 items) and two to four factors gathering two to several items from the Shame and Guilt dimensions. Additionally, as illustrated in Figure 1, parallel analysis showed that the data were best represented by a 2-factor solution. Therefore, based on the combination of fit indices and results of parallel analysis, the 2-factor EFA model was retained for subsequent analyses.

The standardised parameter estimates, composite reliability coefficients, and latent factor correlation for the 2-factor EFA model are reported in Table 2. Both of the factors (i.e., Authentic-Hubristic Pride and Shame-Guilt) had moderate-to-large loadings ($\lambda = .506-.916$), and cross-loadings were of a low magnitude ($|\lambda| = .001-.203$) except for item #4 (.300). As shown in Table 2, the two composite reliability coefficients were excellent ($> .900$) and the latent factor correlation was significant and of a very low magnitude ($< .100$). These results confirm the relative independence of the latent factors.

3.1.2. Gender invariance. Goodness-of-fit statistics from the measurement invariance test across gender are reported in Table 1 (Models 2-1 to 2-6). Results supported the complete (configural, weak, strong, strict, latent variances-covariances, and latent means) invariance of the 2-factor model.

3.1.3. DIF and latent mean differences as a function of age. The results from the hybrid MIMIC models are reported in Table 1. These models were estimated starting from the most invariant measurement model as function of gender (Model 2-6: invariance of latent means). Results showed that the saturated model (Model 3-2) and factors-only model (Model 3-3) did not result in a substantial improvement in model fit relative to the null effects model (Model 3-1). These results thus indicate that item responses and scores obtained on BASES were unrelated to participant age. Given the lack of associations between BASES scores and age across gender, the invariance of these associations across subsamples were not examined.

3.2. Exploratory Structural Equation Modelling, Invariance Across Ethnicity and Gender, and DIF as a Function of Age

3.2.1. Exploratory structural equation modelling. Goodness-of-fit statistics for the 2-factor ESEM model are reported in Table 1 (Model 4-1). Results showed that all fit indices were acceptable ($CFI-TLI > .90$; $RMSEA < .06$; $SRMR < .09$). This model had substantial main factor loadings ($\lambda = .482-.872$) coupled with reasonably small cross-loadings ($|\lambda| = .010-.211$). Additionally, the two composite reliabilities were excellent ($> .910$) and the latent factor correlation was statistically significant with a very small magnitude ($< .110$).

3.2.2. Invariance across ethnicity and gender. Goodness-of-fit statistics from the measurement invariance test across ethnicity and gender are reported in Table 1 (Models 5-1 to 5-7). These results support the weak (Model 5-2) and strict (Model 5-5) invariances of the 2-factor model, though not its strong (model 5-3) invariance. Examination of the parameter estimates from this solution and of the modification indices associated with the failed strong invariance solution suggested that invariance constraints had to be relaxed on: (a) two intercepts associated with items #6 (“In general, I have felt proud that I am great looking person”) and #14 (“In general, I have felt proud of my appearance efforts”) in Malay women; and (b) one intercept associated with item #14 in Chinese men. The resulting model of partial

strong (model 5-4) invariance was supported by the data. Finally, the last two steps also supported the invariance of latent variances/covariances (model 5-6) and latent means differences (model 5-7).

3.2.3. DIF and latent mean differences as function of age. Results from the hybrid MIMIC models are reported in Table 1. These models were estimated starting from the most invariant measurement model as function of participant ethnicity and gender (Model 5-7: invariance of latent means). Results showed that the saturated model (Model 6-2), but not the factors-only model (Model 6-3), resulted in a substantial improvement in model fit relative to the null effects model (Model 6-1). They suggest the presence of DIF as a function of age, coupled with a lack of association between age and scores of the BASES latent factors. Examination of modification indices suggested that direct paths of age on Item #9 (“In general, I have felt proud of my superior appearance”) needed to be added in the factors-only model for the Malay women. Therefore, a fourth model of partial DIF was estimated (Models 6-4) and was found to present a level of fit comparable to that of the saturated model. Results showed that older participants tended to score significantly lower on Item #9 ($-.042, p = .003$) among Malay women. Given the lack of associations between BASES scores and age across ethnicity and gender subsamples, the invariance of these relations across subsamples were not examined.

3.3. Construct Validity and Invariance of Correlations Across Ethnicity and Gender

In a first step, the invariance of the BASES 2-factor structure across ethnicity and gender subsamples (i.e., Malay women, Malays men, Chinese women, Chinese men) from the total sample was examined (see Table S1 in the Supplementary Materials). Results supported the complete (configural, weak, strong, strict, latent variances-covariances invariance, and latent means) invariance of the 2-factor model. Therefore, in a second step, the most invariant measurement model from the first step (i.e., invariance of latent means) was used to estimate

the configural model of the SEM. Results from this model showed that all fit indices were acceptable, $\chi^2(881) = 1738.244, p < .001$, CFI = .921, TLI = .918, RMSEA = .061 (90% CI = .057-.065), SRMR = .084. Finally, all correlations from the SEM were constrained to be invariant across ethnicity and gender. Results from this model showed that all fit indices were acceptable, $\chi^2(962) = 1815.749, p < .001$, CFI = .922, TLI = .925, RMSEA = .058 (90% CI = .054-.062), SRMR = .087. Comparison between the configural and invariant models showed a similar level of fit ($\Delta R\chi^2 = 69.18, df = 81, p = .820, \Delta CFI = -.001, \Delta TLI = -.007, \Delta RMSEA = +.003$), revealing invariance of correlations across ethnicity and gender. The results from this final model are presented in Table 3 and show that the Authentic-Hubristic Pride factor was significantly and: (a) positively correlated with body appreciation, subjective happiness, self-esteem, and secure non-striving; and (b) negatively correlated with BMI. However, no significant association was found with age. Additionally, the results showed that the Shame-Guilt factor was significantly and negatively correlated with body appreciation, subjective happiness, self-esteem, secure non-striving, and age. However, no significant association was found with BMI.

4. Discussion

The primary objective of the present study was to examine the factor structure of scores on a Bahasa Malaysia translation of the BASES. In contrast to previous studies that have supported the original 4-factor structure (Castonguay et al., 2014; Razmus et al., 2019; Zemestrani et al., 2019) or a modified 4-factor structure (Alcaraz-Ibáñez & Sicilia, 2018; Chiminazzo et al., 2021), our results using an EFA-to-ESEM framework indicated that scores on the Bahasa Malaysia BASES are best conceptualised as consisting of two dimensions. The first of these dimensions grouped together the hypothesised Shame and Guilt subscales, whereas the second dimension grouped together the subscales related to Authentic and Hubristic Pride. These results raise important questions about the conceptualisation of body

and appearance-related self-conscious emotions, as well as the utility of the BASES to operationalise such emotions across cultural contexts.

The finding that scores on the Bahasa Malaysia BASES reduced to two, rather than four, dimensions can be speculatively explained as a function of the cultural context. More specifically, given the importance of shame (*malu*) sensitivity for social cohesion and the broad meaning of this construct in Malaysia – encompassing not only concerns over propriety but also self-effacement, formality, (loss of) face, (fear of) guilt, and politeness (Goddard, 1996, 1997) – it is perhaps unsurprising that shame and guilt items loaded onto a common factor. Indeed, Malaysian cultural values facilitate common expressions of shame and/or guilt for departures from societal standards of appearance (Aloysius & Syed Jamaludin, 2018; Collins & Bahar, 2000) and the absence of these emotions would signify dishonour to one's social groups (Goddard, 1996). In this view, experiences of both shame and guilt are consistent with the norms of modesty, self-criticism, and humility that is common in many interdependent contexts, as they demonstrate a willingness to both acknowledge and align oneself with social expectations and requirements (Kitayama et al., 2004; Mascolo et al., 2003; Stadter & Gao, 2020). It may also be the case that it is unimportant to Malaysian adults whether internal attributions lead to shame or guilt, as what matters is the social outcome (see also Li et al., 2004; Wong & Tsai, 2007).

A similar argument can be speculatively applied to the experience of body and appearance-related authentic and hubristic pride in the Malaysian context. In interdependent contexts, pride – whether authentic or hubristic – is inconsistent with the goal of maintaining harmonious relationships (Markus & Kitayama, 1991; Mesquita & Karasawa, 2004). In Malaysia specifically, although one is expected to honour one's self and one's social units (*maruah*), this is conceptually different to showing pride (*angkuh, sombong*; Goddard, 1997). Indeed, to take pride – whether in an authentic sense or hubristically – in one's appearance or

body may be viewed as an extreme social and moral *faux pas*, bringing dishonour and shame to one's self and wider social groups (Goddard, 1997). In fact, Malaysian cultural norms may police such forms of appearance and body-related pride not only through language, but also through conservative dress codes, the punishing of public displays of the body and excessive appearance concern, and regulation of appearance-related behaviours (Chua, 2019; Collins & Bahar, 2000). In practical terms, this may explain why we found that all BASES items tapping pride loaded onto the same dimension.

While we have interpreted our results as being consistent with self-construal theory (Markus & Kitayama, 1991), a broader critique of the BASES is also possible. That is, given that previous studies have generally not considered the extent to which the constructs of body and appearance-related shame and guilt, on the one hand, and authentic and hubristic pride on the other show conceptual overlap, it is possible that previous results supporting their distinctiveness are artefactual. In fact, where studies have reported correlations between Shame and Guilt and between Authentic and Hubristic Pride, respectively, these tend to be moderate ($\sim .60$; Zamestani et al., 2021) to very high ($\sim .70-.80$; Alcaraz-Ibáñez & Sicilia, 2018; Castonguay et al., 2014; Chiminazzo et al., 2021), which is suggestive of some conceptual similarity. Indeed, previous studies examining the factor structure of the BASES have been limited by the sole reliance on CFA, which does not allow for an accurate accounting of cross-loading items and may be responsible for the high inter-scale correlations. At the very least, there may be value in re-considering how best to conceptualise body and appearance-related self-conscious emotions in both interdependent and independent cultures. Allowing for the possibility of a 2-dimensional conceptualisation of the BASES in future work would be useful, especially as it may help clarify the extent to which the present results are a function of national or cultural context, or analytic decision-making. This may be especially important given debate about the distinctiveness of facets of self-conscious

emotions (Holbrook et al., 2014a, 2014b).

Beyond issues of factorial validity, the results of the present study indicated that the 2-dimensional model of BASES scores was fully invariant as function of gender and ethnicity (with the exception of item intercepts that were relaxed for three items). In broad outline, these results are consistent with previous work indicating that the BASES is invariant across gender (Alcaraz-Ibáñez & Sicilia, 2018; Chiminazzo et al., 2021), and showed a lack of latent means invariance. Moreover, while one previous study reported that the 4-factor model of BASES scores was partially invariant across national groups (Rasmus et al., 2019), we believe ours is the first demonstration of invariance across ethnic groups within the same nation. The lack of latent mean differences as function of gender and ethnicity on our 2-dimensional model of BASES scores likely reflects the similar phenomenological functions that body and appearance self-conscious emotions plays across these groups. Additionally, in exploratory analyses, we also assessed DIF as a function of age. Here, our results generally suggested – with the exception of partial DIF on one item in the second split-half subsample – no differential item functioning and no associations with age.

Finally, our results also demonstrated that the 2-dimensional model of BASES scores also had adequate construct validity in all subgroups (i.e., as a function of gender and ethnicity), at least in terms of the Authentic-Hubristic Pride subscale. To wit, correlations between this factor and measures of body appreciation, subjective happiness, self-esteem, and secure non-striving were all in the expected direction and consistent with our hypotheses in terms of strength. On the other hand, evidence of construct validity in relation to the Shame-Guilt subscale was more equivocal. Specifically, while associations with subjective happiness were as hypothesised, all other associations were weak in effect size. In the absence of further data, it is difficult to explain these findings. One possibility, consistent with our explanations above, is that the concept of shame (*malu*) in the Malaysian context is broader than what is

currently being tapped by the BASES shame- and guilt-related items (e.g., it may include concepts associated with body and appearance-related propriety, effacement, and social honour, which are not currently tapped by the BASES). One possible strategy to further understand these issues would be through the use of an emic approach (Brislin et al., 1973), wherein item content relevant to Malaysian adults specifically is developed iteratively. Such an approach would require an understanding of the meaning and nature of *malu* in the Malaysian context and may have low generalisability beyond Malaysia, but it would provide a more thorough understanding of body and appearance-related self-conscious emotions in Malaysian adults.

There are a number of limitations to the present study, which we acknowledge. First, we only recruited Malay and Chinese participants to the present study. Although these ethnic groups make up the majority of the Malaysian population (Department of Statistics Malaysia, 2018), it will be important in future work to extend our findings to other minority ethnic groups in Malaysia so as to establish the generalisability of our findings. Likewise, given the high proportion of participants who had completed tertiary education, it will be important to replicate our work with more representative samples in terms of education specifically and socioeconomic status more generally. In a related vein, although Bahasa Malaysia is the national language of Malaysia, it is more likely to be the first language of Malays, rather than Chinese individuals. As such, there may be value to considering the extent to which our results are a function of linguistic limitations (i.e., whether our findings would be replicated if Chinese participants completed the BASES in a Chinese translation). There are other sample-related ways in which the present study could be extended, such as through an examination of invariance across urbanicity, which has been hypothesised as being relevant to body image outcomes in Malaysia (Swami, 2015; Swami & Barron, 2017). In addition, our study was limited in terms of its assessment of various forms of validity (e.g., predictive validity), as

well as the absence of estimates of test-retest reliability. Relatedly, the additional measures included in the survey package to assess construct validity were all positively-valenced, and in future work it would be useful to include additional instruments that assess negative-valenced outcomes (e.g., body dissatisfaction).

These limiting considerations aside, our results suggest that the hypothesised 4-factor structure of BASES scores was not supported in the interdependent context of Malaysia. Instead, our use of an EFA-to-ESEM framework of analysis supported a 2-factor solution that diverges from all previous reports of the factor structure of the BASES. For scholars intending to use the BASES with Malay-speaking populations, our preliminary recommendation is that BASES scores are computed in accordance with the 2-dimensional model reported here – preliminary because more work can be done to assess additional psychometric properties of the Malay BASES. More generally, we recommend that scholars interested in body and appearance-related self-conscious emotions pay closer attention to how the construct is measured and operationalised. While it may be that the 2-dimensional model is limited to interdependent contexts (or, indeed, to the Malaysian context), it is also possible that previous studies have rendered this 2-dimensional model less likely given the sole use of CFA. An important next step for researchers working on the BASES, therefore, would be to reconsider the extent to which the 4-factor model offers better fit over the 2-factor model reported here. Doing so would allow us to better understand whether the present results are a function of culture or improved analytic method compared to previous work.

Footnotes

¹ The appropriateness of the sample sizes used in the present study was determined using a Monte Carlo simulation conducted with Mplus 8.6 and following the guidelines provided by Muthén and Muthén (2002). The population model was specified using the data from the first split-half subsample and the second split-half subsample, and the parameter estimates from

the 2-factor EFA and ESEM with 10,000 replications. The focus of the power estimation in these models was on the main loadings and the latent factor correlation between the 2-factor of the BASES. Results showed that the Muthén and Muthén's (2002) criteria were satisfied for EFA and ESEM analyses [i.e., lack of bias of parameters ($\leq 10\%$ for any parameter in the model) and standard errors ($\leq 5\%$ for main loadings and the latent factor correlation and $\leq 10\%$ for any other parameter in the model), and coverage of the 95% confidence interval ranging from .91 to .98]. Therefore, the statistical power of main loadings and the latent factor correlation (ranging from 78% to 100%) was inspected and indicates that the current subsample sizes were appropriate.

References

- Alcaraz-Ibáñez, M., & Sicilia, A. (2018). Psychometric evaluation and sex invariance of the Spanish version of the Body and Appearance Self-Conscious Emotions Scale. *Body Image*, 25, 78-84. <https://doi.org/10.1016/j.bodyim.2018.02.006>
- Alcaraz-Ibáñez, M., Sicilia, A., Dumitru, D. C., Paterna, A., & Griffiths, M. D. (2019). Examining the relationship between fitness-related self-conscious emotions, disordered eating symptoms, and morbid exercise behavior: An exploratory study. *Journal of Behavioral Addictions*, 8(3), 603-612. <https://doi.org/10.1556/2006.8.2019.43>
- Aloysius, M., & Syed Jamaludin, S. S. (2018). Breastfeeding in public: A study of attitudes and perception among Malay undergraduates in Universiti Sains Malaysia. *Geografia*, 14(2), 212-224. <https://doi.org/10.17576/geo-2018-1404-12>
- Asparouhov, T., & Muthén, B. (2009). Exploratory structural equation modeling. *Structural Equation Modeling*, 16(3), 397-438. <https://doi.org/10.1080/1075510903008204>
- Asparouhov, T., Muthén, B., & Morin, A. J. S. (2015). Bayesian structural equation modeling with cross-loadings and residual covariances: Comments on Stromeier et al. *Journal of Management*, 41(6), 1561-1577. <https://doi.org/10.1177/0149206315591075>
- Beaton, D., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*, 25, 3186-3199.
- Bochner, S. (1994). Cross-cultural differences in self concept: A test of Hofstede's individual/collectivism distinction. *Journal of Cross-Cultural Psychology*, 25(2), 273-283. <https://doi.org/10.1177/0022022194252007>
- Browne, M. W. (2001) An overview of analytic rotation in exploratory factor analysis. *Multivariate Behavioral Research*, 36(1), 111-150. https://doi.org/10.1207/S15327906MBR3601_05

- Bynum, W. E., & Artino, R. (2018). Who am I, and who do I strive to be? Applying a theory of self-conscious emotions to medical education. *Academic Medicine*, 93(6), 874-880.
<https://doi.org/10.1097/ACM.0000000000001970>
- Castonguay, A. L., Brunet, Ferguson, L., & Sabiston, C. M. (2012). Weight-related actual and ideal self-states, discrepancies, and shame, guilt, and pride: Examining associations within the process model of self-conscious emotions. *Body Image*, 9(4), 488-494.
<https://doi.org/10.1016/j.bodyim.2012.07.003>
- Castonguay, A. L., Gilchrist, J. D., Mack, D. E., & Sabiston, C. M. (2013). Body-related pride in young adults: An exploration of the triggers, contexts, outcomes and attributions. *Body Image*, 10(3), 335-343. <https://doi.org/10.1016/j.bodyim.2013.03.001>
- Castonguay, A. L., Sabiston, C. M., Crocker, P. R. E., & Mack, D. E. (2014). Development and validation of the Body and Appearance Self-Conscious Emotions Scale (BASES). *Body Image*, 11(2), 126-136. <https://doi.org/10.1016/j.bodyim.2013.12.006>
- Chen, F. F. (2007). Sensitivity of goodness of fit indices to lack of measurement invariance. *Structural Equation Modeling*, 14(3), 464-504.
https://doi.org/10.1207/s15328007sem1203_7
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, 9(2), 233-255.
https://doi.org/10.1207/s15328007sem0902_5
- Chiminazzo, J. G. C., Alcaraz-Ibáñez, M., Sicilia, A., & Fernandes, P. T. (2021). Psychometric properties of the body and appearance self-conscious emotions scale in Brazilian adolescents. *Journal of Health Psychology*, 26(4), 500-512.
<https://doi.org/11.77/1359105318820690>
- Chua, H.-K. (2019). *Malu* sensitivity and the identities of non-heteronormative Malay Muslim men in Peninsular Malaysia. *Kajian Malaysia*, 37(1), 109-130.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159.

<https://doi.org/10.1037/0033-2909.112.1.155>

Collins, E. F., & Bahar, E. (2000). To know shame: Malu and its uses in Malay societies.

Crossroads: An Interdisciplinary Journal of Southeast Asian Studies, 14(1), 35-69.

Edelstein, R. S., & Shaver, P. R. (2007). A cross-cultural examination of lexical studies of self-conscious emotions. In J. L. Tracy, R. W. Robins, & J. P. Tangney (Eds.), *The self-conscious emotions: Theory and research* (pp. 194-208). Guilford Press.

Eid, M., & Diener, E. (2009). Norms for experiencing emotions in different cultures. Inter- and intranational differences. In E. Diener (Ed.), *Culture and well-being. Social Indicators Research Series, volume 38* (pp. 169-202). Springer.

https://doi.org/10.1007/978-90-481-2352-0_9

Gilbert, P., Broomhead, C., Irons, C., McEwan, K., Bellew, R., Mills, A., Gale, C., & Knibb, R. (2007). Development of a striving to avoid inferiority scale. *British Journal of Social Psychology*, 46(3), 633-648. <https://doi.org/10.1348/014466606X157789>

Goddard, C. (1996). The “social emotions” of Malay (Bahasa Melayu). *Ethos*, 24(3), 426-464.

Goddard, C. (1997). Cultural values and “cultural scripts” of Malay (Bahasa Melayu). *Journal of Pragmatics*, 27, 183-201. [https://doi.org/10.1016/S0378-2166\(96\)00032-X](https://doi.org/10.1016/S0378-2166(96)00032-X)

Goetz, J. L., & Keltner, D. (2007). Shifting meanings of self-conscious emotions across cultures: A social-functional approach. In J. L. Tracy, R. W. Robins, & J. P. Tangney (Eds.), *The self-conscious emotions: Theory and research* (pp. 153-173). Guilford Press.

- Holbrook, C., Piazza, J., & Fessler, D. M. T. (2014a). Conceptual and empirical challenges to the “authentic” versus “hubristic” model of pride. *Emotion, 14*(1), 17-32. <https://doi.org/10.1037/a0031711>
- Holbrook, C., Piazza, J. R., & Fessler, D. M. T. (2014b). Further challenges to the “authentic”/“hubristic” model of pride: Conceptual clarifications and new evidence. *Emotion, 14*(1), 38-42. <https://doi.org/10.1037/a0035457>
- Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika, 32*, 179-185. <https://doi.org/10.1007/BF02289447>
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Huellemann, K. L., Pila, E., Gilchrist, J. D., Nesbitt, A. E., & Sabiston, C. M. (2021). Body-related self-conscious emotions and reasons for exercise: A latent class analysis. *Body Image, 38*, 127-136. <https://doi.org/10.1016/j.bodyim.2021.03.016>
- Kitayama, S., Karasawa, M., & Mesquita, B. (2004). Collective and personal processes in regulating emotions: Emotion and self in Japan and the U.S. In P. Philippot & R. S. Feldman (Eds.), *The regulation of emotion* (pp. 251-273). Erlbaum.
- Kitayama, S., Markus, H. R., & Matsumoto, H. (1995). Culture, self, and emotion: A cultural perspective on “self-conscious” emotions. In J. P. Tangney & K. W. Fischer (Eds.), *Self-conscious emotions. The psychology of shame, guilt, embarrassment, and pride* (pp. 439-464). Guilford.
- Lee, R. L. M. (1981). Structure and anti-structure in the culture-bound syndromes: The Malay case. *Culture, Medicine and Psychiatry, 5*(3), 233-248. <https://doi.org/10.1007/BF00050770>

- Lewandowska-Tomaszczyk, B., & Wilson, P. A. (2014). Self-conscious emotions in collectivistic and individualistic cultures: A contrastive linguistic perspective. In J. Romero-Trillo (Ed.), *Yearbook of corpus linguistics and pragmatics 2014* (vol. 2, pp. 123-148). Springer. https://doi.org/10.1007/978-3-319-06007-1_7
- Li, J., Wang, L., & Fischer, K. (2004). The organisation of Chinese shame concepts? *Cognition and Emotion*, 18(6), 767-797. <https://doi.org/10.1080/02699930341000202>
- Little, T.D. (2013). *Longitudinal structural equation modeling*. Guilford.
- Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, 46(2), 137-155. <https://doi.org/10.1023/A:1006824100041>
- Maeda, N. (1975). Family circle, community, and nation in Malaysia. *Current Anthropology*, 16(1), 163-166. <https://doi.org/10.1086/201527>
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224-253. <https://doi.org/10.1037/0033-295X.98.2.224>
- Marsh, H.W., Hau, K.-T., & Grayson, D. (2005). Goodness of fit evaluation in structural equation modeling. In A. Maydeu-Olivares, & J. McArdle (Eds.), *Contemporary psychometrics* (pp. 275-340). Erlbaum.
- Marsh, H. W., Liem, G. A. D., Martin, A. J., Morin, A. J. S., & Nagengast, B. (2011). Methodological measurement fruitfulness of exploratory structural equation modeling (ESEM): New approaches to key substantive issues in motivation and engagement. *Journal of Psychoeducational Assessment*, 29(4), 322-346. <https://doi.org/10.1177/0734282911406657>
- Marsh, H. W., Morin, A. J. S., Parker, P. D., & Kaur, G. (2014). Exploratory structural equation modeling: An integration of the best features of exploratory and confirmatory

factor analysis. *Annual Review of Clinical Psychology*, 10, 85-110.

<https://doi.org/10.1146/annurev-clinpsy-032813-153700>

Marsh, H. W., Muthén, B., Asparouhov, T., Lüdtke, O., Robitzsch, A., Morin, A. J. S., & Trautwein, U. (2009). Exploratory structural equation modeling, integrating CFA and EFA: Application to students' evaluations of university teaching. *Structural Equation Modeling*, 16(3), 439-476. <https://doi.org/10.1080/10705510903008220>

Marsh, H. W., Nagengast, B., & Morin, A. J. S. (2013). Measurement invariance of big-five factors over the life span: ESEM tests of gender, age, plasticity, maturity, and la dolce vita effects. *Developmental Psychology*, 49(6), 1194-1218.

<https://doi.org/10.1037/a0026913>

Mascolo, M. F., Fischer, K. W., & Li, J. (2003). Dynamic development of component systems in emotions: Pride, shame and guilt in China and the United States. In R. J. Davidson, K. R. Schere, & H. H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 375-408). Oxford University Press.

Mendia, J., Pascual, A., Conejero, S., & Mayordomo, S. (2021). The relationship between body and appearance-related self-conscious emotions and disordered eating: The mediating role of symptoms of depression and anxiety. *International Journal of Psychology and Psychological Therapy*, 21(1), 93-105.

Mesquita, B., & Karasawa, M. (2004). Self-conscious emotions as dynamic cultural processes. *Psychological Inquiry*, 15(2), 161-166.

Millsap, R. E. (2011). *Statistical approaches to measurement invariance*. Routledge.

Morin, A. J. S., Arens, A., & Marsh, H. (2016a). A bifactor exploratory structural equation modeling framework for the identification of distinct sources of construct-relevant psychometric multidimensionality. *Structural Equation Modeling*, 23(1), 116-139.

<https://doi.org/10.1080/10705511.2014.961800>

- Morin, A. J. S., & Maïano, C. (2011). Cross-validation of the short form of the Physical Self-Inventory (PSI-18) using exploratory structural equation modeling (ESEM). *Psychology of Sport and Exercise*, 12, 540–554.
<https://doi.org/10.1016/j.psychsport.2011.04.003>
- Morin, A. J. S., Maïano, C., Scalas, L. F., Aşçı, F. H., Boughattas, W., Abid, S., Mascaret, N., Kara, F.M., Fadda, D., & Probst, M. (2018). Cross-cultural validation of the short form of the Physical Self Inventory (PSI-S). *Sport, Exercise, and Performance Psychology*, 7, 60-79. <https://doi.org/10.1037/spy0000096>
- Morin, A. J. S., Marsh, H. W., & Nagengast, B. (2013). Exploratory structural equation modeling. In G. R. Hancock & R. O. Mueller (Eds.), *Structural equation modeling: a second course* (pp. 395-436). Information Age Publishing, Inc.
- Morin, A. J. S., Myers, N. D., & Lee, S. M. (2020). Modern factor analytic techniques: Bifactors models, exploratory structural equation modeling (ESEM), and bifactor-ESEM. In G. Tenenbaum & R. C. Eklund (Eds.), *Handbook of sport psychology* (4th ed., pp. 1044-1073). Wiley. <https://doi.org/10.1002/9781119568124.ch51>
- Mu, W., & Berenbaum, H. (2019). Negative self-conscious emotions: Appraisals, action tendencies, and labels. *Journal of Social and Clinical Psychology*, 38(2), 113-157.
<https://doi.org/10.1521/jscp.2019.38.2.113>
- Muthén, L. K., & Muthén, B. (2019). *Mplus user's guide*. Muthén & Muthén.
- Muthén, L. K., & Muthén, B. O. (2002). How to use a Monte Carlo study to decide on sample size and determine power. *Structural Equation Modeling*, 9(4), 599-620.
https://doi.org/10.1207/S15328007SEM0904_8
- Nunnally, J. C. (1978). *Psychometric theory*. McGraw-Hill.
- Peletz, M. G. (2009). *Reason and passion: Representations of gender in a Malay society*. University of California Press.

- Razmus, M., Razmus, W., Castonguay, A. L., & Sabiston, C. M. (2019). Body and appearance self-conscious emotions in Canada and Poland. *Journal of Health Psychology*. Advanced online publication. <https://doi.org/10.1177/1359105319882740>
- Revelle, W. R. (2019). *psych: Procedures for personality and psychological research*. <https://cran.r-project.org/web/packages/psych/index.html>
- Robins, R. W., & Shriber, R. A. (2009). The self-conscious emotions: How are they experienced, expressed, and assessed? *Social and Personality Psychology Compass*, 3(6), 887-898. <https://doi.org/10.1111/j.1751-9004.2009.00217.x>
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press.
- Sabiston, C. M., Pila, E., & Gilchrist, J. (2019). Self-conscious emotions and the physical self. In R. Eklund & G. Tenenbaum (Eds.), *Handbook of sport psychology* (pp. 299-319). Wiley. <https://doi.org/10.1002/9781119568124.ch14>
- Statder, M., & Gao, J. (2020). Shame East and West: Similarities, differences, culture, and self. *Psychoanalysis and Psychotherapy in China*, 3(1), 1-21.
- Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual Differences*, 42, 893-898. <https://doi.org/10.1016/j.paid.2006.09.017>
- Swami, V. (2008). Translation and validation of the Malay Subjective Happiness Scale. *Social Indicators Research*, 88(2), 347-353. <https://doi.org/10.1007/s11205-007-9195-2>
- Swami, V. (2011). Further examination of the psychometric properties of the Malay Rosenberg Self-Esteem Scale. In S. de Wals, & K. Meszaros (Eds.), *Handbook on the psychology of self-esteem* (pp. 371-380). Nova Science Publishers.

- Swami, V. (2015). Cultural influences on body size ideals: Unpacking the impact of Westernisation and modernisation. *European Psychologist*, 20, 44-51.
<https://doi.org/10.1027/1016-9040/a00150>
- Swami, V. (2020). Measures of body image and disordered eating for use with Malaysian populations: A critical review and methodologic critique of the recent literature. In G. J. Rich, J. L. Jaafar, & D. Barron (Eds.), *Psychology in Southeast Asia: Sociocultural, clinical, and health perspectives* (pp. 192-203). Routledge.
- Swami, V., & Barron, D. (2017). Recommendations to improve body image research in an increasingly globalised world. *Malaysian Journal of Nutrition*, 23(3), 3-10.
- Swami, V., & Barron, D. (2019). Translation and validation of body image instruments: Challenges, good practice guidelines, and reporting recommendations for test adaptation. *Body Image*, 31, 204-220. <https://doi.org/10.1016/j.bodyim.2018.08.014>
- Swami, V., Maïano, C., Furnhan, A., & Robinson, C. (2021). The Intuitive Eating Scale-2: Re-evaluating its factor structure using a bifactor exploratory structural equation modelling framework. *Eating and Weight Disorders*. Advance online publication.
<https://doi.org/10.1007/s40519-021-01271-9>
- Swami, V., Mohd. Khatib, N. A., Toh, E., Zahari, H. S., Todd, J., & Barron, D. (2019). Factor structure and psychometric properties of a Bahasa Malaysia (Malay) translation of the Body Appreciation Scale-2. *Body Image*, 28, 66-75.
<https://doi.org/10.1016/j.bodyim.2018.12.006>
- Swami, V., Todd, J., & Barron, D. (2021a). Translation and validation of body image instruments: An addendum to Swami and Barron (2019) in the form of frequently asked questions. *Body Image*, 37, 214-224. <https://doi.org/10.1016/j.bodyim.2021.03.002>
- Swami, V., Todd, J., & Barron, D., Wong, K. Y., Zahari, H. S., & Tylka, T. L. (2021b). The Body Acceptance by Others Scale-2 (BAOS-2): Psychometric properties of a Bahasa

Malaysia (Malay) translation and an assessment of invariance across Malaysia, the United Kingdom, and the United States. *Body Image*, 38, 346-357.

<https://doi.org/10.1016/j.bodyim.2021.05.009>

Swami, V., Zahari, H. S., Mohd. Khatib, N. A., Toh, E. K. L., & Barron, D. (2020).

Promoting inter-ethnic understanding and empathy using a round table cinema activity with Malaysian Malay and Chinese students. *Integrative Psychological and Behavioral Science*, 54, 416-437. <https://doi.org/10.1007/s12124-020-09514-7>

Sznycer, D. (2019). Forms and functions of the self-conscious emotions. *Trends in Cognitive Neuroscience*, 23(2), 143-157. <https://doi.org/10.1016/j.tics.2018.11.007>

Tangney, J. P. (1990). Assessing individual differences in proneness to shame and guilt:

Development of the Self-Conscious Affect and Attribution Inventory. *Journal of Personality and Social Psychology*, 59(1), 102-111. <https://doi.org/10.1037/0022-3514.59.1.102>

Tracy, J. L., & Robins, R. W. (2004). Putting the self into self-conscious emotions: A theoretical model. *Psychological Inquiry*, 15(2), 103-125.

https://doi.org/10.1207/S15327965pli1502_01

Tracy, J. L., & Robins, R. W. (2007). The psychological structure of pride: A tale of two facets. *Journal of Personality and Social Psychology*, 92(3), 506-525.

<https://doi.org/10.1037/0022-3514.92.3.506>

Tracy, J. L., & Robins, R. W. (2014). Conceptual and empirical strengths of the authentic/hubristic model of pride. *Emotion*, 14(1), 33-

37. <https://doi.org/10.1037/a0034490>

Tylka, T. L., & Wood-Barcalow, N. L. (2015). The Body Appreciation Scale-2: Item refinement and psychometric evaluation. *Body Image*, 12, 53-67.

<https://doi.org/10.1016/j.bodyim.2014.09.006>

Wong, T., & Tsai, J. (2007). Cultural models of shame and guilt. In J. L. Tracy, R. W.

Robins, & J. P. Tangney (Eds.), *The self-conscious emotions: Theory and research* (pp. 209-221). Guilford Press.

Zemestrani, M., Abarin, M., & Castonguay, A. L. (2021). Factor structure, validity, and reliability of a Persian version of the Body and Appearance Self-conscious Emotions Scale. *Journal of Health Psychology*, 26(5), 741-752.

<https://doi.org/10.1177/1359105319842928>

Table 1*Goodness-of-Fit Statistics for the BASES*

Models	Samples	N°	Description	$R\chi^2$	df	CFI	TLI	RMSEA	RMSEA LB	90% CI UB	SRMR	CM	$\Delta R\chi^2$	df	p	ΔCFI	ΔTLI	$\Delta RMSEA$
EFA	First split-half	1-1	1-factor	1517.679*	104	.540	.469	.193	.185	.202	.232	-	-	-	-	-	-	-
		1-2	2-factor	270.657*	89	.941	.920	.075	.065	.085	.033	-	-	-	-	-	-	-
		1-3	3-factor	191.545*	75	.962	.939	.065	.054	.077	.026	-	-	-	-	-	-	-
		1-4	4-factor	157.735*	62	.969	.940	.065	.053	.078	.017	-	-	-	-	-	-	-
		1-5	5-factor	134.227*	50	.973	.934	.068	.054	.082	.015	-	-	-	-	-	-	-
		1-6	6-factor	NA	NA	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-
ESEM: MI across gender	First split-half	2-1	Configural invariance	399.411*	178	.931	.907	.083	.072	.094	.039	-	-	-	-	-	-	-
		2-2	Weak invariance	422.694*	206	.932	.921	.076	.066	.086	.047	2-1	14.29	28	.98	+.001	+.014	-.007
		2-3	Strong invariance	437.456*	220	.932	.926	.074	.064	.084	.049	2-2	11.72	14	.63	.000	+.005	-.002
		2-4	Strict invariance	450.137*	236	.933	.932	.071	.061	.080	.052	2-3	15.74	16	.47	+.001	+.006	-.003
		2-5	Variances-covariances invariance	451.870*	239	.933	.933	.070	.060	.080	.056	2-4	1.01	3	.80	.000	+.001	-.001
		2-6	Latent means invariance	455.643*	241	.933	.933	.070	.060	.080	.059	2-5	3.77	2	.15	.000	.000	.000
DIF: age	First split-half	3-1	Null effects	509.841*	273	.929	.929	.069	.060	.078	.071	-	-	-	-	-	-	-
		3-2	Saturated	463.836*	241	.933	.924	.071	.061	.081	.057	3-1	42.51	32	.10	+.004	-.005	+.002
		3-3	Factors only	485.469*	269	.935	.934	.066	.057	.076	.057	3-1	29.96	4	<.001	+.006	+.005	-.003
ESEM	Second split-half	4-1	2-factor	336.802*	89	.947	.929	.064	.057	.071	.031	-	-	-	-	-	-	-
ESEM: MI across ethnicity and gender	Second split-half	5-1	Configural invariance	727.307*	356	.930	.905	.078	.070	.086	.041	-	-	-	-	-	-	-
		5-2	Weak invariance	851.919*	440	.922	.915	.074	.066	.081	.071	5-1	117.29	84	.01	-.008	+.010	-.004
		5-3	Strong invariance	952.827*	482	.911	.911	.076	.068	.083	.077	5-2	105.50	42	<.001	-.011	-.004	+.002
		5-4	Partial strong invariance	919.508*	479	.917	.917	.073	.066	.080	.074	5-2	65.62	39	.005	-.005	+.002	-.001
		5-5	Strict invariance	1000.043*	527	.911	.919	.072	.066	.079	.079	5-4	83.53	48	.001	-.006	+.002	-.001
		5-6	Variances-covariances invariance	1020.638*	536	.908	.918	.073	.066	.079	.115	5-5	21.03	9	.01	-.003	-.001	+.001
		5-7	Latent means invariance	1027.648*	542	.908	.919	.072	.066	.079	.116	5-6	5.75	6	.45	.000	+.001	-.001

Models	Samples	N°	Description	$R\chi^2$	df	CFI	TLI	RMSEA	RMSEA 90% CI LB UB	SRMR	CM	$\Delta R\chi^2$	df	p	ΔCFI	ΔTLI	$\Delta RMSEA$
DIF: Age	Second split-half	6-1	Null effects	1156.308*	606	.901	.911	.073	.066 .079	.119		-	-	-	-	-	-
		6-2	Saturated	1028.175*	542	.913	.912	.072	.066 .079	.113	6-1	130.28	64	<.001	+.012	+.001	-.001
		6-3	Factors only	1116.052*	598	.907	.915	.071	.065 .078	.113	6-1	47.74	8	<.001	+.006	+.004	-.002
		6-4	Partial DIF	1107.975*	597	.908	.916	.071	.064 .077	.114	6-2	71.70	55	.06	-.005	-.004	-.001

Notes. BASES = Body and Appearance Self-Conscious Emotions Scale; EFA = exploratory factor analyses; ESEM = exploratory structural equation model; $R\chi^2$ = robust maximum likelihood chi-square; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; 90% CI = 90% confidence interval of the RMSEA; LB = lower bound; UB = upper bound; MI = measurement invariance; NA = failed to convergence; DIF = differential item functioning; Δ = change from the previous model; $\Delta R\chi^2$ = robust chi-square difference tests (calculated from loglikelihoods for greater precision). * $p \leq .01$

Table 2

Standardised Parameters Estimates from the 2-Factor Exploratory Factor Analytic Representation of the BASES in the First and Second Split-Half Subsamples

Items	First Split-Half Subsample			Second Split-Half Subsample		
	Authentic-Hubristic Pride (λ)	Shame-Guilt (λ)	δ	Authentic-Hubristic Pride (λ)	Shame-Guilt (λ)	δ
1	-.098	.751	.440	-.156	.755	.430
2	.710	<u>.083</u>	.478	.724	.101	.449
3	.810	<u>-.019</u>	.347	.787	<u>-.040</u>	.386
4	.300	.528	.601	.162	.546	.657
5	.203	.506	.683	.211	.482	.701
6	.834	<u>.049</u>	.294	.808	<u>.037</u>	.340
7	<u>.000</u>	.840	.294	<u>-.010</u>	.828	.316
8	-.082	.916	.168	<u>-.034</u>	.872	.245
9	.842	<u>.030</u>	.285	.831	.059	.296
10	.828	<u>.022</u>	.311	.773	<u>-.045</u>	.408
11	<u>.041</u>	.734	.454	<u>.015</u>	.789	.375
12	.841	<u>.018</u>	.290	.782	<u>-.045</u>	.394
13	.091	.751	.415	<u>.017</u>	.786	.379
14	.858	<u>-.028</u>	.267	.768	<u>-.035</u>	.415
15	.862	<u>-.005</u>	.259	.830	<u>-.017</u>	.314
16	<u>.001</u>	.812	.340	-.070	.831	.317
ω	.945	.909		.930	.910	
Shame-Guilt	-			-		
Authentic-Hubristic Pride	.097	-		.106	-	

Notes. BASES = Body and Appearance Self-Conscious Emotions Scale; λ = factor loadings; δ = Uniquenesses; ω = McDonald's omega. Non-significant loadings and correlations are underlined and italicized.

Table 3*Convergent Validity Analyses of the BASES Across Ethnicity and Gender.*

	Authentic-Hubristic Pride				Shame-Guilt			
	Malaysian men	Malaysian women	Chinese men	Chinese women	Malaysian men	Malaysian women	Chinese men	Chinese women
Body appreciation	.479***	.481***	.487***	.477***	-.170***	-.171***	-.173***	-.169***
Subjective happiness	.410***	.434***	.410***	.421***	-.314***	-.332***	-.314***	-.322***
Self-esteem	.217***	.215***	.211***	.205***	-.092**	-.091**	-.089**	-.087**
Secure Non-Striving	.471***	.483***	.453***	.469***	-.142***	-.145***	-.136***	-.141***
Body mass index	-.071*	-.072*	-.072*	-.071*	.013	.013	.013	.013
Age	-.011	-.011	-.011	-.011	-.258***	-.253***	-.251***	-.257***
Shame-Guilt	.123**	.123**	.123**	.123**	-	-	-	-

Notes. BASES = Body and Appearance Self-Conscious Emotions Scale. Although correlations are invariant across subsamples, the standardized coefficients may still show some variation as a function of within-samples estimates of variability. * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

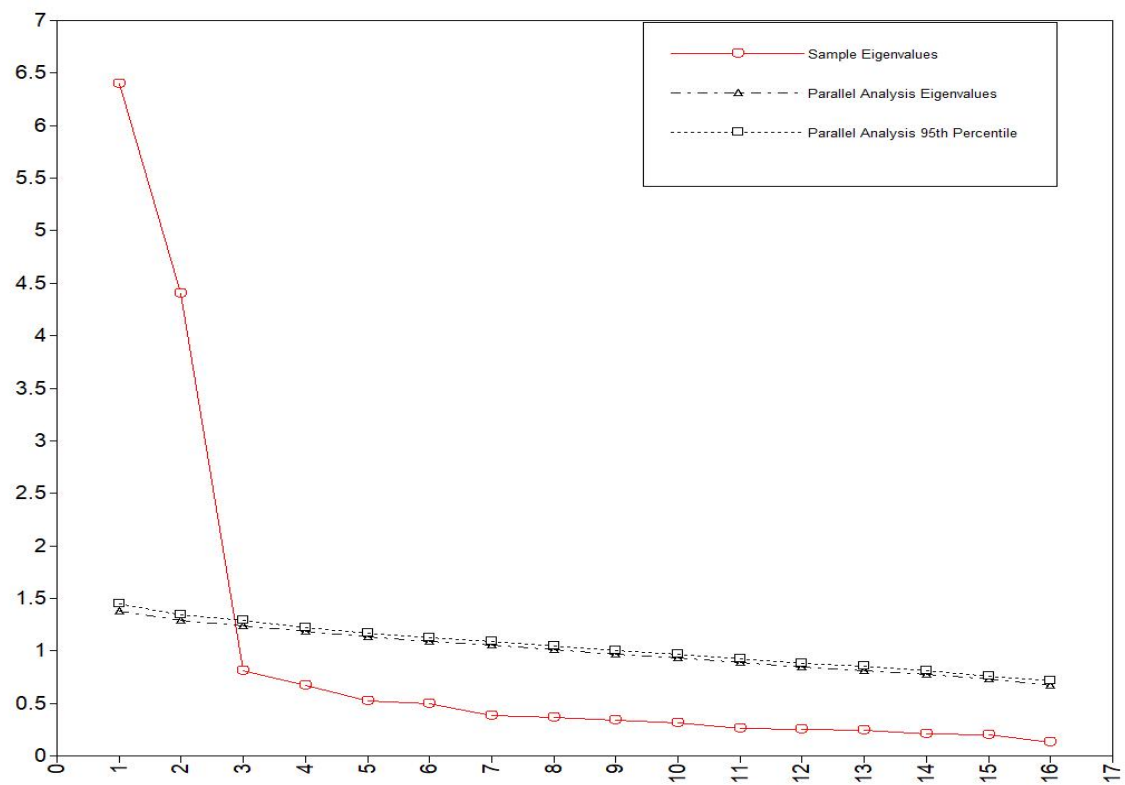


Figure 1

Scree plot and parallel analysis from the exploratory factor analysis of the Body and Appearance Self-Conscious Emotions Scale in the first split-half subsample.

Appendix 1

Items of the Body and Appearance Self-Conscious Emotions Scale in English and Bahasa Malaysia (In Italic)

Item	Hypothesised subscale in Castonguay et al. (2014)
1. In general, I have felt ashamed of the way I look / <i>Secara umumnya, saya malu dengan cara penampilan saya.</i>	S
2. In general, I have felt proud that I am more attractive than others / <i>Secara umumnya, saya bangga saya lebih cantik/tampan berbanding orang lain.</i>	HP
3. In general, I have felt proud of the effort I place on maintaining my appearance / <i>Secara umumnya, saya bangga dengan usaha saya untuk mengekalkan penampilan saya.</i>	AP
4. In general, I have felt guilty that I do not do enough to improve the way I look / <i>Secara umumnya, saya rasa bersalah kerana saya tidak buat secukupnya untuk memperbaiki cara penampilan saya.</i>	G
5. In general, I have felt inadequate when I think about my appearance / <i>Secara umumnya, saya rasa tidak memadai apabila saya berfikir tentang penampilan saya.</i>	S
6. In general, I have felt proud that I am great looking person / <i>Secara umumnya, saya bangga saya seorang yang berpenampilan hebat.</i>	HP
7. In general, I have felt guilt that I look the way I do / <i>Secara umumnya, saya rasa bersalah kerana cara penampilan saya.</i>	G

-
- | | |
|--|----|
| 8. In general, I have felt ashamed of my appearance <i>Secara umumnya, saya malu dengan penampilan saya.</i> | S |
| 9. In general, I have felt proud of my superior appearance / <i>Secara umumnya, saya bangga dengan penampilan unggul saya.</i> | HP |
| 10. In general, I have felt proud about my effort to improve the way I look / <i>Secara umumnya, saya bangga dengan usaha saya untuk memperbaiki cara penampilan saya.</i> | AP |
| 11. In general, I have felt regret that I do not put effort into my appearance / <i>Secara umumnya, saya menyesal saya tidak berusaha berkenaan penampilan saya.</i> | G |
| 12. In general, I have felt proud that I have achieved my appearance goals / <i>Secara umumnya, saya bangga saya telah mencapai matlamat penampilan saya.</i> | AP |
| 13. In general, I have felt regret that I do not work on improving my appearance / <i>Secara umumnya, saya menyesal saya tidak berusaha memperbaiki penampilan saya.</i> | G |
| 14. In general, I have felt proud of my appearance efforts / <i>Secara umumnya, saya bangga dengan usaha berkenaan penampilan saya.</i> | AP |
| 15. In general, I have felt proud that I am an attractive person / <i>Secara umumnya, saya bangga saya seorang yang cantik/tampan.</i> | HP |
| 16. In general, I have felt ashamed that I am a person who is unattractive / <i>Secara umumnya, saya malu kerana saya seorang yang tidak berpenampilan cantik/tampan.</i> | S |
-

Note. S = Shame, G = Guilt, AP = Authentic Pride, HP = Hubristic Pride