APPEARANCE SCHEMAS INVENTORY–REVISED: VALIDATION ON A POLISH SAMPLE

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The aim of this study ($N = 713$) was to adapt the Appearance Schemas Inventory–Revised into Polish and evaluate its psychometric properties. The ASI-R is a widely used tool for measuring appearance schemas, but it is currently not available in Polish. The adaptation of the ASI-R has the potential to fill this gap and encourage research in the Polish community. The validation of the scale was conducted on two separate samples of healthy adults. Although the results indicate that the Polish version of the scale, in contrast to the original one, exhibits a one-factor structure, its psychometric properties are robust. The scale demonstrates high internal consistency and sound construct validity, established through correlations with various aspects of psychosocial functioning, along with body image and sociocultural attitudes toward appearance. The scale seems to be gender-invariant and can be utilized in future studies that adopt a cognitive-behavioral approach to appearance schemas.

Keywords: Appearance Schemas Inventory–Revised; appearance investment; body image; Polish adaptation; invariance analysis.

It seems that the way we look and whether or not we feel satisfied with our body shape, size, and overall appearance have become more and more important in recent years (Carrard et al., 2021; Cash & Deagle, 1997). Appearance is not only important for personal reasons or to attract a mate. It can also be a resource for success in social and professional settings. On the one hand, social media have made it easier for people to view and judge our appearance through pictures. On the other hand, the media portrayal of celebrities has created an unrealistic standard for what it means to look good. Another important factor is the awareness of a healthy lifestyle and diet. People often use their appearance to demonstrate their ability to maintain healthy habits, such as exercise and healthy eating. Social sciences suggest that a desirable appearance can also result from self-management abilities, such as habits and rituals, that can lead to success at work. In various settings, individuals can identify and categorize body types that are more likely to achieve successful and desirable employment (Brewis, 2017). Moreover, studies have found evidence of bias against overweight employees in recruitment and promotion (Brownell et al., 2005; Rothblum et al., 1990). These factors demonstrate that our perception of appearance has evolved over time. Therefore, it is crucial to develop reliable psychometric tools to measure how individuals evaluate their appearance and conduct studies to determine how attitudes towards body image and appearance may impact psychological well-being.

Body Image and Appearance Schemas

Body image is about how individuals perceive and feel about their own bodies, particularly in terms of physical appearance. Researchers have proposed several conceptual frameworks to explore the cognitive mechanisms responsible for this phenomenon. One of them focuses on sociocultural pressures and the internalization of appearance ideals as determinants of body image disturbance and eating pathology (Schaefer et al., 2015). A different (cognitive-behavioral) approach to understand body image is represented by Cash, Jakatdar, and Williams (2004). They argue body image experiences in everyday life are determined by appearance-related self-schemas. In other words, appearance self-schemas are a significant component of body image. They convey a person's beliefs about the importance, meaning, and impact of their appearance on various domains of their life. Self-schemas are activated by various contextual events and transfer to particular emotions or self-regulatory activities. Cash

(2002) proposes that body image attitudes, defined as appearance investment (AI), include two dimensions. The first evaluative component relates to self-ideal discrepancies and the level of satisfaction with the body. The second investment component denotes to what extent a person is motivated to focus on their appearance and how much effort they are willing to put in to maintain their attractive presence. The authors argue that while the former, self-esteem-related aspect of body image has been extensively explored in various studies, the latter is often neglected. In order to fill this gap, the Appearance Schemas Inventory in a revised version (ASI-R) was developed (Cash, Melnyk, & Hrabosky, 2004), which consists of the two subscales assessing Self-Evaluative Salience (SES) and Motivational Salience (MS).

The development of the notion of appearance investment and its measurement (ASI; Cash & Labarge, 1996; ASI-R; Cash, Jakatdar, & Williams, 2004) has resulted in a vast body of research. Since its original publication, the construct has been used in various types of studies, ranging from correlational and cross-sectional studies to experimental studies, experience-sampling studies, longitudinal studies, and intervention studies. It has been analyzed as a correlate, moderator, or mediator variable as well as an independent or (less frequently) dependent variable. It is worth noting, though, that the studies mainly pertain to samples collected in English-speaking countries (cf. Jarry et al., 2019). Over the years, the way of conceptualizing the construct itself has also changed. Initially, the one-dimensional character of the ASI was emphasized (Cash, 1992; Cash & Labarge, 1996). In 1996, based on research involving 274 female college student volunteers, Cash and Labarge (1996) validated the tool and confirmed its one-factor structure—one composite ASI score. However, at the same time, the PCA performed by the authors revealed three factors: Body-Image Vulnerability (referring to SES), Self-Investment (referring to MS), and an additional factor, Appearance Stereotyping. The first factor was associated with the tendency to focus on the negative aspects of one's appearance. The second factor, Self-Investment, entailed the belief that one's appearance is central to self-concept and that it is therefore necessary to maximize efforts to improve it. Finally, the third factor, Appearance Stereotyping, concerned assumptions about "the social meanings of physical attractiveness and unattractiveness" (Cash & Labarge, p. 46). However, due to the fact that the extracted factors were interrelated and composed of few items, Cash and Labarge (1996) did not recommend using them as distinct subscales but rather as "descriptive of the ASI content" (Cash & Labarge, p. 46). Finally, as a result of revisions carried

out in 2004, a two-dimensional structure differentiating between the SES and MS components was introduced. Studies using the ASI-R have used both the total index score and the SES and MS scales, each yielding a different dependence pattern. This suggests, on the one hand, that not distinguishing the ASI-R subscales in studies examining appearance investment may result in the loss of information. On the other hand, the few studies to date on the ASI and ASI-R factor structure (Ambo et al., 2011; Argyrides & Kkeli, 2013a, 2013b; Chua et al., 2015; Rusticus et al., 2008; Smith & Davenport, 2012) indicate that it varies across study populations. According to the researchers, factors that contribute to variability in how the scale items are interpreted include age and gender (Rusticus et al., 2008), health status (Chua et al., 2015; Grocholewski et al., 2011), and ethnicity (Smith & Davenport, 2012).

Previous research has confirmed the original two-factor model in Japan (Ambo et al., 2011) and Greece (Argyrides & Kkeli, 2013a, 2013b), but only in a female sample. Conversely, Rusticus et al. (2008) found evidence supporting a two-factorial model of the ASI-R in a Canadian sample. However, the authors found less support for the measurement invariance across gender and age groups, concluding that the items may be differently interpreted by different groups of respondents. Chua et al. (2015) demonstrated, in turn, differences in the factor structure related to health status. The authors found evidence supporting the three-factor structure of the ASI-R in breast-cancer patients undergoing reconstructions. Of the three factors extracted in the analysis, two (Appearance Self-Evaluation and Appearance Standards and Behavior) aligned with those previously identified by Cash, Melnyk, and Hrabosky (2004). The third factor (Appearance Power/Control), unique to the study, reflected appearance as being a part of one's identity and having control over one's emotions, thoughts, and behaviors. Finally, Smith and Davenport (2010), in their confirmatory study conducted among Hispanic women, pointed out the need to further explore the level of cultural influence on the appearance investment construct and its factorial structure.

These differences in interpreting the items' content suggest that the construct is culturally sensitive. As a consequence, the tool itself should undergo an adaptation and validation procedure before being used in research in a particular culture or study group. Therefore, our study aimed to culturally adapt and validate the revised version of the ASI questionnaire (ASI-R, Cash, Jakatdar, & Williams, 2004) in a Polish non-clinical sample.

Studies suggest that there is ample evidence of a robust connection between self-esteem and body perception. Disappointment with the physical appearance is related to lower self-esteem for both men and women (Lowery et al., 2005; Paxton & Phytian, 1999). Moreover, the internalization of idealized standards negatively affects the evaluation of the body. Female students who had a higher appearance self-schema (the perceived body image as an important area of self-evaluation) were less satisfied with their bodies and reported lower self-esteem than females with a low appearance self-schema (Jung & Lee, 2006). These data support the assumption that the evaluative component of body image is related to a negative perception of one's physical appearance. Motivational salience seems to have more ambiguous outcomes. It correlated negatively with body appreciation (Swami et al., 2016), and, for women, it was associated with a more insecure attachment style with men (Ledoux et al., 2010). However, it was also positively related to enjoyment of clothes shopping (contrasting with self-evaluative salience), for which a negative relationship was observed (Tiggemann & Lacey, 2009). In another study, men who invested more in physical appearance considered themselves to be more handsome (Mafra et al., 2016).

In an extensive review of studies on appearance investment measured with ASI-R, authors examine results obtained for the general factor as well as for the SES and MS scales separately (Jarry et al., 2019). Their analysis indicated that a higher score on the ASI-R was associated with a greater body image disturbance and eating pathology. However, when the SES and MS scales were measured separately, the results obtained for them differed. Consistently, SES was linked to more negative outcomes than MS. Even when both scales were associated with adverse effects, correlations with the SES scale were larger compared to the MS scale. What is more, for both women and men, SES was associated with more dysfunction than MS.

The Current Study

Given both the relatively small number of validation studies and their inconclusive nature (Ambo et al., 2011; Argyrides & Kkeli, 2013a, 2013b; Chua et al., 2015; Grocholewski et al., 2011; Rusticus et al., 2008; Smith & Davenport, 2012), in our study we aimed to investigate whether the original ASI-R model (Cash, Melnyk, & Hrabosky, 2004) can be replicated in a different cultural setting. Results from various studies consistently show that the concepts concerning appearance and body image are culturally sensitive and dependent

on a culture-specific constellation of needs, traits, and values. What is more, it should be noted that there has been no formal adaptation of the ASI-R in Poland to date. Given the mounting empirical evidence of how the construct has broadened the understanding of body image beyond the dimension of satisfaction (Jarry et al., 2019), the new adaptation will most likely have a wide application in a variety of studies, including clinical and non-clinical samples. The adapted and validated ASI-R will not only be the proper adaptation of the tool into the Polish culture, which could be used to study appearance invest-ment construct; it could also be of use for practitioners, such as doctors, die-titians and therapists for diagnosis of their patients.

With that in mind, we conducted a study on two different non-clinical sam-ples, designed to assess the validity of the ASI-R (Cash, Melnyk, & Hrabosky, 2004) in Poland. First, we aimed to determine if the two factors measured by the tool's original version (Cash, Melnyk, & Hrabosky, 2004) adequately gauge appearance investment in Poland and whether the model reproduces equally well across genders (structural validity).

Our second goal was to evaluate the construct validity of the Polish version of the ASI-R. Based on the previous research (Allen & Walter, 2016; Łaguna et al., 2014; Maia et al., 2021), we assumed that AI would be negatively asso-ciated with emotional stability and extraversion (Hypothesis H1). Additionally, we controlled the levels of agreeableness, conscientiousness, and social desira-bility, but we did not expect any relations with these variables (Cash & Labarge, 1996; Cash, Melnyk, & Hrabosky, 2004). We also expected a negative link between self-esteem and AI (Cash, Melnyk, & Hrabosky, 2004; Jarry et al., 2019). In the study where participants reported their self-esteem and appearance schemas daily, on the days they did not like their appearance, they felt bad about themselves. They negatively viewed their bodies as undesirable, which led to distress, excessive worry, and lower self-esteem (Jung & Lee, 2003) (Hypothe-sis H2). In terms of well-being, the empirical evidence is mixed. Some studies indicate that it is negatively associated with appearance investment (Jarry et al., 2019), whereas others imply that several forms of investment, such as focusing on weight loss, can positively affect well-being (Gough et al., 2016). Never-theless, taking into consideration strong links between happiness and self-esteem (Baumeister et al., 2003) and results from studies on body image that indicate the negative relationship between well-being and body dissatisfaction (Cafri et al., 2002; Margraf et al., 2013), we predicted that appearance investment will be associated with lower psychological well-being (Hypothesis H3). Based on the works on the connections between body image investment and appearance-

related outcomes, we expected that appearance investment would be negatively related to body area satisfaction and appearance evaluation (Argyrides & Kkeli, 2013b; Cash & Labarge, 1996) (Hypothesis H4) and positively to appearance orientation and internalization of the socially-prescribed appearance ideals: the "thin ideal" and the "muscular ideal", which are often considered as schemas that are consequences of society pressure (Cash, Melnyk, & Hrabosky, 2004; Swami & Szmigielska, 2013; Uhlmann et al., 2020) (Hypothesis H5).

METHOD

Participants

The study was conducted on two separate samples. Sample 1 was comprised of $N = 356$ ($M = 31.45$, $SD = 5.65$), and Sample 2 consisted of $N = 357$ ($M = 31.57$, $SD = 5.55$). Apart from the sociodemographic variables, the description of both samples also includes variables describing the subjective assessment of time and money invested in appearance, as well as the frequency and regularity of physical exercise (Table 1). No outliers were excluded from the analysis.

Table 1
Summary of Characteristics of Tested Samples

	Sample 1	Sample 2
Sample Size	356	357
Gender		
Female	178 (50%)	178 (49.9%)
Male	178 (50%)	179 (50.1%)
Age in years ($M \pm SD$)	31.45 ± 565	31.57 ± 5.55
Education		
Elementary	6 (1.7%)	14 (3.9%)
Vocational	26 (7.3%)	38 (10.6%)
Secondary	156 (43.8%)	126 (35.3%)
Higher	168 (47.2%)	179 (50.1%)

Table 1 (continued)

Summary of Characteristics of Tested Samples

Place of residence		
Village	89 (25.0%)	85 (23.8%)
Town < 50,000	83 (23.3%)	78 (21.8%)
City 50,000–100,000	59 (16.6%)	45 (12.6%)
City 100,000–500,000	75 (21.1%)	70 (19.6%)
City > 500,000	50 (14.0%)	79 (22.1%)
Relationship status		
In a relationship	263 (73.9%)	257 (72.0%)
Single	93 (26.1%)	100 (28.0%)

Measures

We applied different measures in Samples 1 and 2. The sociodemographic survey and ASI-R were used in both. In Sample 2, we applied also other measures described below.

The ASI-R (Cash, Jakatdar, & Williams, 2004) contains 20 items within two subscales: SES (12 items) and MS (8 items), rated on a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores indicate a higher degree of appearance investment. The internal consistency of the composite ASI-R and the two subscales calculated using Cronbach's alpha is satisfactory and ranges between .82 and .91 (Cash & Grasso, 2005; Cash, Jakatdar, & Williams, 2004).

The ASI-R tool was translated into Polish using a parallel blind technique and blind back-translation (Behling & Law, 2000). We carried out a full language adaptation (Behling & Law, 2000; Dewolf et al., 2009), we aimed to maintain the original's semantic meaning of the ASI-R items while also allowing for some necessary linguistic modifications (Drwal, 1990). The linguistic evaluation of the translated items was conducted by a panel of competent judges consisting of both psychology and Polish philology specialists. Individual statements were checked for the degree of comprehensibility of the vocabulary used, grammatical correctness, and the length and complexity of the statements (Hornowska, 2007). The final version of the ASI-R translation was consulted with and approved by the author. The factor structure and the psychometric parameters of the Polish version of the ASI-R are described in more detail in what follows.

The Ten-Item Personality Inventory (TIPI, Gosling et al., 2003) is based on the Big-Five personality dimensions that include extraversion, agreeableness,

conscientiousness, emotional stability, and openness (Costa & McCrae, 1992). The scale consists of ten items. Each personality dimension is represented by two items: one item represents a negative pole and the other a positive pole. Participants assess the degree to which each personality trait applies to themselves using a seven-point scale, from 1 (*strongly disagree*) to 7 (*strongly agree*). The TIPI showed satisfactory psychometric parameters, i.e., Cronbach's alpha ranged between $\alpha = .40–.68$, which is typical for short scales (Ziegler et al., 2014); however, it showed high temporal stability ($r = .62–.77$). In the present study, the Polish version of the TIPI was used (Sorokowska et al., 2014). Cronbach's α coefficient for personality dimensions ranged between .44–61.

The Social Desirability Scale (WSPAS; Fronczyk & Witkowska, 2020) is the Polish equivalent of SDS-17 (Stöber, 2001), which is a measure of social desirability. The questionnaire consists of 10 items, assessed by the participants on a four-point rating scale from 1 (*definitely not true*) to 4 (*definitely true*). WSPAS has satisfactory psychometric parameters (Fronczyk & Witkowska, 2020). In the present study, Cronbach's α coefficient for social desirability equals .78.

Self-esteem was assessed using the Polish version (Łaguna et al., 2007) of the Rosenberg Self-Esteem Scale (SES), originally developed by Rosenberg (1965). The SES is a 10-item questionnaire measuring global self-esteem, understood as a positive or negative attitude towards oneself. Each item is assessed on a 4-point Likert scale, ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). SES has satisfactory psychometric parameters (Łaguna et al., 2007). In the present study, Cronbach's α coefficient for global self-esteem is very good and equals .87.

The Polish adaptation (Karaś & Cieciuch, 2017) of the short, one-dimensional, 18-item version of the Psychological Well-Being (PWB) questionnaire by Ryff and Singer (1996) was used to measure well-being. Respondents assess items on a 5-point scale, ranging from 1 (*completely disagree*) to 5 (*completely agree*). In the present study, Cronbach's α coefficient for general wellbeing equals .83.

The Multidimensional Body-Self Relations Questionnaire (MBSRQ) is a self-report measure of body image attitudes created by Cash (2000, 2018) and adapted by Schier, Rzeszutek, Topór, Matkowska, and Pasternak (Pasternak, 2018). It contains 69 items and includes 10 subscales. In the current study, only three subscales were utilized: Appearance evaluation, Body areas satisfaction, and Appearance orientation. Participants assess the items on a five-point scale ranging from 1 (*definitely disagree*) to 5 (*definitely agree*). The

higher the overall mean score, the greater the appearance evaluation or appearance orientation is. In the Body area satisfaction subscale, respondents assess their satisfaction with nine body areas on a five-point scale, ranging from 1 (*very dissatisfied*) to 5 (*very satisfied*). The MBRSQ has satisfactory psychometric parameters (Cash, 2000, 2018). In the present study, Cronbach's α coefficient for the three subscales ranged between .81–.86.

The Sociocultural Attitudes Towards Appearance (SATAQ-4) (Schaefer et al., 2015) measures internalization of appearance ideals and the perceived sociocultural. It contains 22 items within five subscales:

- internalization: thinness;
- internalization: muscularity;
- pressures: family;
- pressures: media;
- pressures: peers.

Respondents assess each item on a five-point scale, ranging from 1 (*definitely disagree*) to 5 (*definitely agree*). Higher scores indicate a higher perceived pressure to reach appearance ideals. The tool has satisfactory psychometric parameters (Schaefer et al., 2015). Cronbach's α coefficient for the Polish version ranged between .92–.96.

Procedure

The project was conducted following the ethical guidelines of the Helsinki Declaration and was approved by the Ethics Committee of the Maria Grzegorzewska University. Data were collected online using the Research Panel Ariadna. During data collection, participants were reminded that taking part in the study was voluntary, that they could withdraw at any time without explanation, and that all information would be kept confidential. All participants gave their informed consent and were offered points by the panel for completing the survey. In order to manage the risk of random answers, we decided that the responses whose total time was shorter than 5 minutes would be excluded from the analyses.

Statistical Analyses

To test the structural validity of the ASI-R, we tested a series of confirmatory factor analytic models. All of the analyses were carried out on both samples, using the robust maximum likelihood estimation in Mplus v. 7.2. (Muthen

& Muthen, 2012). No covariances between the residuals were considered. To evaluate model fit, we relied on standard recommendations—that is, the analyzed model might be deemed well-fitted if the Comparative Fit Index (CFI) is greater than .90 and the Root Mean Square Error of Approximation as well as the Standardized Root Mean Square Residual (SRMR) are both less than .08 (Byrne, 1994). First, we assessed whether the existing one- and two-factorial models (Cash, 1992; Cash, Melnyk, & Hrabosky, 2004) would reproduce in our data. Second, we assessed the degree to which negatively worded-items produce artificial noise variance. To capture this artificial variance, in the third model, we included an orthogonal latent variable measured by all the negatively-worded ASI-R items and constrained the factor loadings to be equal (Podsakoff et al., 2012). The fourth model was composed only of the positively worded ASI-R items. All of these analyses were carried out simultaneously on both samples.

In addition to the evaluation of the ASI-R internal structure, to test the hypothesis that the structural model of the Polish validation of the ASI-R reproduces equally well across genders, we have conducted the multigroup CFA (MGCFA) on the data from both samples. In this analysis, we tested three models with increasing levels of complexity (Meredith, 1993). In the first model, referred to as the configural model, we estimated the best-fitting model freely, without any additional constraints. If this model were fitted well, as in regard to the conventional criteria described above, this would mean that the model might be seen as invariant in terms of the basic characteristics (e.g., the number of factors). In the second model, referred to as the metric model, we added the constraint that all of the factor loadings are equal across both compared groups. To assess whether the metric model is fitted well, it is recommended that the difference in the fit indices between the metric and configural models be calculated. If the difference (i.e., Δ) values in CFI and RMSEA do not exceed .01, the model might be seen as invariant (Chen, 2007). The consequence of establishing the metric model is that one might compare the correlates across the samples. Finally, we tested the most constrained model, that is, the scalar model. In this model, in addition to constraining factor loadings to be equal across groups, the item intercepts are constrained as well. This model's fit is assessed in the same way as for the metric model. Establishing scalar invariance makes it possible to compare the differences between the latent mean scores across genders.

Statistics were calculated using SPSS (Version 29) and Mplus (v. 8.3; Muthén & Muthén, 2017). Due to the violation of the multivariate normality, we applied the bootstrap technique, with 1,000 bootstrap samples at a confidence interval of 95.

RESULTS

Structural Validity

First, we checked the structural validity of the ASI-R. The fit indices of the analyzed CFA models across two samples are presented in Table 2. Neither the one-factor, nor the two-factor model fitted well in either of the analyzed samples. Furthermore, the two-factor model, despite a slight improvement in terms of model fit, seems less convincing given the high correlation between the latent factors, reaching $\rho = .88$ in Sample 1 and $\rho = .82$ in Sample 2. Thus, in the next model, we sought to identify the potential sources of this misfit through the evaluation of the effects of method bias resulting from the presence of the negatively worded items. The inclusion of the method factor significantly improved the overall model fit to the desired thresholds. The method factor explained 35% of the overall variance in Sample 1 and 30% in Sample 2. Furthermore, the inclusion of the method factor within the model resulted in a significant decrease in the strength of the factor loadings of the negatively worded items, which was, on average, roughly $\lambda = .17$ in Sample 1 and $\lambda = .11$ in Sample 2. Thus, these negatively worded items might be seen as poor indicators of the underlying latent variable, which mostly introduces noise variance. Thus, in the next model, we excluded these items from the analysis. Given the high latent correlation identified in a two-factor model suggesting multicollinearity, we have only examined the one-factor model. The fit indices revealed that such a model is well-fitted across the two samples. The strength of the factor loadings was adequate (which are presented in Table 3), and thus the Polish adaptation of the ASI-R might be deemed structurally valid.[1]

Next, we analyzed measurement invariance across genders using the one factor abbreviated model. The fit indices of the analyzed models from the MGCFA are presented in Table 4. The results revealed that there was only a small difference between the samples across increasingly constrained models, especially after constraining the factor loadings. We have found partial support for the scalar invariance as the estimate of the CFI was at the boundary of the assumed threshold (i.e., .012 vs .010), while the estimates of RMSEA and SRMR both supported scalar invariance, indicating that the model reproduces across the two genders and thus providing further support for its

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[1] We also tested for invariance across the samples, finding support for full scalar invariance.

structural validity. Additionally, in line with Rusticus et al. (2008), the latent mean comparisons revealed that males scored significantly lower than females ($z = -.25$, $p < .001$).

Table 2

Fit Indices of Analysed Models

Model	Sample	$\chi^2_{(df)}$	P	CFI	RMSEA	90% CI	SRMR
One-factor	1	$633.49_{(170)}$	.001	.741	.088	.080, .095	.096
	2	$699.57_{(170)}$	.001	.733	.093	.086, .101	.102
Two-factor	1	$607.18_{(169)}$	.001	.755	.085	.078, .093	.100
	2	$627.57_{(169)}$	.001	.768	.087	.080, .095	.094
Method factor	1	$333.28_{(169)}$	.001	.908	.052	.044, .060	.057
	2	$470.42_{(169)}$	.001	.848	.071	.063, .078	.069
One-factor abbreviated	1	$165.92_{(77)}$	.001	.932	.057	.045, .069	.050
	2	$222.81_{(77)}$	.001	.906	.073	.062, .084	.054

Table 3

Standardized Factor Loadings of One-Factor Abbreviated ASI-R Model Across Samples

Item	Sample 1	Sample 2
2	.73	.69
3	.57	.63
6	.67	.67
7	.73	.74
8	.53	.67
10	.64	.68
13	.68	.66
14	.76	.77
15	.67	.72
16	.61	.58
17	.58	.51
18	.61	.67
19	.65	.61
20	.58	.57

Table 4

Fit Indices of Multigroup Confirmatory Factor Analysis Across Genders

Model	$\chi^2_{(df)}$	p	CFI	RMSEA	SRMR
Configural	$378.81_{(154)}$	$< .001$	.918	.064	.052
Metric	$397.47_{(167)}$	$< .001$	.916	.062	.059
Scalar	$443.90_{(180)}$	$< .001$	.904	.064	.064
Metric vs. configural	$13.60_{(13)}$	.403	.008	.002	.007
Scalar vs. metric	$53.09_{(13)}$	$< .001$	.012	.002	.005

Overall, the abbreviated, final version of the ASIR consists of 14 items, all of which are positively worded. It measures self-schemas concerning self-ideal discrepancies and satisfaction with one's body, as well as motivation to maintain an attractive appearance. In our study we prove that these two constructs are to such an extent correlated with each other that in the research conducted in Polish culture, they should be treated as one factor. In Table 5, we present the descriptive statistics of the Polish version of ASI-R.

Table 5

Descriptive Statistics of the Polish Version of ASI-R, Samples 1 and 2

ASI-R	M	SD	Skewness	Kurtosis
Sample 1	3.25	0.67	–0.22	0.83
Sample 2	3.27	0.69	–0.11	0.59

Internal Consistency

Next, we analyzed the internal consistency of the Polish version of ASI-R. Both Cronbach's alfa coefficient ($\alpha = .91$) and McDonald's omega coefficient ($\omega = .91$) for the final, one-factor model were satisfactory.

Construct Validity

Construct validity (Hypotheses H1–H5) was assessed through correlations with different measures of psychosocial functioning and body image. Table 6 presents the correlation matrix between AI personality traits (Gosling et al.,

2003), self-esteem (1965, as cited in Łaguna et al., 2007), wellbeing (Ryff & Singer, 1996), social desirability (Fronczyk & Witkowska, 2020), body image (Cash, 2018) and attitudes towards appearance (Schaefer et al., 2015).

Table 6

Bootstrapped Pearson's Correlation Coefficients Between ASI-R and Measures of Psychosocial Functioning and Body Image (Sample 2)

	ASI-R
Personality traits (TIPI):	
Emotional stability	–.20** [–.31; –.08]
Extraversion	.11* [.00; .23]
Agreeableness	<.00 [–.12; 12]
Conscientiousness	–.075 [–.18; .04]
Self-esteem (Rosenberg SES)	–.18** [–.29; –.06]
Well-being (PWBS)	–.09 [–.21; .04]
Body image (MBRSQ):	
Appearance evaluation	.04 [–.08; .15]
Body areas satisfaction	–.00 [–.11; 10]
Appearance orientation	.67** [.59; .74]
Sociocultural attitudes towards appearance (SATAQ-4)	
Internalization: Thin/Low body fat	.46** [.36; .55]
Internalization: Muscular/Athletic	.46** [.35; .55]
Social desirability (SPAS10)	.03 [–.09; .16]

Note. Bonferroni correction applied. Correlations at p (.05/12) < .004 are marked as significant with *.

Concerning convergent validity, the bootstrapped Pearson correlation co-efficients between appearance investment and emotional stability and extraversion were negative; however, there was no correlation with extraversion, as assumed, and as a result, H1 has been partially confirmed. The negative correlation with self-esteem was observed, which proved Hypothesis H2. Well-being, however, was not correlated with AI, which was against our assumptions (H3 was rejected). In line with what we expected, the appearance investment

was strongly and positively related to appearance orientation. However, contrary to our predictions, no statistically significant correlations were observed between the AI and appearance evaluation and body area satisfaction, indicating that these constructs are independent (H4 partially confirmed). As expected, both personality traits of agreeableness, conscientiousness, and social desirability were not correlated with AI.

DISCUSSION

The aim of the study was to adapt the ASI-R scale into the Polish language and culture, check whether the scale has the same structure as the original, and assess its psychometric properties by verifying its reliability and validity. Contrary to our assumptions, we did not find evidence supporting the two-factor structure (Cash, Melnyk, & Hrabosky, 2004). The model fit for the original solution was not satisfactory. Also, the two latent factors, representing the SES and the MS, respectively, were highly correlated, suggesting multicollinearity. This is a surprising result, since various validation studies conducted so far (Argyrides & Kkeli, 2013a, 2013b; Chua et al., 2015; Rusticus et al., 2008; Smith & Davenport, 2012) have indicated the multidimensional nature of the ASI-R. It should be emphasized, however, that the measure of appearance investment (as well as the measures of other related constructs) has been developed mostly in English-speaking countries, and the construct itself is culturally sensitive (Chua et al., 2015; Rusticus et al., 2008; Smith & Davenport, 2012). In our validation project, the source of the misfit was the negatively worded items, which were excluded from the final model.

When it comes to internal consistency, the Polish version of the ASI-R has satisfactory structure coefficients as well as alpha and omega indexes. The relationship between the ASI-R and measures of psychosocial functioning and body image mostly proved the validity of the adapted scale. The two validation hypotheses, which were not fully confirmed, concerned well-being, appearance evaluation, and body area satisfaction. The past studies on well-being and appearance gave mixed results (Jarry et al., 2019; Gough et al., 2016), so these two variables need more studies in order to investigate their associations and their possible mediators. Simultaneously, the lack of connections between the appearance investment, measured by the ASI-R, and the appearance evaluation (AO) and body area satisfaction (BAS), both measured by the MBSRQ, indicates the diversity of these constructs. This in turn is consistent with how

they are conceptualized and operationalized (Cash & Labarge, 1996; Cash, Melnyk, & Hrabosky, 2004; Cash, Jakatdar, & Williams, 2004). While the notion of AI addresses the importance of appearance for the self, AE and BAS refer to different levels of satisfaction with overall appearance (AE) and specific body parts (BAS). Additionally, the AI appears not to be related to extraversion; this result, however, needs further investigation, as some studies suggest such a relation (Kvalem et al., 2006). Our analysis also showed that, in general, males scored lower than females, which is consistent with previous results (Rusticus et al., 2008). However, the tested model was reproduced across both genders, which implies that the scale is gender-invariant.

Limitations and Conclusions

Our study has several limitations that should be mentioned. Participants were recruited via a research panel, which restricts potential participants to the registered panel members, increasing the likelihood of self-selection bias. Over 90% of the respondents completed at least secondary education, so it is likely that they were somewhat better educated, more technologically savvy, and of higher socioeconomic status than the average Pole. Hence, the two samples are unlikely to be fully representative of the population. Besides, when conducting studies online, it is extremely difficult to control the settings in which participants complete the questionnaires. Different study conditions might affect the quality of the results. In future studies, it would be advisable to add control questions to make sure that participants are actually attentive to the material (such as self-report indicators, bogus items, and instructed items; DeSimone & Harms, 2018). While studies on data from panels are gaining popularity (Federico et al., 2021; Jasielska et al., 2022; Zagefka, 2021), it is important to note the specificity of this form of recruitment. It would be advisable to replicate these results in other cultures, including countries with different characteristics on cultural dimensions (Hofstede et al., 2010), to check whether the ASI-R scale is culturally sensitive. Replicating the obtained structure in countries that, for example, vary in their level of individualism would add robustness to the results. Also, the sample in our study was relatively young, consisting of people aged around 30. Over 50% of the group declared that they spend little or very little time on appearance investment. Future studies should focus on appearance investment across different age groups because the importance of taking care of the body may change as the signs of aging s on the body (which is not an issue for most people in their late twenties or early thirties).

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