# Researching identity styles in Pakistan: confirmatory factor analysis and associations with commitment and value priorities

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# Researching Identity Styles in Pakistan:

# Confirmatory Factor Analysis and Associations with Commitment and Value Priorities

**Abstract**

Identity styles – informational, normative and diffuse-avoidant – have been studied widely across North America and Europe, but infrequently in "non-Western" cultures. We tested the factorial structure of the Identity Styles Inventory-5 among 479 young adults in Pakistan. Findings supported the predicted three-factor solution, but only when numerous poorly-performing items were deleted. We further tested associations among identity styles, identity commitment, and value priorities. As expected, informational and normative styles were associated with higher commitment, whereas diffuse-avoidant style was associated with lower commitment. The three identity styles showed a pattern of divergent associations with value priorities that mostly, but not entirely, replicated the pattern of associations previously found among US and European samples. We conclude that Berzonsky's three identity styles can be detected in a Pakistani cultural context, but that the ISI-5 may not fully capture the breadth and complexity of identity formation processes among Pakistani youth.

**Keywords:** *Identity styles; confirmatory factor analysis; commitment, value orientations; culture; Pakistan*

**Researching Identity Styles in Pakistan:**

**Confirmatory Factor Analysis and Associations with Commitment and Value Priorities**

In this study, we evaluate the applicability of Berzonsky's (1989, 2011) model of identity styles, consisting of informational, normative, and diffuse-avoidant styles, in a Pakistani context. The Identity Style Inventory (ISI: Berzonsky, 1989, 2013) has been extensively used to measure individual differences in identity construction, especially in Western cultural contexts, and the three identity styles have often been assumed to apply universally (Berzonsky, 2011). Pakistan is an important context in which to study identity styles, because previous research has suggested that the identity style construct may operate differently there than in Western contexts (e.g., Hassan, Vignoles, & Schwartz, 2017; Tariq, 2012).

## Identity Formation: Theories and Measurement

Much research on identity formation has been conducted following the pioneering theoretical work of Erikson (1950, 1963, 1968). Erikson described identity formation as a crucial developmental task that adolescents must negotiate if they are to navigate the transition to adulthood successfully, and his ideas have inspired much subsequent research. In particular, Marcia (1966, 1980) and Berzonsky (1989) have played a prominent role in establishing empirical instruments based upon Erikson's ideas.

Marcia (1966) framed identity formation in terms of presence/absence of dimensions of "exploration" and "commitment". Exploration refers to sorting through various potential choices, and commitment refers to deciding to adhere to one or more of the options considered. Marcia further divided these dimensions into "high" versus "low" and subdivided them to derive four identity statuses: (a) *Identity Achievement,* where exploration is followed by commitment; (b) *Moratorium*, where exploration is underway, but few commitments have

been made; (c) *Foreclosure*, where commitments are made without prior exploration; and (d) *Diffusion*, defined by the absence of commitments or systematic exploration.

Building on the identity status model and adopting a constructivist epistemology where people are viewed as active agents who develop their own identities, Berzonsky's (1989) theory of identity styles focuses on the cognitive processes that individuals use to formulate a sense of who they are and the reality within which they live. Berzonsky described these processes as giving rise to three *identity styles*, labeled as informational, normative and diffuse-avoidant. According to Berzonsky (1989, 2011), people using an *informational style* actively and deliberately seek out, elaborate on, and evaluate self-relevant information, enacting commitments on the basis of information they have sought by themselves (see Berzonsky, 2003). Those using a *normative style* conform to the expectations held by significant others and reference groups; these individuals are found to have high levels of commitment, but their commitments often not self-chosen but rather are influenced by norms and values that they and their referent group hold (see Berzonsky, 2003, 2011). Individuals with a *diffuse-avoidant style* tend to procrastinate or strategically avoid confronting identity-related issues, and hence they typically lack commitments (see Berzonsky & Ferrari, 2009; Berzonsky, Cieciuch, Duriez, & Soenens, 2011). Given this pattern of findings, Berzonsky (2011) suggested that these three identity styles underlie Marcia's (1966) identity statuses: an informational style underlies moratorium and achievement, a normative style underlies foreclosure, and a diffuse-avoidant style underlies diffusion.

**Identity Style Inventory: Correlates and Application across Cultures**

The Identity Style Inventory (ISI) has been the most widely used instrument to assess and measure the three identity styles (Bosch & Card, 2012). As of 2013, six versions, including a revision of the ISI-4, had been constructed: ISI-1 (Berzonsky, 1989), ISI-2 (Berzonsky, 1992a), ISI-3 (Berzonsky, 1992b), ISI-4 (Smits et al., 2009), ISI-4 Revised

(Berzonsky, Soenens, Luyckx, Goossens, Dunkel, & Papini, 2011) and ISI-5 (Berzonsky, Soenens, Luyckx, Smits, & Papini, 2013). Researchers have tested the associations of identity styles with numerous psychological variables, notably identity statuses (Berzonsky & Neimeyer, 1994), commitment (Berzonsky, 2003), psychological well-being (Phillips & Pittman, 2007; Vleioras & Bosma, 2005), value orientations (Berzonsky, Cieciuch, et al., 2011; Berzonsky & Papini, 2014), causality orientations (Smits, Soenens, Vansteekiste, Luyckx, & Goossens, 2010), academic achievement (Xu, 2009), cognitive reasoning processes (Berzonsky et al., 2013), parenting (Smits, Soenens, Luyckx, Duriez, Berzonsky, & Goossens, 2008) and personality traits (Dollinger, 1995), to name a few.

The ISI has been used in various cultural contexts. According to Berzonsky (2011, 2013), English or translated versions of the ISI have been used in Australia, Belgium, Canada, the Czech Republic, Denmark, Finland, Germany, Greece, Iran, Italy, the Netherlands, Poland, Spain, Switzerland, Slovakia, and Turkey. Most of these countries are in what is widely referred to as the Western world – Europe, North America, and Oceania. Relationships between identity styles and other correlates have tended to be consistent across the cultural contexts sampled (e.g., Berzonsky, Macek, & Nurmi, 2003; Crocetti & Shokri, 2010; Krettenauer, 2005; Soenens, Duriez, & Goossens, 2005). On this basis, Berzonsky (2011) suggested that identity formation styles might generalizable across cultures, this implies testing applicability of the ISI measure in wider cultural contexts.

However, relatively little previous research using the Identity Style Inventory has been conducted in non-Western countries—and even less research has sought to *validate* the measure for use in such contexts (but see Crocetti & Shokri, 2010; Tariq, 2012, for two exceptions). It is important to examine carefully how the ISI has been used in other cultures and to evaluate the psychometric support across cultural contexts, so that the use of the ISI in influencing policy and practice in diverse cultural contexts can be appropriately evaluated.

According to Berzonsky (2011) and Berzonsky et al. (2013), psychometric properties of the ISI-3 in particular, when translated and used in various cultures, have been acceptable. However, the psychometric properties of the ISI versions in these studies were typically evaluated only in terms of Cronbach's alpha coefficients. Berzonsky et al. (2013, p. 895) noted that alpha coefficients for scores on the ISI-3 subscales range from .60 to .75. However, compared to the other identity styles, the normative identity style has often shown lower reliability, especially in studies where the original version has been translated into different languages (e.g., Berzonsky et al., 2003; Crocetti, Rubini, Berzonsky, & Meeus, 2009; Crocetti & Shokri, 2010; Xu, 2009). Moreover, no published study that we are aware of has yet evaluated the item-level factorial structure of any of the ISI measures beyond their cultures of origin (i.e., USA and Belgium). Therefore, the first goal of our current study was to test the item-level factor structure of the ISI-5 in a new cultural context, namely Pakistan.

**Validating the ISI in other Cultures: The example of Pakistan**

Very different from the Western contexts where many theories on identity formation were originally developed, Pakistan was established based on a nationalist religious ideology (Jalal, 1995). When the country was founded in 1947, the most defining element of the new state was that it would be founded upon Islamic ideology (Alvi, 2002; Marsden, 2005). Under this nationalistic religious ideology, some traditional practices were rejected as backward or as a residue of Hindu colonialism. Consequently, giving rise to multiple and complex influences on identity formation in the country, including the impacts of religion, region, caste, nationalism, creed, and language. In a recent study across 33 nations, Gelfand et al. (2011) described Pakistan as having the "tightest" norms of all nations sampled, whereas the USA and Belgium, where versions of the ISI have been developed, were characterized by relatively "loose" norms and more openness to diversity. Pakistani culture can thus provide an interesting context for testing the cross-cultural validity of identity style scores.

**Factorial Structure of the Measure**

Only one previous unpublished study has tested any version of the ISI in Pakistan. In her PhD study, Tariq (2012) conducted confirmatory and exploratory analyses of the ISI-4 (Smits et al., 2009) among a sample of 150 Pakistani adolescents. She found lower-than-expected reliabilities for the informational (α = .60) and diffuse-avoidant styles (α = .60), and poor reliability for the normative style (α = .46). Furthermore, a measurement model using the original scoring algorithm provided an unacceptable fit to the data (CFI = .59, RMSEA = .07). To address these problems, with the help of a committee of experts, Tariq reviewed each item on the basis of its content and loading and reassigned many items to different style categories. For example, a diffuse/avoidant item ("*I try to avoid personal situations that require me to think a lot and deal with them on my own"*) and an informational item ("*I have a definite set of values that I use to make personal decisions"*) were reassigned to the normative identity style, because the committee believed that both of these items reflected dependency on others. Moreover, Tariq (2009) included the 10-item commitment scale, which is strongly conflated with the identity styles and may have distorted the factor structure.

Other than Tariq's (2012) study in Pakistan, validation studies of the ISI in Italian (Crocetti et al., 2009) and Iranian (Crocetti & Shokri, 2010) samples provide useful comparators for the current research. In these studies, the authors relied on item parceling when testing the factorial structure of the ISI. Perhaps because of the parceling approach, the three-factor solution was confirmed without discarding any items from the style subscales. Item parceling is a useful way of creating just-identified latent variables for use in structural models when the factorial structure of the measures has already been established (Little, Cunningham, Shahar, & Widaman, 2002). However, parceling does not provide a way of

testing whether individual items are performing as expected, because the items are combined with each other and so their individual performance cannot be separated.

Hence, our first goal was to provide a more stringent test of the factorial structure of the ISI-5 items in a Pakistani sample. We conducted a confirmatory factor analysis (CFA) using individual items, rather than item parcels (cf. Crocetti et al., 2009; Crocetti & Shokri, 2010). This allowed us to identify items with low loadings, as well as those that cross-loaded (i.e., did not load solely on their target factor). Eliminating, rather than reclassifying, poorly loading and cross-loading items (see Worthington & Whittaker, 2006) would help create a more valid instrument to measure Berzonsky's (1989) theoretical constructs in a new cultural context. Moreover, examining which items performed better or worse might reveal subtle differences in the meanings of the three identity styles in a non-Western culture such as Pakistan.

**Associations of Identity Styles with Related Constructs**

Identity styles are often studied in association with identity commitment (Berzonsky, 2003) and value orientations (S.H. Schwartz, 1992, 2007) in past Western research. Therefore, in the present study we aimed to examine the similar associations of identity styles with measures of identity commitment and value orientations (Berzonsky et al., 2011) albeit in the different cultural context i.e., Pakistan.

As reviewed above, both the informational and normative styles have been theorized as routes to higher commitment, whereas the diffuse-avoidant style theoretically entails a lack of commitment—and these predictions have been abundantly supported in previous studies (e.g., Berzonsky, 2003, 2004; Berzonsky et al, 2013; Crocetti & Shokri, 2010; Kerpelman et al, 2012; Vleioras & Bosma, 2005; Zimmermann, Mahaim, Mantzouranis, Genoud, & Crocetti, 2012). Hence, we sought to establish whether previous findings linking information style and normative style to higher commitment and diffuse-avoidant style to lower

commitment could be replicated in a very different cultural context from those that have generally been studied in the identity styles literature.

Although informational and normative styles should be similarly related to identity commitment, they can be expected to show diverging associations with personal value priorities (Berzonsky, Cieciuch, et al., 2011; Berzonsky & Papini, 2014). Like identity styles, value priorities are cognitive dimensions that serve as an important basis for making major life decisions; and developing a clear set of values may also be one of the main outcomes of identity formation (Marcia, 1966). S.H. Schwartz's (1992, 2007) model of individual-level value priorities has been validated across a wide range of cultural contexts. In this model, human values are organized into a circumplex structure defined by two higher-order bipolar dimensions: *openness to change versus conservation*, which captures the conflict between values that emphasize independence (self-direction, stimulation) and values that emphasize order and self-restriction (tradition, conformity, security), and *self-transcendence versus self-enhancement,* which contrasts values that emphasize empathy and interest for others (universalism, benevolence) with those that priorities one's own self-interest and dominance over others (achievement, power). One value, *hedonism*, is less well captured by the two bipolar dimensions, because it is related to both openness and self-enhancement (S. H. Schwartz, 2007), and so it is treated separately here.

Theoretically, openness to change is closely aligned with the definition of an informational identity style, where the individual makes her/his own decisions (self-direction) and is interested in exploring new experiences (stimulation); whereas conservation values are closely aligned with the definition of a normative identity style, where the individual follows what is expected of her/him by close others and by society (tradition, conformity). It is less clear how the second bipolar dimension, self-transcendence versus self-enhancement, should relate theoretically to identity styles. Finally, hedonism implies a carefree approach to life

with little concern for others, which might be characteristic of those using a diffuse-avoidant style, but uncharacteristic of those using a normative style.

Two previous studies conducted in Western nations have supported this expected pattern of associations: Berzonsky, Cieciuch, et al. (2011) in Poland, and Berzonsky and Papini (2014) in the United States, found that the informational identity style was associated with openness (vs. conservation) values, whereas the normative style was associated with conservation (vs. openness) values. They also reported that hedonism was positively related to the diffuse-avoidant style and negatively to the normative style. Additionally, the informational style was associated with self-transcendent (vs. self-enhancing) values in both studies, whereas other relationships were inconsistent across the two studies.

We expected similar associations between value priorities and identity styles within our Pakistani sample. In particular, we expected that openness to change (vs. conservation) would be positively related to the informational style and negatively related to the normative style, and that the hedonism would be positively related to the diffuse-avoidant style and negatively related to the normative style.

## Summary of Objectives

In sum, our study was guided by two main objectives: First, we examined the factor structure of the ISI items among a sample of Pakistani young adults. Second, we tested associations of identity styles with identity commitment and value priorities, to ascertain how these may be similar to or different from those observed in Western contexts.

## Method

### Participants and Procedure

Participants were 479 students (286 females [60%], 192 males [40%], 1 unspecified; 241 undergraduates [50%], 223 postgraduates [47%], 15 unspecified [3%]) from six universities in Islamabad and Rawalpindi (Pakistan), recruited from classes or through

printed advertisements. Islamabad is a metropolitan city and the capital of Pakistan, and Rawalpindi is adjacent to Islamabad. We distributed paper copies of our questionnaire in English, which was the language of instruction at both universities, to all students in the sample. Participants were aged 18 to 25 years ($M$ = 21.86; $SD$ = 1.89). Regarding their religious affiliations, 458 (96%) described themselves as Muslim, 5 (1%) as Christian, 4 (1%) as non-believers, and 12 (2.5%) did not report their religion; of the 458 Muslim participants, 307 (67%) described themselves as Sunni, 38 (8%) as Shia, 18 (4%) as belonging to other sects, and 79 (17%) as not belonging to a sect. Sixteen participant (3% of the sample) did not report their sect membership.

The research was approved from the research ethics committee from the first and second authors' home university in the United Kingdom. Approvals from Vice Chancellors/Directors at the respective Pakistani universities were obtained prior to data collection. Participation was voluntary, and no compensation was provided. Participants were briefed regarding the purpose of the study, were assured of anonymity, and a written consent was obtained. Data were collected in classrooms, and all participants were informed that they could withdraw at any point in the study. After the study, participants were debriefed and given an opportunity to request a summary of findings.

**Measures**

**2.1.1 Identity Style Inventory.** Identity styles were assessed using the ISI-5 (Berzonsky et al., 2013), which includes 9 items for each of the three styles. Each ISI-5 item was rated using a 5-point Likert scale, ranging from 1 (*Not at all like me*) to 5 (*Very much like me*). The ISI-5 assesses use of three identity styles including informational style (α = .69; e.g., "*I handle problems in my life by actively reflecting on them"*); normative style (α = .59; e.g., *"I strive to achieve the goals that my family and friends hold for me*"); and diffuse-avoidant style (α = .62; e.g., "*When personal problems arise, I try to delay acting as long as possible*").

**2.1.2 Identity Commitment**. The commitment scale from the ISI-4 (Berzonsky et al., 2010) was administered. Nine items (α = .69; e.g., "I know basically what I believe and don't believe") were responded to using the same 5-point Likert scale as the ISI-5.

**2.1.3 Portrait Values Questionnaire (PVQ).** Participants completed the PVQ-21 (S.H. Schwartz, 2007). Each PVQ item consists of two sentences describing the goals, aspirations and wishes of a person of the same gender as the participant. For example, the statement "*Thinking up new ideas and being creative is important to her(him). She(He) likes to do things in her(his) own original way*" reflects self-direction, one component of openness to change. Respondents rated each portrait using a six-point scale ranging from 1 (*Very much like me*) to 6 (*Not like me at all*). We recoded all items so that higher numbers indicated stronger endorsement of the value in question. The PVQ-21 includes two items measuring each of the component values – self-direction, power, achievement, security, stimulation, conformity, tradition, benevolence, and hedonism, and three items measuring universalism. A CFA with 10 value orientations provided a satisfactory model fit ($\chi^2 = 431.701$, $df = 144$, CFI = .909, RMSEA = .065 [90% CI: .058, .072], SRMR = .044). Before making observed scores for our analyses, we controlled for response styles (e.g., choosing primarily extreme values) by computing each individual's mean across all PVQ items and subtracting this mean from the person's ratings of each item (S. H. Schwartz, 2007). Ipsatized items were averaged to derive scores for each of the 10 values, and these scores were then averaged as follows to measure the two bipolar dimensions: Scores for self-direction, stimulation, tradition (reversed), conformity (reversed), and security (reversed) were combined to measure *openness to change versus conservation* (α = .45). Scores for universalism, benevolence, achievement (reversed) and power (reversed) were combined to measure *self-enhancement versus self-transcendence* (α = .46). Note that because values theoretically follow a circumplex structure, measures of the two bipolar dimensions are composite scores and their reliabilities are expected to be low. As in previous research into identity styles and values

(Berzonsky, Cieciuch, et al., 2011; Berzonsky & Papini, 2014), *hedonism* (2 items: $r = .09$*) was analyzed separately.

## Results

### Confirmatory Factor Analyses

Scores on the ISI items were subjected to a series of Confirmatory Factor Analyses to test their structure in our Pakistani sample. Robust maximum likelihood estimation was used to adjust standard errors and fit indices for non-normality in the indicator variables (Satorra & Bentler, 1994). Several indices were used to assess model fit, including the Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). Recommended cutoffs for these indices are as follows: values of RMSEA ≤ .05 (or .08) indicate good (or adequate) fit (Hu & Bentler, 1999); values of SRMR ≤ .05 indicate a good fit, and values ≤ .10 may be interpreted as adequate (Browne & Cudeck, 1993; Hu & Bentler, 1995; Schreiber, Nora, Stage, Barlow, & King, 2006); for CFI, values ≥ .95 (or .90) indicate good (or adequate) fit (Bentler, 1990).

To test the ISI-5 measurement model, all items were allowed to load on their target factors, as specified by Berzonsky et al. (2013), and no cross-loadings or error covariances were permitted. Standardized factor loadings can be seen in Table 1. This model showed acceptable values of RMSEA and SRMR, but a very poor value of CFI: $\chi^2(321) = 735.221$, CFI = .707, RMSEA = .052 (90% CI: .047, .057), SRMR = .064.

Because these fit indices were not acceptable, we inspected the standardized loadings and modification indices to identify sources of misfit. All items loaded significantly ($p < .05$) on their target factors, but some standardized loadings were rather low (e.g., $\lambda = .134$ for item N9). When we inspected model modification indices, 26 out of 27 items showed at least one significant cross-loading or covariance, but many of these also were rather small (e.g., $\lambda = -.106$; $\psi = .095$). In the following description, because of our large sample size, we focus on

effect sizes rather than on statistical significance. We conducted three iterative revisions of the measurement model, each time using the following three criteria: (1) We deleted items which failed to load at $\lambda > .316$ (i.e., 10% of variance) on their target factor. (2) We deleted items where the modification indices indicated standardized loadings > .224 (i.e., 5% of variance) on a non-target factor. (3) We allowed covariances between items within the same factor where modification indices suggested standardized values > .224 (i.e., 5% of variance), but we did not allow covariances between items that loaded on different factors. In total, we thus removed 11 poorly performing items from the original scale and added one covariance.

After three iterative revisions, no further problems were identified, and the model showed an acceptable fit according to all indices: $\chi^2(100) = 161.033$, CFI = .912, RMSEA = .036 (95% CI: .025, .046), SRMR = .040. Standardized loadings of the retained items and reasons for deleting the excluded items are in Table 1. Deleting these poorly performing items left only 7 information style items, 4 normative style items, and 5 diffuse-avoidance items in our revised measure. Additionally, we tested gender invariance for both the full ISI-5 and for our empirically modified version. The revised measure showed stability of the model across gender for factor scores $\Delta\chi^2$ (3) = 5.85, $p$ = .119, whereas, the factor structure of the original measure was not consistent across gender $\Delta\chi^2$ (3) = 7.85, $p$ = .050. Therefore, the revised measure suggested invariance of the factor structure across gender, providing further support for deleting poorly performing items.

Reliabilities for the shortened scales were quite low (informational $\alpha$ = .67; normative $\alpha$ = .54, diffuse-avoidant $\alpha$ = .51), and they are also worse than the reliabilities for the full scale ($\alpha$'s = .69, .59, .62, respectively). However, we believe there is a trade-off between reliability (indicated by higher $\alpha$'s in the original measure) and discriminant validity (indicated by cleaner item loadings in the revised measure) in these results, as the higher reliabilities in the full scale may be inflated by common method variance due to response

styles, rather than shared substantive content of the items. Additionally, a weakness of Cronbach's alpha is that it is inflated by the number of items on the scale (Streiner, 2003). We report subsequent analyses in parallel using both the original and revised measures.

**Concurrent Validity**

Table 2 provides zero-order correlations among the identity styles, identity commitment and value orientations. Table 3 provides hierarchical regression analyses predicting identity commitment and values as a function of the three identity styles. The regression analyses reflect the extent to which each identity style was uniquely related to commitment or value priorities, controlling for the other two styles. Following previous studies (Berzonsky, Cieciuch, et al., 2011; Berzonsky & Papini, 2014), gender (coded as a dummy variable: Male = 0, Female = 1) and age were entered as control variables on Step 1 of our regression analyses, and the three identity styles were entered on Step 2.

**Identity styles and commitment.** Associations between identity styles and commitment were largely, but not entirely, as expected. In both zero-order correlations and regression analyses, and with both original and revised measures, the informational style was positively related to commitment, whereas the diffuse-avoidant style was negatively related to commitment. The normative style was only weakly (using the original ISI-5) or non-significantly (using the revised measure) related to commitment at the zero-order level and was a relatively weak but significant positive predictor of commitment in both sets of regression analyses. Thus, the association of the normative style with commitment was somewhat weaker than expected, but still detectable in our data.

**Identity styles and value priorities.** Unexpectedly, the informational style was not associated with openness to change (vs. conservation) values at the zero-order level. This association reached significance in regression analyses using the original ISI-5, but not using the shortened version. Additionally, we found a small but consistent association between the

informational style and self-transcendence (vs. self-enhancement) values.

As expected, the normative style was consistently associated with conservation (versus openness to change) values and was negatively associated with hedonism. At the zero-order level, however, the association with hedonism reached significance only with the shortened version of the measure.

Using the original ISI-5, diffuse-avoidance evidenced the expected positive relationship with hedonism both at the zero-order level and in regression analyses. These relationships were not significant using the shortened version, however. Additionally, diffuse-avoidance was consistently associated with self-enhancement (vs. self-transcendence) values.

Identity styles accounted for between 3% and 8% of variance in value orientations, with both original and revised versions of the ISI-5 performing similarly in this regard.

## Discussion

### Factor Structure of Identity Styles in the Pakistani Context

Results of our Confirmatory Factor Analysis largely supported the three-factor structure of identity styles proposed by Berzonsky (1989, 1990, 1992b; Berzonsky et. al. 2013), in a very different cultural context from that in which his model was originally developed. However, our confirmatory factor analytic results indicated that numerous poorly performing items should be deleted, especially from the normative and diffuse-avoidant style scales. Only the informational style subscale remained relatively intact. The previous validation studies mentioned above did not recommend deletion of items, perhaps because the authors used item parceling, which does not allow for identification of poorly performing items. A strength of the present research is therefore that our item-level analysis allowed us to identify items that did not work well in the Pakistani context.

The deletion of items from the identity style framework in general, and especially

from the normative and diffuse-avoidant orientations, highlights the need to consider whether or not these identity styles have a comparable meaning across cultures. As we noted earlier, Pakistan has been characterized as a collectivist and "tight" culture with rigid social norms (see, e.g., Gelfand et al. 2011; Tariq, 2012), especially compared to the individualist and "loose" cultures where the identity styles model was originally developed. The deletion of more than half of the items from the ISI-5 normative orientation subscale leads us to speculate that these items might not adequately represent the ways in which normative orientation works in the Pakistani context. Notably, the two lowest-loading items from the original scale (items N8 and N9; see Table 1) refer to a lack of questioning of one's *personal* values or beliefs and make no reference to sources of normative influence—indeed, item N8 even mentions *disregarding* the influence of others. The four retained items (N1 to N4) also focus mainly on a closed-minded cognitive style. Items N1 and N3 explicitly mention sources of normative influence ("what close friends or relatives expect from me"; "the values I was brought up with"), whereas items N2 and N4 refer only to "firm" or "fixed" beliefs and values. Although not referring explicitly to others, these items may have been interpreted by participants as referring to religious values, which are a major source of normative social influence in Pakistani society (Naeem, Gobbi, Ayub, & Kingdon, 2009).

Thus, the four items (items N1- N4) that were retained seem to provide greater face validity for measuring normative orientation compared to those that were dropped. Yet these four items still emphasize the use of norms in an automatic and unquestioning manner, which is consistent with Berzonsky's (1989, 2011) definition of the construct, but at odds with the possibility that individuals may use normative influences more flexibly and strategically in their decision making (Hassan et al., 2017). In any case, the substantial loss of items from the normative style category raises the possibility that some aspects of the use of norms in identity formation in a non-Western society such as Pakistan are not addressed through these

items—and that they perhaps may not be captured adequately by the conceptualization of normative style in Berzonsky's (1989) model.

We also lost 4 items from the diffuse-avoidance subscale. Closer inspection suggests that the 5 retained items tend to emphasize a relatively passive approach of "going with the flow," rather than engaging actively in decision making or planning. In contrast, the excluded items refer to a state of diffusion, where the individual is lacking a clear sense of identity (D8), mentioned challenging situations (D7, D9), or did implicate the individual in decision making (D6; see Table 1). Berzonsky and Ferrari (2009) found that diffuse-avoidance should be understood as a strategic, motivated way to avoid having to make commitments, rather than a quasi-random state of "self-confusion". This sense of avoidance as a strategy, albeit not acknowledged as such, is somewhat more apparent in the five items that were retained (D1 – D5) than in most of those that were deleted (D6 – D9).

Finally, the two items that were dropped from the informational subscale (I8, I9) both referred to "talking to others" as a source of information. It is interesting that these two items did not evidence substantial potential cross-loadings on the normative style factor, reinforcing our interpretation that the latter is capturing a closed-minded cognitive style, rather than attentiveness to social norms or expectations per se.

**Concurrent Validity with Commitment and Value Orientations**

Although reliabilities of the three factors were poor, tests of concurrent validity revealed a pattern of associations with identity commitment and value orientations that was broadly—albeit not perfectly—consistent with previous Western studies. We found mostly positive associations of both informational and normative styles with identity commitment and a negative association between the diffuse-avoidant style and commitment. Although the associations with commitment were somewhat weaker for the normative style than for the other two styles, this pattern of findings largely replicates what has been found in previous

studies (e.g., Berzonsky, 2003, 2004; Berzonsky et al, 2013; Crocetti & Shokri, 2010; Kerpelman et al, 2012; Vleioras & Bosma, 2005; Zimmermann et al., 2012), giving credence to the utility of the ISI-5 for measuring these constructs in a Pakistani cultural context.

Moreover, our results mostly supported the expected pattern of associations between identity styles and values, as revealed in previous Western findings (Berzonsky, Cieciuch, et al., 2011; Berzonsky & Papini, 2014) in the Pakistani context. As expected, individuals high in use of the normative style endorsed values emphasizing conservation (vs. openness to change) and were less likely to endorse hedonism values, whereas those high in use of the diffuse-avoidant style were more likely to endorse hedonism values. Unexpectedly, the informational style evidenced little association with openness to change (vs. conservation) values; however, we did replicate the previously observed association of this style with self-transcendence (vs. self-enhancement) values. Thus, using both the original and shortened scales and in a new cultural context, we largely replicated the associations between identity styles and value orientations that had been observed in Western contexts. These findings highlight the important role that identity styles might play in relation to value orientations, not only in Western cultures, and suggests that the ISI identity style subscales carry somewhat comparable—but not identical—meanings in the Pakistani context to their meanings in the USA (Berzonsky & Papini, 2014) and Poland (Berzonsky, Cieciuch, et al., 2011). However, we acknowledge some limitations and avenues for future research in the next section.

**Limitations and Future Directions**

The present findings should be considered in light of some important limitations. First, participants were all university students from relatively high socio-economic backgrounds living in two large cities. Our results may not generalize to less affluent members of Pakistani society, nor to those living in rural areas. Relatedly, there has been

much criticism that social scientific research with student participants presents a biased view of the wider population (e.g., Peterson, 2001; Sears, 1986). Indeed, only 5% of young people aged 17-23 in Pakistan attend university (Aaj News report, 2011), and our findings may not generalize beyond this privileged group. Moreover, our participants attended universities where English was the language of instruction. Targeting participants with less education and lower socio-economic status would require an Urdu version of the ISI. A more representative sample could have provided a broader picture of the operation of identity styles in Pakistan. Nonetheless, as the first systematic evaluation of the item-level factor structure and correlates of the ISI in a non-Western culture, our study provides an important step towards greater generalizability (Henrich, Heine, & Norenzayan, 2010).

Both the ISI and the PVQ-21 are self-reported measures, and thus potentially vulnerable to social desirability, false or invalid responding, and response sets (Rosenthal & Rosnow, 1991). As Berzonsky et al. (2013) have pointed out, the ISI measures perceived styles rather than actual processing of identity related information. Future research in this area should triangulate ISI scores with performance-based observations of decision-making, so as to avoid the limitations associated with self-reports.

Considerable caution should be used when importing instruments developed within Western cultural contexts into new cultural contexts (i.e., an "imposed etic" approach: Berry, 1989), and instruments should be evaluated to ascertain their cultural relevance before they are used in a new context. There may be subtle differences between the types of items constructed and validated in the United States and other Western contexts, and those that might be more suitable for a Pakistani sample. The loss of numerous items from the original scale, together with the poor internal consistencies observed in both original and reduced measures, suggests a need to develop indigenous understandings of identity formation in Pakistan, as well as in other countries with "tight" cultural systems (i.e., an "emic" approach:

Berry, 1989), and thus generate new items that are more culturally consonant with the population being investigated. In particular, there appears to be a need to examine indigenous manifestations of the normative identity style among Pakistani youth. It is not well understood how the role of norms in identity formation may differ between Western and non-Western contexts. Hence, the current research must be complemented by in-depth qualitative research exploring the processes that Pakistani young adults employ while handling identity related issues and forming their life decisions (e.g., Hassan et al., 2017).

**Concluding Remarks**

Identity formation does not occur in a vacuum, but rather always takes place within a social and cultural context (Berzonsky, Cieciuch, et al. 2011; Hogg, Terry, & White, 1995). Accordingly, the present study provides information regarding how identity styles operate in a non-Western context, with different ecological and historical challenges compared to those that are typical of Western countries. Our results supported the three-factor structure of informational, normative, and diffuse-avoidant styles, and largely replicated the relationships among identity styles, identity commitment, and values previously found in other countries (Berzonsky, Cieciuch, et al,. 2011; Berzonsky & Papini, 2014). However, the poor performance of a substantial proportion of individual ISI items in our study suggests that this measure may not fully capture the complexities of identity formation in this cultural context, and highlights the need to incorporate an indigenous perspective in future theorizing and research into identity formation. We hope that our study will inspire future work in this direction.

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Table 1: *Factor loadings of the ISI-5 and items retained after CFA*

| ISI items | | Standardized parameters | | | | Reasons for deletion |
|---|---|---|---|---|---|---|
| | | ISI-5 | R1 | R2 | R3 | |
| Informational Identity Style item loadings | | | | | | |
| I1 (34) | When making important decisions, I like to have as much information as possible. | .569 | .571 | .568 | .566 | - |
| I2 (18) | When facing a life decision, I try to analyse the situation in order to understand it. | .531 | .554 | .566 | .564 | - |
| I3 (26) | When making important decisions, I like to spend time thinking about my options. | .525 | .539 | .543 | .545 | - |
| I4 (10) | When facing a life decision, I take into account different points of view before making a choice. | .439 | .441 | .434 | .435 | - |
| I5 (30) | I handle problems in my life by actively reflecting on them. | .437 | .428 | .423 | .425 | - |
| I6 (46) | It is important for me to obtain and evaluate information from a variety of sources before I make important life decisions. | .398 | .411 | .407 | .406 | - |
| I7 (37) | I periodically think about and examine the logical consistency between my values and life goals. | .395 | .396 | .398 | .399 | - |
| I8 (6) | Talking to others helps me explore my personal beliefs. | .358 | .307 | - | - | low loading |
| I9 (14) | I spend a lot of time reading or talking to others trying to develop a set of values that makes sense to me. | .340 | .283 | - | - | low loading |

| ISI items | | Standardized parameters | | | | Reasons for deletion |
|---|---|---|---|---|---|---|
| | | ISI-5 | R1 | R2 | R3 | |
| Normative Identity Style item loadings | | | | | | |
| N1 (35) | When I make a decision about my future, I automatically follow what close friends or relatives expect from me. | .601 | .641 | .776 | .786 | - |
| N2 (19) | I think it is better to adopt a firm set of beliefs than to be open-minded. | .363 | .354 | .527 | .538 | - |
| N3 (3) | I automatically adopt and follow the values I was brought up with. | .374 | .374 | .345 | .339 | - |
| N4 (27) | I think it's better to hold on to fixed values rather than to consider alternative value systems. | .348 | .401 | .369 | .364 | - |
| N5 (15) | I never question what I want to do with my life because I tend to follow what important people expect me to do. | .452 | - | - | - | cross-loading (diffuse-avoidance: .264) |
| N6 (31) | I prefer to deal with situations in which I can rely on social norms and standards. | .419 | - | - | - | cross-loadings (information: .375; diffuse-avoidance: -.255) |
| N7 (7) | I strive to achieve the goals that my family and friends hold for me. | .373 | - | - | - | cross-loading (diffuse-avoidance: -.255) |
| N8 (38) | When others say something that challenges my personal values or beliefs, I automatically disregard what they have to say. | .247 | - | - | - | low loading |
| N9 (11) | I have always known what I believe and don't believe; I never really have doubts about my beliefs. | .134* | - | - | - | low loading and cross-loadings (information: .336; diffuse-avoidance: -.390) |

| ISI items | | Standardized parameters | | | | Reasons for deletion |
|---|---|---|---|---|---|---|
| | | ISI-5 | R1 | R2 | R3 | |
| Diffuse-Avoidant Style item loadings | | | | | | |
| D1 (32) | I try to avoid personal situations that require me to think a lot and deal with them on my own. | .448 | .435 | .422 | .425 | - |
| D2 (4) | I'm not sure where I'm heading in my life; I guess things will work themselves out. | .437 | .449 | .474 | .455 | - |
| D3 (28) | I try not to think about or deal with problems as long as I can. | .428 | .455 | .418 | .399 | - |
| D4 (42) | My life plans tend to change whenever I talk to different people. | .406 | .355 | .382 | .404 | - |
| D5 (16) | I am not really thinking about my future now, it is still a long way off. | .357 | .390 | .425 | .423 | - |
| D6 (8) | It doesn't pay to worry about values in advance; I decide things as they happen. | .355 | .335 | .304 | - | low loading |
| D7 (20) | When I have to make a decision, I try to wait as long as possible in order to see what will happen. | .384 | .353 | - | - | cross-loading of .234 on normative style |
| D8 (45) | Who I am changes from situation to situation. | .331 | .226 | - | - | low loading |
| D9 (48) | When personal problems arise, I try to delay acting as long as possible. | .404 | - | - | - | cross-loading of -.240 on normative style |

Added error covariances

| ISI items | Standardized parameters | | | | Reasons for deletion |
|---|---|---|---|---|---|
| | ISI-5 | R1 | R2 | R3 | |
| I8 with I9 | - | .282 | - | - | both items removed |
| D4 with D8 | - | .247 | - | - | one item removed |
| N1 with N2 | - | - | -.512* | -.555* | - |

Note. R3 is the final model. All parameters are statistically significant at $p < .001$ except * $p < .05$

Table 2. *Correlations between identity styles, identity commitment, and value orientations.*

| | | M (SD) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| | | | Correlations using original version of ISI-5 | | | | | | |
| 1 | Informational style | 3.784 (.651) | - | | | | | | |
| 2 | Normative style | 3.485 (.637) | .347** | - | | | | | |
| 3 | Diffuse-Avoidant style | 2.939 (.717) | -.017 | .305** | - | | | | |
| 4 | Identity Commitment | 3.778 (.699) | .422** | .159** | -.405** | - | | | |
| 5 | Openness vs. Conservation values | 0.027(.45) | .029 | -.275** | -.086 | .055 | - | | |
| 6 | Self-Transcendence vs. Self-Enhancement values | 0.162 (.484) | .112* | -.036 | -.211** | .229** | -.143** | - | |
| 7 | Hedonism values | 0.470 (.953) | -.034 | -.086 | .106* | -.107* | .210** | -.098* | - |
| | | M (SD) | Correlations using revised version of ISI-5 | | | | | | |
| 1 | Informational style | 3.84 8(.691) | - | | | | | | |
| 2 | Normative style | 3.513(.843) | .167*** | - | | | | | |
| 3 | Diffuse-Avoidant style | 2.798 (.847) | -.140** | .295** | - | | | | |
| 4 | Identity Commitment | 3.778 (.700) | .436** | .040 | -.442** | - | | | |
| 5 | Openness vs Conservation values | 0.027 (.458) | .019 | -.261** | -.071* | .055 | - | | |
| 6 | Self-Transcendence vs. Self-Enhancement values | 0.162 (.484) | .125** | -.049 | -.222** | .229*** | -.143** | - | |
| 7 | Hedonism values | 0.470 (.953) | -.063 | -.127** | .073 | -.107* | .210** | -.098* | - |

****p<.001, **p<.01, *p<.05*

Table 3. *Hierarchical regression of identity commitment and value priorities on identity styles*

| Predictor | Dependent Measure | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Commitment | | Openness to Change vs. Conservation | | Self-Transcendence vs. Self-Enhancement | | Hedonism | |
| | Step 1 $\beta$ | Step 2 $\beta$ | Step 1 $\beta$ | Step 2 $\beta$ | Step 1 $\beta$ | Step 2 $\beta$ | Step 1 $\beta$ | Step 2 $\beta$ |
| | Analyses using original version of ISI-5 | | | | | | | |
| Sex (female) | .008 | -.023 | -.153** | -.119** | .065 | .069 | -.130** | -.119* |
| Age | .021 | -.040 | .004 | .014 | .015 | -.004 | .063 | .078 |
| Informational style | - | .345*** | - | .130** | - | .110* | - | .014 |
| Normative style | - | .188*** | - | -.308*** | - | -.023 | - | -.122** |
| Diffuse-avoidant style | - | -.456*** | - | .021 | - | -.209*** | - | .156** |
| $R^2$ | .000 | .357 | .024 | .103 | .004 | .062 | .023 | .050 |
| $\Delta R^2$ | - | .356 | - | .079 | - | .058 | - | .027 |
| $R^2_{adj}$ | -.004 | .350 | .019 | .093 | .000 | .052 | .019 | .040 |

Analyses using revised version of ISI-5

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Sex (female) | .008 | -.020 | -.153** | -.122** | .065 | .068 | -.130** | -.113* |
| Age | .021 | -.045 | .004 | .006 | .015 | -.008 | .063 | .077 |
| Informational style | - | .356*** | - | .067 | - | .091† | - | -.017 |
| Normative style | - | .111** | - | -.267*** | - | -.017 | - | -.144** |
| Diffuse-avoidant style | - | -.429*** | - | .028 | - | -.213*** | - | .127** |
| $R^2$ | .000 | .347 | .024 | .088 | .004 | .064 | .023 | .051 |
| $\Delta R^2$ | - | .346 | - | .064 | - | .060 | - | .027 |
| $R^2_{adj}$ | -.004 | .340 | .019 | .078 | .000 | .054 | .019 | .040 |

****p<.001, **p<.01, *p<.05, †p<.06*