



Are Traditional, Negative Gender Attitudes Associated with Violent Attitudes toward Women? Insights from a New, Culturally Adapted Measure in India

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Abstract

We conducted four focus group discussions followed by three studies to develop and validate a scale for measuring traditional attitudes toward women in Indian society. Study 1 ($n = 592$) yielded four factors (i.e., Perceived Feminine Frivolity and Selfishness; Extra-Familial Patriarchal Attitudes; Within-Family Patriarchal Attitudes; Perceived Feminine Weakness) underlying traditional negative attitudes toward women in Indian society. In Study 2 ($n = 250$), a four-factor reflective model offered a comparatively better model fit and robust psychometric properties for the proposed scale. Study 3 ($n = 343$) showed that the proposed measure (the Traditional Attitudes toward Indian Women scale; TAIW) explains a significantly greater amount of variance in violent attitudes toward women as compared to a scale standardized in other cultures, demonstrating the predictive relevance of the scale. Decoding the complex relationship between culture and gender-based violence, our measure establishes a clear link between traditional gender and violent attitudes toward women both among male and female participants. We discuss the implication of our findings for policy, research, professional practice, and psychological intervention to create a more inclusive and egalitarian social experience for women.

Keywords Attitudes · Culture · Gender · India · Violence

India has the second-largest female population in the world after China. Indian society is home to around 5.6% of the female population in the world. Over 1.3 billion culturally diverse Indians who are born and live in a fundamentally patriarchal society (Ghai 2002) call their country “motherland.” Growing with a feminine ideal of the nation (*Bharatmata* or Mother India) amidst an inseparable combination of tradition and modernity has significant implications for the way women are evaluated in Indian society. A notion of the nation as a mother (*matribhumi* or motherland) in

Indian culture sharply contrasts with its high scores on masculinity (Hofstede 2001), patriarchal social norms and the prevalence of ambivalent, or negative, attitudes toward women (Datta 2017). For instance, despite having female goddesses of wealth (*Lakṣmī*), power (*Durga*), and knowledge (*Saraswatī*), Indians prefer male over female children (Ramanamma and Bambawale 1980). Girls are worshipped but not welcomed in India (Sharda 2011). Boys and men in Indian society are thought to have higher economic value (Oomman and Ganatra 2002) and to possess more power (Varghese 2015), intelligence, and knowledge (Pati 2003). Furthermore, sons are considered as indispensable for achieving social success, maintaining lineage, leaving a legacy, replicating the social order, and thus for leading an immortal life in India (Gupta et al. 2014).

Traditional gender attitudes toward women in Indian society are associated with many severe social crimes against women such as practice of sex selection before birth (Mallik 2002), dowry murders, intimate partner violence, honor killings, molestations, abductions, and rape (Jha 2014). Women in India are the most unsafe when they are in their marital homes or with someone known to them. For instance, cruelty

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by husbands and relatives accounts for 36.4% of the total cases of crime against women in India, and in 95% of rape cases, offenders are known to the victim (National Crime Records Bureau of India 2015). Ambivalent sexist attitudes toward women in Indian society are well reflected in the revered, respectful, and a significant roles ascribed to women in Indian society, on the one hand, and restrictive cultural ideals for women and girls, gendered socialization practices, male family headship, masculine work demands, and mutually exclusive norms for marriage and social relationships on the other hand. These practices may have their roots in early cultural values and norms of ancient Indian society.

Although India has rich cultural and ethnic diversity with many religions, numerous ethnic sects, and a large number of linguistic groups, cultural ideals of the Indian woman seem to have profound social and psychological implications for the ways in which women are evaluated in India (Guzder and Krishna 1991, p. 257). For instance, Bruner, in his survey of over 250 Indians, found that *Sita*, wife of revered Hindu Lord Rama, was considered the ideal of Indian women by a vast majority of the respondents irrespective of their age or gender (Guzder and Krishna 1991; Kakar 2001). Therefore, to develop a scale to measure attitudes toward women in India, we relied mainly on the feminine ideals of women as enshrined in the Indian culture. We avoided blending findings from major religious and cultural groups while selecting psychometric content for our scale in hopes of capturing an accurate representation of what is considered to be the central ideal of women in Indian society. In the following, we offer an overview of the literature on gender attitudes along with a review of the relevant cultural models and social norms that hold strong relevance for the evaluation of women in India.

Theoretical Considerations and Review of Existing Measures

Attitudes refer to our evaluations of various aspects of the social world (Banaji and Heiphetz 2010). They predispose a person to act favorably or unfavorably toward the attitudinal object (Bernstein 2016). Attitudes determine our readiness to respond in a particular way (Brinol and Petty 2012) and are considered to be learned and enduring in nature. According to classical theories, learning, cognitive consistency, social judgment, and functional utility of attitudes play a vital role in attitude formation (Branscombe and Baron 2017). A widely accepted theory of attitude formation relies on the cognitive-expectancy model, which is best expressed in Fishbein's summation theory of attitudes (Ajzen and Sexton 1999). Fishbein's summation theory was later elaborated into the theory of reasoned action and planned behavior (Ajzen 2005; Ajzen and Fishbein 1980). According to this theory, a person's behavior toward an attitude object is a function of

behavioral intention, which in turn is determined by the person's attitudes toward the action and the perceived social norm. Among the existing measures, the Attitudes toward Women Scale (AWS) tries to include all potential social behaviors for which normative expectations were hypothesized to be the same for males and females (Spence et al. 1973). However, in India, normative expectations for males and females are not only different but also are desired to be different.

According to social role theory (Eagly and Wood 2012), an interaction between biological and local cultural factors leads to a division of labor based on differential gender role beliefs which are further reinforced through the socialization process. These differential gender role expectations lead to different attitudes toward women mediated through a mechanism of biological, social, and personal regulation. Duiker and Spielvogel (2016) also believe that the main reason for female subordination in Indian society is its vital role in early agrarian society in which men mainly contributed to the field and made a living for the family whereas women did not play much role in commercial activities. Even today, around 70% of the Indian population is dependent upon agriculture for their livelihood (FAO 2017), and women constitute just 24.28% of the Indian labor force as compared to 39.37% in the world (World Bank 2016). Biological differences, coupled with a skewed distribution of economic and structural resources between women and men in India, delineate "soft" and nurturant roles for women, leading to different gender beliefs and expectations from them, which are regularly reinforced through gender-specific socialization and customs from birth until death.

Core beliefs and values drawn from particular cultural experiences are the primary sources of attitudes (Bhatia and Chaudhary 2003). Mythological and cultural experiences are the foundations of the human psyche (Shweder 2003), and they program the collective mind of a society (Hofstede 2001). Therefore, to measure attitudes toward women in any society, it is desirable to look at issues from a cultural perspective. In Indian society, traditional cultural ideals and social norms play a pivotal role in the ways women are socially evaluated and perceived. Apart from gender-specific cultural ideals, strong patriarchal attitudes toward women exist in India because Indian society has a strong dual-focused patriarchy that operates both within and beyond the family (Maithreyi 1991). Indian social norms themselves provide a strong foundation for double patriarchy by embracing values like chastity and faithfulness toward one's husband as essentials for a woman in both her private and public life (Mohanty 2004). Some of the cultural conundrums associated with the status of women in India stem from the religious and cultural practices of Indian society (Datta 2017). Traditional attitudes toward women are often reflected in the forms of patriarchal dictates of subdued social behavior, restricted dress codes, "soft" [communal] social and work roles, and limited

interactions with men, among others. Perceived overstepping of cultural ideals and deviation from patriarchal expectations are the two primary reasons for the high rate of violence toward women in India both in the family and in public places (Sharma 2015). In the following, we further shed light on the relevant cultural ideals and social processes that reflect strong traditional beliefs toward women in India.

Cultural Ideals and Social Norms for Women in India

The cultural construction of an ideal Indian woman dates back to around 5000 years ago when the roots of early societies and social structures were taking place in India. Ancient Indian society was agrarian and hierarchical, with a strict division of labor across both genders and social groups, which helped in laying the foundation for a patriarchal society. An essential element of the broad cultural philosophy of India has been the ideals of self-purification and renunciation of human vices and frivolities for realizing the divinity within an individual. Whereas men strived toward material and spiritual achievements through pursuing agriculture, commerce, war, and *Vedas*, women took care of the household and other familial responsibilities to set men free to pursue what they considered noble and liberating. Thus, the role of mother was highly glorified because it was central to the image of an ideal wife necessary for maintaining social order and helping to feed the family, nurture the children, remaining faithful to the husband, and give birth to sons who carry on one's lineage and thus serve as a token to immortality.

Irrespective of time, the scope for getting work and positions of social significance have mostly remained limited for women in India. Although both men and women in India are theoretically considered to be equal parts of a supreme cosmic consciousness, because of extreme cultural ideals, patriarchal social norms, division of labor, and physical differences, women have generally received an inferior position in gender relations and in a patriarchal hierarchy. Due to the menstrual cycle, women were considered impure (Prakash 2005) and thus not suitable for studying *Vedas* or making personal offerings to gods, rendering women as unsuitable candidates for positions of social significance or salvation. Women were considered weak, physically and spiritually, except for their unique ability to give birth (preferably to sons), maintenance of the social order through their unconditional devotion to their husbands, and their adherence to overarching ideals of Indian femininity (e.g., *Sita*; Kakar 2001; Lal and Gokhale 2009). Likely failing to meet these exacting standards, many ordinary Indian women will be regarded as weak, frivolous, and self-centered.

Apart from instituting cultural ideals, Indian society has also worked out informal rules to govern gender relations that

set the agenda for the way men and women think, feel, and act toward each other (Smith et al. 2014). Although, the unwritten family code in India gives a moderate level of authority and status to women (Organisation for Economic Co-operation and Development 2010), especially to mothers at home, men own the ultimate power and influence in terms of family headship, inheritance rights, kinship, marriage, polygamy or first social right to give divorce, dowry seeking, and privileged access to education (Maertens 2013), that is, much of what is socially valuable. The concept of masculine privilege rooted in India's social system helps in sustaining patriarchy and perpetuating the subordination of women in Indian society that has also been universally witnessed around the world (Lerner 1986).

A resilient and flourishing patriarchal social structure is the most glaring reflection and testimony of widely prevalent traditional attitudes toward women in India. The seemingly emancipatory social forces of modernization and development have progressed only in adaptation to the innovative patriarchal bargains structured across gender lines (Kramarae and Spender 2000) in India. The age-old patriarchy of India is often reflected in patriarchal prescriptions for women both within and beyond family boundaries. An unwritten prescription for women is to live according to patriarchal expectations or face domestic and social violence, often questioning the integrity, character, and competence of women who dare to challenge patriarchal norms. Pervasive instances of dowry deliveries and deaths (Babu and Babu 2011), low conviction rates for rape and crimes against women, and transnational violence and abuse of Indian women (Anitha et al. 2018) are the objective expressions of the way women are subjectively evaluated and perceived when they are believed to be deviating from the intended cultural ideals and social norms in India.

Choosing a Comparative Measure

We reviewed the existing scales on measuring gender attitudes developed in other cultures. The Attitudes toward Women Scale (AWS) was designed and standardized mainly on North American samples (Spence and Hahn 1997), which may not account for indigenous cultural differences. Considering the dated AWS as a culturally adapted scale for measuring traditional attitudes toward women in the Indian culture seems questionable. We also reviewed other pertinent measures, such as the Ambivalent Sexism Inventory (Glick and Fiske 1997), the Sex-Role Egalitarianism Scale (Beere et al. 1984), and the Attitudes toward Rape Victims Scale (Ward 1988). However, we selected the AWS as a comparative measure due to its wide popularity and cross-cultural interest (Abdalla 1996; Gibbons et al. 1997; Twenge 1997). Methodologically, we wanted to examine if a scale developed

and validated in Indian culture will better predict violent attitudes toward women as compared to the AWS.

Study 1

To address our research objectives, we conducted three studies. The goal of Study 1 was to develop relevant items to measure our proposed construct of gender attitudes and to explore the factor structure of the scale using a combination of qualitative and quantitative techniques.

Method

Focus Group Discussion and Operationalization of the Construct

To operationalize and standardize our proposed construct, we planned four focus group sessions and three questionnaire-based studies. The participants for focus groups were recruited based on an announcement for participation in a discussion on a gender-based topic for about 1.5 h for which we paid Indian Rupees 700 (an equivalent to USD 10) to each participant. The criterion for inclusion in the sample was any Indian citizen above 18 years of age. We received 117 relevant nominations collected by two student volunteers, from which 40 people were randomly selected to equally representing women and men. A pre-participation telephone conversation was initiated with the selected participants to confirm their comfort with the topic and availability on the chosen dates. However, four female participants dropped out of the study, citing inconvenience, leaving five men and four women to be randomly assigned in each focus group.

Participants were drawn from Delhi and adjoining suburban areas and reportedly practiced Hinduism ($n = 16$), Islam (6), Christianity (4), Sikhism (4), Jainism (3), Buddhism (2) and Atheism (1). All the participants signed an adapted version of the Informed Consent Form for Qualitative Studies provided by the World Health Organization (WHO). We briefed all the participants about the purpose of the discussion and personally moderated all the four sessions held throughout one month with the help of two student volunteers. Because most of the participants expressed discomfort in having their views recorded using either audio or video recorders, we employed note-taking assistants to write down key points of each participant's views on the topics discussed. Moreover, all the participants were provided a writing pad and pen to jot down their ideas and points, which may help them during the discussion.

We framed a few key questions in each focus group session as per the previously cited literature and the three core components of attitudes (i.e., cognitive, affective, and behavioral tendency components). More specifically, some key questions

asked how participants evaluate (favorably or unfavorably) women in Indian society in general, who an ideal Indian woman is, what should be the roles of women within and outside the family, what they feel about positive and negative things that were happening to women in Indian society and why, whether current Indian women should live by India's ancient cultural norms and values, what should be done to those women who flout Indian cultural values, and what are the reasons for various crimes against women in India. Participants were also encouraged to share their insights related to the topic of discussion beyond the moderated questions.

The focus group discussions were quite lively and sometimes heated, indicating the relevance of the topic. We collected all discussion notes from each participant and volunteers immediately after group discussion and organized them for further evaluation for identifying underlying themes. The data were coded manually by two independent coders (one 32-year-old man; one 29-year-old woman) based on the framework approach (Pope et al. 2000). The two coders first familiarized (familiarization) themselves by reading the complete discussion notes followed by identifying the thematic framework (identification) through which data could be examined. For determining the thematic structure, the two coders referred to the objectives of the research and key questions raised during the focus group discussion. After this stage, the identified thematic framework was systematically applied to the entire dataset (indexing), followed by the organization of data according to the thematic structure to which they relate (charting). In case of any disagreement among coders, the opinion of a third independent judge (42-year-old woman) was taken. The extent of agreement achieved between the two coders was 85%.

The recurrent themes that emerged from the analysis evaluated women as a self-centered, weaker gender who suffer primarily when they are unable to uphold cultural values or social/familial norms. We found both men and women expressing unfavorable attitudes relatively more often than favorable attitudes toward women. Even instances of favorable opinions toward women were loaded with ascribing motherly or nurturant qualities to women, which further reflect traditional attitudes toward women, supporting our decision to limit our measure to conventional attitudes toward women in India. A few minor themes like westernization, change, freedom, dating, and technology also emerged, but as per focus, they appeared as deviations from traditional cultural values in India rather than as separate themes in their own right. Therefore, we mapped and interpreted (mapping and interpretation) the minor themes by associating them with two major themes of evaluation of women based on traditional cultural ego ideals and patriarchal norms. The themes which could not be mapped and associated within the identified thematic framework were labeled as "Other." We found a substantial amount of inter-rater agreement between the two raters for the

two identified themes ($\kappa = .71, p < .001$). Based on the literature discussed earlier and the findings of the focus group discussion, we defined traditional attitudes toward women in Indian society as evaluations of women as per the cultural ideals of women enshrined in the Indian culture and the patriarchal social norms of Indian society.

Item Writing and Inter-Rater Agreement Analysis

Based on the findings from the focus group discussions and guidelines of item writing for scales (Edwards 1983; Haladyna 2012), we initially wrote 68 items, oversampling the proposed construct. We wrote more negatively worded items ($n = 51$) as compared to positively worded items ($n = 17$) as per our observations during the focus group discussion. For rating items, we choose Likert-type summated rating scales because Likert scales are preferred for measuring attitudes in general and attitudes toward women in particular (Delevi and Bugay 2013; Morrison and Morrison 2003; Spence et al. 1973). We constructed a 7-point response option for each item varying from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*), with 4 being a neutral (*Neither Agree nor Disagree*) choice.

We did an inter-rater agreement analysis to check expert consensus over the inclusion of an item based on its accuracy (i.e., accurate representation of the construct), semantic clarity, and relevance in the Indian culture. We selected three experts: two women (ages 54 and 42 years-old) and one man (45 years old), with each having sufficient experience on gender issues in India. We asked each of them to rate the 68 items of the scale as accurate, clear, and culturally relevant or not. Next, we calculated Fleiss's kappa coefficient to assess inter-rater agreement. Fleiss's kappa is a reliable measure of inter-rater agreement for three or more judges (McHugh 2012). A value of Fleiss's kappa over .70 is considered a good indicator of inter-rater agreement. The calculated Fleiss's kappa coefficient values were: accuracy (.73, 95% CI [.60, .87]; $Z = 10.45, p < .001$), clarity (.56, 95% CI [.42, .70]; $Z = 7.96, p < .001$), and cultural relevance (.76, 95% CI [.62, .89]; $Z = 10.80, p < .001$). These results show that there was a substantial amount of agreement among the three judges about the accuracy and relevance of the items.

However, for clarity of items a moderate, but statistically significant, amount of agreement was reported. A moderate level of agreement among raters for clarity of items may be due to issues of bad wording, inappropriate length, or confusion about certain items among raters, which can be detected through a negative corrected item-total correlation (Nunnally and Bernstein 1994). However, moderate levels of agreements are reported in social science studies (Lallmahomed et al. 2013) as well as medical literature (Jensen et al. 1995). Subsequently, a reliability analysis ($n = 592$) identified two items having a negative but nonsignificant corrected item-

total correlation ($-.09, -.11$). These two items were later eliminated during the exploratory factor analysis due to low factor loadings.

Sample

Based on the objectives of our study, we targeted a sample matching the demographic composition of gender in India at the national level. This selection was done to keep the study's sample nationally representative in terms of gender composition. To achieve a gender proportion in our sample similar to the national level composition of gender in the Indian population, we referred to the percentage of men and women in India as per the recent census data. Our data were collected mainly through fieldwork and printed questionnaires using a convenience sampling approach. Both authors did the data collection with the help of two research assistants. The criteria for inclusion in the sample were that the participant must be a naturally born Indian citizen and at least 18 years-old. We approached various colleges, universities, organizations, and resident associations for our data collection. All participants signed a consent form before completing the pencil-and-paper questionnaires. We were able to collect 604 questionnaires, of which 592 were found to be usable and complete.

The sample ($n = 592$) consisted of 307 (52%) men and 284 (48%) women, while one person did not disclose gender, drawn from Delhi and adjoining suburban areas, which are closer to the national demographic composition of men (51.53%) and women (48.47%) in the Indian population as per the 2011 census (Ministry of Statistics and Programme Implementation 2018). The average age of the sample was 26.46 years ($SD = 10.80$, range = 18–69). Around 76% ($n = 453$) of respondents were 18 to 30 years-old, 18% ($n = 106$) of respondents were 31 to 50 years old, and about 5% ($n = 30$) of respondents were older than 50 years old. Drawing on the 2011 census of the Indian population (Visaria and Ved 2016), younger people were comparatively overrepresented in the present sample.

Pilot Testing for Validity

We did a pilot testing to check the validity of the proposed scale by calculating its concurrent validity with Attitudes toward Women Scale ($\alpha = .85$; Spence and Hahn 1997). During the study, we administered the AWS to 174 respondents, along with the proposed scale, of which 169 responses on AWS were found usable for further analysis. The AWS uses a 15-item Likert-type scale with response options ranging from 0 (*Strongly Disagree*) to 3 (*Strongly Agree*). A high score on this scale reflects an egalitarian attitude, whereas a low score reflects traditional attitudes toward women. We found a significant negative correlation ($r = -.64, p < .001, n = 169$) between our proposed scale and AWS. A significant negative

correlation between the scores of the two scales indicates the concurrent validity of the proposed scale.

Exploratory Factor Analysis

Costello and Osbourne (2005) recommend checking the normality of the input data and deciding a suitable method for doing factor analysis as per the nature of the distribution. They suggest using the Maximum Likelihood method when the distribution is normal, whereas in cases of deviation from normality, principal axis factoring is recommended. We tested our 68-items for normality, and the results indicated a significant departure from normality for most of the items. Therefore, we decided to use the principal axis factoring method to identify underlying factors.

The two other vital choices while doing factor analysis are selecting a rotation method and determining the criteria for retaining a particular number of factors. The rotation method can be orthogonal or oblique depending upon whether the latent factors are hypothesized to be uncorrelated or correlated. The practice of using orthogonal rotation seems highly prevalent among researchers because using orthogonal rotation offers better ease of factor interpretation. However, in psychological research, underlying factors are seldom independent because human behavior is “rarely partitioned into neatly packaged units that function independently of one another” (Costello and Osbourne 2005, p. 3). Forcing orthogonal rotation in such cases may lead to loss of valuable information and can bring a less reproducible factor solution. We expected the underlying latent factors to be correlated; hence, we preferred an oblique rotation method. The two available oblique rotation methods in SPSS are direct oblimin and promax method. These methods offer a similar solution, but we preferred promax due to its conceptual and computational simplicity (Lee and Ashton 2007).

As for determining the total number of factors to be extracted, we did not use Kaiser’s eigenvalues criteria because it is less reliable. As compared to Kaiser’s rule, Cattell’s scree plot method has been considered comparatively more reliable (Ledesma and Valero-Mora 2007). However, due to the graphical nature of the scree test, we decided to combine its results with Velicer’s Minimum Average Partial (MAP) test due to better performance and statistical robustness of the MAP test (Courtney 2013). Before going for factor analysis, we screened the original 68-item scale for its overall reliability as well as the reliability of individual scale items. Screening items for their reliability, based on their item-total correlations, is recommended to avoid the inclusion of any non-reliable and poorly worded items in exploratory factor analysis (Nunnally and Bernstein 1994). Items with item-total correlation more than .40 are considered reliable and sufficiently distinguishing between high and low scorers on the scale (Field 2013).

Results

We performed the Velicer’s MAP test using the syntax provided by O’Connor (O’Connor 2000), which suggested four factors with minimum squared average partial correlation ranging from .0058 to .0038. Moreover, after the reliability analysis, we found 40 suitable items with item-total correlations above a .40 cut-off criterion (Field 2013). All the 17 positively worded items were eliminated because they were unable to meet this criterion. Therefore, we performed an exploratory factor analysis on the remaining 40 items. The overall reliability of the original 68-item scale was found to be .91, whereas the reliability of the 40-item scale used for exploratory factor analysis was found to be .93. It shows there was no significant loss of scale reliability after eliminating 28 items.

We also tested the adequacy of the sample for doing exploratory factor analysis using Kaiser-Meyer-Olkin’s (KMO) test for the sampling adequacy. The value for the KMO test of sampling adequacy was found to be .91, above the recommended KMO test cut-off value of .70, indicating the sufficiency of sample size for the exploratory solution. Bartlett’s test of sphericity was also found to be significant, $\chi^2(153) = 2697.37$, $p < .001$, indicating that the correlation matrix was significantly distinct from the identity matrix. These results suggest the overall suitability of the sample data for doing exploratory factor analysis.

We further tested the data for common method variance error which occurs when the measurement method employed in the study, not the hypothesized latent constructs, account for the obtained variances (Podsakoff et al. 2003). A test for common method variance error ensures that obtained results are a genuine effect of the underlying construct and not just a measurement artifact. We used Herman’s single factor test to diagnose common method variance error which forces the software to extract only one factor from the data, with all the 40 items included in factor analysis, without using any rotation. If this single factor explains more than 50% variance, then common method variance error is considered to be present in the data. The results showed that the single factor explained only 17.32% of the variation, which is significantly less than the prescribed 50% criterion. Thus, we can say there was no common method variance error in the data.

We carried out exploratory factor analysis using principal axis factoring method and promax rotation with kappa value fixed at the default value of 4. It offered a weak factor solution containing seven factors with eigenvalues over 1, explaining 46.96% of the total variance. The total variance explained was below the recommended cut-off of more than 50% variance to be explained by the obtained factors (Netemeyer et al. 2003, p.124). To improve the quality of the exploratory factor solution, we eliminated those items that cross-loaded on more than one factor and whose factor loadings were below .30 (Field 2013). It gave us a four-factor solution containing 18 items

and explaining around 52% of the variance, which was more than the recommended 50% criterion for an acceptable factor solution (see Table 1).

A latent factor is considered to be acceptable if it explains at least 5% of the variance in the sample data (Field 2013). The four obtained factors, which we named Perceived Feminine Frivolity and Selfishness, Within-Family Patriarchal Attitudes, Extra-Familial Patriarchal Attitudes, and Perceived Feminine Weakness, explained 31.44%, 7.10%, 6.89%, and 6.20% variance respectively. We named these factors based on their content and the strength of the factor loadings of the items. We will discuss these factors in

detail, along with their constituent elements and relevant literature in our Discussion section. In the next study, we conducted a confirmatory factor analysis to assess the validity of the obtained factor structure on a new sample.

Study 2

The purpose of Study 2 was to confirm the factor structure of the proposed scale as obtained in Study 1 by establishing its construct validity along with testing its reliability and measurement invariance.

Table 1 Results of exploratory and confirmatory factor analyses, study 1 and study 2

Item No.	Items within Factors	Study 1		Study 2		
		Exploratory Factor Analysis (<i>n</i> = 592)		Confirmatory Factor Analysis (<i>n</i> = 250)		
		<i>M</i>	<i>SD</i>	Factor Loadings	Standardized Loadings (λ)	Item Reliability (λ^2)
(a) Perceived Feminine Frivolity and Selfishness (% Variance ^a = 31.44, Eigenvalue = 5.66, α = .74, CR = .856, AVE = .543)						
1	Women are more selfish than men.	4.58	2.03	.702	.785	.616
2	Women enjoy gossiping and spreading rumors.	3.55	1.81	.578	.697	.486
3	Women are a financial and emotional liability.	4.67	2.02	.536	.717	.514
4	Most of the women at the top have reached there by taking undue advantage of being female.	4.98	1.73	.506	.765	.585
5	As compared to men, women are essentially more confined to their self-interest.	4.99	1.84	.502	.717	.514
(b) Extra-Familial Patriarchal Attitudes (% Variance ^a = 7.10, Eigenvalue = 1.28, α = .69, CR = .788, AVE = .553)						
6	Women should be allowed to work only if the family's economic condition is poor.	5.96	1.51	.820	.745	.555
–	Women often lack decision making and leadership qualities.	5.89	1.50	.554	deleted ^b	
7	Women can be successful only in jobs requiring soft skills.	5.02	1.83	.515	.749	.561
8	Women always give a wrong meaning to handshakes.	5.31	1.78	.465	.737	.543
(c) Within-Family Patriarchal Attitudes (% Variance ^a = 6.89, Eigenvalue = 1.24, α = .68, CR = .820, AVE = .532)						
9	Women should modify themselves according to their family and in-law's expectations.	3.66	1.78	.631	.711	.506
10	Women with more male friends are women of questionable character.	5.05	1.83	.494	.730	.533
11	A woman can never be the head of the family.	4.25	2.22	.512	.743	.552
12	Girls should be quiet in nature.	4.63	2.02	.506	.732	.534
(d) Perceived Feminine Weakness (% Variance ^a = 6.20, Eigenvalue = 1.12, α = .73, CR = .813, AVE = .522)						
13	Most of the women are just waiting to be getting married or grab a job that they do not deserve.	5.11	1.77	.698	.812	.659
14	Women are physically as well as psychologically weak.	5.17	1.69	.494	.726	.527
15	A woman can never contribute to society as much as a man can.	5.53	1.65	.509	.657	.432
–	I would have lost respect for all the women had there not been mothers in this world.	5.17	1.83	.543	deleted ^b	
16	Educated girls become undisciplined and don't listen to their parents.	5.37	1.76	.433	.686	.471

Note. The item numbers reported here reflect the recommended order of the 16 items in our final Traditional Attitudes toward Indian Women scale (TAIW). KMO test value for sampling adequacy = .91, Bartlett's χ^2 (153) = 2697.37, $p < .001$; Eigenvalue = Kaiser's eigenvalues criteria, CR = Composite Reliability, AVE = Average Variance Extracted. Each item is rated on a Likert scale from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). We recommend that researchers do not use the overall score for the TAIW but instead use its subscales

^a % Variance = Percentage of variance explained by a factor. ^b item deleted during confirmatory analysis to improve model fit

Method

The data for Study 2 were collected mainly through field surveys ($n = 257$) and from Indian college students using a non-probability convenience sampling method. Young adult male and female respondents over 18 years of age were selected based on their availability and willingness to participate in the survey. Convenience sampling is considered to be the most widely used sampling method in the survey and social research due to its various advantages, and it can be a useful approach if sample cross-sections are carefully defined and a description of sample characteristics is given by the researchers (Gravetter and Forzano 2012). The desired cross-sections of our sample were male and female respondents. All the participants signed a consent form before completing the questionnaires. We excluded seven participants from the analysis due to incomplete questionnaires, leaving a final sample of 250 students.

The validation sample consisted of 250 respondents with a mean age of 24.56 years ($SD = 9.77$, range = 18–63). The average age of the Indian population is 29 years as per the 2011 Census (Financial Express 2017). There were 118 (47.2%) men, 107 (42.8%) women, and 25 (10%) preferred not to disclose their gender. A total of 64.4% ($n = 161$) of the sample reported to be unemployed, 26% ($n = 65$) employed, and 9.6% ($n = 24$) did not disclose their employment status. The proportion of reportedly unemployed people in the sample was more due to the over-representation of students and urban women in the sample. Students and nonworking people may tend to label themselves as unemployed partly because of the possible ignorance about the technical differences between being unemployed and not being part of the labor force, and partly because marking oneself as unemployed may bring certain socioeconomic benefits. Kuhn (2000) has also reported such labeling among the nonworking Canadian population.

Although students labeled themselves as unemployed, technically they represent the nonworking group that has not participated in the labor force yet. As per the 2011 Census of India figures (Ministry of Statistics and Programme Implementation 2016, p. 61), the total work participation rate in urban areas is 35.31%, with the work participation figures for men and women being 53.76% and 15.40% respectively. Moreover, according to a report by National Sample Survey Organization (NSSO), Ministry of Statistics and Programme Implementation, Government of India, 64% women in urban areas and 60% women in rural areas in India are involved in domestic work (Singh 2014) and, thus, they cannot be considered formally employed. In the present sample, 60.2% of men and 65.4% of women reported being unemployed in the sense that they were nonworking and were not engaged in paid professional work for any employer at the time of data collection. However, they were not actively looking for a job; hence, they cannot be truly categorized as unemployed. Therefore,

considering the average age of the Indian population and the work participation rate as per the 2011 Census of India, the present sample characteristics are close to national-level statistics. All the participants completed the 18-item scale along with completing the demographic details mentioned in the questionnaire.

Results

The confirmatory analysis offers various model fit measures that help select the best fitting model approximating closest to the sample behavior. The differences between the sample covariance matrix and the model-predicted covariance matrix are examined to test the extent to which sample data support the proposed model. We relied on the recommended indices of model fit (Hu and Bentler 1999) to validate our measurement model. The Chi-square test is a standard goodness-of-fit measure of model fit, but it is sensitive to large sample size (Hair et al. 2013). Hence, we used relative Chi-square, a ratio between Chi-square value and degree of freedom, instead of Chi-square. GFI measures the extent of variance and covariance in the sample data that can be explained by the hypothesized model. It is an absolute fit index because it compares the hypothesized model with no model at all (Byrne 2016). The Comparative Fit Index (CFI) is an incremental fit index developed by Bentler (1990) that compares the hypothesized model with a baseline (i.e., null) model. It also measures the improvement in the hypothesized model fit as compared to a null model in which all the observed variables are assumed to be uncorrelated (Kohno and Nishizawa 2016, p. 70). Tucker-Lewis Index (TLI) is another useful index of model fit because it is relatively insensitive to sample size (McDonald and Marsh 1990) and also takes model complexity into account (Wickrama et al. 2016). For a good model fit, it is recommended to have relative Chi-square value between 1 and 3, and GFI, CFI, TLI values over .95 (Hu and Bentler 1999).

In contrast to GFI and CFI, which measure the goodness of the hypothesized model in accounting for sample variance-covariance information, SRMR (i.e., standardized root mean square residual) and RMSEA (i.e., root mean square error of approximation) measure the extent of discrepancy or the lack of model fit. SRMR represents the average discrepancy, whereas RMSEA denotes the size of residual (or error) while using the hypothesized model to predict the sample data. RMSEA also accounts for the model complexity by providing a measure of model discrepancy for each degree of freedom of the model (Browne and Cudeck 1993). The recommended cut-off values for SRMR and RMSEA are less than .08 and .06, respectively. AMOS also offers a confidence interval of RMSEA followed by PClose values. PClose is a measure of closeness of the fit of RMSEA (i.e., the likelihood of RMSEA falling within the recommended range) in the respective population. The p value for PClose should be higher than .05 to

ensure the goodness of fit of RMSEA in the respective population (Byrne 2016). Finally, we used Akaike Information Criteria (AIC) for non-nested model comparison. AIC represents the extent of information loss while selecting the hypothesized model as the correct model (i.e., the model which is responsible for generating the sample data). A model having the lowest AIC value is considered better as compared to other competing models.

The initial results of confirmatory analysis of the four-factor model gave an unsatisfactory model fit ($\chi^2/df = 1.76$, GFI = .911, CFI = .945, TLI = .935, SRMR = .056, RMSEA = .054), with GFI and TLI being close but below the recommended threshold of .95. This model also showed validity issues because average variances extracted (AVE) for the two latent constructs were below the prescribed cut-off criteria of .50 (Hair et al. 2013). Hence, to improve the model fit, we decided to screen the indicators based on modification indices and standardized factor loadings. Modification indices are a type of measure for model misspecification defined as an overall decrease in Chi-square values if the constrained and fixed parameters in the model are allowed to be freely estimated (Brown 2015). They help in identifying redundancy among scale items by assessing error correlations among item pairs (Byrne 2016). All the modification indices were quite low, and none correlated with the error term belonging to the same construct. Hence, we screened the standardized factor loadings and eliminated items 24 ($\lambda = .55$) and 63 ($\lambda = .53$) with loadings less than the recommended cut-off criterion of .70 (Hair et al. 2013). Elimination of these two items improved the GFI and CFI indices to .93 and .96, respectively, along with further improving other indices of model fit ($\chi^2/df = 1.71$, TLI = .95, SRMR = .048, RMSEA = .053). Further deletion of any item did not significantly improve GFI or any other index of model fit, and thus no other item was deleted. Hence, we retained the 16-item, four-factor model (see Fig. 1) for testing the comparative model fit.

To assess the comparative model fit, we compared the four-factor model with a null model, a common factor model, and a hierarchical model with a second-order construct. According to Kline (2015, p. 128), “model parameters can be free, fixed, or constrained depending upon model specification.” The variance of the second-order construct in the hierarchical model was constrained to 1 to keep the model identified. Path coefficients of all error terms and one path value from each latent factor to its indicators were fixed to 1 as per the common practice (Arminger et al. 1995) in all the models to ensure measurement model identification. The results show that the four-factor model fits better to the data as compared to other competing models (see Table 2), and thus it was accepted for further assessment of model reliability and validity. We therefore created a final 16-item, four-factor measure that we named the Traditional Attitudes toward Indian Women scale (TAIW). The items for this scale can be identified in Table 1

(and they are available in a ready-to-use form in the [Online Supplement](#)).

Reliability and Construct Validity

We present the results of the reliability and validity of the four-factor model in Table 3, along with the recommended criteria for assessing scale reliability and validity (Gaskin and Lim 2016; Hu and Bentler 1999). Table 3 suggests sufficient convergent validity of the current scale because all AVE (average variance extracted) values are above the recommended level. A model is said to have discriminant validity if the average variance extracted for a construct is more than the common variance it shares with other latent variables in the model (Gotz et al. 2010, p. 696). The results meet the Fornell-Larcker criterion indicating the discriminant validity of the model (see Table 3). The obtained ASV and MSV values are less than the AVE values of the respective constructs, thereby affirming the discriminant validity of the four-factor model.

Multi-Group Invariance Analysis

The purpose of multi-group invariance analysis is to find out whether the number of latent factors and the pattern of their structure is similar across the relevant groups. If an analysis of measurement weights establishes the equivalence of factor loadings across groups, then the meaning of items can be considered the same across groups (Wang 2014). It is known as measurement model invariance or measurement equivalence. Among various criteria for measurement equivalence (Hair et al. 2013), we tested the proposed model for configural invariance and metric variance. Configural invariance tests whether the constructs are congeneric across the groups (i.e., the same basic factor structure exists across the groups). Metric invariance, on the other hand, establishes the equivalence of the basic meaning of the construct across the groups (Hair et al. 2013, p. 760). Practically, a model is said to have configural invariance if the analysis of the unconstrained model with multiple groups shows an adequate model fit. The model fit indices for the unconstrained model for two relevant groups in our study (i.e., men and women) suggested acceptable configural equivalence of the four-factor model ($\chi^2/df = 1.56$, SRMR = .07, CFI = .93, RMSEA = .05, PClose = .51). Moreover, we found a nonsignificant Chi-square difference between an unconstrained model and the model in which factor loadings were equal across the groups ($\Delta\chi^2 = 23.12$, $df = 16$, $p = .11$), suggesting metric invariance.

Study 3

We conducted Study 3 to test the predictive relevance of the proposed scale by regressing the scores of violent attitudes

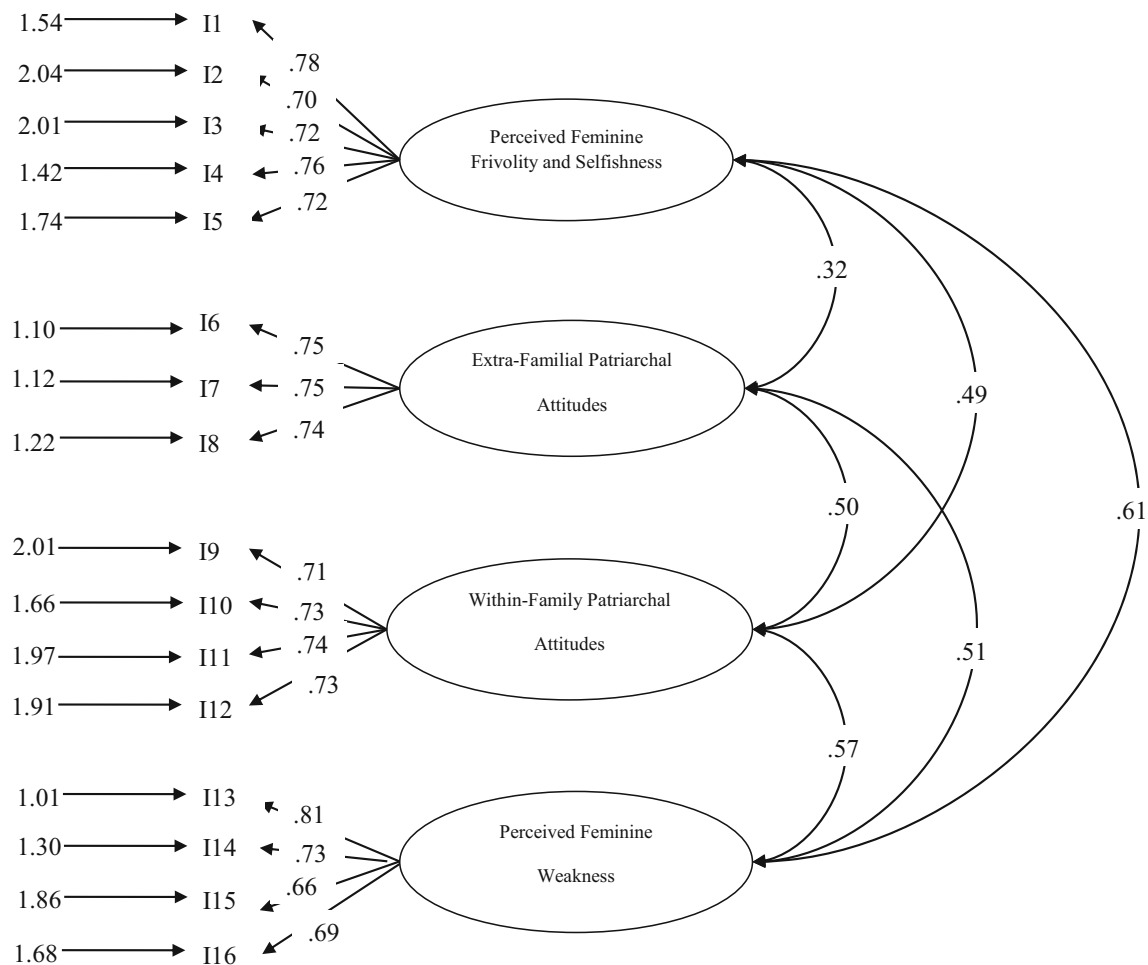


Fig. 1 Confirmatory factor structure of the scale. Latent constructs are shown as ellipses and observed variables (e.g., I11) are shown as rectangular boxes, study 2

toward women on traditional negative attitudes toward women. Researchers have discussed the relationship between a conventional negative and violent attitudes toward women across cultures (Babu and Kar 2009; Kalra and Bhugra 2013; Koski et al. 2011; Stöckl, March, Pallitto, Garcia-Moreno, and WHO Multi-country Study Team 2014). The issue of traditional gender attitudes and violent behavior toward women is highly relevant for both Eastern and Western societies. Although acceptance of violent attitudes toward women is comparatively less in America (13%) as compared to India (45%), both American (with 36% prevalence rate) and Indian society (with 37% prevalence rate) witness a high and almost equal prevalence of violence toward women (OECD 2014). An assessment of traditional negative attitudes, as opposed to egalitarian attitudes, toward women could offer a more direct and a better explanation of the prevalence of violent attitudes toward women in India. Thus, for establishing the predictive validity of our scale, we hypothesized a positive relationship between the traditional negative and violent attitudes toward women along with their relevant dimensions. We also conducted a hierarchical regression analysis to study the

incremental contribution of the proposed scale in explaining violent attitudes toward women as compared to AWS (Spence et al. 1973) after excluding sociodemographic variables.

Method

The purpose of Study 3 was to compare our proposed measure with the AWS for predicting violent attitudes toward women assessed through a scale based on Flood (2014). The scale by Flood measures violent attitudes toward women on the dimension of intimate partner violence, psychological violence, violent attitudes in romantic relationships, sexual violence, and rape-related violent attitudes. Certain items of the scale by Flood, especially the items related to the dimension of sexual violence and rape-related violent attitudes, can be considered sensitive, explicit or offensive in Indian culture because publicly talking about sexuality, and sexual violence, is regarded as a taboo in India (Solomon et al. 1998). Hence, to avoid any discomfort to the respondents, the questionnaire was shared online through Google® forms. The link to the online Google® form was also shared with relevant contacts of the

Table 2 Fit indices for comparative model fit, study 2

Model	χ^2	df	χ^2/df	SRMR	RMSEA [90% CI]	GFI	CFI	TLI	PClose	AIC
Null model	1937.09***	153	12.66	-	.216 [.208–.225]	.342	.000	.000	.000	1973.09
Common factor model	759.40***	135	5.63	.106	.136 [.127–.146]	.692	.650	.603	.000	809.37
Second-order Hierarchical model	233.30***	132	1.77	.057	.056 [.044–.067]	.909	.943	.934	.162	316.16
Four-factor default model (18 item)	227.08***	129	1.76	.056	.055 [.043–.067]	.911	.945	.935	.225	311.08
Four-factor model (16 item)	167.23***	98	1.71	.049	.053 [.039–.066]	.927	.957	.948	.335	243.23
Threshold	–	–	Between 1 and 3	< .08	< .06	> .95	> .95	> .95	> .05	Lower the better

SRMR Standardized root mean square residual, RMSEA Root mean square error of approximation, GFI Goodness of fit index, CFI Comparative fit index, TLI Tucker-Lewis index, AIC Akaike Information Criteria

*** $p < .001$

second author through WhatsApp® and SMS along with a request for forwarding it further to those in their personal network who are at least 18 years-old.

This snowballing approach brought some benefits as well as a few limitations. Snowball sampling helped us in getting suitable references and brought comfort and trust to the end respondents in the sense of responding to a seemingly sensitive questionnaire coming through a directly known and trusted source. It also helped us in getting a reasonable response rate and submission of only completed questionnaires from the end respondents. On the negative side, being a nonprobability sampling method, snowball sampling may pose a problem of generalization. In such situations, to avoid any unintended bias, the sample characteristics can be kept in mind while generalizing the research findings. However, the snowball sampling method is often used in modern research literature especially when the topic of research is sensitive and personal references can be useful in bringing large, and otherwise not easily accessible, target samples (Botta et al. 2019; Owujuyigbe et al. 2017).

Sample. We collected data through an online survey sent to 370 respondents, of which 343 surveys were found acceptable for analysis. The final sample ($n = 343$) consisted of 141

(41%) men and 202 (59%) women. A total of 65.3% ($n = 224$) reported practicing Hinduism, 9.9% ($n = 34$) Islam, 7.6% ($n = 26$) Atheist, 4.1% ($n = 14$) agnostics, 6.7% ($n = 23$) Sikhism, 4.4% ($n = 15$) Christianity, and around 2% ($n = 7$) Jainism and Buddhism. A significantly large number of respondents belonged to nuclear families (260, 75.8%) in comparison to joint families (83, 24.2%). Socially, around 88% ($n = 302$) of respondents were from General Category, 6.4% ($n = 22$) Other Backward Classes (OBCs), 4.4% ($n = 15$) Scheduled Caste (SC), and 1.2% ($n = 4$) Scheduled Tribes (ST). General Category is a phrase often used in India to refer to people who are not considered economically or socially backward or disadvantaged. Other Backward Classes (or OBCs), Scheduled Castes (SCs) and Scheduled Tribes (STs) are legally recognized terms as mentioned in the Indian Constitution. Other Backward Classes (or OBCs) refer to socially and educationally backward classes of India. Scheduled Castes (SCs) and Scheduled Tribes (STs) are considered to be historically disadvantaged groups of India. The Indian constitution empowers the President of India to legally specify groups as SCs (Article 341) and STs (Article 342) for taking measures for their economic and social development. Politically, 79% ($n = 271$) of respondents reported politically

Table 3 Reliability, convergent and discriminant validity, study 2

Latent Factors	CR	AVE	MSV	MaxR(H)	Correlations			
					1	2	3	4
1. Perceived Feminine Frivolity and Selfishness	.856	.543	.369	.859	(.74)			
2. Extra-Familial Patriarchal Attitudes	.788	.553	.258	.788	.319***	(.74)		
3. Within-Family Patriarchal Attitudes	.820	.532	.320	.820	.493***	.497***	(.73)	
4. Perceived Feminine Weakness	.813	.522	.369	.825	.608***	.508***	.566***	(.72)

Values shown in parentheses on the diagonal of the correlation matrix represent the square root of AVE values for respective constructs

CR Composite reliability, AVE Average variance extracted, MSV Maximum shared squared variance

*** $p < .001$

liberal views, whereas 5.2% ($n = 18$) pacifist, 5% ($n = 17$) leftist, 6.7% ($n = 23$) rightist, and 4.1% ($n = 14$) reported holding extreme political views. The average age of the sample was 25.64 years ($SD = 7.35$, range = 18–58), with the average participant belonging to families with an median income of Indian Rupees 8.75 Lakhs per annum ($SD = 16.85$, range = 14,000–110,00,000; median income in India = INR 1,26,406; Press Trust of India 2019), and average work experience of 4.24 years ($SD = 6.37$, range = 0–40).

Traditional Attitudes toward Indian Women Scale (TAIW)

We measured traditional attitudes toward women through our 16-item four-factor scale ($\alpha = .90$) that we validated in Study 2. The 7-point rating scale consisted of response options ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). A sample item of the scale is “Women with more male friends are women of questionable character.” We added participants’ responses across items such that higher scores indicated stronger endorsement of traditional negative attitudes toward women. We also used four-point egalitarian attitudes toward women scale ($\alpha = .73$) or AWS (Spence et al. 1973) as a comparative measure to assess the incremental validity of the proposed scale. Again, adding across items, higher scores indicate stronger endorsement of egalitarianism. (A ready-to-use version of TAIW is available in the [Online supplement](#).)

Violent Attitudes toward Women Scale

To measure violent attitudes toward women, we used a 22-item scale based on Flood (2014). The scale consisted of four items measuring attitudes toward domestic violence, three items measuring violent attitudes in romantic relationships, three items measuring attitudes toward psychological violence, nine items measuring attitudes toward sexual violence, and three items measuring attitudes toward rape-related violent attitudes. Two sample items are: “Domestic violence is a private matter to be handled in the family,” and “Girls who cheat on their boyfriends definitely deserve to be slapped.” The response choices on this 7-point scale ranged from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). We added each participants’ scores across items so that higher scores indicate stronger acceptance of violence against women. The overall reliability of the scale in our study was high ($\alpha = .90$).

Results

We found a strong positive correlation between our measure of a traditional negative attitudes toward women and violent attitudes toward women (see Table 4) for both men ($r = .71$, $p < .001$) and women ($r = .65$, $p < .001$). Results in Table 4 also indicate the nomological validity of our proposed scale.

Men scored significantly higher than women on traditional gender, $t(219.15) = 5.47$, $p < .001$ (95% CI [5.08, 10.80],

$n_{\text{men}} = 141$, $n_{\text{women}} = 202$), and violent attitudes, $t(250.63) = 6.58$, $p < .001$ (95% CI [9.49, 17.59], $n_{\text{men}} = 141$, $n_{\text{women}} = 202$) toward women (see Table 4). Furthermore, men scored significantly lower than women on egalitarian attitudes toward women, $t(110) = -2.60$, $p < .05$ (95% CI [-1.49, -10.94], $n_{\text{men}} = 31$, $n_{\text{women}} = 81$). These findings are in line with studies reporting that men having a more traditional, more hostile, and a less egalitarian attitudes toward women, especially in traditional societies (Hill and Marshall 2018; Yoder 2013). A comparison between the samples practicing Hindu and non-Hindu religion yield no significant differences on traditional attitudes, $t(200.95) = .03$, $p = .98$ (95% CI [-3.03, 3.12], $n_{\text{Hindu}} = 224$, $n_{\text{non-Hindu}} = 119$) as measured by the proposed scale, violent attitudes, $t(207.74) = -.42$, $p = .67$ (95% CI [-5.48, 3.54], $n_{\text{Hindu}} = 224$, $n_{\text{non-Hindu}} = 119$), or egalitarian attitudes, $t(110) = -1.60$, $p = .11$, 95% CI [-8.18, .87], $n_{\text{Hindu}} = 73$, $n_{\text{non-Hindu}} = 39$) toward women as measured by AWS. These results indicate that sample groups do not significantly differ in terms of traditional, violent, or egalitarian attitudes toward women based on their Hindu and non-Hindu religious experiences indicating further applicability and generalization of the scale results across Hindu and non-Hindu religious categories.

Moreover, the results of a hierarchical multiple regression analysis show that socio-demographic variables explain a significant amount of variance in the violent attitudes toward women ($R^2 = .21$) (see Table 5). However, after controlling the effect of sociodemographic variables, if we include egalitarian attitudes toward women and our proposed scale in the model, then the total variance predicted in violent attitudes toward women improved significantly from 51.9% to 58.3%. It shows that our proposed scale predicted a significant amount of additional variance (i.e., 6.5%) in violent attitudes toward women, $\Delta F(1,71) = 10.99$, $\Delta p < .01$, over and above the egalitarian attitudes toward women scale by Spence et al. (1973). These results offer support for the incremental validity of the proposed scale.

Additionally, a traditional negative attitudes toward women, as measured by our scale, significantly predicted violent attitudes toward women both for men ($\beta = .67$, $p < .001$) and for women ($\beta = .63$, $p < .001$) after controlling for the socio-demographic variables. These findings suggest that the proposed measure is predictive of violent attitudes toward women for both men ($\Delta R^2 = .41$), $\Delta F(1116) = 102.43$, $p < .001$, and women ($\Delta R^2 = .37$), $\Delta F(1169) = 124.71$, $p < .001$, over and above demographic variables. A comparatively lower amount of R^2 change in the case of women as compared to men was due to sociodemographic factors contributing to a comparatively higher amount of variability in violent attitudes toward women among female (13.7%) as compared to male (12.6%) participants. These results suggest that the structural and demographic aspects of society have a comparatively stronger influence on women, as compared to men, in shaping the relationship between traditional negative gender attitudes and violent attitudes toward women. Traditional societies do not encourage the cultivation of

Table 4 Correlations among psychological variables, study 3

Variables	Women <i>M (SD)</i>	Men <i>M (SD)</i>	Correlations						
			1	2	3	4	5	6	7
1. Perceived Feminine Frivolity and Selfishness	14.84 (5.85)	16.46 (6.48)	(.76)	.566**	.630**	.622**	.793**	.607**	-.807**
2. Extra-Familial Patriarchal Attitudes	6.02 (2.77)	8.28 (4.54)	.457**	(.73)	.694**	.699**	.866**	.547**	-.717**
3. Within-Family Patriarchal Attitudes	7.06 (3.55)	9.38 (5.11)	.435**	.564**	(.78)	.645**	.868**	.638**	-.797**
4. Perceived Feminine Weakness	8.54 (3.90)	11.33 (5.89)	.505**	.569**	.639**	(.77)	.861**	.640**	-.775**
5. Traditional Attitudes toward Indian Women (TAIW)	26.76 (9.74)	34.70 (15.20)	.743**	.756**	.828**	.828**	(.90)	.714**	-.852**
6. Violent Attitudes toward Women	44.84 (15.86)	58.38 (20.53)	.420**	.482**	.528**	.580**	.648**	(.90)	-.679**
7. Egalitarian Attitudes toward Women (AWS)	84.54 (10.56)	80.32 (13.07)	-.396**	-.534**	-.485**	-.464**	-.575**	-.626**	(.73)

Note. The numbers in parentheses on the diagonal of the correlation matrix are Cronbach's alphas. Correlations for men are shown above the diagonal, whereas correlations for women are shown below the diagonal of the correlation matrix. For women, $n = 202$ for all scales except AWS ($n = 81$); for men, $n = 141$ for all scales except AWS ($n = 31$)

* $p < .05$. ** $p < .001$

independent thinking and attitudes among women (Chia et al. 1994), and status inequality among genders may further render women more susceptible to social influence in conservative societies (Eagly 1983).

General Discussion

The current research aimed to develop a measure of the traditional negative evaluation of women in Indian society and observe its relevance for predicting violent attitudes toward

women. Study 1 offered four main components of traditional negative attitudes toward women in Indian culture. We named these dimensions as Perceived Feminine Frivolity and Selfishness, Perceived Feminine Weakness, Within-Family Patriarchal Attitudes, and Extra-Familial Patriarchal Attitudes based on the nature of items loading on each factor. Study 2 confirmed a four-factor reflective model with sufficient convergent and discriminant validity. Study 3 demonstrated that the obtained measure can account for a greater amount of variability in violent attitudes toward women as compared to a non-native measure.

Table 5 Results of a hierarchical regression analysis for incremental validity, study 3

Variables	Step 1			Step 2			Step 3		
	β	b	<i>t</i>	β	b	<i>t</i>	β	b	<i>t</i>
Age	.14	.77	1.25	.11	.59	1.21	-.01	-.07	-.14
Gender	.38	18.03	3.32**	.16	7.77	1.71	.14	6.55	1.54
Work Experience	.06	.22	.48	.07	.29	.79	.08	.32	.91
Annual Income	.23	.37	2.17*	.04	.07	.49	.09		1.05
Religion	.02	1.09	.22	-.11	-5.07	-1.28	-.10		-1.24
Caste	-.06	-5.16	-.54	.09	8.20	1.05	.14		1.67
Family Type	.07	3.39	.60	-.02	-.88	-.20	-.01		-.13
Political Views	-.08	-5.18	-.71	-.05	-3.10	-.54	-.07		-.87
AWS				-.64	-1.12	-6.81***	-.36		-2.94**
TAIW scale									3.32**
<i>F</i>	2.42*			8.63***			9.94***		
<i>df</i>	8			9			10		
<i>df</i> _{error}	73			72			71		
<i>R</i> ²	.21			.52			.58		
ΔR^2				.31			.065		

Note. Gender: female = 0, male = 1; Religion: 0 = non-Hindu, 1 = Hindu; Caste: 0 = others, 1 = general category; Family type: 0 = nuclear family, 1 = joint family; Political views: 0 = others, 1 = liberal. *df* = degrees of freedom

* $p < .05$. ** $p < .01$. *** $p < .001$

Perceived Feminine Frivolity, Selfishness, and Weakness

The cultural history of India, especially its imperial past, laid a premium on male qualities in contrast to supposedly distracting feminine characteristics. For instance, Victorian Indian literature typically portrays women as *Memsahib* (Madame) and labels women as frivolous, snobbish, selfish and as distracting men from their duties (Patai 1984). Culturally, the stern mythological feminine ideals are beyond the reach of many ordinary Indian women, leaving most of them weak or trivial in the face of their overarching role models. In the absence of physical prowess and unattainable ideals, women are considered weak both physically and psychologically (Item 14) in India. This fragile architecture and these failings render women unsuitable to carry their freedom (Item 16) or unable to contribute anything meaningful to society (Item 15). It may leave many Indian women undeserving of any professional achievement (Item 13). However, because self-esteem is a basic human need (Maslow 2012), women are left to strive for it by being socially respectable and desirable. Although avenues for professional and personal achievement are open in a democratic and globalized world, the surest route to social respect and acceptance for a woman is becoming a mother. Respect for mothers in the world has remained stable throughout the ages, and India is no exception to it.

Alternatively, women can boost their self-esteem by being desirable, for which they must be pretty, slim, and well-dressed (Patton 2006). However, this may also render a woman to be stereotyped as selfish (Item 5, Item 1), a dramatic attention seeker, and a financial and emotional liability (Item 3). However, research shows that women contribute more to social cause (Eckel and Grossman 1998) and are not universally more emotional and expressive than men (McDuff et al. 2017). In many cultures, feminine beauty is desirable, but frivolous (Yano 2006). Although beauty remains the primary and central task of the post-modern women, its pursuit is considered to be a task of a fundamentally frivolous creature, one incapable of living a life governed by reason and self-direction (Mann 2006, p. 27). In the wake of such perceived weakness, assigned frivolity, and structural barriers, a successful woman is likely to be regarded as aggressing her way to the top by using the sword of gossip (McAndrew 2014) and sometimes taking undue advantage of being a female (Item 4).

Within-Family and Extra-Familial Patriarchal Attitudes

Patriarchal attitudes are quite prevalent in India. Patriarchy is considered to be a universal phenomenon that evolved over an extended historical period of 2500 years between 3100 to 600 BC (Weber 2011). The early River Valley Civilizations in China, Mesopotamia, Egypt, and India were the first to witness the rise of patriarchy due to the emergence of property,

class, hierarchies, kingship, slavery, commodity production, and work specializations (Lerner 1986). These developments replaced the old matriarchal or kinship cultures and put the men in a more dominant position, both within and beyond the family. The ensuing traditions brought by these socio-historical imperatives have led to a profound entrenchment of the patriarchal mindset in Indian society. Although men appear to be the primary perpetrators of patriarchy, women in India have also significantly internalized it (Amirtham 2011) both within and beyond family life.

An important expression of Within-Family Patriarchal Attitudes is social disapproval of women family headship (Item 11). Families headed by women are considered to be abnormal and deviant, and women who assume the role of the family head are considered to be engaging in an unnatural gender role (Brandwein et al. 1974). Rather than assuming family headship or leadership roles, women are expected to be nurturant, docile, and quiet (Item 12). Within family life, a woman is supposed to behave as per the expectations of the parents and in-laws (Item 9). Conformity to such aspirations is necessary for maintaining the social order of a patriarchal society. Moreover, the cultural norms of heterosexual relations are quite rigid in India (Abraham 2002), which restrict women, especially young women, from befriending or mixing with a man (Item 10) both inside and outside family life.

Apart from the family, traditional attitudes toward women are also visible at workplaces. Indian women are discouraged from taking up employment (Item 6) because they are primarily looked upon as reproductive, not productive, actors of the society (Şiddiqui 2004, p. 77). Although women in India are gently breaking the glass ceiling, they are still considered to be lacking competence and leadership qualities and male subordinates dislike working with them (Lipman-Blumen 1989; Nath 2000). Despite no significant differences between male and female employees regarding various work values (Aggarwal and Singh 2017; Singh and Aggarwal 2018), women are considered to have better prospects of success in the jobs requiring mainly soft skills (Item 7).

In the Indian context, traditional social norms act as a broad framework that guides everyday interactions between men and women in the family, society, and the workplace. These norms become more explicit for the behaviors related to touch and handshakes at the workplace. For example, women in India are not expected to shake hands with men even during meetings, although handshakes are considered very crucial during business meetings (Hage 2017). On the other hand, people think that women give a wrong meaning to handshakes (Item 8). A handshake may connote intimacy, companionship, access, or availability (Ved 2013, p. 447), which a woman in India is supposed to reserve mainly for her husband. As in the case of *Sita*, any overstepping of the patriarchal moral boundary may invite a lifelong penalty and social censorship for a woman (Nijhawan 2009).

Comparison with Existing Measures

Although AWS (Spence et al. 1973) as well as our newly developed TAIW scale aim to be objective measures of attitudes toward women, they differ from each other in terms of their foci and the psychometric criteria they follow to fulfill them. Psychometrically, the AWS is a unidimensional measure with statements revolving around “rights, roles, obligations and privileges that women *should* have in modern society” (Spence et al. 1973, p. 219; Yoder et al. 1982, p. 652, *italics added*). In contrast to this view, the TAIW scale is a multidimensional measure with statements that reflect an evaluation of women in line with patriarchal norms and traditional cultural values in the Indian culture that diminish or restrict the rights, roles, and privileges of Indian women. Furthermore, whereas the AWS considers a low score as a reflection of traditional attitudes and high score as a reflection of egalitarian attitudes toward women, the TAIW scale focuses on offering an uncontaminated measure of negative attitudes toward women. We believe that traditional attitudes toward women are not indicated by mere absence of positive attitudes. Unlike ratio scales, measures of attitudes necessarily have no absolute neutral zero point that is devoid of either favorability or unfavorability.

However, there could be some parallels between the two scales regarding the nature of a few items (e.g., unacceptance of female leadership at community vs. family level, underplaying contribution of women to economic output vs. society, prescriptive reverence for women in conventional roles), which is further affirmed by a moderate but significant negative correlation between the two scales. It also reflects the content and concurrent validity of AWS on the Indian sample. Nevertheless, one primary motivation behind developing the TAIW scale was to explain the puzzling simultaneity of the prevalence of violent attitudes toward women in Indian society along with a highly revered position ascribed to women in India since ancient times. TAIW scale throws better light on this puzzle by studying and incorporating traditional cultural values and social norms to develop a measure that is culturally more sensitive and, hence, better explains variability in violent attitudes toward women when these cultural sensitivities are perceived to be overstepped. Besides dimensions of Perceived Feminine Frivolity and Selfishness and viewing women as the weaker gender, patriarchal attitudes toward women have conceptual parallels with the dimensions of hostile sexism and protective paternalism of the Ambivalent Sexism Inventory (ASI; Glick and Fiske 1996). Nonetheless, the items of TAIW scale and ASI are quite distinct. For instance, questions based on feminist orientation are not part of TAIW scale because traditional attitudes toward women in India are more rooted in traditional cultural values and patriarchy and less in contemporary feminist discourse. Whereas items of TAIW scale mainly revolve around culturally and socially primed

hostile attitudes toward women, the hostile sexism subscale of the ASI has more varied content “revolving around issues of social power, gender identity, and sexuality” (Glick and Fiske 1996, p. 593).

Limitations and Future Research Directions

Our use of convenience sampling and our reliance on mainly Indian samples could limit the scope of the current tool. A majority of the sample in the present research was young, educated, and drawn from urban areas. Nonetheless, as we discussed, the ideal archetypes of Indian women are reasonably stable over geographical, religious, and cultural variations in India. In the future, psychometric evaluation of the scale on Indian Diaspora as well as cross-cultural samples could be undertaken to assess its validity in other cultures. The presence of only negatively worded items leading to any possible response bias can be another criticism of the proposed measure. However, it is noteworthy that conventionally attitude scales are built containing both positive and negatively worded items to reduce response bias, but there is no unambiguous support for the same. Instead, it has been reported that mixing positively and negatively worded questions in a single scale, in fact, impairs response accuracy (Schriesheim and Hill 1981). Moreover, as we discussed earlier, we found in our focus group analysis that both men and women expressed traditional attitudes more often than egalitarian attitudes toward women. Therefore, to develop an uncontaminated measure of the proposed construct, we kept the items reflecting conventional attitudes toward women in a comparatively higher proportion. This focus helped us reduce possible construct dilution. However, as the results of Studies 2 and 3 reflect, our measure showed sufficient psychometric robustness and comparatively better predictive relevance as compared to AWS by Spence et al. (1973), which contains both positively as well as negatively worded items.

The current research identifies extended questions that can be taken up in future studies. Because the present study establishes a clear link between traditional and violent attitudes toward women, the next step lies in diagnosing relations between traditional attitudes and violent behavior in the context of gender roles. In the wake of the inconsistent relationship between attitudes and behavior, it would be noteworthy to observe if conventional attitudes toward women in the presence of attitudes congruent with social norms would lead to violent behavior toward women (Megens and Weerman 2010). An important variation will be to observe if gender violence is more common across specific gender roles because our review suggests that women are not equally revered across different gender roles in non-egalitarian societies. Moreover, the experience of positive and negative emotions may play a vital moderating role in the relationship between traditional attitudes and violent behaviors toward women, and the same

can be studied by using a suitable theoretical framework from the attitudes literature. Next, researchers of human geography and regional sciences may investigate the spatial determinants of negative attitudes and violent behavior toward women in the broader context of crowding, crime, culture, and violence. Finally, apart from cultural and religious values, ethical beliefs, and moral dilemma tasks may offer an excellent opportunity to study the link between traditional attitudes and violent behavior toward women. For instance, experimental analyses of the findings of the current research can be done with the help of the MIT Moral Machine experiment that offers varying levels of moral dilemma tasks having violent implications for different gender roles (Awad et al. 2018).

Practice Implications

The present scale can immensely help policymakers and researchers to study the prevalence of traditional attitudes toward women in the family, society, workplaces, as well as classrooms. The results of Study 3 show that as compared to a measure standardized in a non-native culture, the present measure is a better predictor of violent attitudes toward women in Indian society. India's tremendous economic progress, gender-inclusive welfare policies, and emphasis on women's empowerment often get diluted by disturbing gender statistics and high rates of crime against women in Indian society. Every 3 min about two crimes are committed against women in India (National Crime Records Bureau of India 2016). According to Kamdar et al. (2017), a woman is raped every 20 min in India. The alarming crime statistics against women become more puzzling in light of stable political democracy, cultural idealism, and professed gender equality for women in India. The proposed measure can help policymakers and researchers to gain insight into this puzzle by deconstructing how cultural values and patriarchal social norms are used to evaluate a modern Indian woman. Moreover, because the feminist discourse is quite rich in India, the proposed tool can contribute to the literature by offering a culturally sensitive, as well as methodologically robust measure of traditional negative attitudes toward women in Indian society.

Social activists and gender counselors can use the findings of the current research to initiate a healthy gender discourse in India and sensitize people about those building blocks of a traditional Indian psyche that contributes to negative views toward women. School counselors can use the contents of the scale to sensitize students to develop equitable gender attitudes and respect for women in different gender roles starting at an early age. Because increasing awareness about social norms and reference groups have been reported to reduce the instances of workplace and social incivility against women (Saxena et al. 2019), psychotherapists and counselors can use our research findings not only for the purpose of assessment but also to carry out culturally sensitive interventions among teenagers, married couples, and people at work. Finally, maternal health and caregiving experts

may benefit from the understanding that the selective cultural approval of specific gender roles, as highlighted in the current research, may play a significant role in the caregiving interests of women toward infants (Ta et al. 2017). The current psychometric tool, with its thoughtful application, can make a significant contribution toward the betterment of the status of women and, thus, the creation of a more equitable and diversified human society.

Conclusion

Despite tremendous economic progress, rich cultural values, and venerable mythological metaphors about women, negative attitudes toward women are widely prevalent in India. The absence of a culturally sensitive assessment tool and lack of motivation among policymakers to implement such psychometric instruments at the national level have been the two major obstacles in ensuring gender-inclusive growth and equitable status for women in Indian society. We partly address this gap by developing a culturally adapted and psychometrically robust measure of traditional negative attitudes toward women in the Indian cultural context. Furthermore, we find a clear link across genders between a negative evaluation of women and violent attitudes toward them after controlling sociodemographic variables. Researchers, policymakers, and practitioners can use the current tool and research findings for carrying out positive gender role interventions, reductions in gender violence, and the creation of a more egalitarian society. Although the present scale is standardized on Indian samples, its findings have the potential to stimulate a broader debate and research surrounding the intricate relationship between culture and gender violence.

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Compliance with Ethical Standards

Conflict of Interest Authors declare no conflict of interest. All the research participants were treated as per the ethical standards of the institutional research committee and 1964 Helsinki declaration and its subsequent amendments. Informed consent from all the research participants was taken.

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