Developing and Validating the Gender Role Attitude Scale

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Abstract

The research paper was to advance and confirm a psychometric measure on gender role attitude among adults in Bangladesh. The knowledge on the attitudes towards gender roles is essential when applying to enhance equity and societal growth, and a cross-culturally defined tool to facilitate the same was required. In the first round, 25 items were produced through a logical way of generating so as to make it content relevant. The 220 purposively chosen adult respondents (both male and female) took the preliminary version of the scale. The face validity was determined by judgment of experts and reaction of participants. Item analysis and exploratory factor analysis (EFA) were the steps involved in the analysis of data to extract the item reduction and factors. Based on EFA, 8 items were retained and loaded on two separate factors which were Mutual Understanding and Equity. Inter-factor calculations were statistically significant and thus conspired with the construct (convergent) validity of the scale. The scale had a good overall reliability (Cronbach α = .82) and one could find that its factors were also relatively reliable with acceptable levels of internal consistency. The use of independent sample t-tests demonstrated important gender based differences in gender role attitudes between the male and female group, and this area of significant perceptual difference has been highlighted. It will be found out that the newly derived scale was in fact reliable as well as valid in measuring gender role attitudes in the Bangladeshi adults. Its high psychometric forms also help the scale become an asset when used in research and social policy interventions in relation to generating gender equity in the future.

Keywords: gender role, attitude, mutual understanding, equity

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Introduction

People often envision a scenario in which both males and females have equal opportunities and access to various institutions in society, including religion, economy, education, and culture. A common misunderstanding about gender is the belief that it pertains solely to women. Many individuals expect that women will handle childcare, cooking, and household chores, while men focus on financial matters and work outside the home. Nowadays, more women are working outside, earning money, giving financial support to family (WORLD ECONOMIC FORUM, 2024)

Gender roles for men and women can be classified as traditional or egalitarian (Mandy Boehnke, 2011). Traditionally, women have been assigned non-equal responsibilities such as managing household duties and staying out of the workforce. In contrast, men have typically been viewed as the heads of the household, responsible for providing for their families. However, egalitarian roles involve equal responsibility sharing in social, professional, familial, and educational spheres (Demirel, 2003; Basow, 1992; Dökmen, 2004; Kimberly & Mahaffy, 2002; Lindsey, 1990).

Traditional gender roles, such as "man should be the head of the household," "woman's main duty is to take care of home and the family," "breadwinning should be the man's responsibility," and "man should be successful in professional life," were addressed to high school and university students in studies intended to ascertain their opinions about gender roles. This research validated the acceptance of traditional gender norms among students. According to research done to find out what university students in Turkey believed about gender roles, female students had a more egalitarian perspective than male students (Baykal, 1988; Güvenç, 1996). The roles assigned to men and women in society have unequivocally led to negative discrimination against women, consistently placing them in subordinate positions and entrenching an inequality model that favors males. This injustice is glaringly apparent in critical areas such as decision-making, freedom of choice, access to health benefits, equal pay for the same profession, as well as education and career opportunities. Following the increase in mandatory education to eight years in 1997, there was a notable rise in the enrollment of girls at every level of education, extending the duration of their active learning. However, data from the academic year 2006-2007 reveals that the enrollment rate for girls in primary education is just 87.9 percent, compared to a higher 92.2 percent for boys. Alarmingly, the percentage of girls enrolled in higher education institutions remains disproportionately low at only 18.6 percent. This disparity demands urgent attention and action. The same ratio for boys is 21.5 percent (Education Statistics in Turkey, 2006). The elimination of social status equality between men and women is the result of all these elements that are part of the inequality model (Akïn Demirel, 2003; World Health Organization, 1998).

In developing nations, women's education levels are significantly lower than men's, despite education being one of the key indicators of social standing (Akİn Demirel, 2003). The 2006 Population and Development Indicators report clearly demonstrates that 19.6% of Turkish women are illiterate, in stark contrast to just 4.0% of men. This significant

discrepancy highlights an urgent need for addressing educational inequalities in the country. These results show that gender disparity exists in Turkey at all educational levels, with differences between men and women. Furthermore, despite Turkey's overall rise in literacy over the past 70 years, the gap between males and women's levels of literacy has remained stable (Demirel, 2007). Increasing women's education is the most significant way to increase their participation in politics, the workforce, and decision-making processes (The Condition of Woman in Turkey, 2004).

Women's participation in politics and decision-making processes is significantly hindered by several key factors, including low educational attainment, minimal professional involvement, and inadequate access to health care. In 2007, data revealed that women's employment in Turkey was a mere 22.2 percent, in stark contrast to the 64.3 percent for men. Moreover, the Household Labour Investigation in Turkey (2007) clearly shows that women represent 47.3% of the workforce, while 19% of men are engaged in unpaid family labor within the agricultural sector. It is crucial to address these disparities to enhance women's roles in society.

In the 2002 National Election results, women accounted for only 4.4% of the Turkish Parliament, highlighting a significant lack of representation. In the 2007 National Elections, this percentage rose to 9.1% (Distribution of Parliamentary Members by Gender, 2007 and National Elections, 2007). Women are primarily affected negatively by all of the aforementioned social status disparities. Data from 2007 indicates that in Turkey, 22.2 percent of women are employed, compared to 64.3 percent of men. In addition, the Household Labor Investigation in Turkey (2007) reports that 19% of men and 47.3% of women are unpaid family laborers in the agricultural sector. The results of the 2002 National Election revealed that female representatives comprised only 4.4% of the members of the Turkish Parliament. This figure rose to 9.1% in the 2007 National Elections (Distribution of Parliamentary Members by Gender; 2007 National Elections, 2007). It is evident that the prevailing social status disparities significantly disadvantage women. According to 2007 data, a striking 64.3% of men are employed, while only 22.2% of women in Turkey hold jobs. This stark contrast underscores the urgent need for change. Furthermore, according to the 2007 Household Labor Investigation in Turkey, 47.3% of women and 19% of men work as unpaid family laborers in the agriculture industry. 4.4% of the members of the Turkish Parliament are female legislators, based on the results of the 2002. National Election. In the 2007 National Elections, the ratio rose to 9.1% (Distribution of Parliamentary Members by Gender, 2007; National Elections, 2007). Most of the previously identified disparities in social status have a negative effect on women. Preventing these disparities between men and women is crucial, for this reason.

Conventional gender roles entail assigning responsibilities based on a person's sex, reflecting the disparities in duties that men and women assume in society. This characteristic not only raises the possibility of violence against the partner in affective relationships, but it also supports the rationalization of abusive behavior. In a similar vein, hostile sexism, which is defined by mistrust and antagonistic feelings toward the partner,

validates the mistreatment of women by endorsing its practice and simultaneously holding them accountable for the conflict (Herrera et al., 2012, Lila et al., 2013, Lila et al., 2014).

This may have an impact on how the very circumstances that are encountered in affective interactions are labeled, providing an interpretation of their classification as abuse separate from the identification of particular behaviors as abusive (Cortés et al., 2014; López-Cepero et al., in press). Women's actions concerning their standing as partners in affective relationships, in turn, will impact other people's opinions or views. According to Herrera et al. (2012), men who have a classic sexist mindset tend to view women more adversely when they reject their partner's decisions. Likewise, we cannot ignore the fact that, in addition to sexist views regarding roles, there are transcendent attitudes that, when viewed from an egalitarian standpoint, also need to be evaluated as defenders of equality (Baber & Tucker, 2006, López-Cepero et al., 2013). The Ambivalent Sexism Inventory (ASI) (Glick & Fiske, 1996) and the Attitudes Toward Men Inventory (AMI; Glick & Fiske, 1999) are two other tools that measure gender inequality, which can be expressed in either a hostile or benevolent way.The Social Roles Questionnaire (SRQ-R; Baber & Tucker, 2006) is one tool that, in contrast, not only measures inequality but also evaluates equality between the sexes, defining an attitudinal typology based on role characteristics. It does this by evaluating both sexes equally as recipients and sexist and egalitarian attitudes. Since the literature has shown a probable link between these attitudes and a higher or lower tolerance of potential abuse scenarios, it is important to highlight the distinctions in each type of attitude (Rodríguez-Franco et al., 2012). The Social Roles Questionnaire (SRQ-R; Baber & Tucker, 2006) is one tool that, in contrast, not only measures inequality but also evaluates equality between the sexes, defining an attitudinal typology based on role characteristics. It does this by evaluating both sexes equally as recipients and sexist and egalitarian attitudes. Since the literature has shown a probable link between these attitudes and a higher or lower tolerance of potential abuse scenarios, it is important to highlight the distinctions in each type of attitude (Rodríguez-Franco et al., 2012). We should aim to develop a new scale for measuring attitudes towards gender roles, informed by the theoretical framework of gender equality. This initiative will provide valuable insights into how we can effectively transform sexist beliefs and promote positive change.

Rationale of the Study

The knowledge of gender role attitudes is an essential requirement in the establishing of gender equity though overcoming traditional stereotypes that suppress the concept of the potential of human beings due to their sex. A rigid way of gender rules still exists in most societies like in Bangladesh, which affect the education, working conditions, household duties and societal expectations. Such functions tend to favor males as well as support the inferiority of women, thus hampering the achievement of equality and integrative development.

In as much as efforts on a global and national level have been made towards strengthening gender equity, there is still perceived inequality in various levels which

can be cited in education, political participation, labour force participation, and decision making power. Such inequalities are not only perpetuated by structural impediments; they are further sustained by strongly entrenched beliefs and attitudes on respective roles of men and women. Thus, the perception of the population to gender roles is considered to be an important aspect of perception and treatment of gender-based discrimination.

Globally, there are a number of tools used in the measurement of gender role attitudes though in most cases, the tools do not capture the cultural context, values and lived reality of people in a non-western society like in Bangladesh. This symbolizes the dire necessity of a culturally considerate, dependable, and valid psychometric tool that will cerate the subtle sense of Bangali views in gender roles.

The aim of the present study was to address this gap, the Gender Role Attitude Scale (GRAS) was developed and confirmed. The scale seeks to give the researchers, educators and policymakers a standardized information in gauging the gender role attitudes. Through this, it is also possible to identify the gaps in perception between males and females of any given gender, and the information can be used as an input to making the educational curriculum, social intervention, and advocacy to create gender equity in Bangladesh.

Attitude towards gender role is an important issue nowadays. How male and female perceive their own role and the role of their opposite gender determines whether gender can balance work and house hand-in-hand. To measure such attitude, no psychometric measure has yet been found in accordance with our culture (Bangladesh). Hence, developing a scale regarding the topic is seemed to be a requisite.

Objectives of the Study

Objectives of the present study are as follows:
1. Developing a scale to measure gender role attitudes
2. Exploring the latent construct of the newly developed scale, and
3. Estimating reliability and providing validity evidence of the newly developed scale.

Method

The development of the Gender Role Attitude Scale was accomplished through a series of decisive steps:

Step 1: Identifying and Operationalizing the Construct(s)

The first step in developing any kind of instrument is to identify or operationalize the construct. In this study, our concern was to measure gender role attitudes. The concept of 'gender role' highlights the expectations, obligations, and activities that society places on women and men. Understanding these roles is crucial, as they influence not only individual identities but also our collective progress toward equality and inclusivity. A reflection of gender roles to women and men on their communal life denotes significant differences in family life, professional life, social life, education life, and career choice (Demirel, 2003; Basow, 1992; Dökmen, 2004; Lindsey, 1990).

There is considerable diversity in the literature regarding the definition or categorization of gender roles. In contemporary gender studies, researchers frequently explore a range of defined roles that individuals may occupy within various contexts. These roles include: (1) egalitarian gender roles, which emphasize equality and shared responsibilities; (2) female gender roles, often highlighting societal expectations specific to women; (3) marriage gender roles, which examine the dynamics and responsibilities within marital relationships; (4) traditional gender roles, characterized by historical norms and expectations; (5) parental gender roles, focusing on the distribution of responsibilities between parents; and (6) occupational gender roles, which assess how gender influences professional opportunities and workplace behavior. Each of these categories provides a framework for understanding the complexities of gender interactions across different social settings.

This report after factor analysis could retain two domains—equity and mutual understanding as representative factors for gender role attitude. The operational definition of gender role attitude for this study is unequivocally centered on the roles of genders (male and female) regarding equity and mutual understanding in all aspects of life.

Step 2: Generation of Items Pool

After identifying the construct, a series of items were developed across the constructs on which numerical information can be collected. Items were generated with the help of literature review. We initially selected 25 items from the literatures.

Step 3: Designing and Scoring Response Options

In this study, we employed a four-point Likert-type scale as the response format. The scale clearly defines the following options: 1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree. This robust approach ensures precise measurement of participants' opinions.

Step 4: Collecting Data

We conveniently collected data from a total of 220 males and females by using this scale. They were all different professionals and students with no age limit. Data has been collected via online. Participants were asked to report any words or concepts they found difficult to understand. Participants were promised that their answers would remain under wraps, ensuring complete confidentiality and peace of mind.

Results

Item Analysis

We computed corrected item-to-total correlations of 25 items to see if individual item went with the total GRAS score (Table-1). The corrected item total correlation values of 25 items ranged from $r = -.236$ (item no 7) to $r = .684$ (item no 2).

Table 1

Corrected Item-to-Total Correlations of 25 Items

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item1	75.95	78.280	.656	.802
Item2	76.03	76.570	.684	.799
Item3	77.90	96.982	-.600	.850
Item4	76.37	78.984	.467	.809
Item5	75.63	83.888	.388	.814
Item6	77.46	96.277	-.422	.856
Item7	77.92	91.126	-.236	.838
Item8	75.85	78.886	.609	.804
Item9	76.25	76.250	.626	.801
Item10	75.80	81.409	.468	.810
Item11	76.63	77.376	.454	.809
Item12	75.77	80.012	.614	.806
Item13	76.13	80.376	.365	.814
Item14	75.64	83.638	.480	.813
Item15	76.31	79.860	.326	.817
Item16	76.53	77.008	.553	.804
Item17	76.13	78.015	.606	.803
Item18	75.78	81.203	.522	.809
Item19	76.65	79.624	.405	.812
Item20	75.84	82.969	.369	.814
Item21	75.90	80.346	.500	.809
Item22	76.18	77.254	.606	.802
Item23	76.39	82.795	.275	.818
Item24	75.84	80.993	.473	.810
Item25	75.70	80.916	.612	.807

Items that value of corrected item-total correlation was $r<.30$ were excluded. According to Field (2013), item-total correlation values higher than .30 considered adequate. After removing specific items, we recalculated the corrected item-total correlations and identified items with

correlation values below 0.30, which we promptly excluded. Ultimately, we retained 8 items with correlation values exceeding 0.30, as detailed in Table 2.

Table 2

Corrected Revised Item-to-Total Correlations for 8 Items

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item1	25.49	10.379	.617	.790
Item2	25.58	9.971	.597	.795
Item5	25.17	12.125	.456	.813
Item12	25.32	10.994	.585	.796
Item14	25.19	12.116	.543	.806
Item18	25.33	11.226	.541	.802
Item21	25.45	10.696	.547	.801
Item24	25.39	10.969	.516	.806

Factor Analysis

To begin with, our analysis revealed a KMO value of .896, which surpasses the recommended threshold of 0.50. This suggests that our sample is well-suited for factor analysis. Furthermore, the results of Bartlett's Test indicated that the correlation matrix is not an identity matrix, with a significance level below 0.000. This finding reinforces the validity of our data and confirms that we meet the necessary criteria to proceed with factor analysis.

Table 3

Factor Matrix for 8 items

Items	Factor	
	1	2
Item1		.742
Item2		.882
Item5	.559	
Item12		.613
Item14	.552	
Item18	.516	
Item21	.699	
Item24	.687	

Note. Values less than .30 were excluded.

We analyzed the data using Principle Component Analysis extraction method and all the factor loading <.30 was suppressed. The factor analysis clearly indicated a two-factor solution for the eight items. Factor 1 includes items 5, 14, 18, 21, and 24, and is designated as 'Mutual Understanding.' Factor 2 comprises items 1, 2, and 12, and is labeled as 'Equity.'

Reliability

The reliability of Gender Role Attitude Scale (GRAS) was determined by computing Cronbach's alpha. The Cronbach's alpha was .82 which indicates an excellent internal consistency reliability for this scale with specific sample. The values of Cronbach's alpha for the factors of GRAS- Mutual Understanding, Equity were .75, .80 respectively. The reliability analysis of the factors is presented in Table 4

Table 4

Exploring the Impact of Factors on Reliability Analysis

Factors	No of items	*M*	*SD*	Coefficient Alpha
Mutual Understanding	5	18.41	2.299	.75
Equity	3	10.57	1.991	.80

Validity

Face validity was ensured by the response of the sample. The construct validity was assessed by estimating inner-factor correlation and factor-total GRAS correlation. The result presented in Table 5 showed that the scale has significant construct validity. Factorial validity refers to the description of the inner structure of GRAS that is the number of dimensions that underlie the GRAS and the definitions of dimensions which is determined by the factor analysis. Factor 1 (mutual understanding) concerns the understanding and shared activities between male and female. Factor 2 (equity) concerns the equal rights of the both groups.

To investigate gender differences in Gender Role Attitude, independent sample *t* test was performed. Table 6 reveals intriguing insights into the substantial differences in attitudes toward gender roles based on gender. These findings highlight how perspectives can vary significantly between groups, sparking important conversations about societal expectations and individual beliefs.

Table 5

Correlation between the GRAS Factors

	1	2
1.Mutual Understanding	-	.529**
2. Equity	.529**	-

Note. **p <.001

Table 6

Descriptive Statistics and Gender Differences in GRAS

Gender	N	M	SD	t
Female	108	83.64	7.232	7.282
Male	112	75.39	9.454	

Note. *p* <.001, *N*= 220.

Discussion

This study aimed to develop a robust and reliable scale for measuring attitudes towards gender roles. The development of this scale was conducted by several steps. At first, we identified the qualities that can define the term Gender Role Attitude.

Then, we went through the literature review for collecting items under the identified categories. We selected 25 items at the beginning. After that, we checked face validity through pretest and we measured construct validity through factor analysis where we collected 16 responses via online. Following the pretest and factor analysis, we successfully retained eight items for the scale. To enhance clarity and comprehension, the scale was subsequently administered to 220 participants, allowing us to confirm that they understood each item effectively.

The data obtained from the participants was first analyzed through item analysis and each item discriminative ability was determined. Item analysis was done by computing corrected item-to-total correlation. The analysis from Table 1 revealed that the values of items 3, 4, 6, 7, 8, 9, 10, 11, 13, 15, 16, 17, 19, 20, 22, 23, 25 were below .30. Therefore, these 17 items were excluded and item-to-total correlation of remaining 8 items were presented in result Table 2. In Table 3, they were then factor analyzed to determine dimensionality and construct validity. According to the rules of thumb, the minimum sample size should be 50 observations and measure of sampling adequacy must exceed .50 for overall test and Bartlett's test of sphericity (p <.05) is statistically significant for factor analysis (Hair, Black, Babin, & Anderson, 2014). According to Kline (1994), for a successful factor analysis at least 100 participants should have to provide and the minimum ratio of participants and variables should be 2:1 and the minimum ratio of participants and extracted factors should be 20:1. On the basis of all of this, we could use this sample size (n = 220) to proceed factor analysis. Table 3 represented factor analysis from which two factors were identified under which the 8 items were loaded. The factor loadings of 8 items ranged from .34 to .75. As a rule of thumb, only variables with loadings of .32 and above are interpreted (Tabachnick & Fidell, 2007) and the factor loadings of ±.3 to ±.4 are minimally acceptable, values greater than ±.5 are necessary for practical significance (Hair et al, 2014). So, all the variables under two factors were interpretable and only few variables were minimally acceptable. Furthermore, we determined the reliability. It is evident from result of Table 4 that the overall reliability of the scale was found to be high (.82). The values of Cronbach's alpha

for all factors ranged from .75 to .80. This study suggested that the internal consistency of all the factors were acceptable. The rules of thumb for evaluating alpha coefficient can be described as follows: "$\alpha \geq .9$ = Excellent, $.9 > \alpha \geq .8$ = Good, $.8 > \alpha \geq .7$ = Acceptable, $.7 > \alpha \geq .6$ = Questionable, $.6 > \alpha \geq .5$ = Poor, $.5 > \alpha$ = Unacceptable" (George & Mallery, 2003; cited in Gliem & Gliem, 2003). After that the construct validity was determined by computing interactor correlations and correlation with total score of GRAS. The result from Table 5 showed that the construct validity of this scale was significant. Factorial validity was determined from factor analysis. The responses from participants provided a valuable opportunity to assess the reliability and validity of the GRAS, allowing us to strengthen its effectiveness as a measurement tool.

In Table 6, we analyzed the differences in Gender Role Attitudes between male and female participants. An independent samples t-test was conducted to assess these gender differences, revealing statistically significant variations in attitudes: female participants exhibited a mean score of 83.64, whereas male participants demonstrated a mean score of 75.39. These findings support the assertion that gender influences attitudes towards gender roles.

Furthermore, the results presented in Tables 2 and 3 confirm that the Gender Role Attitude Scale (GRAS) comprises 8 items. Each item is scored on a 4-point scale ranging from 4 (indicating "strongly agree") to 1 (indicating "strongly disagree"). The overall score for each participant is calculated by summing the scores of all items, resulting in a minimum possible score of 8 and a maximum score of 32, with a midpoint of 20.

This scoring system indicates that higher scores are associated with a more positive Gender Role Attitude, while lower scores reflect a more negative stance. Overall, the GRAS has proven to be a reliable and valid tool for measuring Gender Role Attitudes, highlighting its significance in understanding the underlying dynamics of gender perceptions in various contexts.

The findings in Table 3 highlight two important factors that can enhance our understanding of student performance. The total score for each factor is derived from the cumulative scores of all related items. For the factor of Mutual Understanding, which includes five items, students can achieve a maximum score of 20, with a minimum score of 5 and a midpoint of 12.5. Similarly, the factor of Equity consists of three items, allowing for a score range from 3 to 12, with a midpoint set at 7.5. Evaluating scores in relation to these midpoints can provide valuable insights into how effectively participants demonstrate these qualities. This approach can guide improvements and foster development in these areas. The scale can be used to provide necessary feedback regarding the Gender Role Attitude Scale that will be useful in knowing attitudes towards gender roles. The present study is not beyond its limitation. Because the factor pattern that emerged from a large sample size factor analysis will be more stable than that emerging from a smaller sample and the larger samples increase the generalizability of the conclusions reached by means of factor analysis (DeVellis, 2017). The study utilized a sample drawn from students, and although the sample size was 220, there is an opportunity to expand this in future research to

enhance the robustness of the findings. Therefore, it may be an obstacle for generalization and it is not the representative of the population concerned. In spite of its limitation this study is very helpful for measuring the Gender Role Attitude.

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Appendix

Factor wise final items of Gender Role Attitude Scale (GRAS)

Items	দৃঢ়ভাবে ভিন্নমত (১)	ভিন্নমত (২)	একমত (৩)	দৃঢ়ভাবে একমত (৪)
Factor : Equity				
১. পরিবারের যেকোন সিদ্ধান্ত গ্রহণের ক্ষেত্রে নারী ও পুরুষের সমান সুযোগ থাকা উচিত।				
২. কর্মক্ষেত্রে গুরুত্বপূর্ণ পদগুলোতে পুরুষের পাশাপাশি নারীদেরও অংশগ্রহণের সুযোগ দেয়া উচিত।				
৩. ছেলে ও মেয়ের লেখাপড়া ও চাকুরিক্ষেত্রে সমান অধিকার পাওয়া উচিত।				
Factor : Mutual Understanding				
৪. সন্তানের ভালোমন্দ বিচারে মা-বাবা উভয়ের মতামতের সমান গুরুত্ব থাকা উচিত।				
৫. দাম্পত্য জীবনে স্ত্রীর মতামতের প্রতি স্বামীর শ্রদ্ধাবোধ থাকা উচিত।				
৬. পরিবারকে খুশি রাখতে একজন নারীর মুখ বুঝে সবকিছু সহ্য করা উচিত।				
৭. সব বিষয়ে প্রভুত্ব করা পুরুষের বৈশিষ্ট্য হওয়া উচিত।				
৮. মেয়েদের বিয়ের ক্ষেত্রে ইচ্ছের বিরুদ্ধে হলেও, পরিবারের সিদ্ধান্ত মেনে নিতে হবে।				

*Last 3 items (6, 7, 8) are negative which were reversed coded during statistical analysis.