

DEVELOPMENT AND VALIDATION OF INDIGENOUS GAMOPHOBIA SCALE FOR PAKISTANI POPULATION

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ABSTRACT

An exploratory sequential mixed-methods research design was used to construct a statistically sound tool to measure the extent of Gamophobia in Pakistani adults, as existing scales are based on a Western context and cannot be adopted locally. A six-step process was followed. Firstly, the initial item pool was generated through a focus group discussion, semi-structured interviews, and current literature. Secondly, an expert review was conducted to maintain content validity, resulting in the retention of 22 items. The third step consists of a pilot study and cognitive debriefing to assess item comprehension. A sample of 300 ($M = 34.56$, $SD = 6.97$) was selected via purposive sampling from the target population to establish construct validity through exploratory factor analysis (EFA), which produced a three-factor structure with subscales: Interpersonal Vulnerability, Anticipatory Panic, and Existential Dread, resulting in the elimination of 3 more items. A Confirmatory Factor Analysis was conducted to confirm the established factor structure, yielding acceptable results. After that, Psychometric properties were established, in which reliability was established via Cronbach's alpha, which was .96; convergent and divergent validity were assessed by the Composite Reliability (CR) and Average Variance Extracted (AVE) indices computed via a macro-enabled Validity Master worksheet within the Stats Tools Package (Gaskin & Lim, 2018). Convergent validity was demonstrated across all dimensions, as the CR for all factors exceeded the threshold of .70 (Hair et al., 1997). The AVEs exceeded the .50 cut-off (Fornell & Larcker, 1981), confirming convergent validity.

I. INTRODUCTION

The term Gamophobia is grounded in two Greek words, "gamos", meaning marriage, and "phobos", meaning fear. It is defined as a persistent, irrational and overwhelming fear of entering a marital contract (Ossai & Chujor, 2023). It was first coined by Feigenbaum (1930), who described it as a state of marital torment. In 1974, Houdini further elaborated on the phenomenon, defining it as a pathological fear of marital union. It is to be noted that this state does not include apprehensions but rather a persistent fear that manifests as a mechanism of avoidance, causing acute psychological and physical distress. The symptoms of Gamophobia consist of increased anxiety triggered by the discussion on the topic of marriage, an aggressive defense mechanism, and perceived inability to sustain a lifelong partnership. According to the psychoanalytic perspective, people who have a negative fixation during the genital stage can end up having an avoidant attitude toward the opposite sex, eventually manifesting as gamophobia (Agbo & Iwundu, 2016). The observational learning theory by Bandura (1977) posits that if a child observes negative marital models, especially regarding the marriage of the parents, he may internalize these

behaviors as the standard for all marriages, rather than his parents'. As a result, the chances of gamophobic behaviour become higher. The cognitive theory established by Beck and Emery (1985) proposes that gamophobia results from deeply fixed, distorted thinking patterns. An individual develops a negative schema about marriage that serves as a filter. This filter ensures that all information about marriage is processed negatively, while the positive information is discarded or misinterpreted as being "fake" or "temporary."

The phenomenon of gamophobia is unique in the context of Asian societies and especially in Pakistani society, as marriage is often viewed as a religious and social obligation rather than an independent choice of a person. Whenever a person expresses fear of entering into marriage, society usually considers it a rebellious act or a breach of the "social contract". In the worst of cases, the person's family, friends and society overall mock him regarding his fear, and question his masculinity/femininity. These hurdles further worsen the condition of a person due to rigid gender roles, socio-cultural expectations and stigmatization surrounding marital failure which in turn makes a person to choose maladaptive coping strategies (Fatima & Habib, 2023). It is because of these factors that people from these societies tend to hide and mask their fear of marriage, resulting in the present, but not hidden, aspect of Gamophobia. According to Haizhong (2008), people with gamophobia do not tend to show their fear directly, but rather the symptoms manifest as a rationalization of this fear, like financial stability or burden of responsibility, etc., behavioral change, e.g., escapism, and emotional disruption like aggression, depression or frustration, etc. In the modern world, Gamophobia is getting more and more attention, specifically due to the decline of the institution of marriage and the increase of casual relationships, but the psychological tools for its assessment and identification remain rare. The deep literature analysis revealed that only a couple of scales are available for screening of Gamophobia, including the Lebanese Fear of Relationship Commitment Scale (LFRC; Obeid et al., 2020) and the Gamophobic Behavior Inventory (GBI; Ossai & Chujor, 2023). But none of these scales considers the Pakistani cultural context, so they cannot be properly adopted locally, which raises a need for an indigenous scale that measures gamophobia, considering all aspects of the Pakistani culture. The following hypotheses were formulated;

- H₁ The Indigenous Gamophobia Scale will be a reliable measure for screening and measuring Gamophobia.
- H₂ The Indigenous Gamophobia Scale will have satisfactory convergent and divergent validity.

II. METHOD

Research Design

The study followed an exploratory sequential mixed-methods research design (Ivankova et al., 2006), i.e., a qualitative phase followed by a quantitative phase.

Participants

A sample of 300 from Lahore, Multan, Dera Ghazi Khan, Karachi, Islamabad and Faisalabad was selected using purposive sampling for Exploratory Factor Analysis (EFA) and psychometric testing. Both males and females, married and unmarried, professionals and non-professionals with at least 14 years of formal education, aged 22 to 45 years, with no comorbid psychological disorder, and identified with gamophobic symptoms through LFRC were included in the sample. Individuals having no gamophobic symptoms and having a history of divorce were not considered for the sample.

Measures

[1] Demographic Information Sheet. The demographic sheet included information about the identification with gamophobic symptoms, age, education, gender, and socioeconomic status of the respondents. **[2]** Lebanese Fear of Relationship Commitment Scale. An English version of the 20-item, 4-point Likert-type scale Lebanese Fear of Relationship Commitment Scale (LFRC; Obeid et al., 2020) with alpha reliability of .78 was used as a screening tool in this study.

Procedure

The research followed the ethical guidelines given by the American Psychological Association (2016), in which i) a formal informed consent was obtained from every participant in the research, ii) objectives were clearly stated, iii)

voluntary participation was ensured, iv) participants were informed about the right to withdraw, v) research participants were briefed about data confidentiality, vi) the protection from psychological/physical harm was guaranteed, vii) and suspected conflict of interest was addressed. The scale construction follows a six-step procedure (Boateng et al., 2018), which is elaborated as follows: **[1]** Generation of Initial Item Pool. The initial item pool of 57 items was generated using data triangulation, following a Focus Group Discussion, Semi-Structured Interviews and Past Literature. Out of these, 6 items were reverse-scored, 17 were rooted in the Focus Group Discussion, 11 were rooted in the previous literature, 19 questions were derived from the semi-structured interviews, and 2 items were extracted from the diagnostic criteria of specific phobia in DSM-5 TR. **[2]** Expert Review. To ensure content validity, this pool was presented to five departmental experts (3 Assistant Professors, 1 Associate Professor and 1 Professor) from the Department of Applied Psychology at Bahauddin Zakariya University, each with at least 5 years of research experience in scale construction. Items were formatted into a 5-point Likert-type rating scale ranging from 1 (*not at all relevant*) to 5 (*very much relevant*). The experts evaluated each item's alignment with the operational definition of gamophobia extracted from the literature (Ossai & Chujor, 2023). Following a consensus review, the recommended 22 items were retained after the removal of 35 items, based on 80% approval rate from the experts. **[3]** Pilot Study. In this step, the pilot study and cognitive debriefing were done to assess the general understanding of the items. A sample of 20 was drawn from the target population, i.e., the general population (Sekaran & Bougie, 2019), using purposive sampling. **[4]** Determining Factor Structure. A purposive sample of 300 (Male = 114, Females = 186, M = 34.56, SD = 6.97) was selected based on Tabachnick & Fidell (2014) criteria to explore the factor structure of the scale under development via Exploratory Factor Analysis. The Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were conducted to assess the data's suitability and the absence of an identity matrix. Upon meeting these assumptions, the EFA was conducted according to the criterion set by Kaiser (1960), retaining factors with eigenvalues > 1.0. The cut-off for the items' loadings was 0.60, as Matsunaga (2010) reports it is adequate for factor structuring. **[5]** Confirming Factor Structure. A separate sample of 300 (Male = 118, Females = 182, M = 35.78, SD = 7.12) was taken for the purpose of conducting confirmatory factor analysis. **[6]** Determining Psychometric Properties. Reliability was assessed by observing Cronbach's alpha. Composite Reliability (CR) and Average Variance Extracted (AVE) indices were computed using the macro-enabled Validity Master worksheet within the Stats Tools Package (Gaskin & Lim, 2018) to assess the convergent and divergent validities of the Indigenous Gamophobia Scale.

III.RESULTS

Statistical Analyses. IBM Statistical Package for Social Sciences (SPSS v27.0) was used for statistical analyses. CR and AVE were computed using the Validity Master worksheet within the Stats Tools Package (Gaskin & Lim, 2018).

Table I: KMO & Bartlett's test of sphericity

Kaiser-Meyer-Olkin		.71
Bartlett's test of sphericity	X ²	10036.07
	df	231
	P	.00

The above table showed that the sample size was adequate for factor structuring, as evidenced by the value of KMO = .71, which is greater than the cut-off of .70 (Kaiser, 1974). Also, Bartlett's test of sphericity was significant with X² (231) = 10036.07, depicting that the correlation matrix is not an identity matrix, thus confirming the assumptions for EFA (Bartlett, 1954).

Table II: Rotated Factor Matrix for the Indigenous Gamophobia Scale

	Factor		
	1	2	3
G20	.85		
G17	.82		
G4	.71		

G15	.69		
G18	.69		
G7	.69		
G8	.66		
G3	.63		
G12		.82	
G13		.79	
G1		.78	
G16		.71	
G6		.70	
G10		.62	
G2			
G22			.79
G21			.76
G11			.73
G19			.67
G5			.62
G9			
G14			
Eigenvalues % of Variance	58.21	8.13	6.24
Eigenvalues Cumulative %	58.21	66.34	72.58

Exploratory Factor Analysis was conducted on the 22-item scale using Maximum Likelihood extraction and Varimax Rotation. It was observed that 19 items are clearly distributed across the three nonoverlapping factors. The items with factor loadings above .60 were retained. Factor 1 comprised eight items (G20, G17, G4, G15, G18, G7, G8, G3) with robust factor loadings ranging from .63 to .85. Factor 2 accumulated six items (G12, G13, G1, G16, G6, G10) with stable loadings spanning between .62 and .82. Factor 3 was defined by five items (G22, G21, G11, G19, G5) with loadings ranging from .62 to .79. Items G2, G9, and G14 were removed from the final scale because they had factor loadings ($\lambda < .60$), which, according to Matsunaga (2010), are not adequate for inclusion in any factor.

Table III: The Factor Transformation Matrix for the Indigenous Gamophobia Scale

Factor	1	2	3
1	.580	.615	.534
2	.763	-.639	-.094
3	-.283	-.462	.841

The factor transformation matrix was observed to assess the distinction among the subscales of the under-construction Indigenous Gamophobia Scale. Table III shows a satisfactory distribution of the variance, as indicated by the off-diagonal values (Yong & Pearce, 2013). Resulting in three distinct subscales of the Indigenous Gamophobia Scale.

Confirmatory Factor Analysis

A confirmatory factor analysis (CFA) was done to confirm the factor structure of the Indigenous Gamophobia Scale, including the subscales Interpersonal Vulnerability, Anticipatory Panic, and Existential Dread. Figure 1 shows the structural model depicting the relationships between the observed variables and the related latent constructs.

Figure I: CFA of the Indigenous Gamophobia Scale

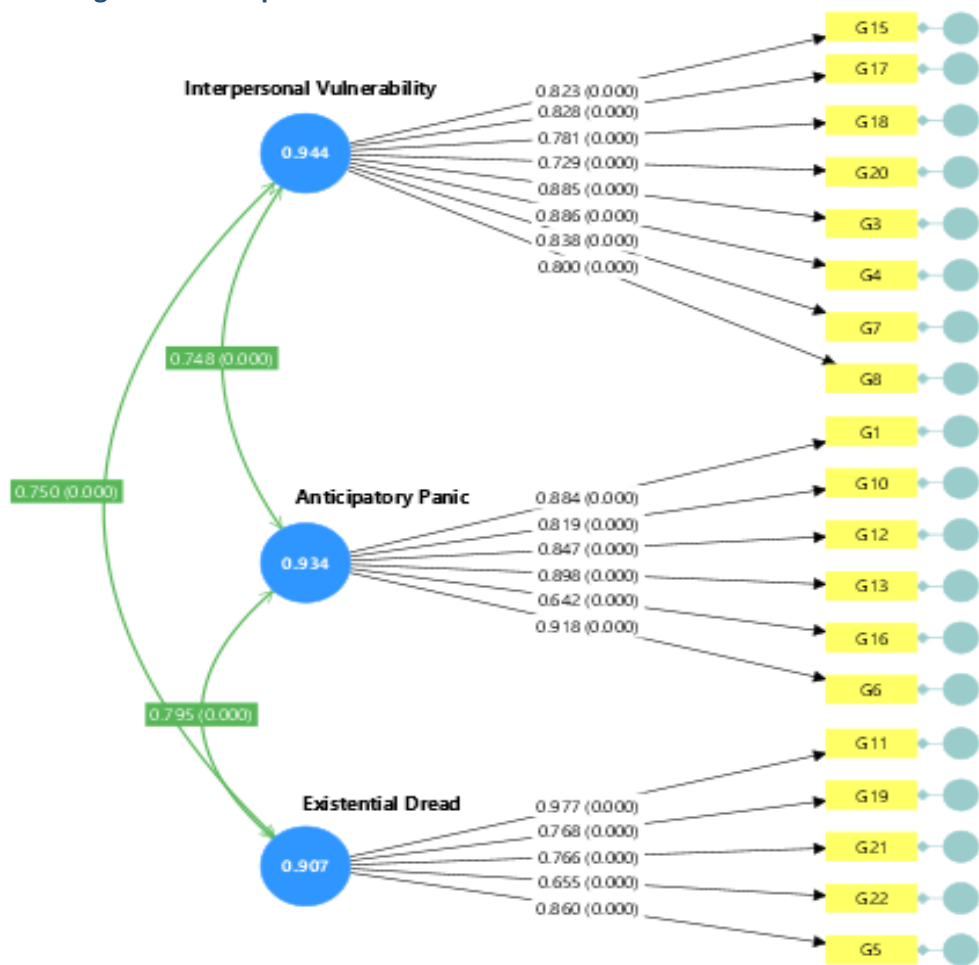


Table IV: Standardized Factor Loadings and Indicator Reliability for the Indigenous Gamophobia Scale

Constructs	Indicators	Standardized loading (λ)	Indicator reliability (λ^2)	p
Interpersonal Vulnerability	G7	0.84	0.70	0.00
	G8	0.80	0.64	0.00
	G17	0.78	0.61	0.00
	G3	0.88	0.78	0.00
	G4	0.89	0.78	0.00
	G18	0.83	0.69	0.00
	G20	0.73	0.53	0.00
	G15	0.82	0.68	0.00
Anticipatory Panic	G1	0.88	0.78	0.00
	G10	0.82	0.67	0.00
	G12	0.85	0.72	0.00
	G13	0.90	0.81	0.00
	G16	0.64	0.41	0.00
	G6	0.92	0.84	0.00
Existential Dread	G11	0.98	0.95	0.00
	G19	0.77	0.59	0.00
	G21	0.77	0.59	0.00
	G22	0.65	0.43	0.00
	G5	0.86	0.74	0.00

The Indigenous Gamophobia Scale comprised 19 items with factor loadings ranging from .642 to .977, which are adequate for inclusion (Matsunaga, 2010). All indicators exceeded the 0.40 threshold recommended for newly developed instruments (Hulland, 1999), so all indicators were retained, confirming strong item-level construct validity.

Table V: Model Fit Indices for the Indigenous Gamophobia Scale

Fit index	Value	Fit index	Value	Fit index	Value
χ^2	410.30	TLI	.96	CFI	.97
df	149	RMSEA	.02		
P	.09	RMSEA 90% CI	[.00, .04]		
χ^2 / df	2.75	SRMR	.04		

Note. N = 300

The confirmatory factor analysis supports the hypothesized three-factor structure of the Indigenous Gamophobia Scale, as indicated by the model fit indices in Table 5. The fit of the model was highly satisfactory, as chi-square was non-significant: $\chi^2 (149) = 410.30, p=.09$ (Barrett, 2007), which is reinforced by the values of TLI and CFI of $> .95$ (Hu & Bentler, 1999), Finally, SRMR = .04 is well below .08, and RMSEA = .02, 90% CI [.00, .04] meets the cut-off for a close-fitting structural model (Browne & Cudeck).

Table VI: The Reliability Analysis of the Indigenous Gamophobia Scale and Its Subscales

	N of Items	Cronbach's Alpha
Indigenous Gamophobia Scale Total	19	.96
Interpersonal Vulnerability	08	.94
Anticipatory Panic	06	.93
Existential Dread	05	.91

The Indigenous Gamophobia scale underwent a reliability analysis. The Cronbach's α value of .96 showed satisfactory internal consistency for the Indigenous Gamophobia Scale Total. The subscales of the Indigenous Gamophobia Scale also had Cronbach's alpha coefficients $> .90$, indicating satisfactory internal consistency.

Table VII: The Convergent and Discriminant Validity of the Indigenous Gamophobia Scale

Subscale	CR	AVE	Factor 1	Factor 2	Factor 3
Factor 1: Interpersonal Vulnerability	0.90	0.52	.72		
Factor 2: Anticipatory Panic	0.88	0.55	.41	.74	
Factor 3: Existential Dread	0.84	0.52	.35	.49	.72

Convergent and discriminant validity were examined using Composite Reliability (CR) and Average Variance Extracted (AVE), computed with the macro-enabled Validity Master worksheet in the Stats Tools Package (Gaskin & Lim, 2018). As shown in Table 7, convergent validity was demonstrated across all dimensions, with CR estimates exceeding the .70 threshold (Hair et al., 1997). The AVE values also exceeded the baseline cut-off of .50 (Fornell & Larcker, 1981), indicating that the latent constructs accounted for more than half of the variance in their respective item sets, thereby confirming convergent validity. The square root of the AVE for all the factors was uniformly greater than the bivariate correlation coefficients (r) shared between the constructs.

IV.DISCUSSION

The current study aimed to develop a reliable and valid tool to screen and measure the phenomenon of Gamophobia in the general population of Pakistan. It follows a six-step procedure (Boateng et al., 2018), including: A comprehensive item pool of an initial 57 items was generated through the data triangulation technique. This technique includes a focus group discussion in which different experts on the topic present their perspectives on

the phenomenon of gamophobia. Semi-structured interviews were conducted with people with gamophobia in order to have a better understanding of the manifestation, etiology and symptomatology of the phenomenon. Moreover, the established literature was studied to grasp the already existing understanding of gamophobia. Five experts from the domain of psychology went through the initial items and assessed them in terms of item alignment (Ossai & Chujor, 2023), according to an operational definition of gamophobia provided to them, resulting in the exclusion of 35 items which fails to surpass the 80% agreement among the experts.

A pilot study and cognitive debriefing were conducted to assess item comprehension by sampling 20 individuals from the target population, yielding promising results. The factor-analytic evaluation of the data established a sound three-factor model for the newly developed scale. Initial testing confirmed the dataset's absolute suitability for structural factorization, as evidenced by a Kaiser-Meyer-Olkin (KMO) measure of .71 and a highly significant Bartlett's Test of Sphericity ($X^2(231) = 10036.07, p < .001$). Next, factor structure was extracted using Maximum Likelihood extraction method with Varimax rotation, as a result a three-factor structure was established with subscales: Interpersonal Vulnerability with items 3, 4, 8, 7, 15, 18, 17, and 20, Anticipatory Panic with items 1, 6, 10, 12, 13, and 16 and Existential Dread with items 5, 11, 19, 21, and 22, shedding 3 more items, i.e., 2, 9, and 14. The factor transformation matrix was observed to assess the distinction among the subscales as the cross-diagonal weights are .58, -.64, and .84; it was assumed that each factor is distinct from the others.

The Cronbach's α value was assessed to determine the internal consistency of this 19-item scale; the result of .96 shows satisfactory reliability, whereas the three subscales of the scale were also highly reliable with α ranging from .93 to .91. The Composite Reliability (CR) and Average Variance Extracted (AVE) were evaluated through a macro-enabled Validity Master worksheet (Gaskin & Lim, 2018), as measures of convergent and discriminant validity, respectively. The CR values for each subscale are above the .70 criterion (Hair et al., 1997), indicating satisfactory convergent validity. All three subscales have AVE values higher than the set value of .50 (Fornell & Larcker, 1981), indicating convergent validity, as further confirmed by the square roots of the AVEs being higher than the off-diagonal correlations. All the above findings conclude that the Indigenous Gamophobia Scale is a psychometrically sound, valid and reliable measure for measuring and screening the phenomenon of Gamophobia.

V. CONCLUSION

A statistically sound scale for screening and measuring gamophobia was developed, named the Indigenous Gamophobia Scale. The exploratory factor analysis (EFA) shows a three-factor structure. The reliability analysis indicates satisfactory internal consistency, as reflected by $\alpha = .960$. The scale was also shown to have satisfactory validity, as indicated by CR and AVE. The indigenous gamophobia scale is a highly reliable measure for clinical screening, providing a quantitative bridge to the qualitative realities described by the participants. Making the clinicians better able to identify people with gamophobia, as before, no other tool was available for the Pakistani population for this purpose. Although the tool is highly reliable in the Pakistani population, its heavy reliance on data from cities in Punjab may limit its generalizability. All the participants were Muslims, which may have omitted some realities in Pakistani society.

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