



Vol. 4 No. 3 (March) (2026)

Development and Validation of Determinants of Hoarding Scale for Pakistani Culture

Fauzia Malik

Assistant Professor, University of Management and Technology, Lahore

Prof. Dr. Anila Kamal

VC, Women University of Azad Jammu & Kashmir Bagh

ABSTRACT

The aim of present study was to develop a psychometrically sound instrument assessing hoarding related factors in cultural context of Pakistan. A mixture of both inductive and deductive approaches was used. Qualitative inquiry was taken using grounded theory method to explore the phenomenon indigenously. Exploratory factor analysis (n=400) on subsequent data generated three factors namely materialism, perceived utility value and emotional associations. Strong internally consistent Alpha coefficients were found for each sub-scale and total score ranging from .81 to .9. Confirmatory factor analysis (n=250) yielded good model fit for established factor structure. While present study is supportive of preliminary psychometric properties of newly developed Determinants of Hoarding Scale (DHS), more diverse samples are essential to be recruited to raise the generalization of study findings.

Key words: Scale Development, Mix-Method Research, Factor Analysis, Hoarding Behavior

Introduction

Accumulating and assembling personal possessions is a fairly common phenomenon and has served as an adaptive behavior in human beings. However, this saving behavior when becomes extreme and incoherent with the basic purpose is considered maladaptive. Current research suggest that excessive acquisition and saving of items is a serious mental health concern that can affect not only the person involved in it but the family and community at large (Steketee & Frost, 2003). Diagnostic and Statistical Manual (DSM-V, 2013) for mental health describes excessive acquisition and difficulty discarding a number of objects resulting in clutter and significant distress as hoarding disorder.

Recent research shows prevalence rate of 3% to 5% posing hoarding as a serious public health concern (Timpano et al., 2011). It develops at childhood and becomes severe with passing age (Steketee & Frost, 2003). Among characteristics of hoarding, excessive acquisition occurs through compulsive buying and involves almost all sort of items regardless of their real value. It is found to be associated with both positive emotions and as result of avoiding certain negative emotions like fear and regret. However, most noticeable feature of hoarding is difficulty discarding which in some cases include a total failure to discard anything at all. Any effort to discard possessions carries a lot of suffering and its avoidance results in disorganized and cluttered living spaces. Which precludes the intended use of these spaces and consequently brings in distress and impairment (Steketee & Frost, 2007).

According to cognitive behavioral model (Frost & Hartl, 1996), hoarding involves



Vol. 4 No. 3 (March) (2026)

vulnerability factors like erroneous beliefs regarding importance of personal possessions, excessive emotional attachment with objects, and information processing deficits. Factors like stressful life events (Steketee & Frost, 2007); emotional deprivation (Grisham et al., 2009); and certain personality traits like anxiety sensitivity and perfectionism (Timpano et al., 2011) can increase likelihood of developing hoarding disorder. It could also be influenced by other mental health conditions like depression and anxiety. Similarly, many other comorbid psychopathologies like bipolar II disorder, social phobia, eating disorders and ADHD have been found associated with people suffering hoarding disorder (Wheaton et al., 2008). Extant literature suggests that hoarding is a debilitating condition that can have serious consequences including health, safety, and economic concerns (Tolin et al., 2008).

There has been tremendous research on phenomenology and associated features of hoarding in last decade and much has been known regarding associated beliefs about importance of possessions, underlying vulnerabilities and risk factors. Recent advancement in research also suggest that hoarding behavior is fairly common and not limited to developed nations only. Reports from different parts of world indicate that it exists across cultures. However there are many reasons to believe that phenomenology and associated factors could differ with certain cultural differences like economic and living conditions (Timpano et al., 2015). Consequently culture specific measures are required to assess core characteristics and associated features validly. Present study demonstrates the development of Determinants of Hoarding Scale (DHS) to analyze factors associated with hoarding in Pakistani culture.

Method

A combination of both inductive and deductive approaches was utilized for this scale development. The summary of steps involved were as follows

Qualitative exploration of construct for delineating underlying dimensions and item generation

Feedback from experts to refine item wording and structure.

Pretesting for item evaluation and questionnaire design.

Determining factor structure using exploratory factor analysis.

Evaluating items based on theoretical convergence, loadings, cross loadings, communalities and inter-item correlations.

Naming subscales and examining reliability statistics of scale and sub-scales.

Confirming resultant factor structure through CFA on an independent sample

Participants

Sample consisted of adults of 20-60 years of age comprising of university students, working and non-working class. Overall three sets of sample were taken. Initial sample for focus group discussions to generate item pool consisted of 46 individuals ranging from 5 to 10 in each of six groups conducted. Most of them were women (54.3%), have Master's or higher degree (71%) and predominantly of working class (60.7%). Second and third samples consisted of 400 and 250 individuals for establishing and validating factor structure of the scale using EFA and CFA respectively.

Procedure

Item generation. A thorough literature review was conducted to precisely define and illustrate the construct of hoarding. After clarifying construct and reviewing existing measures on hoarding, focus groups were convened to ascertain role of culture and associated factors in construct conceptualization (see Malik & Kamal, 2020). Focus



Vol. 4 No. 3 (March) (2026)

group guide was prepared to assess perception and understanding of phenomenon and using constant comparative method data was synthesized with existing literature and between focus groups to see for any emerging differences. Focus group guide was modified accordingly. Six focus groups proved to be sufficient for saturation of underlying themes. Transcribed data was used to generate an initial item pool (112 items) using terminology from respondents verbatim based on four delineated themes from focus group discussions. Moreover items related to memory concerns that didn't emerge in qualitative inquiry were added from existing measures to adequately tap the aspects of phenomenon under consideration.

Expert Validation. Experts from the field were invited to judge items for establishing construct relevance and to assess for item structure and clarity. Eight experts comprising of professionals (n=5, Ph.D.) and Ph.D. Psychology students (n=3) were provided with definitions of different dimensions of the construct as emerged from qualitative investigation and were asked to scrutinize and match items based on their suitability for relevant dimension. An item was considered for scale if it was agreed upon by 5 of 8 experts. Finally an item pool of 80 was given to another expert panel (N=4) for cross checking finalized items for item structure, wording and clarity of expression. Four items were rephrased as suggested by expert panel.

Pre-testing. The instrument was pretested on sample of 15 to evaluate for any problem area or concerns regarding time taken to fill or understanding the questionnaire. As participants finished taking questionnaire, it was checked for any missing responses and participants were asked in group to mention whether they found any item confusing or wording difficult to understand. It took in average 20 minutes to complete the questionnaire and participants didn't find any difficulty in responding items.

Data Collection. Once pretested, data was collected from a sample of 400 individuals considered acceptable for running EFA (Worthington & Whittaker, 2006). Sample consisted of university students and adults from general public with mean age of 34.5 years. Sample was predominantly of females (59%), most of participants were married (55%), and belonged to nuclear family system (64%). After establishing preliminary psychometric properties of questionnaire and finalizing items statistically using exploratory factor analysis, resultant questionnaire was administered to another sample of 250 individuals. Confirmatory factor analysis was applied to this data in order to see replicability of priori established factor structure.

Results & Discussion

Exploratory factor analysis was done using Oblique rotation (promax) to identify optimal factor structure. Before extracting factors data was assessed for sampling adequacy using Kaiser-Meyer-Olkin Measure (.94) and Bartlett's test of sphericity and was found to be suitable for running factor analysis. As a retention criteria, factors were examined for eigen values >1, Scree plot, and rejection of factors with few items (<3) was considered. Consequently, various factor solutions were extracted to see theoretically more coherent factor solution. Finally three factor solution was agreed upon as it gave a clear and conceptually sound item content explaining 30.7% of variance. Further items with cross loadings and factor loadings less than .4 were deleted and analysis was rerun. Resultant factor solution consisted of 46 items (F1=24, F2=12, F3=10) which were then examined theoretically and with help of expert opinion a scale consisting of 22 items (Appendix A)



Vol. 4 No. 3 (March) (2026)

was finalized with three subscales labeled as Materialism (focus of life-style is around acquisition and consumption as an indicator of overall life satisfaction, $n=8$), Perceived Utility Value (personal evaluation of significance and desirability of objects, $n=7$), and Emotional Associations (objects as source of connection with certain feelings and emotions, $n=7$).

Internal Consistency

Strong internally consistent values of Alpha coefficient were found for each scale: Total Scale Score ($\alpha=.9$), Materialism ($\alpha=.82$), Perceived Utility Value ($\alpha=.81$), and Emotional Associations ($\alpha=.83$) suggesting that items in each subscale are contributing towards total scale's score. Similarly inter-item correlations were as follows: Total Scale Score (.14-.57), Materialism (.27-.57), Perceived Utility Value (.27-.50), and Emotional Associations (.28-.56), $p<.01$ for all values. Correlation (Table 1) among subscales and total scale score were also found to be significant.

Table 1

Interrelations between DHS Scores

	1	2	3	4
(1) Materialism	1			
(2) Perceived Utility Value	.41**	1		
(3) Emotional Associations	.67**	.51**	1	
(4) DHS total	.83**	.78**	.87**	1
Mean (SD)	14.2 (5.8)	19.7 (6.0)	14.0 (5.6)	48.0 (14.5)
Skew	1.1	.25	.81	.74
Kurtosis	1.0	-.39	-.02	.29

DHS Determinants of Hoarding Scale, SD Standard deviation

****** $p<.01$

Confirmatory Factor Analysis

Confirmatory factor analysis (Figure 1) was done using three factor structure established earlier. Model fit was acceptable ($\chi^2/ (df) = 1.78$, $p<.000$, GFI=.88, TLI=.90, CFI=.91, RMSEA=.05). However modification indices were examined to improve it. All the factor loadings were >0.3 indicating acceptable validity. Next indices of covariances were observed and allowed several residual terms to co-vary that improved the model fit ($\chi^2/ (df) = 1.57$, $p<.000$, GFI=.90, TLI=.93, CFI=.94, RMSEA=.04).

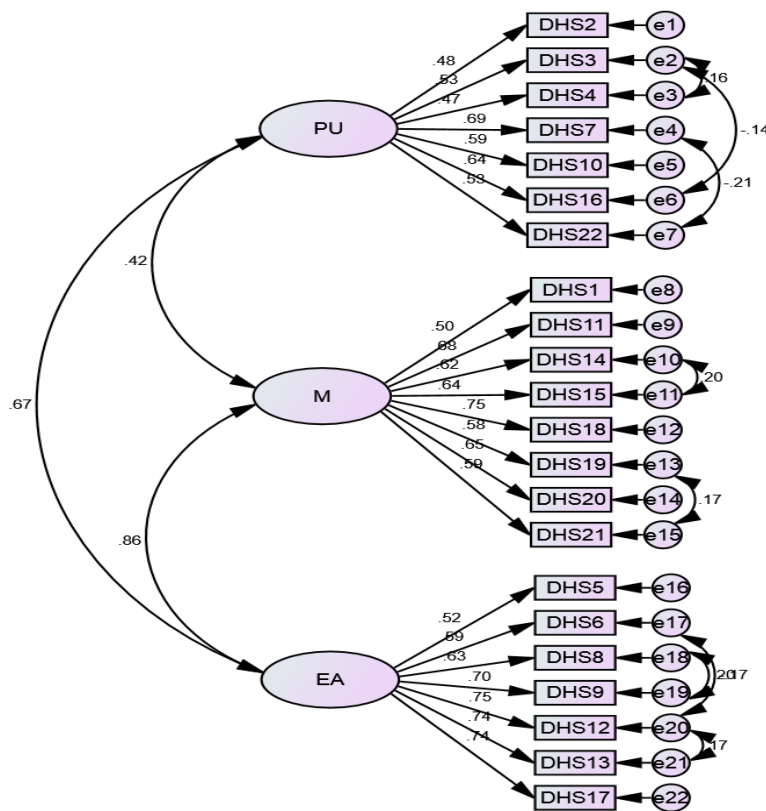


Figure 1: Confirmatory Factor Analysis of Determinants of Hoarding Scale (DHS)

The emergent aspects or factors of scale are indicative of some similarities with existing associated factors as found in extant literature of hoarding like instrumental value and emotional associations attached with possessions. At the same time Materialism emerged as a culture specific factor that appears to be linked with hoarding behavior in Pakistan. One reason could be the efforts towards economic growth that can result in status consciousness and consumption and display of meaningful number of objects (Fang & Podoshen, 2017). Being a developing country and due to an enormous effect of media materialistic thinking among Pakistani's is intensifying over time and people use to make sense of achievement by way of their possessions (Ali et al., 2012). That can result in an increased vulnerability towards hoarding. However, it needs further exploration to accurately and reliably determine role of materialism in hoarding in Pakistan.

Conclusion

An empirical approach was followed for scale development using synthesis of both qualitative inquiry and extensive literature review. Preliminary results were promising suggesting that DHS is psychometrically reliable and valid measure to identify factors that are associated with hoarding in present sample. EFA yielded a three factor solution signifying three distinct but associated aspects in relation to hoarding behavior. Results of current study also supported the replicability of factor structure. Good model fit indices and satisfactory to strong factor loadings in confirmatory factor analysis are indicative of construct validity of the DHS scale. While the present study is supportive of primary psychometric properties of DHS, more diverse samples are essential to be recruited to raise generalization of study findings. A larger sample and further research is required to replicate established factor structure of scale. Relationship of these factors with hoarding assessment and relevant measures also need to be undertaken in future research.



Vol. 4 No. 3 (March) (2026)

References

- Ali, S. A., Ramzan, M., Razi, A., Khan, H., & Fatima, I. (2012). Materialistic thoughts among people. *Global Journal of Management and Business Research*, 12(8).
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 5th ed. Washington: American Psychiatric Association; 2013.
- Fang, Y., & Podoshen, J. S. (2017). New insights into materialism and conspicuous consumption in China.
- Frost RO, Hartl TL. A cognitive-behavioral model of compulsive hoarding. *Behav Res Ther* 1996; 34:341-50.
- Grisham, J. R., Frost, R. O., Steketee, G., Kim, H., Tarkoff, A., & Hood, S. (2009). Formation of attachment to possessions in compulsive hoarding. *Journal of Anxiety Disorders*, 23(3), 357-361. doi:10.1016/j.janxdis.2008.12.006
- Steketee, G., & Frost, R. (2003). Compulsive hoarding: Current status of the research. *Clinical Psychology Review*, 23(7), 905-927. doi:10.1016/j.cpr.2003.08.002
- Steketee, G., & Frost, R. O. (2007a). *Compulsive hoarding and acquiring: Therapist guide*. New York, NY: Oxford University Press.
- Timpano KR, Exner C, Keshaviah A, Rief W, Brähler E, Wilhelm S. The epidemiology of the proposed hoarding disorder: exploration of the acquiring specifier, associated features, and distress. *J Clin Psychiatry* 2011; 72: 780-6.
- Timpano, K. R., Çek, D., Fu, Z. F., Tang, T., Wang, J. P., & Chasson, G. S. (2015). A consideration of hoarding disorder symptoms in China. *Comprehensive psychiatry*, 57, 36-45.
- Tolin, D. F., Frost, R. O., Steketee, G., Gray, K. D., & Fitch, K. E. (2008). The economic and social burden of compulsive hoarding. *Psychiatry Research*, 160(2), 200-211. doi:10.1016/j.psychres.2007.08.008
- Wheaton, M., Timpano, K. R., LaSalle-Ricci, V., & Murphy, D. (2008). Characterizing the hoarding phenotype in individuals with OCD: Associations with comorbidity, severity and gender. *Journal of Anxiety Disorders*, 22(2), 243-252. doi:10.1016/j.janxdis.2007.01.015
- Worthington, R. L., & Whittaker, T. A. (2006). Scale Development Research: A Content Analysis and Recommendations for Best Practices. *The Counseling Psychologist*, 34(6), 806-838. <https://doi.org/10.1177/0011000006288127>

Appendix A

Factor Loadings of the *Determinants of Hoarding Scale obtained through Promax rotation (n=400).

Items	Factor Loadings		
	F1	F2	F3
I gather most of the things to get social supremacy on others.	.72	-.16	.08
I gather many things because they may get expensive.	.63	.19	-.21
I gather most of things by looking at others.	.63	-.02	.01
Things get accumulated because I don't keep the courage to give my things to someone else.	.62	-.11	.07
I feel difficulty in giving away things because it took me a lot of time to get them.	.62	.19	-.16
I gather most of the things to compete others.	.60	-.14	.21
I keep on gathering things because importance of material things in our society is increasing.	.58	.18	-.10
I feel it easier to spend time with things as compare to	.44	-.10	.20



Vol. 4 No. 3 (March) (2026)

humans.			
I keep most of the things so that I don't need to ask others.	-.17	.70	.09
I keep things because they can be used (useful) in hard times.	.01	.68	.02
I keep most of the things because they could be needed in future.	.03	.67	.02
I keep things with care out of a thought that they can come in use at some time	-.20	.63	.11
I gather things to make my or my kids/sibling's life comfortable.	.16	.51	-.02
I gather most of the things to avoid embarrassment because of shortage of anything.	.12	.51	.08
I gather many things while planning for coming times (future).	.21	.44	-.01
My things are a source of pride for me.	-.02	.09	.65
My things determine my individuality.	-.14	.11	.58
My things give me a sense of security.	.10	-.06	.57
My things become a source of getting away of my loneliness.	.25	.07	.49
I keep things because they give me a sense of ownership.	.20	.01	.46
I gather things because they mark my identity to people.	.29	.01	.44
Gathering things give me feelings of accomplishment.	.18	.12	.44

**The scale is developed originally in Urdu language. This is English translation of scale for publication purpose.*