

Research Article

Cite this article: Teleb, A. A., Abbady, A. S., Sufyan, N. S., Emam, M. M., & Abdelmagid, A. S. (2025). Psychometric Properties of The Arabic Version of Generic Scale of Phubbing (A-GSP). *Educational Process: International Journal*, 17, e2025372.

<https://doi.org/10.22521/edupij.2025.17.372>

Received June 6, 2025

Accepted July 23, 2025

Published Online August 12, 2025

Keywords: Arabic version, Generic Scale of Phubbing (GSP), reliability, validity.

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Psychometric Properties of The Arabic Version of Generic Scale of Phubbing (A-GSP)

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Abstract

Background/purpose. Phubbing has emerged as a psychological and behavioral concern that threatens the quality of interpersonal relationships and psychological well-being, particularly among adolescents and adults, so the current research aimed to investigate the psychometric properties of the Arabic version of the Generic Scale of Phubbing (A-GSP), which was originally created by Chotpitayasunondh & Douglas (2018).

Materials/methods. The original 15-item scale was translated, which consisted of fifteen items. It was administered to a sample of 1468 undergraduate and postgraduate university students from three different Arab countries: Saudi Arabia, Egypt, and Oman.

Results. The validity and reliability of the A-GSP were assessed using internal consistency, which examined both the items and the sub-scales. Also, the reliability of A-GSP was established using Cronbach's alpha and split-half reliability methods, both for the sub-scales and the overall scale. Confirmatory factor analysis (CFA) suggested a hierarchical four-factor (Nomophobia, Interpersonal conflict, Self-isolation, and Problem acknowledgement) solution and construct validity.

Conclusion. Our findings suggest that the A-GSP has acceptable psychometric properties and provide empirical support for its validity and reliability as a tool for assessing phubbing behaviors in Arabic-speaking populations.

1. Introduction and Literature Review

Smartphones have significantly facilitated communication with friends, family, and other people in recent years. According to Chan (2015), these devices have been used as tools for strengthening and preserving social ties. However, there are several drawbacks to smartphone use, such as detrimental effects on mental and physical health (Lee et al., 2014), reduced face-to-face interactions, and time wasted during social engagements (Rotondi et al., 2017). Furthermore, disruptive behaviors linked to smartphone overuse have been associated with impaired interpersonal relationships and social functioning (Dwyer et al., 2018).

Among the emerging behavioral issues related to mobile phone use is "phubbing" (Guazzini et al., 2019), which has become increasingly prevalent in social activities. The term "phubbing" is a portmanteau of "phone" and "snubbing" to describe the behavior of a person who ignores others while talking or spending time with them by focusing on one's mobile device instead (Chotpitayasunondh & Douglas, 2016; Karadag, 2015). According to Nazir and Piskin (2016), the phrase was developed with input from linguistic specialists and was finally defined as: The act of ignoring someone in a social environment by glancing at one's phone, thereby diverting attention away from the person speaking.

The concept of "phubbing" is a relatively new term in psychological studies, where Roberts and David (2016) were among the first to define it, describing as the act of ignoring another individual by using a mobile phone while in their presence, or using one's mobile phone when near another person instead of engaging with them.

Similarly, Nazir and Piskin (2016) defined phubbing as a behavior through which an individual or several individuals are ignored during social occasions by using smartphones to check or interact with platforms such as Facebook, WhatsApp, and other social media applications.

Both perspectives (Nazir & Piskin, 2016; Roberts & David, 2016) emphasized the mechanism through which phubbing occurs in the use of social applications on smart devices. While initial definitions focused on the behavioral aspect, subsequent research began to highlight the social and psychological consequences of phubbing. For instance, Cizmeci (2017) explained phubbing behavior as an act driven by mobile devices that causes individuals to ignore those around them, thereby severing interpersonal connections. Blanca and Bendayan (2018), on the other hand, described phubbing behavior as the use of a smartphone in a social environment involving two or more people, in which the individual engages with the device instead of interacting with those present.

Chotpitayasunondh and Douglas (2018) conceptualized phubbing as a multidimensional behavior characterized by ignoring others in favor of smartphone use. This behavior is associated with excessive digital media usage behaviors and compulsive anxiety about missing out on other potentially rewarding experiences, impaired self-regulation of mobile phone use, and violations of social etiquette in face-to-face contexts.

Phubbing is also described as the opposing behavior that occurs in social situations when individuals maintain their focus on their mobile phones at the expense of reducing focus on the conversation partner, who may feel ignored by these individuals (Kaczmarek et al., 2019). Schneider and Hitzfeld (2021) defined phubbing as the act of disregarding communication partners during shared social interactions by directing attention to one's phone instead.

The widespread use of smartphones has transformed social and educational interactions, enhanced connectivity while also introducing challenges, most notably phubbing, defined as the act of ignoring others in favor of smartphone use (Chotpitayasunondh & Douglas, 2016). In academic settings, phubbing interferes with classroom engagement, peer relationships, and concentration,

ultimately diminishing social cohesion and academic performance (Dwyer et al., 2018; Kaczmarek et al., 2019).

Originally coined in 2012 by McCann Melbourne, the term "phubbing" represents a multidimensional behavior associated with nomophobia, interpersonal conflict, self-isolation, and problem acknowledgment (Chotpitayasunondh & Douglas, 2018).

Phubbing consists of several key factors that contribute to the complexity of the issue and increase an individual's dependence on digital technology. Six core elements have been identified: intrusive or dominant thoughts about device use, mood fluctuations, tolerance (i.e., the need to spend increasing time on devices), withdrawal symptoms, interpersonal conflict, and relapse (Brown, 2020; Johnson, 2019; Smith, 2018). These factors collectively intensify individuals' attachment to digital technology and underscore the complexity of phubbing as a behavioral phenomenon.

Chotpitayasunondh and Douglas (2018) identified four main factors that primarily contribute to the formation of phubbing behavior: Nomophobia (NP), which refers to the fear of being disconnected from one's mobile phone; Interpersonal Conflict (IC), reflecting perceived conflict between oneself and others; Self-Isolation (SI), which involves using a phone to escape from social activities and isolate oneself from others; and Problem Acknowledgement (PA), which relates to acknowledgement that the participant has a phubbing problem.

Several studies (Balta et al., 2020; Błachnio & Pareira, 2019; Karadağ et al., 2015; Franchina et al., 2018; Nazir & Bulut, 2019) have shown that phubbing behavior is linked to issues related to smartphone use, such as addiction, attachment to smartphones, social media addiction, and digital gaming addiction on smartphones. These studies emphasize the importance of further investigating the behavioral, social, and psychological consequences of phubbing, particularly in relation to comorbid conditions. They also highlight the need for effective management strategies, as phubbing may hinder individuals' adaptation in educational and professional settings.

1.1. Research Problem

Researchers have shown growing interest in measuring phubbing behavior; however, some of the available instruments exhibit notable limitations, including insufficient consideration of psychological constructs and weaknesses in statistical validation. The study by Chotpitayasunondh & Douglas (2018) is one of the studies that aimed to address this variable in depth, as it focused on developing a scale for phubbing by concentrating on the psychological dynamics that shape this behavior while considering the factors and dimensions of this behavior. Chotpitayasunondh & Douglas conducted two studies: the first aimed at gathering candidate elements from experts to define an initial structure for phubbing (Chotpitayasunondh & Douglas, 2016), while the second aimed to validate these elements through a series of advanced statistical analyses. The study concluded that there are several factors resulting from the relationships between phubbing behavior and other issues related to smartphone addiction (Chotpitayasunondh & Douglas, 2018).

Despite its global prevalence, phubbing research in Arab educational contexts is scarce. The General Scale of Phubbing (GSP) by Chotpitayasunondh and Douglas (2018) has been validated in diverse cultural settings, including Spanish (Ruiz et al., 2024), Brazilian Portuguese (Santos et al., 2023), Persian (Esfahani et al., 2022), Chinese (Li, 2023), and Turkish (Gavcar et al., 2023). However, only one study (Bitar et al., 2023) examined phubbing in an Arabic context, limited to Lebanese youth, underscoring the need for a culturally adapted Arabic version of the GSP (A-GSP) for broader Arab educational populations.

This study addresses the gap in validated tools for assessing phubbing in Arab educational settings, where smartphone use is prevalent among students. By validating the A-GSP across Saudi, Egyptian, and Omani university students, this research aims to provide a reliable instrument to

measure phubbing and inform interventions to enhance classroom interactions and academic performance. Existing phubbing scales often lack comprehensive psychological constructs or cultural specificity for Arab populations (Chotpitayasunondh & Douglas, 2018). This study validates an Arabic version of the GSP (A-GSP) in educational contexts, examining its psychometric properties and cultural invariance. Thus, the problem of the current research can be identified in the following main question: “What are the indicators of the psychometric properties of the A-GSP?” and the following questions emanate from it:

1.1.1. Do the A-GSP scores demonstrate internal consistency?

1.1.2. Does the A-GSP exhibit reliability?

1.1.3. Does the A-GSP show construct validity through factor analysis?

1.1.4. Are there significant cultural differences in A-GSP scores across Arab educational settings?

1.2. Research Objective

This study aims to validate the psychometric properties of the A-GSP among university students in Saudi Arabia, Egypt, and Oman, ensuring its applicability in Arab educational contexts.

1.3. Research Significance

The present study seeks to examine the psychometric properties of the Arabic-translated version of the Generic Scale of Phubbing (A-GSP). Its primary aim is to provide a culturally relevant and scientifically rigorous instrument for assessing phubbing within Arab contexts. Thus, the standardization of A-GSP may open new avenues for research among Arab researchers and enrich the Arabic library with a tool for measuring an important concept, especially given the scarcity of Arab studies addressing the concept of phubbing.

Although the GSP has gained considerable attention in international research and has been adapted across various cultural contexts, including China, Turkey, Spain, Iran, and Brazil, where it yielded good psychometric indicators. This success in those cultures has motivated the current researchers to adapt it for use in the Arab culture.

Beyond academic research, the A-GSP offers practical utility across several domains. It can help researchers in psychology, public health, social sciences, and human development identify the prevalence of phubbing. Mental health professionals may also use it to evaluate the effectiveness of interventions aimed at reducing phubbing behaviors and improving interpersonal relationships.

It can be used in large groups and in an auto-administered manner. Additionally, it gives politicians and mental health experts more information to design programs that identify at-risk people and lessen the negative effects of phubbing behaviors on both phubbers and those who might feel mistakenly excluded.

Also, the A-GSP offers a standardized tool for measuring phubbing in Arab educational settings, enabling educators and psychologists to assess its impact on student engagement and design interventions to foster better interpersonal interactions. Its cross-cultural validation enhances its utility across diverse Arab populations.

1.4. Research Limitations

This research has limitations despite the pertinent findings. This research employs confirmatory factor analysis (CFA) based on prior GSP validations (Chotpitayasunondh & Douglas, 2018). Non-random sampling and a focus on young university students may limit generalizability. Future research should explore diverse populations and assess measurement invariance. Because we have

preconceived notions about the instrument's behavior based on earlier research, we think this strategy is warranted (Chotpitayasunondh & Douglas, 2018). However, the results' generalizability is limited because the subjects were not chosen by a random sampling technique. Young individuals are overrepresented, but this is important since they are more likely than adults to engage in phubbing behaviors due to their frequent use of smartphones and the internet (Yu & Sussman, 2020). Future GSP modifications might guarantee balanced samples to eliminate any potential effects of these variables. Perhaps the most important feature of the current version of the A-GSP is its cross-cultural application in Arabic-speaking countries with different cultural and linguistic backgrounds. In connection with the aforementioned, it is critical to analyze the A-GSP invariance of the instrument in future studies using specially created samples. This entails checking to see if the A-GSP assesses the same concept consistently across various groups (e.g., based on gender, age, ethnicity, socioeconomic position, etc.). Future studies should examine this feature, even though our sample's characteristics prevented us from doing so.

2. Methods

2.1. Methodology

A descriptive, cross-sectional design was used to validate the A-GSP's psychometric properties through confirmatory factor analysis (CFA) and reliability analyses, ensuring rigor and replicability in educational contexts.

2.2. Participants

The sample included 1,468 university students from three Arab countries:

2.2.1. Saudi Arabia: 507 students from King Khalid University (KKU) (234 males and 273 females; aged 18 - 39 years).

2.2.2. Egypt: 485 students from New Valley University (NVU) (218 males and 267 females; aged 18 - 29 years).

2.2.3. Oman: 476 students from Sultan Qaboos University (SQU); 217 males and 259 females; aged 19 - 33 years.

Participants were selected via convenience sampling, with data collected electronically using Google Forms distributed through university student groups. Participant demographics are detailed in the supplemental materials (Table 1).

Table 1. The Characteristics of the Research Participants.

	Age	Gender		Graduate	
		Male	Female	Under-graduate	Post-graduate
<i>Saudi sample</i>	18-39	234 (46.2%)	273 (53.8%)	303 (59.8%)	204 (40.2%)
<i>Egyptian sample</i>	18-29	218 (44.9%)	267 (55.1%)	279 (57.5%)	206 (42.5%)
<i>Omani sample</i>	19-33	217 (45.6%)	259 (54.4%)	280 (58.8%)	196 (41.2%)

2.3. Instruments

The A-GSP is an Arabic version of the GSP (Chotpitayasunondh & Douglas, 2018), translated by the current researchers. The GSP is a self-report method, consisting of 15 items. There were four sub-scales: nomophobia (NP, which involved 4 items, e.g., "I cannot stand leaving my phone alone."), interpersonal conflict (IC, which involved 4 items, e.g., "I get irritated if others ask me to get off my phone and talk to them."), self-isolation (SI, which involved 4 items, e.g., "I get rid of stress by ignoring

others and paying attention to my phone instead.”), and problem acknowledgment (PA, e.g., which involved 3 items, “I know that I must miss opportunities to talk to others because I am using my phone.”). Participants were asked to respond to the items provided using a 7-point Likert scale ranging from “never” to “always,” with scores ranging from 1 to 7 in order. Responses to all items were summed; the total score of GSP ranges from 15 to 105. A higher overall score suggests that the participants engage in more phubbing behavior. To complete the Arabic version of GSP, a trilateral translation process and a cognitive pretest were also used.

2.4. Data Collection Procedures

The A-GSP was developed through a systematic translation and adaptation process:

2.4.1. Translation: Two bilingual psychologists translated the GSP into Arabic, focusing on linguistic and cultural equivalence.

2.4.2. Accuracy Verification: Three English language experts with psychological expertise reviewed the translation for accuracy.

2.4.3. Linguistic and Cultural Validation: Five Arabic-speaking psychologists and linguists ensured item clarity and cultural appropriateness.

2.4.4. Back-Translation: An independent translator back-translated the Arabic version into English to confirm equivalence.

2.4.5. Cognitive Pretesting: A pilot test with 30 students assessed item comprehension and relevance.

2.4.6. Data Collection: The A-GSP was administered electronically via Google Forms.

2.4.7. Data Analysis: Psychometric properties were analyzed using SPSS 26 and AMOS 23, assessing internal consistency, reliability, and construct validity.

These procedures validate the A-GSP's dependability within the framework of the current research as well as its validity and correctness when translated into Arabic.

2.5. Statistical Analyses

Normality was assessed using skewness and kurtosis. Internal consistency was evaluated via item-total and item-subscale correlations. Reliability was measured using Cronbach's alpha and Spearman-Brown coefficients. CFA was conducted with maximum likelihood estimation to confirm the four-factor structure. ANOVA examined cultural differences in A-GSP scores.

3. Results

Prior to answering the research questions, the A-GSP score distribution's normality was confirmed. The normalcy test results are shown in Table 2.

Table 2. Statistics of A-GSP for the Normalcy Test Results.

	Saudi Sample			Egyptian Sample			Omani Sample		
	M	SD	Skewness	M	SD	Skewness	M	SD	Skewness
NP	4.94	1.36	-.991	5.20	1.08	-.528	5.07	1.25	-.962
IC	3.24	1.56	.081	3.61	1.30	.267	3.43	1.47	.052
SI	3.60	1.67	-.109	3.52	1.50	.171	3.57	1.59	-.028
PA	4.44	1.46	-.368	4.54	1.50	-.322	4.54	1.49	-.360

	Saudi Sample			Egyptian Sample			Omani Sample		
	M	SD	Skewness	M	SD	Skewness	M	SD	Skewness
Total score	4.03	1.24	-.339	4.20	1.09	.063	4.13	1.18	-.248

Note: Items were answered on Likert scales (1 = never, 7 = always), NP = Nomophobia, IC = Interpersonal conflict, SI = Self-isolation, PA = Problem acknowledgment, N = 507 for the Saudi sample, N = 485 for the Egyptian sample, and N = 476 for the Omani sample.

Table 2 indicated that the scores of the three sample groups on the A-GSP exhibit moderate levels, making it appropriate to use parametric statistics. The following section addresses the research questions.

3.1. Answering the First Research Question, Which Stated, "Do the A-GSP Scores Demonstrate Internal Consistency?"

The researchers conducted the following steps:

3.1.1. Calculated the correlation coefficients of the items with their respective sub-scales. Table 3 presents the results.

Table 3. Item-Total Correlations and Item-Subscale Correlations of A-GSP

Items		Saudi Sample		Egyptian Sample		Omani Sample	
		r ₁	r ₂	r ₁	r ₂	r ₁	r ₂
NP	1	.660**	.896**	.561**	.816**	.627**	.869**
	2	.607**	.859**	.555**	.829**	.592**	.853**
	3	.482**	.770**	.475**	.743**	.462**	.746**
	4	.581**	.761**	.437**	.732**	.517**	.777**
IC	5	.777**	.921**	.700**	.813**	.747**	.885**
	6	.795**	.912**	.727**	.892**	.757**	.902**
	7	.826**	.902**	.714**	.879**	.768**	.891**
	8	.753**	.883**	.849**	.894**	.795**	.885**
SI	9	.807**	.901**	.795**	.869**	.808**	.890**
	10	.762**	.890**	.814**	.930**	.791**	.913**
	11	.840**	.955**	.756**	.918**	.806**	.938**
	12	.825**	.913**	.809**	.931**	.801**	.921**
PA	13	.637**	.848**	.756**	.884**	.682**	.859**
	14	.757**	.870**	.784**	.870**	.766**	.872**
	15	.576**	.808**	.696**	.892**	.626**	.852**

Note: r₁= Item-total correlations, r₂= item-subscale correlations, NP = Nomophobia, IC = Interpersonal conflict, SI = Self-isolation, PA = Problem acknowledgment, *p < .05, **p < .01.

It is evident from Table 3 that all correlation coefficients, whether between the items and the overall score of A-GSP or between the items and their respective sub-scales, are statistically significant ($p < .01$).

3.1.2. The correlation coefficients of the sub-scales with the overall score of the A-GSP were calculated. Table 4 presents the results.

Table 4. Subscale-Total Correlations of A-GSP, Cronbach's Alpha, and Spearman-Brown Coefficient of A-GSP.

	Saudi Sample			Egyptian Sample			Omani Sample		
	<i>r</i>	α	S-C	<i>r</i>	α	S-C	<i>r</i>	α	S-C
NP	.710**	.838	.800	.650**	.837	.815	.678**	.837	.808
IC	.871**	.926	.926	.861**	.893	.853	.861**	.913	.890
SI	.885**	.935	.930	.868**	.932	.915	.875**	.936	.928
PA	.786**	.792	.763	.846**	.857	.872	.806**	.834	.831
A-GSP	-	.932	.824	-	.926	.805	-	.928	.806

Note: NP = Nomophobia, IC = Interpersonal conflict, SI = Self-isolation, PA = Problem acknowledgment, *r* = subscale-total correlations, α = Cronbach's alpha, S-C = Spearman-Brown Coefficient, and ** $p < .01$.

It is evident from Table 4 that all correlation coefficients between the sub-scales and the overall score of A-GSP are statistically significant ($p < .01$). The correlation coefficients ranged from .710 to .885 for the Saudi sample, from .650 to .868 for the Egyptian sample, and from .678 to .875 for the Omani sample.

From Tables 3 and 4, the A-GSP and its sub-scales exhibit a high degree of internal consistency. Thus, the first research question has been addressed.

3.2. Answering the Second Research Question, Which Stated, "Does the A-GSP Exhibit Reliability?"

The researchers performed the following procedures:

3.2.1. Calculated Cronbach's Alpha coefficients for the overall A-GSP and its sub-scales across the three samples. As shown in Table 4, the Cronbach's Alpha values ranged from .838 to .935 for the Saudi sample, from .837 to .932 for the Egyptian sample, and from .837 to .936 for the Omani sample.

3.2.2. Calculated split-half reliability for the three samples using the Spearman-Brown coefficient. Table 4 also shows that the Spearman-Brown coefficient values ranged from .763 to .930 for the Saudi sample, from .805 to .915 for the Egyptian sample, and from .806 to .928 for the Omani sample.

Taken together, the results of procedures 3.2.1 and 3.2.2 provide evidence of high internal consistency and stability of the A-GSP and its subscales across the three cultural contexts. These findings adequately address the second research question concerning the instrument's reliability.

3.3. Answering the Third Research Question, Which States, "Does the A-GSP Show Construct Validity Through Factor Analysis?"

The researchers assessed the validity of the A-GSP using Confirmatory Factor Analysis (CFA) via Amos 23 software, employing the Maximum Likelihood (ML) estimation method. The analysis revealed that all items loaded significantly onto the four primary factors across the three cultural contexts. Additionally, both first-order and second-order CFAs were conducted, demonstrating that the sub-scales significantly loaded onto a single overarching factor.

3.3.1. *For the Saudi sample:* Table 5, along with Figure 1, presents the path diagram of the CFA model, illustrating the variables loading onto the latent factor in the A-GSP.

Table 5. Statistical Saturation of A-GSP Statements with the Latent Factors of the First and Second Order for the Saudi Sample.

		First degree latent factors				Second-degree latent factors			
	Items	Saturation with the latent factor	Standard error	Z value & significance	R ²	Saturation with the latent factor	Standard error	Z value & significance	R ²
NP	1	.944	.109	26.289**	.891				
	2	.857	.266	22.773**	.734				
	3	.611	.627	14.667**	.373				
	4	.602	.637	14.412**	.363				
IC	5	.910	.172	26.107**	.828				
	6	.886	.214	25.000**	.786				
	7	.861	.259	23.838**	.741				
	8	.826	.317	22.361**	.683				
SI	9	.839	.296	23.138**	.704				
	10	.847	.283	23.472**	.717				
	11	.971	.057	29.582**	.943				
	12	.881	.224	24.983**	.776				
PA	13	.807	.349	18.481**	.651				
	14	.770	.407	17.612**	.593				
	15	.682	.535	15.541**	.465				

Note: NP = Nomophobia, IC = Interpersonal conflict, SI = Self-isolation, PA = Problem acknowledgment, **= $p < .01$ when the calculated "Z" values $\geq$ the tabulated "Z" value (2.59).

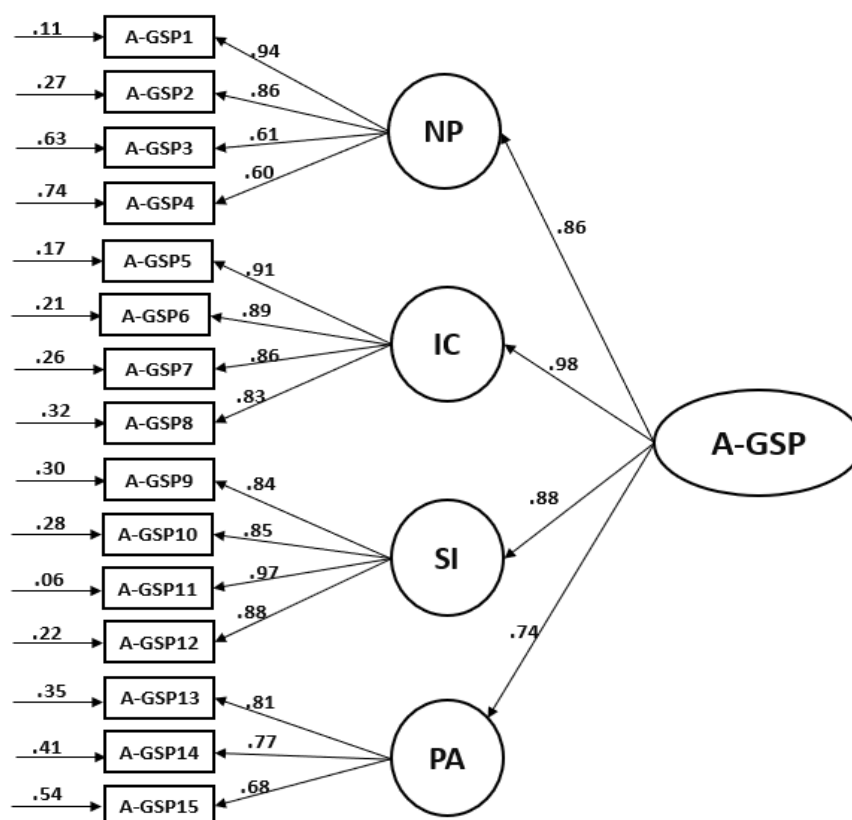


Figure 1. The Schematic Path of the CFA Model for the A-GSP, Where NP = Nomophobia, IC = Interpersonal Conflict, SI = Self-isolation, PA = Problem Acknowledgment (for Saudi Sample)

The results of the CFA for the Saudi sample indicate that the goodness-of-fit indices fall within the ideal range. Specifically, the Chi-square (χ^2) value was 7.848 with 2 degrees of freedom (df), and was not statistically significant; the Root Mean Square Error of Approximation (RMSEA) was .013, the Goodness-of-Fit Index (GFI) was .986, the Adjusted Goodness-of-Fit Index (AGFI) was .931, and the Comparative Fit Index (CFI) was .985—all of which fall within acceptable or ideal thresholds for model fit.

Furthermore, as shown in Table 5 and Figure 1, all items of the A-GSP loaded significantly onto their respective latent factors ($p < .01$), providing strong evidence of item-level validity. Additionally, each of the four latent factors demonstrated substantial and statistically significant loadings onto their corresponding second-order factor, supporting the hierarchical structure of the scale. These results collectively confirm the construct validity of the A-GSP and its alignment with the original GSP model within the Saudi cultural context.

3.3.2. For the Egyptian sample: Table 6, along with Figure 2, presents the path diagram of the CFA model, illustrating the variables loading onto the latent factor in the A-GSP.

The results of the CFA for the Egyptian sample indicate that the goodness-of-fit indices fall within the ideal range. Specifically, $\chi^2 = 9.198$ with $df = 2$, and was not statistically significant; the RMSEA = .017, the GFI = .971, the AGFI = .856, and the CFI = .963—all of which fall within acceptable thresholds.

Furthermore, as shown in Table 6 and Figure 2, all items of the A-GSP significantly loaded onto their respective latent factors ($p < .01$), providing strong evidence of item-level validity. Additionally, each of the four latent factors demonstrated substantial and statistically significant loadings onto their corresponding second-order factor. These findings offer robust support for the construct validity of the A-GSP and confirm the structural consistency of the scale with the original GSP model in the Egyptian cultural context.

Table 6. Statistical Saturation of A-GSP Statements with the Latent Factors of the First and Second Order for the Egyptian Sample.

		First-degree latent factors				Second-degree latent factors			
Items		Saturation with the latent	Standard error	Z value & significance	R ²	Saturation with the latent	Standard error	Z value & significance	R ²
NP	1	.849	.279	20.245**	.721	.807	.349	18.481**	.651
	2	.858	.264	20.494**	.736				
	3	.770	.407	17.612**	.593				
	4	.682	.535	15.541**	.465				
IC	5	.725	.474	17.826**	.526	.797	.365	19.794**	.635
	6	.844	.288	22.212**	.712				
	7	.845	.286	22.246**	.714				
	8	.873	.237	23.394**	.763				
SI	9	.810	.345	21.294**	.655	.850	.278	21.583**	.722
	10	.911	.169	25.751**	.831				
	11	.885	.217	24.504**	.783				
	12	.919	.156	26.110**	.844				
PA	13	.834	.304	20.760**	.696	.811	.343	20.243**	.657
	14	.763	.418	18.562**	.582				
	15	.855	.269	21.436**	.731				

Note: NP = Nomophobia, IC = Interpersonal conflict, SI = Self-isolation, PA = Problem acknowledgment, ** = $p < .01$ when the calculated "Z" values $\geq$ the tabulated "Z" value (2.59).

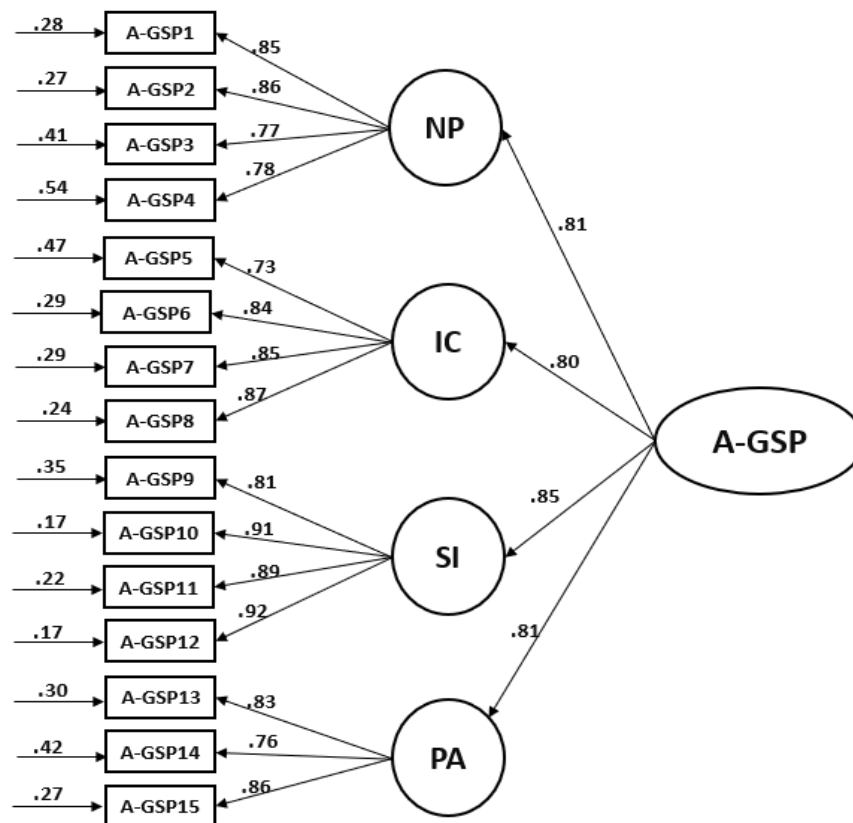


Figure 2. The Schematic Path of the CFA Model for the A-GSP, Where NP = Nomophobia, IC = Interpersonal Conflict, SI = Self-isolation, PA = Problem Acknowledgment (for Egyptian Sample).

3.3.3. *For the Omani sample:* Table 7, along with Figure 3, presents the path diagram of the CFA model, illustrating the variables loading onto the latent factor in the A-GSP.

Table 7. Statistical Saturation of A-GSP Statements with the Latent Factors of the First and Second Order for the Omani Sample.

		First-degree latent factors				Second-degree latent factors			
Items		Saturation with the latent factor	Standard error	Z value & significance	R ²	Saturation with the latent factor	Standard error	Z value & significance	R ²
NP	1	.905	.181	23.304**	.819	.832	.308	22.007**	.692
	2	.859	.263	21.659**	.737				
	3	.653	.683	12.687**	.317				
	4	.611	.627	14.023**	.373				
IC	5	.852	.273	22.537**	.727	.881	.224	24.133**	.776
	6	.877	.231	23.557**	.769				
	7	.842	.290	22.126**	.710				
	8	.833	.307	21.734**	.693				

		First-degree latent factors				Second-degree latent factors			
	Items	Saturation with the latent factor	Standard error	Z value & significance	R ²	Saturation with the latent factor	Standard error	Z value & significance	R ²
SI	9	.725	.474	17.826**	.526				
	10	.794	.370	19.386**	.630				
	11	.871	.241	21.970**	.759	.931	.133	26.505**	.867
	12	.765	.415	18.482**	.585				
PA	13	.803	.355	18.767**	.645				
	14	.773	.402	17.974**	.598	.899	.192	24.943**	.808
	15	.773	.402	17.974**	.598				

Note: NP = Nomophobia, IC = Interpersonal conflict, SI = Self-isolation, PA = Problem acknowledgment, **= $p < .01$ when the calculated "Z" values $\geq$ the tabulated "Z" value (2.59).

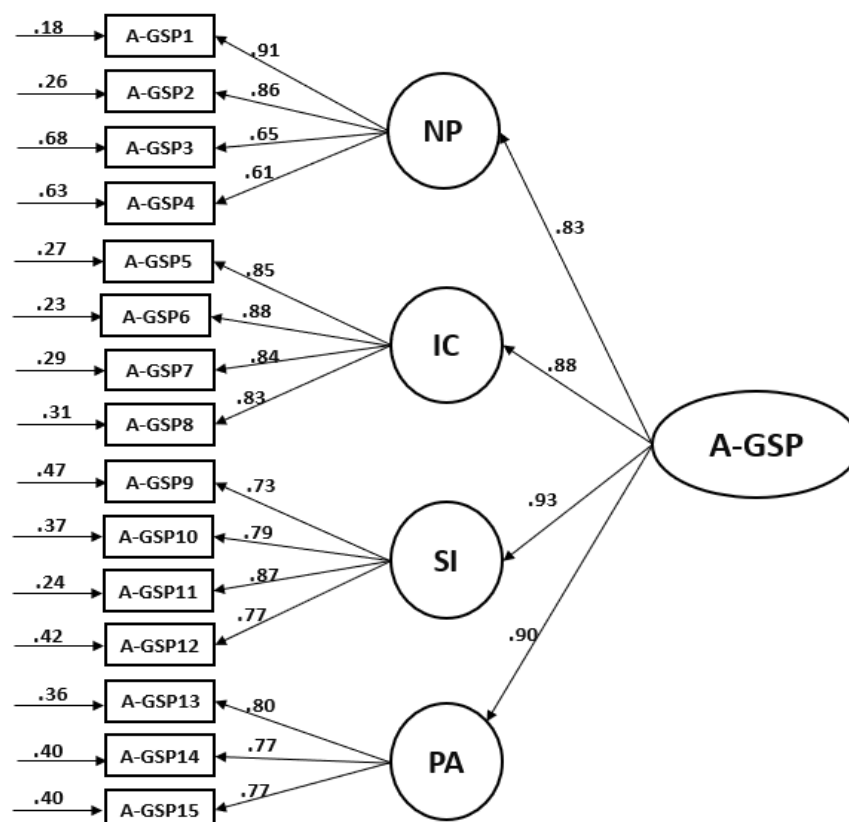


Figure 3. The Schematic Path of the CFA Model for the A-GSP, Where NP = Nomophobia, IC = Interpersonal Conflict, SI = Self-isolation, PA = Problem Acknowledgment (for Omani Sample).

The results of the CFA for the Omani sample indicate that the goodness-of-fit indices fall within the ideal range. Specifically, $\chi^2 = 4.375$ with $df = 2$, and was not statistically significant; the RMSEA =

.0499, the GFI = .995, the AGFI = .977, and the CFI = .999 —all of which fall within acceptable thresholds.

Furthermore, as shown in Table 7 and Figure 3, all items of the A-GSP significantly loaded onto their respective latent factors ($p < .01$), providing strong evidence of item-level validity. Additionally, each of the first four order latent factors demonstrated significant loadings onto the overarching second-order factor. These findings provide robust support for the construct validity of the A-GSP, confirming that its factor structure aligns closely with the original GSP model in the context of the Omani sample.

3.4. Answering the Fourth Question, Which States, "Are There Significant Cultural Differences in A-GSP Scores Across Arab Educational Settings?"

ANOVA analysis was run to explore the differences in A-GSP between the three cultural samples (Saudi, Egyptian, and Omani). Table 8 shows the results of the ANOVA analysis.

Table 8. ANOVA for the Total Scores of the A-GSP Between the Three Cultural Samples (Saudi, Egyptian, and Omani).

		Sum of Squares	df	Mean Square	F	Sig.
A-GSP	Between Groups	1548.399	2	774.200	2.505	.082
	Within Groups	452743.521	1465	309.040		
	Total	454291.920	1467			

As shown in Table 8, analysis of variance (ANOVA) showed no significant differences in A-GSP scores across samples ($F = 2.505$, $p = .082$), suggesting cultural invariance in educational settings.

Based on the preceding result, it can be concluded that the A-GSP demonstrates psychometric properties comparable to those of the original GSP developed by Chotpitayasunondh & Douglas (2018). These findings support the cross-cultural applicability of the A-GSP and suggest that it can be confidently utilized in research conducted across various Arabic-speaking contexts.

4. Discussion

The A-GSP's four-factor structure aligns with the original GSP (Chotpitayasunondh & Douglas, 2018), consistent with validations in Spanish (Ruiz et al., 2024), Turkish (Gavcar et al., 2023), and Chinese (Li, 2023) contexts. The high internal consistency and reliability reflect its robustness in measuring phubbing among Arab students. Beyond the unique factor, the four factors reflect the distinct contributions of each domain, while the general factor reflects the similarities among the common content of all items. Because of its low discriminating score or lack of relevance, none of the initial items were eliminated. Our research completely reproduced the item-factor relationship theoretical framework.

Furthermore, there were medium-high, positive, and significant connections between the general and particular variables of the A-GSP and associated constructs. The lack of cultural differences may indicate shared smartphone usage patterns among Arab youth, possibly driven by universal social media trends (Balta et al., 2020). In educational settings, phubbing's association with nomophobia and self-isolation suggests it may hinder classroom engagement and peer collaboration, aligning with findings that smartphone use reduces face-to-face interaction quality (Dwyer et al., 2018). Compared to Bitar et al. (2023), the A-GSP's broader cultural scope enhances its applicability. Educators can use the A-GSP to identify at-risk students and design interventions to promote active

learning and social connectivity. However, further studies are needed to examine its applicability in diverse age groups and non-university settings.

5. Conclusion

The preceding analysis confirms the alignment of the CFA results with the theoretical framework underlying the A-GSP, consistent with the original GSP version. Overall, the findings indicate that the A-GSP is a valid and reliable tool for assessing phubbing in Arab educational contexts, with robust psychometric properties (including internal consistency, factorial validity, and reliability) across Saudi, Egyptian, and Omani samples.

6. Recommendations

Based on the findings of the current research, the researchers recommend the following:

- ✓ Apply the A-GSP in non-university educational settings.
- ✓ Test the A-GSP across diverse age groups.
- ✓ Explore rural educational contexts for cultural variability.
- ✓ Develop interventions to reduce phubbing in academic environments.

Declarations

Author contributions. All authors contributed to research design, data collection, analysis, and manuscript preparation. They reviewed and approved the final version of the manuscript.

Conflict of interest. The authors declare no conflict of interest regarding the publication of this research.

Funding. This research was funded by the Deanship of Scientific Research, King Khalid University, Saudi Arabia.

Ethical Approval. Prior to conducting the research, approval was obtained from the university's authorities (Reference number: 840/38/1/4).

Data Availability Statement. Data is available from the corresponding authors upon reasonable request.

Acknowledgment. The authors extend their appreciation to the Deanship of Research and Graduate Studies at King Khalid University for funding this work through Small Research Project under grant number RGP1/102/46.

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