

Psychometric Properties of the Indonesian Parental Phubbing Scale



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Abstract:

Introduction: Parental phubbing has emerged as an important phenomenon within digital parenting research, reflecting technology-related attentional disruptions during parent-child interactions. Despite growing international research interest, validated instruments for assessing parental phubbing in Indonesia remain limited. This study aimed to examine the psychometric properties of the Indonesian version of the Parental Phubbing Scale-Revised (PPS-R).

Methods: A cross-sectional design was used with Indonesian parents (N = 471). The PPS-R was adapted through forward translation and expert review. Confirmatory Factor Analysis (CFA), Cronbach's alpha, McDonald's omega, Composite Reliability (CR), and Average Variance Extracted (AVE) were employed.

Results: The findings confirmed the structural unidimensionality of the Indonesian PPS-R, as evidenced by empirical model fit indices that strictly aligned with established psychometric thresholds. Standardized factor loadings were generally acceptable, and all items were statistically significant. Reliability analyses demonstrated adequate internal consistency across Cronbach's alpha, McDonald's omega, and CR values. Although the AVE value was slightly below the conventional threshold, the overall findings supported acceptable convergent validity.

Discussion: The results reinforce the conceptualization of parental phubbing as a coherent technology-related behavioral construct within the Indonesian cultural context. The study also contributes to the growing literature on digital parenting and technoferece in non-Western societies.

Conclusion: The Indonesian PPS-R demonstrates satisfactory psychometric properties and may serve as a reliable instrument for assessing parental phubbing among Indonesian parents. The validated scale provides a useful tool for future research examining digital parenting behaviors and parent-child interaction dynamics.

Keywords: Parental phubbing, Scale adaptation, Technoferece, Cross-cultural validation, Digital parenting behaviors, Parent-child interaction dynamics, Psychometric thresholds.

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1. INTRODUCTION

Smartphones have transformed family interaction patterns. These devices offer convenience and connectivity, but their use during face-to-face interactions raises concerns about parental attention and responsiveness. Within family settings, this phenomenon is referred to as parental phubbing, which denotes parents' tendency to prioritize their smartphones over engaging with their children [1, 2]. Parental phubbing is a specific form of technoferece, in which digital devices disrupt personal communication [3-5]. Empirical research has consistently associated parental phubbing with diminished interaction quality, decreased parental responsiveness, and disruptions in parent-child communication. These interruptions are further linked to reduced relationship satisfaction and adverse socioemotional outcomes for children [6-13]. Collectively, these findings indicate that parental phubbing constitutes a relational behavior with significant implications for family dynamics and child development, rather than merely an issue of screen time.

Although research on parental phubbing is expanding, most empirical studies use measurement instruments developed within Western cultural frameworks. Commonly employed tools, such as the Parental Phubbing Scale [1], are grounded in parenting norms and communication styles prevalent in Western societies. From both cross-cultural and psychometric perspectives, the application of these instruments without appropriate adaptation raises concerns regarding construct equivalence and cultural validity [14-16]. Cultural norms and social values shape parenting practices, expectations of parental attentiveness, and interpretations of smartphone use during family interactions, potentially influencing perceptions and reports of parental phubbing [17]. Consequently, instruments originating in Western contexts may not adequately capture the specific nuances of parental phubbing in non-Western societies, such as Indonesia.

The significance of culturally sensitive measurement is particularly evident in Indonesia. Indonesian families are often defined by strong interpersonal connections, significant parental involvement, and regular daily interactions between parents and children [18]. In these family systems, which emphasize relationships, the presence and attentiveness of parents are highly esteemed. The increasing integration of smartphones into everyday life may pose unique challenges to parent-child interactions, potentially disrupting established communication patterns [19-22]. Despite the importance of parental phubbing in Indonesia, there is currently no standardized and psychometrically validated tool to evaluate this phenomenon among Indonesian parents. Most local research has relied on translated or non-standardized measures, hindering cross-cultural comparability and the development of robust empirical evidence. The absence of a validated scale highlights a significant measurement gap in the literature on parental phubbing within the Indonesian context.

Parental phubbing has been defined through various measurement tools. While the foundational Parental

Phubbing Scale (PPS) evaluates smartphone-induced disruptions during parent-child interactions [1], subsequent structural updates led to the development of the Parental Phubbing Scale-Revised (PPS-R) [17]. This revised iteration retains the core theoretical construct of the original PPS while offering optimized item clarity and refined cross-cultural validity, particularly within Asian demographic cohorts. The PPS-R preserves the unidimensional factor structure of the original PPS while improving semantic precision and cross-cultural applicability. Although parental phubbing measures are increasingly used across cultures, validated tools specifically designed for the Indonesian cultural context remain limited. Given that family interaction patterns, parental roles, and norms of responsiveness differ across societies, applying Western-developed instruments without systematic adaptation may compromise measurement accuracy. Therefore, careful cultural adaptation and psychometric evaluation are essential to ensure that parental phubbing is assessed in a way that is both conceptually equivalent and contextually suitable for Indonesian families.

Examining parental phubbing measures in the Indonesian setting offers distinct theoretical and empirical insights beyond the existing adaptations for Chinese [17] and Turkish [23] populations. Indonesian parenting is shaped by a unique combination of collectivist family values, Islamic teachings that stress parental responsibility (*tanggung jawab orang tua*), and cultural norms like *gotong royong* (mutual cooperation) and *rukun* (harmonious relationships), which emphasize attentiveness in interpersonal relationships [18]. Unlike in East Asian contexts, where hierarchical obedience might influence parent-child interactions, or in Western contexts, which focus on individual autonomy, Indonesian family dynamics are marked by strong parent-child interdependence and the expectation of constant parental emotional support. In January 2024, Indonesia ranks among the countries with the highest levels of daily social media use worldwide [24]. These contextual elements suggest that parental phubbing might be perceived and experienced differently in Indonesia, potentially constituting more significant breaches of caregiving expectations than in societies with lower expectations for constant parental presence. Therefore, a culturally tailored and psychometrically validated Indonesian tool is crucial not only for accurate measurement but also for enhancing theoretical understanding of how technoferece appears across various cultural parenting frameworks.

To address this gap, the present study focused on adapting and validating the Indonesian version of the Parental Phubbing Scale [PPS]. In accordance with the International Test Commission's guidelines for cross-cultural test adaptation [16], this research evaluates the scale's psychometric properties, including its factor structure and internal consistency, within a sample of Indonesian parents. By providing a reliable and culturally pertinent measurement tool, this study contributes to the

growing body of literature on technoferece in family contexts. It supports more comprehensive research on digital parenting behaviors in Indonesia. Specifically, the study aimed to: i) adapt the PPS-R for the Indonesian context through a systematic forward-backward translation and expert review process; and ii) evaluate the scale's internal factor structure and reliability within a sample of Indonesian parents

2. METHOD

2.1. Participants

Participants were Indonesian parents who had at least one child living at home, data collection occurred between April 2025 and July 2025. The sample size determination followed Hair *et al.*'s recommendation, which suggests a minimum of 5-10 observations per indicator in structural equation modeling [25]. Detailed demographic characteristics are presented in Table 1.

Table 1. Demographic profile of participants.

Demographic Profile	Description	Frequency	Percentage
Gender	Male	97	20%
	Female	374	80%
Age	< 30 years	21	4%
	30-40 years	238	51%
	41-50 years	188	40%
	> 50 years	18	4%
	Unknown	6	1%
Occupation	Working	359	76%
	Not working	84	18%
	Unknown	28	6%
Duration of phone use per day	< 3 hours	203	43.1%
	3-5 hours	141	30%
	5-8 hours	77	16.3%
	> 8 hours	43	9.1%
	Unknown	7	1.5%
Level of education	Junior High School	50	10.6%
	Senior High School	211	44.8%
	Bachelor's Degree	151	32.1%
	Master's Degree	18	3.8%
	Others	41	8.7%

2.2. Procedure

This study used a cross-sectional design and collected data *via* a self-administered online survey. Participants were included if they were parents with at least one child, aged 25-55 years, residing in Yogyakarta, Indonesia, and had completed all items of the Indonesian version of the PPS-R. Participants were excluded if they provided incomplete responses or did not meet the eligibility criteria. The final sample consisted of respondents who met these inclusion criteria and had complete data for analysis. Ethics approval for the research protocol was obtained from the Research Ethics Committee of

Muhammadiyah University of Surakarta [Approval Number 5591/B.1/KEPK-FKUMS/II/2025]. Participants were recruited through a parent community group on WhatsApp using purposive snowball sampling. The survey link was distributed by the research team and shared by participants, who then forwarded it to eligible contacts in their networks. Participants received an incentive upon completing the survey [*e.g.*, e-voucher]. Before accessing the questionnaire, all potential participants were provided with a research information sheet explaining the study's purpose, procedures, voluntary participation, anonymity, and the right to withdraw at any time without consequence. Electronic informed consent was obtained from all participants prior to data collection.

This survey was developed through a systematic cross-cultural adaptation process. The PPS-R [17] was first translated from English into Indonesian by a bilingual psychologist and then back-translated into English by an independent translator to verify conceptual equivalence [15]. The translated items were then reviewed by a panel of experts in psychology and psychometric measurement to evaluate linguistic accuracy and cultural relevance for Indonesian parents. Before the main data collection, the adapted scale was piloted on a small sample of Indonesian parents to assess item clarity and understandability. Based on their feedback, minor wording adjustments were made to ensure the items were clearly understood in the Indonesian parenting context.

2.3. Measures

The survey collected demographic information, including age, gender, education level, employment status, and daily smartphone use. Parental phubbing was assessed using the 8-item Parental Phubbing Scale-Revised [PPS-R] [17], originally adapted from the Parental Phubbing Scale [1]. The PPS-R conceptualizes parental phubbing as a technology-mediated disruption of attention during parent-child interactions. The scale consists of eight items reflecting everyday smartphone-related behaviors in the presence of children. Participants responded on a 5-point Likert scale from 1 (never) to 5 (always), with higher scores indicating greater parental phubbing. Sample items include: "While talking to my child, I tend to check my phone" and "When my phone vibrates/rings, I immediately check it even while talking to my child." The complete Indonesian version of the PPS-R is provided in **Appendix A**. All original items are presented in Table 2.

2.4. Data Analysis

Confirmatory Factor Analysis (CFA) was conducted using AMOS 24 with maximum likelihood estimation to test the factor structure of the PPS-R [26, 27]. Model fit was evaluated using χ^2/df , CFI, TLI, and RMSEA. Following conventional criteria, CFI and TLI values $\geq .90$ and RMSEA $\leq .08$ were considered indicative of acceptable fit [28].

Table 2. Items and standardized factor loadings of the Indonesian PPS-R.

Item Content (Original Item)	λ	SE	CR	p
When I have meals with my child, I use the phone	0.48	0.05	9.87	< .001
When I am with my child, I place my phone in a visible location	0.35	0.05	7.23	< .001
When I am with my child, I hold my phone in my hand	0.64	0.04	14.82	< .001
When my phone rings/vibrates, even if I am engaged in a conversation with my child, I take it out to check	0.57	0.05	12.34	< .001
While chatting with my child, I occasionally sneak a glance at my phone	0.70	0.04	16.45	< .001
When playing with my child, I use my phone (including taking pictures and calling)	0.77	0.03	18.92	< .001
I use my phone when I am playing with my child outside together	0.68	0.04	15.78	< .001
During the conversation with my child, I tend to check my phone	0.80	0.03	20.15	< .001

Note: λ = standardized factor loading; SE = standard error; CR = critical ratio; all factor loadings are statistically significant at $p < .001$.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Confirmatory Factor Analysis

As shown in Table 2, the one-factor model demonstrated good fit to the data: $\chi^2(20) = 49.83$, $p < .001$; CFI = 0.99; TLI = 0.98; GFI = 0.99; RMSEA = 0.06 (90% CI [0.04, 0.08]); SRMR = 0.03. All standardized factor loadings were statistically significant [$p < .001$] and ranged from 0.35 to 0.80 ($M = 0.62$). Seven of the eight items exceeded the conventional threshold of 0.40. Overall, the pattern of loadings supported the uni-dimensional structure of the scale.

Standardized factor loadings and item statistics are presented in Table 2.

Most items demonstrated satisfactory standardized factor loadings. Item 2 ("When with my child, I place my phone where it is visible") exhibited a relatively lower loading ($\lambda = 0.35$) compared to other items, falling slightly below the conventional threshold. Nevertheless, this item was retained because it captures a theoretically significant aspect of parental phubbing - the anticipatory availability posture indicating divided attention even prior to active phone use [1], and its loading remained statistically significant ($p < .001$). Precedent for retaining items with comparable loading exists in both Chinese [17] and Western [1] validation studies.

3.1.2. Reliability

The Indonesian PPS-R demonstrated good internal consistency, with Cronbach's alpha of 0.79 and McDonald's omega of 0.80 [29, 30]. Composite reliability derived from the CFA model was 0.80, further supporting the scale's structural reliability.

3.1.3. Convergent Validity

The Average Variance Extracted (AVE) was 0.39, indicating that 39% of the variance in the observed indicators was explained by the latent construct. Although slightly below the recommended threshold of 0.50 [31,

32], the AVE value is considered acceptable given the satisfactory factor loadings and composite reliability ($CR = 0.80$), consistent with the compensatory criterion [31].

4. DISCUSSION

The factor structure and reliability of the Indonesian PPS-R are consistent with those reported in Chinese [17], Turkish [23], and Western samples [1], indicating that parental phubbing represents a structurally stable construct across culturally diverse contexts. This convergence supports the conceptualization of smartphone-related attentional displacement during parent-child interactions as a cross-culturally recognisable behaviour, shaped by the global reach of mobile technology rather than by any single cultural parenting norm [33].

Our findings support technoferece theory [3] in that digital devices compete for parental attention during interactions with children and disrupt face-to-face social interactions. The validated Indonesian PPS-R advances this theoretical framework by enabling systematic measurement of technology-related attentional disruptions specifically within parenting contexts.

The convergence of fit indices across Indonesian, Chinese, Turkish, and Western PPS-R validations demonstrates that parental phubbing is a structurally stable construct - parents across these cultural contexts consistently recognise and report the same pattern of smartphone-mediated attentional displacement during child interactions. Yet structural equivalence should not be conflated with mean-level equivalence, and the present findings raise theoretically important questions about cross-cultural variation in phubbing frequency and impact. Indonesian parenting is characterised by strong relational norms-including rukun (harmonious interdependence), gotong royong (mutual cooperation), and Islamic caregiving duties (tanggung jawab orang tua)-that frame parental attentiveness as both a social and moral expectation [18]. Under these norms, attentional withdrawal toward a device may constitute a more salient violation of caregiving expectations than in Western individualistic contexts, where personal device use carries

greater cultural legitimacy. At the same time, Indonesia's position among the world's highest daily social media users [24] creates a structural tension: collectivist digital communication norms generate constant network-level demands that compete with face-to-face parental presence, potentially sustaining phubbing behaviours even among relationally committed parents. Comparative studies examining mean-level differences and the differential consequences of phubbing across cultural contexts are now possible with the availability of validated instruments in multiple languages and represent an important direction for future research.

Several moderating variables warrant attention in future research using the Indonesian PPS-R. First, Indonesia's position among the world's highest daily social media users [24] suggests that constant digital connectivity is normative in this context, which may reduce parents' conscious awareness of phone-related attentional lapses and contribute to underreporting on self-report measures; observational methods would provide a valuable complement to scale-based assessment. Second, the present sample was predominantly employed mothers (76% employed; 80% female), and future studies should examine whether phubbing frequency and its relational consequences differ between employed and non-employed parents, given that work-related smartphone demands-notifications, messaging apps, and expectations of constant professional availability-are a theoretically distinct driver of technofence from social or recreational use. Third, child age was not systematically assessed in the current study, yet the developmental implications of parental phubbing are likely to vary considerably across age groups: for infants and toddlers, smartphone-related attentional interruptions disrupt the serve-and-return interactions foundational to language and attachment development, while for adolescents, phubbing may become reciprocal and carry different relational meaning. Future validation studies should stratify by child age to examine whether the scale's predictive relationships with child outcomes differ across developmental stages.

Future studies should explore the connection between parental phubbing and its possible predictors (such as problematic smartphone use and work-family conflict) as well as developmental outcomes (such as children's socio-emotional adjustment and the quality of parent-child attachment) to deepen theoretical understanding of technofence in non-Western family systems. Although this study did not examine differences between mothers and fathers in occupation or parental phubbing scores, future research could benefit from examining potential gender-based variations in parental smartphone usage patterns.

5. LIMITATION

Several methodological limitations should be acknowledged. First, the study relied exclusively on self-report data, which may be subject to social desirability bias, particularly given cultural norms emphasizing attentive parenting in Indonesian society. Second, the

sample was geographically restricted to Yogyakarta, limiting generalizability to other Indonesian regions with different urbanization levels, cultural norms, or digital infrastructure. Third, the substantial gender imbalance (80% mothers, 20% fathers) limits our ability to examine potential gender differences in parental smartphone use patterns and restricts the generalizability of findings to Indonesian fathers. Fourth, and most critically, the child's age was not assessed. This is a significant limitation, as the developmental implications of parental phubbing differ substantially across child age groups. For parents of infants and preschoolers, smartphone-related attentional interruptions disrupt the contingent, serve-and-return interactions that are foundational to language acquisition, attachment formation, and early socio-emotional development. For parents of school-age children, phubbing affects perceived parental availability and models digital behaviour during a formative period for technology habits. For parents of adolescents, the dynamic becomes reciprocal-both parent and teenager may phub simultaneously-and the relational meaning of phone use is negotiated differently within peer-oriented identity development. Future studies using the Indonesian PPS-R should stratify samples by child age to examine whether phubbing frequency, its predictors, and its consequences on child outcomes vary across these developmental stages. Fifth, this validation study focused on establishing the internal structure and reliability of the Indonesian PPS-R. Still, it did not examine external validity through associations with theoretically related constructs (*e.g.*, problematic smartphone use, work-family conflict) or child outcomes (*e.g.*, attachment quality, socioemotional adjustment).

CONCLUSION

This study provides the first psychometrically validated instrument for measuring parental phubbing in Indonesia, extending technofence research to a context that differs fundamentally from Western and East Asian settings. In a society where attentive parenting is not only a relational expectation but is reinforced by Islamic teachings on parental responsibility (*tanggung jawab orang tua*) and collectivist norms of interpersonal harmony (*rukun*), parental phubbing carries moral weight beyond mere distraction. Smartphone-related attentional displacement in this cultural context may be experienced by children as a more profound breach of caregiving expectations than in societies where individual device use is culturally legitimised. The availability of a validated, culturally appropriate instrument now enables researchers to examine these culturally embedded consequences empirically, and provides practitioners with a standardised tool for assessing digital parenting risk in Indonesian family, educational, and clinical settings.

That parental phubbing is measurable and structurally coherent in a strongly collectivist, Muslim-majority context is itself theoretically significant. In Indonesian family culture, the Islamic principle of *amanah* - the sacred trust of parental guardianship - alongside norms of *rukun*

(interpersonal harmony) and gotong royong (mutual obligation), position attentive parenting as both a moral and a communal responsibility. Parental phubbing in this setting may therefore generate greater relational disruption and parental guilt than in more individualistic societies, with implications for children's sense of parental availability, emotional security, and their own developing attitudes toward technology use within family relationships. These culturally specific dynamics underscore the need for indigenous measurement tools rather than the direct transfer of Western instruments.

IMPLICATION

From a theoretical perspective, the present study contributes to the cross-cultural validation of psychological measurement instruments in the domain of digital parenting. By adapting and validating the *Parental Phubbing Scale [PPS]* for use among Indonesian parents, this research extends the conceptual understanding of parental phubbing beyond Western and East Asian contexts. The study underscores the importance of theory-driven validation, emphasizing that measurement adaptation should preserve conceptual integrity rather than rely solely on statistical indicators.

In practice, the validated Indonesian version of the PPS provides researchers and practitioners with a reliable tool to assess parental smartphone-related neglect in everyday interactions. The instrument can be used in developmental, educational, and counseling settings to identify risk patterns in digital parenting behavior.

AUTHORS' CONTRIBUTIONS

It is hereby acknowledged that all authors have accepted responsibility for the manuscript's content and consented to its submission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

LIST OF ABBREVIATIONS

PPS	=	Parental Phubbing Scale
PPS-R	=	Parental Phubbing Scale-Revised
CFA	=	Confirmatory Factor Analysis
AVE	=	Average Variance Extracted

APPENDIX A

Indonesian Version of the Parental Phubbing Scale-Revised [PPS-R]

No	Original Item	Indonesian Version
1	When I have meals with my child, I use the phone	Ketika makan bersama anak, Saya tetap menggunakan ponsel
2	When I am with my child, I place my phone in a visible location.	Ketika bersama anak, saya meletakkan ponsel di tempat yang terlihat
3	When I am with my child, I hold my phone in my hand	Ketika bersama anak, saya memegang ponsel
4	When my phone rings/vibrates, even if I am engaged in a conversation with my child, I take it out to check	Saat ponsel saya bergetar/ berdering, saya segera memeriksanya meski sedang berbicara dengan anak saya
5	While chatting with my child, I occasionally sneak a glance at my phone	Saat sedang mengobrol dengan anak saya, saya sesekali melirik ponsel
6	When playing with my child, I use my phone (including taking pictures and calling).	Saat bermain dengan anak saya, saya sering menggunakan ponsel (termasuk untuk berfoto dan menelepon)
7	I use my phone when I am playing with my child outside together	Saya menggunakan ponsel saat bermain dengan anak saya di luar rumah
8	During the conversation with my child, I tend to check my phone	Selama berbicara dengan anak, saya cenderung memeriksa ponsel saya

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was approved by the Research Ethics Committee of Universitas Muhammadiyah Surakarta, Indonesia (Approval No. 5591/B.1/KEPK-FKUMS/II/2025). All procedures performed in this study were conducted in accordance with the ethical standards of the institutional research committee and the Declaration of Helsinki.

HUMAN AND ANIMAL RIGHTS

All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from all participants prior to participation in the study.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of this article are openly available in the Open Science Framework (OSF) repository at <https://osf.io/xd546/> (OSF Project ID: xd546).

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CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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