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DEVELOPMENT AND VALIDATION OF CYBERBULLYING SITUATIONAL SCALE FOR YOUNG ADULTS IN ONLINE ENVIRONMENTS

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Abstract
The global rise in digital technology has led to an increase in cyberbullying, particularly among young adults in Thailand. This study aimed to develop a cyberbullying situational scale, focusing on 490 participants aged 18-24 residing in Bangkok and its metropolitan area for over one year. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were conducted to validate the scale. The 18-item questionnaire, based on cyberbullying scenarios in Thailand, was evaluated for content validity using the Index of Item-Objective Congruence (IOC), with three experts assessing the questionnaire to ensure its validity. Reliability was assessed using Cronbach's alpha, and correlations were analyzed using the LISREL program and SPSS. The overall Cronbach's alpha coefficient for the scale was .81, and the Corrected Item-Total Correlation (CITC) for all items exceeded .2. The data analysis included frequency, mean, and results from the EFA, along with eigenvalues and factor loadings. The CFA results indicated that the scale fit the empirical data well, demonstrating construct validity. The cyberbullying factors were divided into four situations: 1) Harassment, 2) Outing and Trickery, 3) Denigration, and 4) Impersonation, which aligned with the literature on cyberbullying scenarios in Thailand. The correlation analysis using Pearson's correlation coefficient revealed that the cyberbullying situational scale had a statistically significant positive correlation with the aggression scale (r = .87) and a statistically significant negative correlation with the empathy scale (r = -.87).
Keywords: Cyberbullying, Cyberbullying Scale, Online

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Introduction

In the modern era, digital technology and the internet have become essential globally, especially in Thailand, which has embraced full-scale digital development. Technology has enhanced convenience, connectivity, and efficiency in various communication and work processes. Over the past decade, global internet usage surveys have consistently reported annual growth in the number of users. By 2024, it is estimated that there will be approximately 5.35 billion internet users worldwide (Oberlo, 2024).

The 2022 survey on internet usage behavior revealed that social media platforms remain highly popular in Thailand. Facebook is the most used platform, accounting for 98.2% of the population, followed by YouTube, LINE, and Instagram (Electronic Transactions Development Agency, 2020).

It is well recognized that cyberbullying is a significant issue, characterized by its ease of execution and rapid spread online. This behavior typically involves aggressive actions toward victims who cannot often defend themselves. The anonymity provided by digital platforms allows perpetrators to harm others without revealing their identities, enabling attacks at any time and place. Victims of cyberbullying frequently face severe mental health challenges, including heightened risks of anxiety, depression, and suicidal ideation, which are increasingly linked to the effects of online harassment (Longobardi et al., 2022).

Research indicates a significant correlation between the amount of time individuals, particularly adolescents, spend on social media and their risk of encountering cyberbullying. The more time teenagers spend on social media platforms, the higher their likelihood of experiencing online harassment (Zhu et al., 2021; Ma et al., 2024). This aligns with global reports highlighting the increasing prevalence of internet-related threats, especially among young people. Adolescents are particularly vulnerable to cyberbullying, whether as perpetrators or victims (Cook, 2022; Patchin & Hinduja, 2019).

Studies on cyberbullying in Thailand often employ approaches such as in-depth interviews and focus group discussions to explore behaviors associated with cyberbullying, its various forms, youth perceptions of online harassment, prevention strategies, and the impacts of victimization. (Tudkuea et al., 2019; Promnork et al., 2019; Kimalee, 2020; Puapongsakorn, 2020). Most research utilizes existing cyberbullying measurement scales, which may yield generalized results that fail to capture the unique context of Thai online behavior.

The findings highlight the lack of a tailored cyberbullying scale that aligns with Thailand's population's behavioral context. The development of such a scale offers a significant advantage by distinguishing itself from traditional tools that primarily focus on measuring the frequency of past behaviors. This new instrument introduces a novel perspective by assessing the likelihood of future actions based on real-life scenarios commonly encountered by young adults in Thailand's online environment.

The researcher aims to develop a cyberbullying situational scale by collecting data from a sample group aged 18-24 who have lived in Bangkok and its metropolitan areas for over a year. The sample selection criteria are based on data from the National Statistical Office (2023), which indicates that the internet usage rate in Bangkok and its metropolitan areas is 97.8%, with the highest usage rate in this age group reaching 99.1%. This trend continues to increase annually. These factors support the importance of focusing on this population for studying online bullying and victimization. The choice of this age group is also consistent with research by Saengmas et al. (2018), which shows that cyberbullying is a common issue among adolescents and young adults in Thailand, with significant mental health impacts. Furthermore, the study by Balakrishnan (2015) on cyberbullying among young adults in Malaysia found that cyberbullying remains prevalent in young adults, both as perpetrators and victims, underscoring the significance of addressing this issue.

In addition, the cyberbullying situational scale can be used to analyze psychological factors alongside other variables in the study of the causes of cyberbullying. This can support new knowledge in the field of cyberbullying, leading to interesting findings and a broader perspective.

Moreover, significant emphasis is placed on the development of a high-quality tool that adheres to statistical standards. This involves rigorous analyses to ensure its validity and reliability, thereby guaranteeing its quality and suitability for future applications.

Literature Review

Cyberbullying

The term "cyberbullying" is derived from "cyberspace." This form of bullying, conducted via digital devices such as smartphones, computers, and tablets, transcends physical boundaries and time limitations, enabling it to target victims at any time or location potentially. (Alhashmi et al., 2023). The concept of cyberbullying was first explored by Bill Belsey in 2003 in Canada (Smith, 2023). Cyberbullying refers to a form of indirect bullying facilitated through technology. It is typically defined as using information and communication technologies (ICT) to intentionally and repeatedly inflict harm, harassment, or embarrassment upon an individual. This behavior is often carried out by individuals or groups through electronic communication, targeting a victim who cannot easily defend themselves. Such actions are considered aggressive and deliberate, taking place over time and involving various forms of digital interaction. (Sandeep & Venkatesh, 2023).

Cyberbullying can be classified into two primary types: direct and indirect. Direct cyberbullying involves overtly aggressive actions where the aggressor targets the victim through online platforms. This may include sending hurtful messages, posting threatening content, or sharing damaging rumors directly about the victim. These actions are typically easier to observe and can occur across digital mediums like text messaging, social media, or emails. In contrast, indirect cyberbullying is more subtle, as the victim may not immediately notice the harm being done. It can involve impersonating the victim online, spreading false information behind their back, or excluding them from online communities. Though these behaviors may be more challenging for the victim to detect initially, they can still cause significant emotional distress and contribute to social isolation over time. (Zhao & Yu, 2021). Additionally, Cyberbullies cannot immediately see their victims' reactions, and bystanders who share or spread harmful content can contribute to its rapid spread online. This differs from traditional bullying, typically in settings like schools or workplaces. (Foss, 2021).

Cyberbullying is characterized by factors such as anonymity and publicity, which are not typically seen in traditional bullying. While traditional bullying revolves around intentionality, power imbalances, and repetition, cyberbullying involves a broader scope and impact, thanks to its online nature. It can escalate quickly, often beyond the perpetrator's control, due to the vast reach of technology). Unlike traditional bullying, cyberbullying can occur across various digital platforms, including mobile phones, emails, text messages, chat rooms, social media, and online games. (Smith, 2023). Common platforms where cyberbullying takes place include Facebook, YouTube, LINE, Instagram, and Twitter (Electronic Transactions Development Agency, 2021).

From previous research findings, four primary forms of cyberbullying behaviors are frequently encountered in Thai society (Surat, 2018; Lertratthamrongkul, 2021; Sanmai, 2020; Lanak et al., 2020), including 1) Harassment 2) Outing and Trickery 3) Denigration and 4) Impersonation

Harassment

Harassment, the most common form of cyberbullying, involves gossiping, insulting, or mocking. These behaviors often express dislike or resentment through derogatory and

demeaning language on online platforms. While the victim's name may not be explicitly mentioned, readers can often infer the intended target.

Outing and Trickery

Outing and trickery refer to the disclosure of personal information or secrets without consent, with the deliberate intent of publicizing another person's private details online. This can cause the victim feelings of embarrassment and violation of privacy. In some cases, this behavior may co-occur with impersonation, as the perpetrator may reveal sensitive information and assume another person's identity.

Denigration

Denigration is a form of cyberbullying that involves spreading rumors or defamatory remarks. Often stemming from conflicts, it is characterized by gossip and mockery based on unverified or misleading information. During disputes, one party may resort to denigrating the other to provoke feelings of contempt, causing the victim to suffer humiliation, become the subject of ridicule, or face reputational damage.

Impersonation

Impersonation involves the perpetrator assuming another person's identity by accessing their online accounts without authorization. The impersonator may post embarrassing content or communicate with others in the victim's name, leading to misunderstandings and harm to the victim's reputation. This behavior can cause unintentional distress for the victim, as the impersonator's actions may go unnoticed until harm has already been done.

In conclusion, this study identified four key indicators of cyberbullying behaviors: Harassment, Outing and Trickery, Denigration, and Impersonation. The conceptual framework showing these indicators is provided in Figure 1.

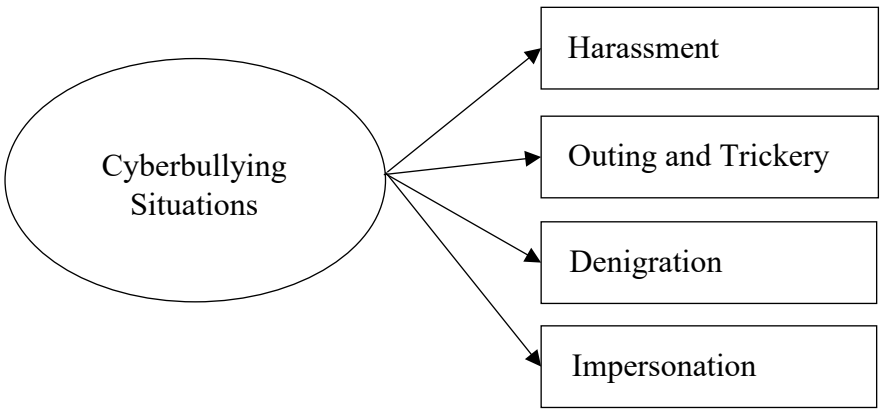

Figure 1 Conceptual Framework of Cyberbullying Situations

Research Methodology

Participants

The study included 490 participants aged 18-24, all residing in the Bangkok Metropolitan Region for at least 1 year. A convenience sampling method was utilized, with recruitment conducted on online platforms such as Facebook and LINE to reach individuals meeting the defined criteria. Data were collected using an online questionnaire administered via Google Forms. For Exploratory Factor Analysis (EFA), the sample size was determined based on the criteria established by Hair et al. (2019), which suggest a sample size of 5 to 10 cases per variable. Consequently, the recommended sample size for this study ranges from 90 to 180 participants. For Confirmatory Factor Analysis (CFA), following the guidelines provided by Hair et al. (2019), a sample size of 10 to 20 cases per variable is recommended. Therefore, the appropriate sample size for CFA in this study should be 180 to 360 participants.

Research Instruments

Developing the cyberbullying measurement scale involved creating content for each scenario and formulating the corresponding items. The researchers reviewed the literature on common forms of cyberbullying found in Thai society and identified the four most prevalent types: 1) Harassment, 2) Outing and Trickery, 3) Denigration, and 4) Impersonation. The content for each scenario and the items in the scale were derived from definitions in the literature and real-life instances of cyberbullying that have occurred online situation in Thailand. This is an example of a scenario created in the questionnaire, Situation 1: "When your favorite star reveals that they have a partner, but it turns out that their partner is not as attractive as you expected and seems very unsuitable for him/her, how would you comment on the topic of news?", Situation 2: "If you see trending news on social media where people are strongly criticizing someone for inappropriate behavior, and some are trying to discover the person's identity and his/her online accounts while you realize that the person the news is someone you know (though not closely and have had disputes with), and you know his/her Facebook and Instagram accounts, how would you comment on the news?", Situation 3: "When you read the news, that discusses a famous celebrity cheating on his/her partner and getting involved with someone else's partner, and people are heavily criticizing this, how would you comment on the topic of news?", and Situation 4: "If you were using a library computer and a Facebook pop-up message appeared from someone messaging an account left logged in, and you checked his/her profile, liked his/her photos and activities, and found them attractive, what would you do if they were asking for a phone number or other contact details to pursue a relationship?" Respondents were instructed to assume they were using Facebook anonymously. The questionnaire consisted of 18 items designed to assess the tendency to engage in each behavior, using a 6-point Likert scale (0 = never, 1 = very rarely, 2 = rarely, 3 = occasionally, 4 = frequently, 5 = always).

The researchers used the Index of Item-Objective Congruence (IOC) to measure content validity. Three experts evaluated the questionnaire, and both the content and items received content validity assessments. The IOC values ranged from 0.67 to 1.00, and CITC for all items exceeded 0.2, meeting the established criteria.

In terms of reliability, Cronbach's alpha was employed to assess the internal consistency of the scale items, yielding an overall reliability coefficient of .81, which indicates a satisfactory level of internal consistency. When analyzed by individual components, the alpha coefficient for 1) Harassment was .82, 2) Outing and Trickery was .80, 3) Denigration, the reliability coefficient was .83, and 4) Impersonation was .81, signifying that the items within this dimension effectively captured the targeted construct. These results collectively suggest that the measurement scale exhibits high internal reliability across all components, reaching the minimum threshold of .70, as Hair et al. (2010) suggested, reflecting perfect internal consistency according to the established standards.

To validate the scale, the researchers examined the correlation between the Cyberbullying Situational Scale and other aggression measures. They compared it with the aggression scale developed by Intamuen (2019) (α = .83), which employs a 7-point Likert scale with 12 items, expecting a positive correlation with the cyberbullying situational scale. Furthermore, they compared the scale with the Basic Empathy Scale (BES) by Jolliffe & Farrington (2006) (α = .92), which consists of 20 items and uses a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). A negative correlation with the cyberbullying situational scale was anticipated.

Data Collection

The researcher employed specific selection criteria for participants, targeting individuals aged 18-24 who have resided in the Bangkok Metropolitan Region for at least 1 year. A convenience sampling method was applied, with recruitment conducted via online platforms such as Facebook and LINE to reach individuals who met the defined criteria. Data were collected

using an online questionnaire administered through Google Forms. The data collection process involved only those participants who provided informed consent, ensuring their autonomy in the decision to participate in the study. This research process was approved by the Research Ethics Review Committee for Research Involving Human Research Participants, Group I, Chulalongkorn University (COA No.122/67), ensuring the integrity and ethical responsibility of the research process. This study is part of the doctoral dissertation titled "A Study of Predictive Factors of Cyberbullying and Cybervictimization."

Data Analysis

Descriptive statistics were analyzed using IBM SPSS Statistics version 22.0 to calculate frequency and percentage for the demographic data of the sample group, exploratory factor analysis (EFA) was performed, and Pearson's correlation was used to examine the relationships between related constructs. Analytical statistics, including confirmatory factor analysis (CFA), were performed using LISREL software version 8.72 to confirm the results of the EFA.

Research Results

Demographic Analysis

The participants in this study were selected based on the following inclusion criteria: individuals aged 18-24 years who have resided in the Bangkok metropolitan area and its surrounding regions for at least one year. A total of 490 participants met the selection criteria, with the majority being female, comprising 302 participants (61.63%) and 188 male participants (38.36%).

Exploratory Factor Analysis

In conducting Exploratory Factor Analysis (EFA), prior to factor extraction, the adequacy of the sample was assessed using the Kaiser-Meyer-Olkin (KMO) measure, and the quality of the inter-variable correlations was evaluated using Bartlett's test of sphericity. According to established criteria, the KMO value should be higher than 0.70, and the p-value from Bartlett's Test should be less than 0.001 to ensure the suitability of the data for factor analysis (Bartlett, 1950). Subsequently, the factor analysis was performed based on specific criteria to ensure the quality of the extracted factors. The cumulative percentage of variance explained by the extracted factors was required to be higher than 60.00%, as Nunnally & Bernstein (1994) recommended, to ensure that the retained factors account for a significant portion of the total variance. Additionally, the eigenvalues of the factors were required to be greater than 1.00, following the guideline proposed by Kaiser (1960), which provides a basis for determining the appropriate number of factors to retain. Furthermore, the factor loadings of individual items were required to be higher than 0.50, by the standard established by Hair et al. (2019), to ensure strong correlations between them and their respective factors. The results of the EFA, conducted by these criteria, are presented in Table 1.

Table 1 Factor Loadings of Cyberbullying Situation Scale from Exploratory Factor Analysis

Items	Factor Loading	Eigenvalues	% of Variance
Harassment		3.80	22.53
Har1	0.65		
Har2	0.62		
Har3	0.58		
Har4	0.64		
Outing and Trickery		3.30	20.04
OT1	0.70		
OT2	0.69		
OT3	0.68		
OT4	0.65		

Items	Factor Loading	Eigenvalues	% of Variance
OT5	0.64		
Denigration		2.70	18.12
DE1	0.72		
DE2	0.70		
DE3	0.68		
DE4	0.67		
Impersonation		2.20	15.23
IM1	0.68		
IM2	0.67		
IM3	0.65		
IM4	0.63		
IM5	0.62		

As presented in Table 1, the Harassment factor explained 22.53% of the variance, the Outing and Trickery factor explained 20.04%, the Denigration factor explained 18.12%, and the Impersonation factor explained 15.23%. The cumulative percentage of variance explained was 75.92%. The eigenvalues for all four factors were higher than 1.0. The Kaiser-Meyer-Olkin (KMO) value was 0.90, and Bartlett's Test of Sphericity yielded a p-value less than 0.001. These results indicate that all factor loadings were significant.

Confirmatory Factor Analysis

To validate the constructs identified through EFA, the researcher conducted a confirmatory factor analysis to assess the structural validity of the Cyberbullying Situation Scale, which includes four indicators: 1) Harassment, 2) Outing and Trickery, 3) Denigration, and 4) Impersonation. All the items in the questionnaire are framed as negative questions, as this study focuses on assessing cyberbullying behavior. Both first-order and second-order CFA analyses, Convergent Validity, Discriminant Validity, and Composite Reliability were performed, as presented in Table 2-3.

Table 2 Confirmatory Factor Analysis of the Cyberbullying Situation Scale

Construct	Loadings	R^2	AVE	CR
First Order				
Harassment (α = .82)			**0.50**	**0.75**
Har1: I would comment criticizing your favorite star's partner for not being attractive. (-)	.72	.53		
Har2: I would comment that you feel disappointed with my favorite star. (-)	.70	.48		
Har3: I would encourage others to stop following and unfollow my favorite star. (-)	.75	.55		
Har4: I would click the angry emoji button on the picture/post. (-)	.71	.51		
Outing and Trickery (α = .80)			**0.53**	**0.78**
OT1: I would drop hints to help people identify the individual. (-)	.74	.54		
OT2: I would share the account name or the person's contact information with others. (-)	.72	.53		
OT3: I would create a fake account profile of the person and release it to the public. (-)	.69	.47		
OT4: I would comment by telling others that you know the person and that they have a bad habit. (-)	.75	.56		

Construct	Loadings	R^2	AVE	CR
OT5: I would ask others if they want the person's contact information because you have the details. (-)	.71	.51		
Denigration (α = .83)			**0.51**	**0.76**
DE1: I would write curses directed at the celebrity in the news. (-)	.76	.59		
DE2: I would share information with others about the bad actions of that celebrity. (-)	.74	.56		
DE3: I would join others on social media in criticizing the bad actions of that celebrity. (-)	.73	.54		
DE4: I would follow the activities of the celebrity and his or her new partner and criticize their inappropriate actions. (-)	.70	.50		
Impersonation (α = .81)			**0.52**	**0.74**
IM1: I would impersonate the account owner and converse while pretending to be him or her. (-)	.69	.46		
IM2: I would impersonate the account owner, initiate conversations in his or her name, and then change the account password to restrict access. (-)	.67	.40		
IM3: I would provide my contact information or phone number instead to continue the relationship. (-)	.73	.54		
IM4: I would reply in a mischievous way to prank the owner of the account. (-)	.72	.52		
IM5: I would write about the account owner to make the person I am chatting with lose interest in the real owner and turn their attention to me instead. (-)	.70	.48		
Second Order				
Harassment	.74	.55		
Outing and Trickery	.72	.52		
Denigration	.78	.61		
Impersonation	.71	.50		

Table 3 Discriminant Validity

Construct	Harassment	Outing and Trickery	Denigration	Impersonation
Harassment	.50			
Outing and Trickery	.30	.53		
Denigration	.35	.40	.51	
Impersonation	.25	.28	.31	.52

According to the analysis in Table 2, the First-Order CFA results indicate that all items have factor loadings ranging from 0.69 to 0.76, reflecting a strong relationship between the observed variables and the latent factors. All factor loadings were found to be statistically significant at the 0.05 level. Furthermore, the Second-Order CFA revealed that the factor loadings for all four indicators of cyberbullying situations were positive, ranging from 0.71 to 0.78, and were statistically significant at the 0.05 level. The chi-square statistic was significant ($\chi^2 = 127.65$, degrees of freedom = 105, p-value = .07). The values for the Root Mean Square Residual (RMR) and Root Mean Square Error of Approximation (RMSEA) were .02 and .03, respectively. The Goodness-of-Fit Index (GFI) and Adjusted Goodness-of-Fit Index (AGFI) were .95 and .97, respectively, indicating a close fit between the model and the data. These fit indices suggest that the model provides a satisfactory fit and adequately explains the data.

(Schumacker & Lomax, 2004). To evaluate convergent validity, it was found that each construct had an Average Variance Extracted (AVE) greater than 0.50 and a Composite Reliability (CR) higher than 0.70, ensuring the adequate reliability of the constructs, as recommended by Hair et al. (2010). Discriminant validity was confirmed by comparing the AVE values, which should be greater than the square of the correlations between the corresponding constructs (Hair et al., 2010), as shown in Table 3.

Correlation between the Cyberbullying Situational Scale and Other Measures to Validate the Scale.

The relationship between the Cyberbullying Situational Scale and theoretically related measures of cyberbullying aggression and empathy was examined. A positive correlation was expected with the aggression scale, and a negative correlation with the empathy scale (Trochim, 1999). The Pearson product-moment correlation coefficients are shown in Table 4.

Table 4 Correlation between the variables studied: Cyberbullying Situational Scale, Aggression Scale, and Empathy Scale.

Variables	CSC	AG	EM
CSC	1.00		
AG	.87**	1.00	
EM	-.87**	-.74**	1.00
M	2.16	3.54	3.41
SD	0.75	0.53	0.87

** $p < 0.01$; Cyberbullying Situational Scale (CSC), Aggression Scale (AG), Empathy Scale (EM)

Pearson's correlation analysis revealed significant positive and negative associations to determine the interrelationship between the Cyberbullying Situation Scale, Aggression Scale, and Empathy Scale. The correlation between all variables demonstrated high correlation coefficients. CSC has a significant positive correlation with AG ($r = .87$, $p < 0.01$) and a significant negative correlation with EM ($r = -.87$, $p < 0.01$), respectively.

Discussion

This study involved the development of a cyberbullying situational scale by designing scenario-based items that reflect real-life cyberbullying behaviors observed in Thailand's online environments. Preliminary opinions were gathered from a sample of Thai young adults to construct the scale. The findings revealed that the developed model comprises four factors and 18 indicators, categorized into four situations: Harassment, Outing and Trickery, Denigration, and Impersonation. These factors were validated through Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and reliability tests using Cronbach's alpha coefficients and Corrected Item-Total Correlation (CITC). Additionally, the correlations between the studied variables were analyzed.

The results demonstrated that the instrument met the required statistical criteria, suggesting that the developed cyberbullying situational scale is reliable and applicable. These findings are consistent with previous research that categorized different forms of cyberbullying. For instance, Łosiak-Pilch et al. (2022) conducted a study in Poland to examine the prevalence rates of cyberbullying and the association between cyberbullying and protective/risk factors. The study categorized cyberbullying into seven forms: Cyberstalking, Denigration, Exclusion, Flaming, Harassment, Impersonation, and Outing and Trickery. Similarly, Kezia (2023) conducted a study aimed at collecting and analyzing articles related to the various causes and forms of cyberbullying among adolescents. This research identified common forms of

cyberbullying behaviors in adolescents, including Flaming, Harassment, Denigration, Impersonation, Outing, and Trickery. These findings support the results of this study.

However, through the development of the cyberbullying situational scale and conducting Confirmatory Factor Analysis, it was found that cyberbullying can be categorized into four forms: Harassment, Outing and Trickery, Denigration, and Impersonation. This aligns with the literature review, which indicates that these forms of cyberbullying occur frequently and are relevant in the context of young adults in Thailand, as previously stated. This helps to gain a deeper understanding of the cyberbullying phenomenon.

Additionally, a relationship between cyberbullying and empathy was found, with the results showing that cyberbullying perpetration was related to affective empathy and that empathy could be longitudinally linked to cyberbullying events. It was found that individuals with lower empathy levels were more likely to engage in cyberbullying (Francisco et al., 2024; Falla et al., 2023). In contrast, aggression was found to have a direct influence on cyberbullying perpetration (Hussain et al., 2023). These findings highlight the importance of addressing cyberbullying.

This research's recommendations and potential applications are as follows: The cyberbullying situational scale can be applied to adolescent and young adult populations in Thailand. This tool can help predict the future behaviors of perpetrators. Additionally, it can be used in conjunction with existing cyberbullying scales to assess past behaviors of both perpetrators and victims through traditional measures, thereby providing a comprehensive view of the cyberbullying context. The development of this measurement tool is expected to offer a deeper understanding of actual cyberbullying behaviors in various situations among Thai young adults. It may also serve as a guide for identifying ways to prevent such undesirable behaviors. Moreover, this scale can be used as a model for developing similar tools for other populations in different contexts.

Conclusion

This study aimed to develop and analyze the structure of a cyberbullying situational scale using Confirmatory Factor Analysis (CFA) among young adults in Thailand. Data were collected via a questionnaire administered to 490 individuals aged 18-24 who had resided in Bangkok and its metropolitan area for more than one year. The sample was selected through convenience sampling.

The findings revealed that the developed cyberbullying situational scale aligned well with the empirical data. The model comprised four factors and 18 indicators supported by the literature review: Harassment, Outing and Trickery, Denigration, and Impersonation. The study emphasizes the creation of the questionnaire and its items based on real-life scenarios encountered in Thai online society. These findings confirm that the model developed fits the empirical data, making the questionnaire suitable for assessing cyberbullying behaviors among young adults in Thailand. However, there are some limitations to this study. The sample was homogeneous in terms of age and geographic location, which may restrict the generalizability of the findings. Therefore, future research should include a more diverse sample to validate the scale across cultural contexts. Further research is also encouraged in this area.

Additionally, the analysis of the relationships between the cyberbullying situational scale, the aggression scale, and the empathy scale revealed significant correlations, with cyberbullying showing a positive correlation with aggression and a negative correlation with empathy at a statistically significant level.

References

Alhashmi, A., Kumar, K., Eid, A., Mansouri, W., Othman, S., Miled, A., & Darem, A. (2023). Taxonomy of Cyberbullying: An Exploration of The Digital Menace. *Journal of Intelligent Systems and Applied Data Science, 1*(2), 1-10.

Balakrishnan, V. (2015). Cyberbullying among young adults in Malaysia: The roles of gender, age and Internet frequency. *Computers in Human Behavior, 46*, 149-157.

Bartlett, M. (1950). Tests of significance in factor analysis. *British Journal of Psychology, 3*(2), 77-85.

Cook, S. (2022). *Cyberbullying facts and statistics for 2018-2022*. Retrieved from www.comparitech.com/internet-providers/cyberbullying-statistics/.

Electronic Transactions Development Agency. (2021). *ETDA reveals IUB 2020 survey: Thais use the internet for almost half a day, with COVID-19 playing a role*. Retrieved from www.etda.or.th/th/newsevents/pr-news/ETDA-released-IUB-2020.aspx.

Falla, D., Ortega-Ruiz, R., da Costa Ferreira, P., Veiga Simão, A., & Romera, E. (2023). The effect of cyberbullying perpetration on empathy and moral disengagement: Testing a mediation model in a three-wave longitudinal study. *Psychology of Violence, 13*(5), 436-446.

Foss, R. (2021). *Cyberbullying: Five Common Misconceptions*. Retrieved from www.umgc.edu/news/archives/2021/10/cyberbullying-five-common-misconceptions.

Francisco, S., Ferreira, P., Simão, A., & Pereira, N. (2024). Moral disengagement and empathy in cyberbullying: how they are related in reflection activities about a serious game. *BMC Psychology, 12*, 168.

Hair, J., Babin, B., Anderson, R., & Black, W. (2019). *Multivariate Data Analysis*. 8th ed. London: Pearson Prentice.

Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate Data Analysis*. 7th ed. London: Pearson Education.

Hussain, Z., Kircaburun, K., Savcı, M., & Griffiths, M. (2023). The role of aggression in the association of cyberbullying victimization with cyberbullying perpetration and problematic social media use among adolescents. *The Journal of Concurrent Disorders, 2023*, 1-18.

Intamuen, N. (2019). *The causal model of aggression and brain wave study of recidivists and normal people*. Doctor of Philosophy Thesis, Chulalongkorn University.

Jolliffe, D., & Farrington, D. (2006). Development and validation of the Basic Empathy Scale. *Journal of Adolescence, 29*(4), 589-611.

Kaiser, H. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement, 20*, 141-151.

Kezia, C. (2023). The Forms of Cyberbullying Behavior among Teenage Students: A Systematic Literature Review. *Jurnal Bimbingan dan Konseling Terapan, 7*(2), 151-160.

Kimalee, P. (2020). AnIn-depth Study of the Cyberbullying Victimization Causes and Effects in Workplace. *Journal of Information Systems in Business, 6*(2), 6-20.

Lanak, A., Kiatrungrit, K., Hongsanguansri, S., & Musikaphan, W. (2020). Association between Parental, Peer, and Teacher Attachment, and Cyberbullying. *J Psychiatr Assoc Thailand, 65*(3), 245-262.

Lertratthamrongkul, W. (2021). Cyberbullying among Secondary School Students: Prevalence, Problem-solving and Risk Behaviors. *Neu Academic and Research Journal, 11*(1), 275-289.

Longobardi, C., Thornberg, R., & Morese, R. (2022). Editorial: Cyberbullying and Mental Health: An Interdisciplinary Perspective. *Frontiers in Psychology, 12*, 827106.

Łosiak-Pilch, J., Grygiel, P., Ostafińska-Molik, B., & Wysocka, E. (2022). Cyberbullying and its protective and risk factors among Polish adolescents. *Personality Psychology, 10*(3), 190-204.

Ma, J., Su, L., Sheng, J., Liu, F., Zhang, X., Yang, Y., & Xiao, Y. (2024). Analysis of Prevalence and Related Factors of Cyberbullying-Victimization among Adolescents. *Children, 11*(10), 1193.

National Statistical Office. (2023). *The 2023 household survey on the survey on the use of information (Quarter4)*. Retrieved from www.nso.go.th/nsoweb//storage survey_detail /2024/20240229135937_44161.pdf.

Nunnally, J., & Bernstein, I. (1994). *Psychometric Theory*. 3rd ed. New York: McGraw-Hill.

Oberlo. (2024). *How many people use the internet?*. Retrieved from www.oberlo.com/statistics /how-many-people-use-internet.

Patchin, J., & Hinduja, S. (2019). *Summary of Our Cyberbullying Research (2007-2019)*. Retrieved from https://cyberbullying.org/summary-of-our-cyberbullying-research.

Promnork, C., Apinuntavech, S., & Musikaphan, W. (2019). Cyberbullying Behavior in 4th to 6th Grade Students at a Bangkok Municipal School. *Journal of Public Health Nursing, 33*(1), 20-39.

Puapongsakorn, N. (2020). *Revealed statistics of Thai children heavily "cyberbullied"! Average ranks among the highest in the world*. Retrieved from https://teroasia.com/ news/194261?ref=news.

Saengmas, C., Komenkul, K., & Puapradit, A. (2018). *Effects of Social Network and Cyberbullying on Mental Health in Young Adults in Thailand*. A paper presented at the RSU International Research Conference 2018, Rangsit University, Thailand.

Sandeep, G., & Venkatesh, R. (2023). Cyberbullying: A Narrative Review. *Journal of Mental Health and Human Behaviour, 28*(1), 17-26.

Sanmai, P. (2020). *Cyber Bullying on Online Media The Issue and Guideline to Solution*. [Unpublished Master's Thesis]. National Institute of Development Administration.

Schumacker, R., & Lomax, R. (2004). *A beginner's guide to structural equation modeling*. 2nd ed. New Jersey: Lawrence Erlbaum Associates Publishers.

Smith, P. (2023). *Activities in Cyber Behavior*. Cambridge: Cambridge University Press.

Surat, P. (2018). *Cyber Bullying in Socio-Cultural Dimensions: Case Study of Generation Z among Thai Youths*. [Unpublished Doctoral Dissertation]. Srinakharinwirot University.

Trochim, W. (1999). *The Research Methods Knowledge Base*. 2nd ed. New York: Cornell Publishing.

Tudkuea, T., Laeheem, K., & Sittichai, R. (2019). Guidelines for Preventive Cyber Bullying Behaviors among Secondary School Students in the Three Southern Border Provinces. *Journal of Behavioral Science for Development, 11*(1), 91-106.

Zhao, L., & Yu, J. (2021). A Meta-Analytic Review of Moral Disengagement and Cyberbullying. *Frontiers in Psychology, 12*, 681299.

Zhu, C., Huang, S., Evans, R., & Zhang, W. (2021). Cyberbullying Among Adolescents and Children: A Comprehensive Review of the Global Situation, Risk Factors, and Preventive Measures. *Frontiers in Public Health, 9*, 634909.

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