



INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES



Revalidating Adolescent Cyber-Bullying Scale Using Fuzzy Delphi Approach

Zaidatul Nadiah Abu Yazid, Azeni Abu Bakar, Jolin Norshyme Hashim, Nurul Nadia Abd Aziz

To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v12-i9/14908>

DOI:10.6007/IJARBSS/v12-i9/14908

Received: 04 July 2022, **Revised:** 07 August 2022, **Accepted:** 26 August 2022

Published Online: 10 September 2022

In-Text Citation: (Yazid et al., 2022)

To Cite this Article: Yazid, Z. N. A., Bakar, A. A., Hashim, J. N., & Aziz, N. N. A. (2022). Revalidating Adolescent Cyber-Bullying Scale Using Fuzzy Delphi Approach. *International Journal of Academic Research in Business and Social Sciences*, 12(9), 844 – 855.

Copyright: © 2022 The Author(s)

Published by Human Resource Management Academic Research Society (www.hrmars.com)

This article is published under the Creative Commons Attribution (CC BY 4.0) license. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this license may be seen at: <http://creativecommons.org/licenses/by/4.0/legalcode>

Vol. 12, No. 9, 2022, Pg. 844 – 855

<http://hrmars.com/index.php/pages/detail/IJARBSS>

JOURNAL HOMEPAGE

Full Terms & Conditions of access and use can be found at
<http://hrmars.com/index.php/pages/detail/publication-ethics>



INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES



Revalidating Adolescent Cyber-Bullying Scale Using Fuzzy Delphi Approach

Zaidatul Nadiah Abu Yazid, Azeni Abu Bakar, Jolin Norshyme
Hashim, Nurul Nadia Abd Aziz

Faculty of Business and Management, Universiti Teknologi MARA (UiTM) Pahang (Raub
Campus), Pahang, Malaysia

Corresponding Author's Email: zaidhea@uitm.edu.my

Abstract

The purpose of this study is to use the Fuzzy Delphi Approach to obtain expert consensus on the effects of the cyberbully aggressor scale in the context of Malaysia. The purposive sampling method was used to select ten experts for this study. The experts were selected from a variety of educational levels and expertise areas. Most of them have 7 to 29 years of experience in interacting using ICT. For the purpose of revalidation, a revised version of The Cyber-Aggressor Scale (CYB-AGG) was used in this study. The study's findings revealed that there was a strong degree of agreement among experts because the average threshold value for the entire construct reached was 0.07474. The experts generally accepted most of the items, as evidenced by the total expert agreement percentage of 93%. The revalidation of this scale is a significant contribution of this study that may be useful for policymakers to develop more effective prevention programs in minimizing cyberbullying.

Keywords: Cyberbullying, Adolescents, Fuzzy Delphi

Introduction

Substance use, school violence and cyberbullying are among the social and public health issues that are widely discussed in the field of education, organizations, and interpersonal relationships. One of the trends that has received the greatest attention in recent years is violence conduct in using the electronic devices and social media (Molero, et al., 2022). Cyberbullying is a deliberate and persistent harm that is conducted wilfully that take place online due to the use of computers, smartphones and other technology devices through the medium of information and communication technology including texting, social networks (includes Facebook, Instagram, TikTok, etc.), calls, emails and others by an individual or group of individuals to injure another person (Patchin & Hinduja, 2006; Buelga et al., 2020). The capacity to commit such aggression, anonymously, in a larger audience, supplements by a physical distance between the victim and offenders are aspects of cyberbullying that encourage and exacerbate the harm done to the victim (Molero et al., 2022; Kee et al., 2022, Buelga et al., 2020). All of these traits, together with intentionality and power imbalance, contribute to the phenomenon's increasing prominence.

Cyberbullying in Malaysia

Malaysia showed high accessibility of 91.7% internet with the internet usage of 89.6% in 2020 (Department of Statistics Malaysia, 2020). As reported by UNICEF, in 2018, 1 in 3 Internet users is a child and more than 175,000 children go online for the first time every day. In a similar vein, Malaysian Communications and Multimedia Commission (MCMC) found, 92% children between the age of 5 and 17 years used the internet (MCMC Survey, 2018). Additionally, in a 2017 survey of more than 8,000 primary and secondary students nationwide, CyberSecurity Malaysia (CSM), discovered that nearly half of students between the ages of 7 and 9 had social media accounts, and that number rose to 67 percent for students between the ages of 10 and 12. 92% of individuals surveyed between the ages of 13 and 17 have social media profiles (Thomas, 2019).

Along with this concerning figure, the negative effect is a concern where cyber threats such as cyberbullying showed an escalating problem. A survey made by Malaysia cyber security unit in 2012 found 60% of the reported cases were about cyberbullying on social networking sites such as Facebook and MySpace (Anis et al., 2012). A significant study by Balakrishnan, 2015 exposed that 39.7% of users admitted to being cyberbullied online whereas 33.6% stated that they had cyberbullied anyone. The study was conducted among Malaysian aged between 17 to 35 years old. In 2017, it is reported cyberbullying as one of the top five cyber threats and it is the third most dangerous risk after fraud and intrusion (Farezza, 2017). The numbers had unfortunately led to the report made by United Nations Children's Fund (UNICEF), in which Malaysia ranked second in Asia for youth cyberbullying in 2020.

The cyberbullying cases on social media platforms in Malaysia have seriously traumatize users on both psychological and emotional level. As circulated in various mainstream media platforms, the list of evidences in Malaysia is daunting, as for examples in May 2020, a 20-year-old Penang girl, a victim of cyberbullying, hanged herself from a ceiling fan after a TikTok video of her and a colleague garnered criticism on Facebook went viral. In August 2020, a 17-year-old Penang girl committed suicide by jumping to her death from a condo after her boyfriend threatened to post her personal images online. Malaysian were also taken aback by the news in May 2019 when a 16-year-old Sarawak girl committed suicide by jumping to her death after asking her Instagram followers for advice on whether she should live or kill herself in a poll.

In reference to the increasing cases of cyberbullying and previous literatures made by the researchers, it is important to have measurements which is able to identify and overcome the problems. Specifically, there is no accurate measurement found focusing on Malaysia. Thus, there is a need to present a valid measurement catering to context in Malaysia. A specific revalidation scale will lend significant contribution in the area of cyberbullying studies and narrow the gap on the limited studies in Malaysia.

According to the literature discussed, researchers found that there is yet a specific cyberbullying scale in the context of Malaysia perspectives. For that reason, this research is conducted as there is a need to develop a valid measurement scale to be adapted into the Malaysian context. This research is to revalidate the *Adolescent Cyber-Bullying Scale* so that it could study specifically the Malaysian respondents towards the cyberbullying demeanour.

The Research Aims

This study is conducted to acquire expert agreement on the impact of the cyberbully aggressor scale using the Fuzzy Delphi Approach in Malaysia context.

Methodology

The researchers employ the Fuzzy Delphi Method (FDM) to seek consensus among experts on the cyberbullying scale. Expert agreement is very important to determine the relevancy and priority of the items in the scale. Through the process of determining the ranking of the Fuzzy score (A), the researcher can determine the ranking of items according to priority based on expert consensus (Bodjanova, 2006). The literature on the selection of expert size suggests that with a homogeneous group of experts, a panel consisting 10-15 individuals is sufficient to obtain good results (Adler & Ziglio, 1996)

Expert Criteria and Sampling Procedure

An expert is anybody who has knowledge and skill in a certain subject or sector, they have earned their qualifications, training, experience, professional membership, and peer recognition via hard work and devotion (Booker & Mc Namara, 2004; Nikolopoulos, 2004; Perera et al., 2012; Cantrill et al., 1996; Mullen, 2003). In this study, ten experts were selected using the purposive sampling method. This sampling strategy follows Hasson et al (2000), who state that it is the most acceptable strategy in Fuzzy Delphi Method.

An expert panel was assembled to assess the importance of the evaluation parameters of the factors to be evaluated using linguistic variables. Careful selection of the expert group is crucial as it ensures that the correct evaluation is provided in the context of this study (Chang & Wang, 2006). The 10 experts in this study have 7-29 years of experience, including 3 who holds a doctoral degree. This follows Berliner (2004), who suggested a minimum of five years' experience and Gambatese et al (2008), who recommended experts with doctoral degrees. The experts were also carefully chosen from different academic levels with different expertise. The experts that have consented to participate are listed in Table 1.

Table 1
List of Experts

Experts	Area of Specialization	Academic Qualification	Working Experience (years)
1	Policy Studies	PhD	12
2	English Language Studies and Literature	PhD	21
3	English Language Studies and Mobile Assisted Language Learning	PhD	16
4	English Language Studies	Masters	29
5	Finance	Masters	12
6	Finance	Masters	7
7	Economics	Masters	20
8	Economics	Masters	18
9	Human Resource Management; Business Management	Masters	14
10	Marketing	Masters	22

Validation of Instruments: The Adolescent Cyber-Bullying Scale

A revised version of The Cyber-Aggressor Scale (CYB-AGG) developed by Buelga et al (2020) was utilized in this study for the purpose of revalidation. The questionnaire comprises 18 items with a Likert scale ranging from (1) "never" to (5) "many times". These items

measure the adolescent's experience as a cyberbullying perpetrator in the past 12 months. The table shows the updated version of the scale.

Table 2

The Adolescent Cyber-Bullying Scale

Item No	Items
1	I have insulted or ridiculed someone in social networks or groups like WhatsApp to really screw with or annoy him/her.
2	I have called someone's cell phone and hung up to bother or frighten him/her.
3	I have threatened someone to make him/her do things on the Internet or Smart phone that he/she did not want to do (like recording him/herself on video, giving me money, doing bad things).
4	I have told someone's secrets or revealed personal things about him/her in social networks or groups (WhatsApp, snapchats, ...)
5	To make fun of someone, I have made or manipulated videos or photos of him/her and uploaded or distributed them on social networks or by smartphone.
6	I've logged into someone's profile or accounts, and he/she could not do anything about it.
7	I have pretended to be someone else so I could say or do bad things on the Internet.
8	I have purposely created a webpage, a forum, or a group just to make fun of someone and criticize him/her in front of everyone.
9	I have put someone's cell phone number on the Internet and said bad or false things about him/her so that people would call him/her and get him/her into trouble.
10	I have taken someone's smartphone and used it to send photos, videos, or mean messages to others to get him/her into trouble with them.
11	I have criticized someone or made fun of comments, photos, or videos he/she uploaded to social networks or groups like WhatsApp.
12	I have created a false profile on the Internet with someone's personal data in order to impersonate him/her saying or doing bad things.
13	I have ignored and did not answer someone's messages or things he/she shared in groups or social networks, just to make him/her feel bad
14	I have provoked someone in social networks or groups by insulting or taunting him/her to make him/her angry and cause a big argument.
15	I have eliminated or blocked someone from groups to leave him/her without any friends.
16	I've stolen photos, videos, or private conversations and uploaded them or sent them to others.
17	I have changed someone's password to social networks so that he/she could not access them.
18	I sent someone taunting messages to bother and annoy him/she.

Procedure

In this study, the experts were given an expert validation form to rate their agreement on the items. The expert validation form was designed using a seven Likert scale agreement.

Following earlier researchers, the seven Likert scales were because it corresponds with the 7-point Fuzzy scale and with a higher number of scales, the more accurate the results are likely to be (Kamarulzaman & Alsibai, 2018; Yusof et al., 2021; Chang et al., 2011). The table below shows the details of the 7-point Fuzzy scale.

Table 3
Fuzzy Scale

<i>Item</i>	<i>Fuzzy number</i>
Strongly disagree	(0.0, 0.0, 0.1)
Disagree	(0.0, 0.1, 0.3)
Somewhat Disagree	(0.1, 0.3, 0.5)
Neutral	(0.3, 0.5, 0.7)
Somewhat agree	(0.5, 0.7, 0.9)
Agree	(0.7, 0.9, 1.0)
Strongly agree	(0.9, 1.0, 1.0)

Data Analysis: Fuzzy Delphi Method

The Fuzzy Delphi Method entails the fulfilment of two prerequisites: The Triangular Fuzzy Number and the Defuzzification Process.

Prerequisite 1: Determining Triangular Fuzzy Number

This procedure entails translating all linguistic variables into the counting of fuzzy triangles or triangular fuzzy numbers (Hsieh et al., 2004). The Triangular Fuzzy Number represents the values m_1 , m_2 , and m_3 and is written as follows (m_1, m_2, m_3) . The value of m_1 represents the smallest possible value, the value of m_2 represents a rational value, and the value of m_3 represents the highest possible value.

Prerequisite 2: Defuzzification Process

This process is carried out to ensure that the percentage of expert consensus follows the traditional Delphi formula. Expert agreement must reach a minimum of 75% in order for an item to be accepted. This process uses the formula $A_{max} = (1)/4 (a_1 + 2a_m + a_3)$. The fuzzy score (A) is determined from the α -cut value of 0.5 (Cheng & Lin, 2002). The alpha cut value should exceed 0.5 (Bojdanova, 2006; Tang & Wu, 2010). A value is less than the α -cut value = 0.5, the item will be rejected because it does not indicate an expert agreement.

Results and Discussion

This section illustrating an expert agreement on the instruments. These instruments were presented to 10 experts who have years of experiences in interacting using ICT between various individuals. The findings were collected and analysed using Fuzzy Delphi technique based on the responses supplied. The findings are presented in the following tables.

Table 4

Findings of Expert Consensus using the Fuzzy Delphi

Resul ts	Item1	Item2	Item3	Item4	Item5	Item6	Item7	Item8	Item9	Item1 0	Item1 1	Item1 2	Item1 3	Item1 4	Item1 5	Item1 6	Item1 7	Item1 8
Exper t1	0.023 09	0.023 09	0.057 74	0.080 83	0.011 55	0.075 06	0.017 32	0.028 87	0.023 09	0.063 51	0.069 28	0.121 24	0.034 64	0.046 19	0.127 02	0.011 55	0.034 64	0.069 28
Exper t2	0.034 64	0.023 09	0.057 74	0.092 38	0.127 02	0.040 41	0.098 15	0.086 6	0.092 38	0.063 51	0.011 55	0.063 51	0.034 64	0.046 19	0.046 19	0.011 55	0.034 64	0.069 28
Exper t3	0.023 09	0.323 32	0.288 68	0.092 38	0.046 19	0.386 82	0.213 62	0.028 87	0.023 09	0.178 98	0.069 28	0.167 43	0.034 64	0.046 19	0.161 66	0.103 92	0.265 58	0.219 39
Exper t4	0.023 09	0.196 3	0.057 74	0.092 38	0.046 19	0.040 41	0.017 32	0.086 6	0.023 09	0.109 7	0.069 28	0.063 51	0.034 64	0.046 19	0.069 28	0.069 28	0.034 64	0.011 55
Exper t5	0.023 09	0.381 05	0.057 74	0.311 77	0.046 19	0.132 79	0.075 06	0.086 6	0.092 38	0.063 51	0.103 92	0.282 9	0.138 56	0.046 19	0.046 19	0.103 92	0.080 83	0.069 28
Exper t6	0.023 09	0.196 3	0.115 47	0.034 64	0.011 55	0.075 06	0.017 32	0.028 87	0.023 09	0.051 96	0.011 55	0.063 51	0.034 64	0.127 02	0.046 19	0.011 55	0.080 83	0.103 92
Exper t7	0.023 09	0.196 3	0.115 47	0.092 38	0.046 19	0.075 06	0.075 06	0.086 6	0.080 83	0.051 96	0.069 28	0.063 51	0.138 56	0.046 19	0.069 28	0.069 28	0.080 83	0.069 28
Exper t8	0.034 64	0.023 09	0.057 74	0.034 64	0.011 55	0.075 06	0.017 32	0.028 87	0.023 09	0.109 7	0.011 55	0.063 51	0.034 64	0.011 55	0.069 28	0.011 55	0.080 83	0.011 55
Exper t9	0.034 64	0.023 09	0.057 74	0.080 83	0.011 55	0.040 41	0.017 32	0.202 07	0.092 38	0.063 51	0.219 39	0.051 96	0.150 11	0.127 02	0.161 66	0.011 55	0.034 64	0.011 55
Exper t10	0.034 64	0.023 09	0.057 74	0.034 64	0.011 55	0.075 06	0.075 06	0.086 6	0.080 83	0.109 7	0.011 55	0.063 51	0.080 83	0.011 55	0.127 02	0.011 55	0.080 83	0.011 55

Statistics	Item 1	Item 2	Item 3	Item 4	Item 5	Item6	Item7	Item8	Item9	Item1 0	Item1 1	Item1 2	Item1 3	Item1 4	Item1 5	Item1 6	Item1 7	Item 18
Value of the item	0.027 71	0.140 87	0.092 38	0.094 69	0.036 95	0.101 61	0.062 36	0.075 06	0.055 42	0.086 6	0.064 66	0.100 46	0.071 59	0.055 43	0.092 38	0.041 57	0.080 83	0.06 466

Value of the construct	0.07474																	
Item < 0.2	10	8	9	9	10	9	9	9	10	10	9	9	10	10	10	10	9	9
% of item < 0.2	100%	80%	90%	90%	100%	90%	90%	90%	100%	100%	90%	90%	100%	100%	100%	100%	90%	90%
Average of % consensus	93																	
defuzzification	0.96	0.66	0.8	0.84	0.92	0.77	0.87	0.85	0.86	0.81	0.88	0.79	0.76	0.92	0.78	0.88	0.76	0.88
Ranking	1	14	9	7	2	12	4	6	5	8	3	10	13	2	11	3	13	3
Status	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept	Accept

The analysis of findings shows that two of the items from Expert 3 (shown in the bold coloured column) surpasses the threshold value of 0.2 (>0.2). The results show that the agreement of the experts does not aligned with other experts involved in the study on the matters of the proposed scale. However, the average threshold value of the overall construct obtained are 0.07474, for the instrument of cyberbully aggressor among adolescents, which is below than 0.2 ($d = <0.2$). This reveals that, there is a high degree of consensus among the experts (Cheng & Lin, 2002; Chang et al., 2011). In the meantime, the total percentage of expert agreement is 93%, a value far exceeded 75% (>75 percent). This demonstrating that most items have been well-received by experts and that requirements for expert consensus on the instruments have been met. Based on the expert consensus and the defuzzification values, the items are then ranked in order of their priority. It is suggested that, this is the new order of the instruments if it is to be use in the Malaysia context (refer Table 5).

Table 5

The new orders of the instruments based on expert consensus

Original Item's ranks	New item's rank	Instruments
CB1	CB1	I have insulted or ridiculed someone in social networks or groups like WhatsApp to really screw with or annoy him/her.
CB5	CB2	To make fun of someone, I have made or manipulated videos or photos of him/her and uploaded or distributed them on social networks or by smartphone.
CB14	CB2	I have provoked someone in social networks or groups by insulting or taunting him/her to make him/her angry and cause a big argument.
CB11	CB3	I have criticized someone or made fun of comments, photos, or videos he/she uploaded to social networks or groups like WhatsApp.
CB16	CB3	I have stolen photos, videos, or private conversations and uploaded them or sent them to others.
CB18	CB3	I sent someone taunting messages to bother and annoy him/she.
CB7	CB4	I have pretended to be someone else so I could say or do bad things on the Internet.
CB9	CB5	I have put someone's cell phone number on the Internet and said bad or false things about him/her so that people would call him/her and get him/her into trouble.
CB8	CB6	I have purposely created a webpage, a forum, or a group just to make fun of someone and criticize him/her in front of everyone.
CB4	CB7	I have told someone's secrets or revealed personal things about him/her in social networks or groups (WhatsApp, snapchats, ...)
CB10	CB8	I have taken someone's smartphone and used it to send photos, videos, or mean messages to others to get him/her into trouble with them.
CB3	CB9	I have threatened someone to make him/her do things on the Internet or Smart phone that he/she did not want to do (like recording him/herself on video, giving me money, doing bad things).
CB12	CB10	I have created a false profile on the Internet with someone's personal data in order to impersonate him/her saying or doing bad things.

CB15	CB11	I have eliminated or blocked someone from groups to leave him/her without any friends.
CB6	CB12	I have logged into someone's profile or accounts, and he/she could not do anything about it.
CB13	CB13	I have ignored and did not answer someone's messages or things he/she shared in groups or social networks, just to make him/her feel bad.
CB17	CB13	I have changed someone's password to social networks so that he/she could not access them.
CB2	CB14	I have called someone's cell phone and hung up to bother or frighten him/her.

Conclusion and Suggestion

This study aimed to revalidate the cyber aggressor scale for the Malaysian Context using the Fuzzy Delphi method. Ten experts were conferred using an expert validation form to measure their agreement on the items under CYB-AGG index. Expert responses were analysed using the Fuzzy Delphi method to determine the suitability of the indicators. Based on the analysis, most experts agreed with the indicators in the proposed scale, and this confirms that Fuzzy Delphi Method is an effective technique to validate the items in the proposed Cyberbullying Scale.

Cyberbullying is a serious social concern worldwide. Given the statistics that show an increase in cases of cyberbullying among adolescents, this scale may be a useful tool for teachers, psychologists and principals to provide information about the prevalence of cyberbullying in schools and consequently to develop prevention programs to minimize cyberbullying.

In conclusion, the results of the analyses confirmed that CYB-AGG scale to be psychometrically robust. However, this study also has its own limitations that the researcher only uses experts in Malaysia only. Future researchers can carry out the same process by using experts in different professional context such as psychologists, counsellors and school administrators in order to obtain a more holistic and extensive information.

References

- Adler, M., & Ziglio, E. (1996). *Gazing into the Oracle: The Delphi method and its application to social policy and public health*: Jessica Kingsley Publisher
- Anis, N., Rahim, A., & Lim, Y. (2012) Najib: Cyber bullying a serious threat to kids. The Star Online. Retrieved from <https://www.thestar.com.my/news/nation/2012/10/10/najib-cyber-bullying-a-serious-threat-to-kids/#sxK4CmmdUr50tcw2.99> on 28th August 2022
- Balakrishnan, V. (2015). Cyberbullying among young adults in Malaysia: The roles of gender, age and Internet frequency. *Computers in Human Behavior*, Volume 46, Pages 149-157, <https://doi.org/10.1016/j.chb.2015.01.021>.
- Berliner, D. (2004). Describing the Behavior and Documenting the Accomplishments of Expert Teachers. *Bulletin of Science, Technology & Society*. 24. 200-212. [10.1177/0270467604265535](https://doi.org/10.1177/0270467604265535).
- Booker, J. M., & McNamara, L. a. (2004). Solving Black Box Computation Problems Using Expert Knowledge Theory and Methods. *Reliability Engineering & System Safety*, 85(1-3), 331-340.

- Bodjanova, S. (2006). Median Alpha-Levels of A Fuzzy Number. *Fuzzy Sets and Systems*, 157(7), 879–891. doi: 10.1016/j.fss.2005.10.015
- Buelga, S., Postigo, J., Martinez-Ferrer, B., Cava, M. J., & Ortega-Baron, J. (2020). Cyberbullying among adolescents: Psychometric properties of the CYB-AGS cyber-aggressor Scale. *International Journal of Environmental Research and Public Health*, 17(9), 3090.
- Cantrill, J. A., Sibbald, B., & Buetow, S. (1996). The Delphi And Nominal Group Techniques in Health Services Research. *International Journal of Pharmacy Practice*, 4(2), 67–74.
- Chang, P. C., & Wang, Y. W. (2006). Fuzzy Delphi and back-propagation model for sales forecasting in PCB industry. *Expert systems with applications*, 30(4), 715-726.
- Chang, P.-L., Hsu, C.-W., & Chang, P.-C. (2011). Fuzzy Delphi Method for Evaluating Hydrogen Production Technologies. *International Journal of Hydrogen Energy*, 36(21), 14172–14179. doi: 10.1016/j.ijhydene.2011.05.045
- Cheng, C. H., & Lin, Y. (2002). Evaluating the Best Main Battle Tank Using Fuzzy Decision Theory with Linguistic Criteria Evaluation. *European journal of operational research*, 142(1), 174-186.
- Farezza, H. R. (2017). *Cyberbullying among top five online threats*. New Strait Times (Online). Retrieved from <https://www.nst.com.my/news/exclusive/2017/05/236873/cyberbullying-among-top-five-online-threats> on 28th August 2022.
- Gambatese, J., Behm, M., & Rajendran, S. (2008). Design's role in construction accident causality and prevention: Perspectives from an expert panel. *Safety Science*. 46. 675-691. 10.1016/j.ssci.2007.06.010.
- Hasson, F., Keeney, S., & McKenna, H. (2000). Research guidelines for the Delphi survey technique. *Journal of Advanced Nursing*. <https://doi.org/10.1046/j.1365-2648.2000.t01-1-01567.x>
- Hsieh, T. Y., Lu, S. T., & Tzeng, G. H. (2004). Fuzzy MCDM Approach for Planning and Design Tenders Selection in Public Office Buildings. *International Journal of Project Management*. <https://doi.org/10.1016/j.ijproman.2004.01.002>
- Jones, H., & Twiss B. L. (1978). *Forecasting technology for planning decisions*. New York: Macmillan.
- Kamarulzaman, S. F., & Alsibai, M. H. (2018). Time-Change-Fuzzy-Based Intelligent Vehicle Control System for Safe Emergency Lane Transition During Driver Lethargic State. *Advanced Science Letters*. Vol 24(10), 7554-7558(5). <https://doi.org/10.1166/asl.2018.12977>
- Kee, D. M. H., Al-Anesi, M. A. L., Al-Anesi, S. A. L. (2022). Cyberbullying on Social Media Under the Influence of COVID-19. *Global Business and Organizational Excellence*. 6:10.1002/joe.22175. doi: 10.1002/joe.22175. PMID: PMC9350190.
- Malaysia Communications and Multimedia Commission. (2018). Internet Users Survey 2018: Statistical Brief Number Twenty-Three.
- Yusoff, M. A. F., Hashim, A., Muhamad, N., & Hamat, W. N. (2021). Application of fuzzy delphi technique to identify the elements for designing and developing the e-PBM PI-Poli module. *Asian Journal of University Education (AJUE)*, 7(1), 292-304.
- Molero, M. M., Martos, A., Barragan, A. B., Perez-Fuentes, M. C., & Gazquez., J. J. (2022). Anxiety and depression from cybervictimization in adolescents: A metaanalysis and meta-regression study. *The European Journal of Psychology Applied to Legal Context*. 14(1), 42-50.

- Mullen, P. M. (2003). Delphi: myths and reality. *Journal of Health Organization and Management*. Vol. 17 No. 1, pp. 37-52. <https://doi.org/10.1108/14777260310469319>
- Nikolopoulos, K. (2004). Elicitation of expert opinions for uncertainty and risk. *International Journal of Forecasting* (Vol. 20).
- Patchin, J. W., & Hinduja, S. (2006). Bullies move beyond the schoolyard: A preliminary look at cyberbullying. *Youth Violence and Juvenile Justice*, 4(2), 148-169
- Perera, A. H., Drew, C. A., & Johnson, C. J. (2012). *Expert Knowledge and Its Application in Landscape Ecology*. Springer, New York, 1–11. <http://doi.org/10.1007/978-1-4614-1034-8>
- Tang, C. W., & Wu, C. T. (2010). Obtaining a Picture of Undergraduate Education Quality: A Voice From Inside the University. *Higher Education* (60), 269-286
- Tang, C. W., & Wu, C. T. (2010). Obtaining a Picture of Undergraduate Education Quality: A Voice From Inside the University. *Higher Education* (60), 269-286
- Tang, C. W., & Wu, C. T. (2010). Obtaining a Picture of Undergraduate Education Quality: A Voice from Inside the University. *Higher Education* (60), 269-286
- Thomas, J. (2019). Children and social media. Retrieved from <https://theaseanpost.com/article/children-and-social-media> on 29th August 2022.
- UNICEF East Asia and the Pacific Regional Office and the Centre for Justice and Crime Prevention. (2020) *Our Lives Online: Use of social media by children and adolescents in East Asia - opportunities, risks and harms*. UNICEF, Bangkok.