

VALIDATION OF THE ONLINE COPING INVENTORY FOR THE LGBTQ PEOPLE IN MALAYSIA

Muhammad Ashraff Ahmad¹
Azmawaty Mohamad Nor²
Harris Shah Abd Hamid³

¹Faculty of Education, University of Malaya, Kuala Lumpur, Malaysia (E-mail: ashraff.ahmad@me.com)

²Faculty of Education, University of Malaya, Kuala Lumpur, Malaysia (Email: azy_mn@um.edu.my)

³Faculty of Management, Education and Humanities, University College MAIWP International, Malaysia, (E-mail: drharris@ucmi.edu.my): *corresponding author*

Article history

Received date : 21-9-2022
Revised date : 22-9-2022
Accepted date : 15-10-2022
Published date : 15-10-2022

To cite this document:

Ahmad, M. A., Mohamad Nor, A., & Abd Hamid, H. S. (2022). Validation of The Online Coping Inventory for The LGBTQ People in Malaysia. *Journal of Islamic, Social, Economics and Development (JISED)*, 7(47), 462 - 477.

Abstract: *With the rapid use of the internet, the online platform became more accessible as a tool to cope with daily stressors. The Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) community use this platform to obtain information, social connection, and even sexual relations for self-identification, information exchange, and social support despite various social, legal, cultural, and religious restrictions in Malaysia. Many studies had shown the importance of online coping but mainly focused on a specific online coping strategy rather than a consolidated view especially for the LGBTQ people in Malaysia. This study aimed to explore the psychometric properties of the Online Coping Strategy as there are limited instruments that measure online coping strategies and are targeted for this population. The sample consisted of 189 LGBTQ individuals through a survey design study. The confirmatory factor analysis results showed that the three-factor model had acceptable values for the goodness of fit indices indicating the stability of the measurement model, with good validity and reliability standing. The study found that the instrument had stable psychometric properties for practical use to measure online coping strategies among LGBTQ individuals in Malaysia. Further research is required to refine and verify its psychometric properties and credentials for different populations and settings.*

Keywords: *Online Coping; LGBTQ; Coping Strategy; Validity*

Introduction

Similar to conventional offline coping, online coping is defined as the thoughts and behaviors used by people in managing a stressful situation through an online platform such as the Internet (van Ingen et al., 2016). The use of the online platform as an avenue to cope with various forms of stressors and events had been studied by many researchers in recent years (Kanter et al., 2019; Mo & Coulson, 2010; Sriwilai & Charoensukmongkol, 2016; Taggart et al., 2015).

The researches done in this area had been shown to focus on the role of the online social network and the internet in obtaining emotional support (Kanter et al., 2019; McLouglin et al., 2018;

Mo & Coulson, 2010; Sriwilai & Charoensukmongkol, 2016), information gathering (Cao et al., 2017; Kanter et al., 2019; LeGrand et al., 2018; McLouglin et al., 2018) landing point to seek for physical connection and building new friendship or relationship (Groves, 2006; Rhodes et al., 2007), disengagement (Maroney et al., 2019) and building resilience (Jurgens & Helsloot, 2018; McLouglin et al., 2018; Watson, 2018).

However, most of the studies that have been conducted so far are very much fragmented rather than integrated about online coping. Typically, the studies were geared towards a specific type of online coping strategy or used a specific type of internet usage such as Twitter, Facebook, social media, or blog (van Ingen et al., 2016; van Ingen & Wright, 2016). Thus, to have an integrative view of how online coping strategies are being used on a wider landscape of the internet fabric would help to create a broader representation of how online technology is used to facilitate certain types of coping strategies adopted by an individual. Online emotional support, social media sites support and health information seeking on the internet were some of the online coping strategies that have been studied previously in a specific manner instead of an integrated approach under one online coping umbrella (van Ingen et al., 2016). This study intends to validate the psychometric properties of the Online Coping Inventory to measure the online coping strategies employed by the LGBTQ people within the Malaysian context.

Literature Review

Coping With the Emergence of Online Technology

The revised stress and coping model (Folkman, 1997) explained the process of stress and coping made a place for positive emotions in the stress process as compared to the transactional theory of stress and coping by Lazarus & Folkman, (1984). The revised model retained the core processes of the original stress and coping model through the use of appraisal ascribed to the event or stimuli which subsequently trigger the coping strategy employed either by using problem-focused or emotion-focused which will yield an outcome that either favorable or unfavorable that leads to the generation of positive or negative emotions outcomes.

The new model improved the original model by suggesting that positive and negative emotions co-occurred during an intensely stressful situation, as there is now substantial evidence that positive emotions are a normative aspect of the stress process and that they helped restore physiological and psychosocial coping resources (Folkman, 2008). This model emphasizes the balanced perspective of positive emotions in the stress process as traditionally the process is strongly characterized by negative emotions. Subsequently, this will assist in the evaluation of the role of coping processes in facilitating positive emotions during stressful events (Biggs et al., 2017, Ahmad et al., 2021) concerning physiological, psychological, and social outcomes.

Through rapid development in technology, online platforms became another option for people to exercise their coping strategy either to complement or as an alternative to the offline coping strategy. The internet became an ideal platform to seek for information to deal with stressful situations in the current day and age as it covers a wide range of information to help individuals to understand their problems and make optimal decisions (Cao et al., 2017; Kanter et al., 2019; LeGrand et al., 2018; van Ingen & Wright, 2016). Online platforms such as forums, blogs, and social support groups were utilized to help individuals to cope with their stressors and obtain social-emotional supports as it allows anonymity, sharing their experiences, and obtain various information that helped encourage support-seeking, facilitate assertive coping strategy and buffer emotional distress (Kanter et al., 2019; McLouglin et al., 2018; Yang et al., 2018; Yang

& Hanasono, 2021) though these outcomes are not necessarily the case (Duvenage, et al., 2020, Nikmat, et al. 2022). Conversely, the online platform is also used for disengagement coping strategy as a form of escape from social interactions and aversive state (Maroney et al., 2019).

Online Coping Inventory

The Online Coping Inventory was adapted from the Brief COPE inventory developed Carver, (1997) that measures fourteen dimensions of coping strategy such as self-distraction, active coping, venting, acceptance, use of emotional support, use of instrumental support, turning to religion, acceptance, planning, denial, positive reframing, self-blame, humor, and substance abuse. However, due to the off-line nature of some of Carver's coping strategy that is not relevant to online platforms such as complete avoidance, absence of the use of the internet as a primarily cognitive and intrapersonal strategy; the Brief COPE coping strategy dimensions were adapted to reflect the use of the Internet in the Online Coping Inventory instrument (van Ingen et al., 2016).

This inventory was validated in the Netherlands consists of 14 items using 4 points Likert scale options ranging from 0 = "this doesn't apply to me at all" to 3 = "this applies to me a lot". The instrument developers tested a 3-factor and a 7-factor structure and both factor structures exhibited model fit (RMSEA <0.08; CFI> 0.9; TLI> 0.9; SRMR<0.08). The 7-factor structure measures the dimension of mental disengagement, active coping, planning, emotional support, instrumental support, venting of emotions, and positive reinterpretation whereas the 3-factor structure measures the dimension of problem-focused, socioemotional, and disengagement to create similar dimensions to the other offline coping scales available for better practical characteristics (Lyne & Roger, 2000; van Ingen et al., 2016).

To the authors' knowledge, there is an absence of other instruments that specifically measure online coping strategies to date. Most of the researches would utilize current offline coping instruments such as COPE or Brief Cope by Carver, (1997), Coping Inventory for Stressful Situations (CISS) (Endler & Parker, 1990), Coping Scale (Suphamongkhon & Kotrajaras, 2004), which was used among LGBTQ individuals (Song et al., 2002, Kittiteerasack, et al, 2020) and Pandemic Coping Scale (Annett Lotzin et al., 2022) among others to measure coping strategy employed by an individual. Other than the validation made by the original author on the inventory, there was no further validation being attempted on the psychometric properties of the Online Coping Inventory so far to affirm its usage for other populations or settings especially for the hidden population such as the LGBTQ+ in Malaysia.

Online Coping in Malaysia

Based on the literature search done thus far, it can be inferred that there is an opportunity to study the use of online coping in the Malaysian setting. Similar to the global trend, most researches conducted with respect to online coping are either fragmented or focused on a specific coping strategy. It was found that research findings were geared towards specific coping areas of social support, information seeking, active coping, mental disengagement, venting of emotion, and positive reinterpretation (Ilias et al., 2017; Kee et al., 2016; Kok et al., 2017; Mohamad Shakir et al., 2019; Navarro et al., 2018).

Emotional support coping obtained through social support was seen in the example of a few pieces of Malaysian literature. The use of online support groups and social media were identified as particularly beneficial for mothers with an autistic child to cope with their situation. Such a platform allowed them to obtain more convenient ways of obtaining emotional

support, given time constraints they have which generally helped ease their worries and helped them build a broader sense of community and supportive resources (Ilias et al., 2017). Similarly, Navarro et al., (2018) also highlighted the use of the Internet as an avenue for cyberbullying victims to create new relationships with others to deal with their traumatic experiences.

The internet is also seen as an extension to the physical social support for those who are unable or have limited physical reach (such as distance or transportation means) to their support system and uses online platforms to obtain social support. This was illustrated in the case of Myanmar teenage refugees in Malaysia who uses the Internet to connect with their home countries or friends as additional social support to their physical resources obtained from their family members, friends, and teachers in Malaysia. These supportive relationships encouraged them to cope with their challenges as social support plays an influential role in the well-being of these youth (Kok et al., 2017).

On the other hand, the information-seeking coping strategy was also researched in Malaysia. For example, in Ilias et al., (2017), mothers of autistic children in their study illustrated the use of the internet as a source for information seeking about their child to compensate for the limited support they are receiving locally and the overwhelming experience of being a mother to an autistic child. Whereas, in another research, the internet was used by young men who have sex with another man in obtaining information about HIV or sexually transmitted information for precautionary and management of symptoms due to its wide reach and economical means of knowledge procurement (Mohamad Shakir et al., 2019).

Other online coping strategies studied in Malaysia include active coping, mental disengagement, venting of emotion, and positive reinterpretation. Navarro et al., (2018) in their study revealed that cyberbullying victims used the Internet to search for anonymity, escape the real world, and compensate for their lack of social skills to a greater extent than non-victims. This indicated the use of mental disengagement coping strategy in dealing with the stressor or event faced. Similarly, another study conducted on how Malaysian's sports supporters dealt with Dato' Lee Chong Wei's defeat also revealed the use of the Internet in exhibiting various coping strategies such as positive reinterpretation through rationalizations, venting of emotion coping through expressing emotions and injecting humor, and mental disengagement coping (Kee et al., 2016).

Ever since the emergence of the Internet and Online technology, the lesbian, gay, bisexual, transgender, and queer (LGBTQ) community had been actively using this platform widely to obtain information, social connection, and even sexual relations (Courtenay-Quirk et al., 2010; Lim et al., 2018; Mohamad Shakir et al., 2019). In Malaysia, the 2018 data reported that 97.7% of individuals have access to ICT through the use of mobile phones and the most popular Internet activities are participating in social networks (96.5%), finding information about goods or services (83.1%) (Department of Statistic Malaysia, 2010). According to Malaysian Communications and Multimedia Commission, (2021) there are 88.7% internet users in Malaysia, and just like other Malaysians, Malaysia's LGBTQ people uses the Internet in their daily lives especially as a platform for self-identification on their sexuality and allowing information exchange and creating accessibility for them to support each other despite the social, legal, cultural and religious restrictions (Jerome, 2019). Having said that, as illustrated above, there is a limited study being done on online coping strategies that specifically explore the LGBTQ people in Malaysia.

A systematic review done on LGBTQ people living with HIV revealed that LGBTQ people tend to employ helpful coping strategies instead of unhelpful coping strategies (Ahmad et al., 2021) when dealing with stressors in their life. Having said that, the prejudice and discrimination faced by LGBTQ people in Malaysia created an additional layer of stressor because of their minority status as explained by the minority stress theory by Meyer, (2003). The policies in Malaysia are not LGBTQ-friendly, leaving them with minimum legal protection against discriminatory acts or penalized for their identities (Zay Hta et al., 2021). This may cause the LGBTQ individual to experience a higher risk of mental health issues such as stress, depression, and anxiety due to the prejudice in the legal, societal, and religious influences (Berg et al., 2017; Cramer et al., 2017; Flores-Palacios & Torres-Salas, 2017; Kamarulzaman, 2013; Liboro & Walsh, 2016; Sern & Zanuddin, 2014).

Malaysian LGBTQ individuals have lesser support to form helpful coping strategies due to cultural and religious restrictions (Brown et al., 2016). The discrimination faced by society generated fear and internalized stigma which reduces their quality of life (Brown et al., 2016; Cheah & Singaravelu, 2017). Accessibility and availability for these individuals to seek support are limited as they sometimes get referred out by professionals to various places as there are limited professional mental health providers who are comfortable working with this population and potential negative reactions and stigma towards the community (Zay Hta et al., 2021). This limits their choices in effectively coping with their daily stressors.

All of these pieces of evidence indicated that there is an appetite for study to be conducted on whether the Online Coping Inventory would demonstrate good psychometric properties on validity and reliability to measure the online coping strategies employed by the LGBTQ people within the Malaysian context. The validation of the inventory would be beneficial to assist mental health providers to provide better support to the LGBTQ community in Malaysia in building more robust psychological intervention based on the insight gathered on how LGBTQ individuals cope using online platforms given the high utilization of the Internet and online platform at present especially with the current world landscape post-COVID-19 where migration to virtual setup is continuously growing. Having a more holistic online coping research would hopefully boost the interest and expansion of online coping strategy studies in Malaysia to support a helpful use of coping strategies to address stressors and manage their mental health well-being.

Method

The following describes the study design, data collection, instrument used, and statistical data analysis used in the study.

Study Design, Sample, and Data Collection

A survey design was employed to collect data from LGBTQ adults above the age of 18 years old in Malaysia from January to July 2020. A convenient and snowball sampling were used because the LGBTQ population is a hidden population (Meyer & Wilson, 2009; Smith & Ingram, 2004). We collaborated with Non-Government Organizations such as the Malaysian AIDS Council and PT Foundation along with the use of social media influencers over Twitter to generate potential respondents to the study. A total of 189 respondents (53.4% Gay, 32.8% Bisexual, 5.3% Lesbian, 2.1% Transgender, 6.3% Queer, mean age 27.3) participated in this study using a self-administered questionnaire. The sample size collected met with the practical minimum sample size required for using SEM as proposed by (Hair et al., 2019) where a

minimum sample size of 100 is needed when considering models containing five or fewer constructs, each with more than three items.

The questionnaires were all answered online using a URL link or QR Code. The data collection was done anonymously to protect the privacy and safety of the respondents from potential legal risk as LGBTQ is illegal and not recognized in Malaysia. Respondents were asked to answer questions based on two sections that would collect their demographic information and coping strategy via the Online Coping Inventory instrument. A resource sheet for mental health support was provided at the end of the questionnaire should the respondent requires additional support from the mental health professionals and NGOs. There is no incentive provided to participating respondents and the research had obtained its approval and clearance from the University of Malaya Research Ethics Committee (UMREC) before the commencement of recruitment activities.

Online Coping Inventory

Table 1. Constructs and Items for Online Coping Inventory

Construct	Item Code	Item Statement
Disengagement	OCS1	I turned to the Internet to take my mind off things
	OCS4	I did something online to think about it less, such as playing games or visiting websites
Problem Focused	OCS2	With the aid of the Internet, I thought hard about what steps to take
	OCS3	I used the Internet to do something about the situation
	OCS7	I used the Internet to take action to make the situation better
	OCS9	With the aid of the Internet, I tried to see things in a different light, to make it seem more positive
	OCS11	I consulted the Internet to come up with a strategy about what to do
Socioemotional	OCS14	With the aid of the Internet, I looked for something good in what happened
	OCS5	I said things on the Internet to let my unpleasant feelings escape
	OCS6	I got emotional support from others through the Internet
	OCS8	I expressed my negative feelings on the Internet
	OCS10	I got help and advice from other people through the Internet
	OCS12	I received comfort and understanding from someone through the Internet
	OCS13	I asked people who had similar experiences on the Internet on what they did

We used the Online Coping Inventory (van Ingen et al., 2016) to assess the online coping strategies of the sampled population. This inventory was validated in the Netherlands consisting of 14 items using 4 points Likert scale options ranging from 0 = “this doesn’t apply to me at all” to 3 = “this applies to me a lot”. The 3-factor structure was recommended for usage as it has a reasonable model fit and has better practical characteristics. In this study, we tested and adopted the 3 coping dimensions that measure online coping strategies based on problem-focused, socioemotional, and disengagement coping constructs as proposed by van Ingen et al.,

(2016) since the model can be applied to a variety of online platforms and stressful life events. Table 1 illustrates the constructs and items associated with each construct.

Statistical Analysis

The psychometric properties of the Online Coping Inventory were validated using confirmatory factor analysis (CFA) using IBM-SPSS-AMOS 24.0. CFA helped to investigate how well the factor structure fits with the data, thus confirming the construct validity, discriminant and convergence validity and the composite reliability of the instrument tested. The factorial structure was tested using Confirmatory Factor Analysis (CFA) with AMOS (maximum likelihood method). The confirmatory factor analysis was carried out to confirm the construct scores for the original Online Coping Inventory.

Different indices were used to estimate the fit of empirical data to the theoretical model: the Comparative Fit Index (CFI), the ratio of Chisq/df, the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Squared Residual (SRMR). For the CFI (Bentler & Bonett, 1980) values of 0.90 and higher are indicators of a good fit. Values of the RMSEA and SRMR less than .08 indicate a good fit (Schermelleh-Engel et al., 2003; Steiger, 1990). As for the ratio of Chisq/df a good indicator is achieved if the threshold is below 3.0 (Awang, 2015). The reliability of both instruments was verified using the Composite Reliability (CR) for all of the constructs. CR value exceeding the threshold value of 0.6 (Kline, 2016; Rahlin et al., 2019) is considered to obtain good reliability standing.

Results

Demographics

As displayed in Table 2, the majority of the participants are single, Malay, identified themselves as gay, and single. There were very small numbers of respondents who are lesbian, transgender and queer which may be a case of underrepresentation in this sample. The mean age of the participants is 27.3 ($SD = 6.3$).

Table 2. Demographic information

Demographic		<i>f</i>	%
Ethnicity	Malay	129	68.3
	Chinese	25	13.2
	Indian	6	3.2
	Bumiputera Sabah & Sarawak	10	5.3
	Undisclosed	19	10.1
Education level	Secondary School	34	18.0
	Undergraduate	122	64.6
	Postgraduate	23	12.2
	Certificate	5	2.6
	Undisclosed	5	2.6
Relationship status	Single/Never Married	108	57.1
	In Committed Relationship	41	21.7
	In Domestic Partnership	25	13.2
	Married	5	2.6
	Divorced	1	.5
	Widowed	1	.5
	Undisclosed	8	4.2

Sexual Orientation	Gay	101	53.4
	Bisexual	62	32.8
	Lesbian	10	5.3
	Transgender	4	2.1
	Queer	12	6.3

Confirmatory Factor Analysis

Validation of psychometric properties for unidimensionality, validity (construct, convergent, discriminant), and reliability (composite) were done using Confirmatory Factor Analysis (CFA) taking data from the field. The measurement model of the inventory construct is illustrated in Figure 1. The CFA procedure produced the fitness indexes for the construct, the factor loading for every sub-construct (component) as well as the factor loading for every item allowing assessment of unidimensionality, validity, and reliability of the instrument (Awang, 2015; Baistaman et al., 2020).

Validity, Reliability, and Normality

The model fit in Figure 1 met with the minimum threshold values for all three fitness categories of absolute fit, incremented fit and parsimonious fit (Acock, 2013; Awang, 2015; Kline, 2016). None of the items were deleted and covariances were introduced to achieve the model fit. RMSEA (Root Mean Square of Error Approximation) and Standardized Root Mean Squared Residual (SRMR) were used to determine the Absolute Fit category with 0.073 and 0.045, achieving the threshold of less than 0.08, CFI (Comparative Fit Index) to determine the Incremental Fit category with 0.956, greater than the threshold of 0.90, and the ratio of Chisq/df at 1.996 (achieved the threshold of below 3.0) to determine the Parsimonious Fit category. Thus, the measurement model of all latent constructs in Figure 1 have achieved the requirement for Construct Validity as illustrated in Table 3 (Acock, 2013; Awang, 2015; Baistaman et al., 2020; Kline, 2016).

Table 3. The Assessment for Construct Validity and Model Fit

Construct Validity	Category	Index	Acceptance Level	Index Value	Interpretation
	Absolute Fit	RMSEA	<0.08	0.073	Achieved
		SRMR	<0.08	0.045	Achieved
	Incremental Fit	CFI	>0.9	0.956	Achieved
	Parsimonious Fit	ChiSq/DF	<3.0	1.996	Achieved
<i>The measurement model of the Online Coping Inventory has achieved the requirement for Model Fit and Construct Validity</i>					

Table 4. The Composite Reliability and Convergent Validity

Construct	Item	Factor Loading	AVE (above .5)	CR (above .6)	√AVE	Convergent Validity
Disengage	OCS1	0.84	0.67	0.80	0.82	Yes
	OCS4	0.80				
ProblemF	OCS3	0.71	0.56	0.88	0.75	Yes
	OCS7	0.75				
	OCS11	0.79				
	OCS2	0.74				
	OCS9	0.73				
	OCS14	0.75				

SocioEmo	OCS10	0.87	0.54	0.87	0.74	Yes
	OCS13	0.82				
	OCS6	0.73				
	OCS12	0.86				
	OCS5	0.58				
	OCS8	0.48				

Convergent validity was established using the Average Variance Extracted (AVE) with all of the constructs tested exceeding the threshold of 0.5 (Awang, 2015; Baistaman et al., 2020; Kline, 2016; Rahlin et al., 2019). Convergent validity for all constructs was established based on the AVE score above 0.5. The discriminant validity of the Online Coping Inventory (OCI) construct was determined using the coefficient of correlation among the sub-constructs. The constructs achieved the discriminant validity as the coefficient of correlation among the sub-constructs does not exceed 0.85 (Awang, 2015; Baistaman et al., 2020; Noor et al., 2015) as illustrated in Figure 1. Composite reliability was also established with all of the constructs' CR values exceeding the threshold value of 0.6 (Kline, 2016; Rahlin et al., 2019). Both AVE and CR for all constructed are presented in Table 4.

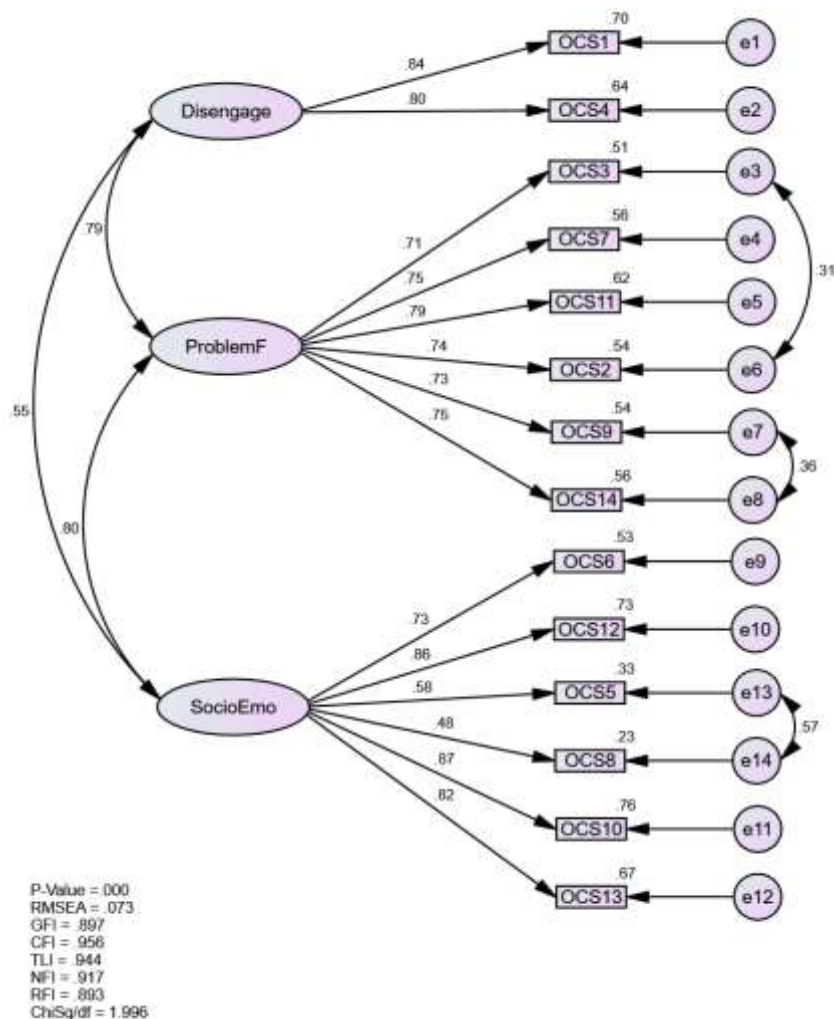


Figure 1. The Assessment of Convergent Validity for Online Coping Inventory Construct

In assessing the distribution of items measuring the Online Coping Inventory constructs, assessment of normality was obtained and presented in Table 5., The normality assessment was made using the skewness of the distribution by performing the Maximum Likelihood Estimator (MLE) procedure. All of the items fall within the range of -1.5 to 1.5, indicating that the data to be acceptable to be normally distributed, or at least does not depart from normality distribution (Awang, 2015; Baistaman et al., 2020; Kline, 2016).

Table 5. The Assessment of Normality of Items

Item	min	max	skew	c.r.	kurtosis	c.r.
OCS8	1	4	0.412	2.312	-0.941	-2.641
OCS5	1	4	0.235	1.32	-1.051	-2.95
OCS13	1	4	0.219	1.231	-1.179	-3.31
OCS10	1	4	-0.056	-0.313	-1.014	-2.845
OCS12	1	4	0.087	0.49	-0.995	-2.791
OCS6	1	4	0.169	0.95	-1.07	-3.002
OCS14	1	4	-0.151	-0.846	-0.861	-2.417
OCS9	1	4	-0.372	-2.09	-0.655	-1.837
OCS2	1	4	-0.009	-0.048	-1.016	-2.851
OCS11	1	4	-0.106	-0.594	-0.888	-2.493
OCS7	1	4	0.15	0.84	-0.875	-2.455
OCS3	1	4	-0.147	-0.823	-0.945	-2.653
OCS4	1	4	-0.363	-2.037	-0.989	-2.776
OCS1	1	4	-0.275	-1.544	-0.927	-2.603
Multivariate					46.046	14.954

Discussion

The previous study had shown that the three-factor of the Online Coping Inventory has a good model fit, a good degree of validity, and reliability (van Ingen et al., 2016). Based on the CFA findings obtained, our data found that the requirement for content validity, construct validity, and criterion for the instrument had been achieved. Similarly, the requirement for reliability was also achieved through the use of composite reliability procedure. Therefore, the Online Coping Inventory instrument is valid and reliable to measure online coping strategy constructs for practical use for the LGBTQ community in Malaysia.

The CFA analysis provided evidence of stability on the psychometric properties for the constructs of the Online Coping Inventory in measuring the online coping strategies of a sample of Malaysian LGBTQ people in Malaysia. The factor loading of every item that belongs to each construct was generally acceptable except for OCS 5 and OCS8. To improve the model fit and factor loading of the item, modification indices were adopted that made sense intuitively given the similarity in the meaning of the items. The results corroborate with the original study by van Ingen et al., (2016) that proposed for the 3-factor structure to be utilized for practical use. It should be noted that we did not explore alternative measurement models as our data conformed to the model proposed by the original study.

Although the findings had shown encouraging results, the study has several limitations that needed considerations for future research and interpretation for future research. First, the sample collected for this study was taken from the LGBTQ community and may not be representative, and can be generalized to the whole Malaysian population. Therefore, a wider

sample to include the general population is recommended to verify the present findings whether the instrument would be valid and applicable to other individuals in Malaysia.

Second, the number of respondents is rather small due to the hidden population, therefore the current findings should be interpreted with caution as it may compromise the accuracy of the results obtained. A larger sample size is recommended for future studies to increase the accuracy to verify the results obtained. Finally, the study managed to capture more representation from the Malay ethnic group, a higher literacy level, and single individuals which may not represent the same coping behavior for the rest of the LGBTQ members. A more diverse representation is recommended for future studies to help generate deeper layers of insights on the online coping strategy chosen and improve the accuracy of the current findings.

Despite the limitation, to the authors' knowledge, this is the first study conducted to explore the psychometric properties of the instrument for the LGBTQ population in Malaysia. The sample size used is sufficient enough in leading the study to have good statistical power. It also increases the heterogeneity possibility of the sample, by including different sexual identities across Malaysia. Additional efforts were made to increase the representativeness of the sample by targeting the recruitment footprint beyond the Community Based Organizations (CBOs) such as online platforms, social media influencers, and snowball referrals in the recruitment strategy.

Finally, the study offered new insights on the use of the instrument to measure online coping strategies in the psychological management of the LGBTQ community in Malaysia especially with the emergence of technology usage and the current world landscape post-COVID-19 where physical access to psychological support is more challenging than before. The findings from this study help to expand current options available for LGBTQ individuals and mental health providers in formulating the best intervention plan and add a new body of knowledge to limited studies done in this area. The past study had indicated that LGBTQ individuals were unable to obtain optimum support from mental health providers in Malaysia due to a lack of knowledge, training, and stigma on the disease (Tuan Abdullah & Mat Min, 2021). Considering the limitations and strengths of this study, interpretation and attempt to generalize the result should be made with caution and within context.

Conclusion

The study found that the Online Coping Inventory had stable psychometric properties to measure online coping strategies among the LGBTQ individuals in Malaysia. Further research is required to refine and verify its psychometric properties and credentials for different populations and settings.

References

- Acock, A. C. (2013). *Discovering structural equation modeling using Stata, Revised edition*. Stata Press. <https://www.stata.com/bookstore/discovering-structural-equation-modeling-using-stata/>
- Ahmad, M. A., Mohamad Nor, A., Abd Hamid, H., & Jamaludin, A. N. S. J. (2021). Coping strategies and mental health of the LGBTQ with HIV/AIDS – A systematic review. *Psychological Thought, 14*(2). <https://doi.org/10.37708/psyc.v14i2.583>
- Annett Lotzin, Ronja Ketelsen, Linda Krause, Ann-Kathrin Ozga, Maria Böttche & Ingo Schäfer (2022) The pandemic coping scale – validity and reliability of a brief measure of coping during a pandemic, *Health Psychology and Behavioral Medicine, 10*:1, 762-785, DOI:10.1080/21642850.2022.2112198
- Awang, Z. (2015). *SEM Made Simple: A Gentle Approach to Learning Structural Equation Modelling*. MPWS Rich Resources.
- Baistaman, J., Awang, Z., Afthanorhan, A., & Rahim, M. Z. A. (2020). Developing and validating the measurement model for financial literacy construct using confirmatory factor analysis. *Humanities & Social Sciences Reviews, 8*(2), 413–422. <https://doi.org/10.18510/hssr.2020.8247>
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88*(3), 588–606. <https://doi.org/10.1037/0033-2909.88.3.588>
- Berg, R. C., Carter, D., & Ross, M. W. (2017). A mixed-method study on correlates of HIV-related stigma among gay and bisexual men in the Southern United States. *Journal of the Association of Nurses in AIDS Care, 28*(4), 532–544. <https://doi.org/10.1016/j.jana.2017.02.004>
- Biggs, A., Brough, P., & Drummond, S. (2017). Lazarus and Folkman's Psychological stress and coping theory. In C. L. Cooper & J. C. Quick (Eds.), *The Handbook of Stress and Health* (pp. 349–364). John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781118993811.ch21>
- Brown, J., Low, W. Y., Tai, R., & Tong, W. T. (2016). Shame, internalized homonegativity, and religiosity: A comparison of the stigmatization associated with minority stress with gay men in Australia and Malaysia. *International Journal of Sexual Health, 28*(1), 28–36. <https://doi.org/10.1080/19317611.2015.1068902>
- Cao, B., Gupta, S., Wang, J., Hightow-Weidman, L. B., Muessig, K. E., Tang, W., Pan, S., Pendse, R., & Tucker, J. D. (2017). Social media interventions to promote HIV testing, linkage, adherence, and retention: Systematic review and meta-Analysis. *Journal of Medical Internet Research, 19*(11), e394. <https://doi.org/10.2196/jmir.7997>
- Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the brief COPE. *International Journal of Behavioral Medicine, 4*(1), 92–100. https://doi.org/10.1207/s15327558ijbm0401_6
- Cheah, W. H., & Singaravelu, H. (2017). The coming-out process of gay and lesbian individuals from Islamic Malaysia: Communication strategies and motivations. *Journal of Intercultural Communication Research, 46*(5), 401–423. <https://doi.org/10.1080/17475759.2017.1362460>
- Courtenay-Quirk, C., Horvath, K. J., Ding, H., Fisher, H., McFarlane, M., Kachur, R., O'Leary, A., Rosser, B. R. S., & Harwood, E. (2010). Perceptions of HIV-related websites among persons recently diagnosed with HIV. *AIDS Patient Care and STDs, 24*(2), 105–115. <https://doi.org/10.1089/apc.2009.0228>
- Cramer, R. J., Burks, A. C., Plöderl, M., & Durgampudi, P. (2017). Minority stress model components and affective well-being in a sample of sexual orientation minority adults

- living with HIV/AIDS. *AIDS Care*, 29(12), 1517–1523.
<https://doi.org/10.1080/09540121.2017.1327650>
- Department of Statistic Malaysia. (2010). *Total population by age group, sex, ethnic group, stratum and state, Malaysia, 2010*.
<https://www.statistics.gov.my/censusatlas/images/EthnicEN.pdf>
- Duvenage, M., Correia, H., Uink, B., Barber, B. L., Donovan, C. L., & Modecki, K. L. (2020). Technology can sting when reality bites: Adolescents' frequent online coping is ineffective with momentary stress. *Computers in Human Behavior*, 102, 248-259.
- Endler, N. S., & Parker, J. D. A. (1990). *Coping Inventory for Stressful Situations (CISS): Manual*. Multi-Health Systems.
- Flores-Palacios, F., & Torres-Salas, N. (2017). Improving health and coping of gay men who live with HIV: A case study of the “Healthy Relationships” program in Mexico. *Cogent Psychology*, 4(1), 1387952. <https://doi.org/10.1080/23311908.2017.1387952>
- Folkman, S. (1997). Positive psychological states and coping with severe stress. *Social Science & Medicine*, 45(8), 1207–1221. [https://doi.org/10.1016/S0277-9536\(97\)00040-3](https://doi.org/10.1016/S0277-9536(97)00040-3)
- Folkman, S. (2008). The case for positive emotions in the stress process. *Anxiety, Stress, & Coping*, 21(1), 3–14. <https://doi.org/10.1080/10615800701740457>
- Grov, C. (2006). Barebacking websites: Electronic environments for reducing or inducing HIV risk. *AIDS Care*, 18(8), 990–997. <https://doi.org/10.1080/09540120500521137>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate Data Analysis* (8th ed.). Cengage Learning.
- Ilias, K., Liaw, J. H. J., Cornish, K., Park, M. S.-A., & Golden, K. J. (2017). Wellbeing of mothers of children with “A-U-T-I-S-M” in Malaysia: An Interpretative Phenomenological Analysis Study. *Journal of Intellectual & Developmental Disability*, 42(1), 74–89.
- Jerome, C. (2019). The Right to Be Me, Queerly cyberly: Cyber crime and queer individuals in Malaysia. In *Exploring the nexus between technologies and human rights—Opportunities and challenges in Southeast Asia*. Strengthening Human Rights and Peace Research/Education in ASEAN/Southeast Asia Programme (SHAPE-SEA).
- Jurgens, M., & Helsloot, I. (2018). The effect of social media on the dynamics of (self) resilience during disasters: A literature review. *Journal of Contingencies and Crisis Management*, 26(1), 79–88. <https://doi.org/10.1111/1468-5973.12212>
- Kamarulzaman, A. (2013). Fighting the HIV epidemic in the Islamic world. *The Lancet*, 381(9883), 2058–2060. [https://doi.org/10.1016/S0140-6736\(13\)61033-8](https://doi.org/10.1016/S0140-6736(13)61033-8)
- Kanter, E., Bevan, J. L., & Dorros, S. M. (2019). The use of online support groups to seek information about chronic illness: Applying the theory of motivated information management. *Communication Quarterly*, 67(1), 100–121. <https://doi.org/10.1080/01463373.2018.1539406>
- Kee, Y. H., Fry, J. M., Wang, J. C. K., Chong, Y. W., & Li, C. (2016). Silver lining in winning silver: An exploratory study of supporters' reactions and coping on the social media towards Lee Chong Wei's London Olympics defeat. *Asia Pacific Journal of Sport and Social Science*, 5(1), 1–15. <https://doi.org/10.1080/21640599.2016.1145938>
- Kittiteerasack, et al., The Influence of Minority Stress on Level of Depression among Thai LGBTAdults. *Jurnal Keperawatan Indonesia*, Vol. 23, No. 1, March 2020, 74–84. DOI: 10.7454/jki.v23i1.1073
- Kline, R. B. (2016). *Principles and Practice of Structural Equation Modeling* (4th ed.). The Guilford Press.

- Kok, J. K., Lee, M. N., & Low, S. K. (2017). Coping abilities and social support of Myanmar teenage refugees in Malaysia. *Vulnerable Children and Youth Studies*, 12(1), 71–80. <https://doi.org/10.1080/17450128.2016.1263774>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. Springer. [http://www.springerpub.com/stress-appraisal-and-coping-9780826141910.html/](http://www.springerpub.com/stress-appraisal-and-coping-9780826141910.html)
- LeGrand, S., Muessig, K. E., Platt, A., Soni, K., Egger, J. R., Nwoko, N., McNulty, T., & Hightow-Weidman, L. B. (2018). Epic allies, a gamified mobile phone app to improve engagement in care, antiretroviral uptake, and adherence among young men who have sex with men and young transgender women who have sex with men: Protocol for a randomized controlled trial. *JMIR Research Protocols*, 7(4), e94. <https://doi.org/10.2196/resprot.8811>
- Liboro, R. M., & Walsh, R. T. G. (2016). Understanding the irony: Canadian gay men living with HIV/AIDS, their Catholic devotion, and greater well-being. *Journal of Religion and Health*, 55(2), 650–670. <https://doi.org/10.1007/s10943-015-0087-5>
- Lim, S. H., Brown, S.-E., Shaw, S. A., Kamarulzaman, A., Altice, F. L., & Beyrer, C. (2018). “You have to keep yourself hidden”: Perspectives from Malaysian Malay-Muslim men who have sex with men on policy, network, community, and individual influences on HIV risk. *Journal of Homosexuality*, 0(0), 1–23. <https://doi.org/10.1080/00918369.2018.1525946>
- Lyne, K., & Roger, D. (2000). A psychometric re-assessment of the COPE questionnaire. *Personality and Individual Differences*, 29(2), 321–335. [https://doi.org/10.1016/S0191-8869\(99\)00196-8](https://doi.org/10.1016/S0191-8869(99)00196-8)
- Malaysian Communications and Multimedia Commission. (2021). *Internet Users Survey 2020*. Malaysian Communications and Multimedia Commission. <https://www.mcmc.gov.my/skmmgovmy/media/General/pdf/IUS-2020-Report.pdf>
- Maroney, N., Williams, B. J., Thomas, A., Skues, J., & Moulding, R. (2019). A Stress-coping model of problem online video game use. *International Journal of Mental Health and Addiction*, 17(4), 845–858. <https://doi.org/10.1007/s11469-018-9887-7>
- McLouglin, L., Spears, B., & Taddeo, C. (2018). The importance of social connection for cyber victims: How connectedness and technology could promote mental health and wellbeing in young people. *International Journal of Emotional Education*, 10(1), 5–24.
- Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, 129(5), 674–697. <https://doi.org/10.1037/0033-2909.129.5.674>
- Meyer, I. H., & Wilson, P. A. (2009). Sampling lesbian, gay, and bisexual populations. *Journal of Counseling Psychology*, 56(1), 23–31. <https://doi.org/10.1037/a0014587>
- Mo, P. K. H., & Coulson, N. S. (2010). Living with HIV/AIDS and use of online support groups. *Journal of Health Psychology*, 15(3), 339–350. <https://doi.org/10.1177/1359105309348808>
- Mohamad Shakir, S. M., Wong, L. P., Abdullah, K. L., & Adam, P. (2019). Factors associated with online sexually transmissible infection information seeking among young people in Malaysia: An observational study. *Sexual Health* (14485028), 16(2), 158.
- Navarro, R., Larrañaga, E., & Yubero, S. (2018). Differences between preadolescent victims and non-victims of cyberbullying in cyber-relationship motives and coping strategies for handling problems with peers. *Current Psychology*, 37(1), 116–127. <https://doi.org/10.1007/s12144-016-9495-2>
- Nikmat, A. W., Mohd Yusof, N. F., & Suddin, L. S. . (2022). Prevalence of Problematic Internet Use and its Association with Psychological Distress and Coping Strategies among

- Universiti Teknologi Mara Students during the COVID-19 Pandemic. *IUM Medical Journal Malaysia*, 21(3). <https://doi.org/10.31436/imjm.v21i3.1904>
- Noor, N. M., Aziz, A. A., Mostapa, M. R., & Awang, Z. (2015, January 15). Validation of the Malay version of the Inventory of Functional Status after Childbirth Questionnaire. *BioMed Research International*; Hindawi. <https://doi.org/10.1155/2015/972728>
- Rahlin, N. A., Awang, Z., Afthanorhan, A., & Aimran, A. (2019). The art of covariance based analysis in behaviour-based safety performance study using confirmatory factor analysis: Evidence from SMES. *International Journal of Innovation, Creativity and Change*, 7(10).
- Rhodes, S. D., Hergenrather, K. C., Yee, L. J., Knipper, E., Wilkin, A. M., & Omli, M. R. (2007). Characteristics of a sample of men who have sex with men, recruited from gay bars and Internet chat rooms, who report methamphetamine use. *AIDS Patient Care and STDs*, 21(8), 575–583. <https://doi.org/10.1089/apc.2007.0002>
- Schermelleh-Engel, K., Moosbrugger, H., & Muller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research*, 8(2).
- Sern, T., & Zanuddin, H. (2014). Affirmative religious response culture to HIV and AIDS: Understanding the public relations role of JAKIM in curbing the epidemic among young Muslim couples in Malaysia. *Asian Social Science*, 10, 8–15. <https://doi.org/10.5539/ass.v10n13p8>
- Smith, N. G., & Ingram, K. M. (2004). Workplace heterosexism and adjustment among lesbian, gay, and bisexual individuals: The role of unsupportive social interactions. *Journal of Counseling Psychology*, 51(1), 57–67. <https://doi.org/10.1037/0022-0167.51.1.57>
- Song, C., Buysse, A., Zhang, W. H., Lu, C., Zhao, M., & Dewaele, A. (2022). The factor structure and measurement invariance of the Coping Inventory for Stressful Situations in a sexual minority population. *Journal of Homosexuality*, 1-16.
- Sriwilai, K., & Charoensukmongkol, P. (2016). Face it, don't Facebook it: Impacts of social media addiction on mindfulness, coping strategies and the consequence on emotional exhaustion: Social media addiction, mindfulness and coping. *Stress and Health*, 32(4), 427–434. <https://doi.org/10.1002/smi.2637>
- Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, 25(2), 173–180. https://doi.org/10.1207/s15327906mbr2502_4
- Suphamongkhon, N., & Kotrajaras, S. (2004). *Anxiety, social support, and coping strategies of university students*. Master thesis. Faculty of Psychology, Chulalongkorn University, Thailand
- Taggart, T., Grewe, M. E., Conserve, D. F., Gliwa, C., & Isler, M. R. (2015). Social media and HIV: A systematic review of uses of social media in HIV communication. *Journal of Medical Internet Research*, 17(11), e248. <https://doi.org/10.2196/jmir.4387>
- Tuan Abdullah, T. N., & Mat Min, R. (2021). Engaging with people living with HIV: Challenges experienced by Malaysian counsellors. *AIDS Care*, 33(6), 795–800. <https://doi.org/10.1080/09540121.2020.1757024>
- van Ingen, E., Utz, S., & Toepoel, V. (2016). Online coping after negative life events: Measurement, prevalence, and relation with internet activities and well-being. *Social Science Computer Review*, 34(5), 511–529. <https://doi.org/10.1177/0894439315600322>
- van Ingen, E., & Wright, K. B. (2016). Predictors of mobilizing online coping versus offline coping resources after negative life events. *Computers in Human Behavior*, 59, 431–439. <https://doi.org/10.1016/j.chb.2016.02.048>

- Watson, B. R. (2018). “A window into shock, pain, and attempted recovery”: A decade of blogging as a coping strategy in New Orleans. *New Media & Society*, 20(3), 1068–1084. <https://doi.org/10.1177/1461444816681523>
- Yang, F., & Hanasono, L. K. (2021). Coping with racial discrimination with collective power: how does bonding and bridging social capital help online and offline? *Howard Journal of Communications*, 32(3), 274–293. <https://doi.org/10.1080/10646175.2021.1910882>
- Yang, F., Zhong, B., Kumar, A., Chow, S.-M., & Ouyang, A. (2018). Exchanging social support Online: A longitudinal social network analysis of Irritable Bowel Syndrome patients’ interactions on a health Forum. *Journalism & Mass Communication Quarterly*, 95(4), 1033–1057. <https://doi.org/10.1177/1077699017729815>
- Zay Hta, M. K., Tam, C. L., Au, S. Y., Yeoh, G., Tan, M. M., Lee, Z. Y., & Yong, V. V. (2021). Barriers and facilitators to professional mental health help-seeking behavior: Perspective of Malaysian LGBT individuals. *Journal of LGBTQ Issues in Counseling*, 15(1), 38–58. <https://doi.org/10.1080/15538605.2021.1868373>

Acknowledgments

A special acknowledgment is made to the Non-Government Organizations such as the Malaysian AIDS Council and PT Foundation for their collaboration in this study. We also thank various social media influencers in Malaysia who had provided their help to generate awareness over the Twitter platform to generate potential respondents to the study.

Funding

This study is not funded by any organization