

Examining Measurement Model of Malay Version of Mental Health Continuum-Short Form (MHC-SF) and Flourishing Scale (FS) among University Students in Sabah, Malaysia

Menguji Model Pengukuran Mental Health Continuum-Short Form (MHC-SF) dan Flourishing Scale (FS) Versi Bahasa Malaysia dalam Kalangan Pelajar Universiti di Sabah, Malaysia

Adeymend Reny Japil*, Rissiusinah Muntik, Siti Nursyafiqah Shafiee, and Christabelle Jill Ellron
Sabah State Public Service Department

*Corresponding author: adeymend.japil@sabah.gov.my

Tarikh dihantar: 25 November 2023 / Tarikh diterima: 28 November 2023

Received date: 25 November 2023 / Accepted date: 28 November 2023

DOI: <https://doi.org/10.51200/jpks.v7i1.6774>

The current study intended to validate the Mental Health Continuum-Short Form (MHC-SF) and Flourishing Scale (FS) in the Malay language. The scales of MHC-SF and FS are used to measure emotional, social, and psychological well-being. Both instruments have been employed in assessing the flourishing mental health and positive human functioning of university students. A total of 131 undergraduate students (29 males and 102 females) from a public university in Sabah aged 19-26 years old participated in the study. Partial least squares-structural equation modeling (PLS-SEM) is used to generate the result of the measurement model. The findings showed that the MHC-SF and FS in the Malay language demonstrated sufficient convergent and discriminant validity. The level of internal consistency for MHC-SF and FS was at an acceptable level. Both Malay versions of MHC-SF and FS have been proven as valid and reliable instruments to be used in the contexts of public undergraduate students in Malaysia, particularly in the state of Sabah.

Keywords: mental well-being, positive mental health, psychometric, psychosocial well-being, structural equation modeling, undergraduate students.

Kajian ini bertujuan untuk mengesahkan skala Mental Health Continuum-Short Form (MHC-SF) dan Flourishing Scale (FS) dalam Bahasa Malaysia. Skala MHC-SF dan FS digunakan untuk mengukur kesejahteraan emosi, sosial, dan psikologi. Kedua-dua instrumen ini telah digunakan untuk menilai kesihatan mental dan kefungsi positif manusia dalam kalangan pelajar universiti. Seramai 131 orang pelajar prasiswazah (29 lelaki dan 102 perempuan) daripada sebuah universiti awam di Sabah berumur 19-26 tahun telah menyertai kajian ini. Partial least squares-structural equation modeling (PLS-SEM) digunakan untuk menjana dapatan model pengukuran. Dapatan kajian menunjukkan bahawa MHC-SF dan FS dalam Bahasa Malaysia menunjukkan kesahan konvergen dan diskriminan yang memadai. Ketekalan dalaman bagi MHC-SF dan FS berada pada tahap yang boleh diterima. Kedua-dua skala MHC-SF dan FS versi Bahasa Malaysia telah dibuktikan sebagai instrumen yang sah dan boleh dipercayai untuk digunakan dalam konteks pelajar prasiswazah di Malaysia, terutamanya di negeri Sabah.

Kata kunci: kesejahteraan mental, kesihatan mental positif, psikometrik, kesejahteraan psikososial, pemodelan persamaan berstruktur, pelajar prasiswazah.

Understanding people's well-being such as mental well-being (i.e. positive mental health) and psychosocial well-being (i.e. psychosocial flourishing) is a fundamental step in providing important information for policy decisions at national, corporate, and governmental levels that allow us to maintain emotional, psychological, and social well-being. The growing interest in mental and psychosocial well-being poses an important conceptual challenge. It is important to understand what constitutes mental well-being and social-psychological well-being in a particular country and culture. The adaptation of instruments to different cultures is also important to understand mental and psychosocial well-being in different cultures. To investigate these constructs, it is important to develop valid and reliable instruments aimed at measuring the different components of the constructs. Little

attention has been given to develop valid and reliable well-being instruments especially positive mental health and psychosocial flourishing of university students in Malaysia, particularly in the state of Sabah. There are two different operationalizations to evaluate well-being. We adopted the two-continua model (Keyes, 2005a) and the psychosocial flourishing model (Diener et al., 2010). Based on these models, the current study intended to evaluate the psychometric properties of the Mental Health Continuum-Short Form (MHC-SF; Keyes, 2005a) and Flourishing Scale (FS; Diener et al., 2010) to assess mental and psychosocial well-being from the previous studies and modified to suit the present study.

Well-being

Psychological research over the past decades has focused almost exclusively on psychopathology (Seligman & Csikszentmihalyi, 2000). To offset the focus from pathology, positive psychology evolved (Gable & Haidt, 2005) to provide a complete understanding of the human experience (Seligman et al., 2005). As a result, psychological well-being and mental health studies have shifted away from its traditional focus on illness to a consideration of human well-being and flourishing (Diehl et al., 2011; Henderson & Knight, 2012).

Current research conceptualizes well-being construct as a multidimensional concept and two major views of well-being emerged based on two historical approaches called *hedonic* and *eudaimonic* traditions (Henderson & Knight, 2012; Lamers et al., 2010; Ryan & Deci, 2001). The hedonic tradition considers pleasure, happiness, and pain avoidance as central aspects to define subjective well-being (Ryan & Deci, 2001). Subjective well-being has thus been operationalized as the synthesis of three components namely life satisfaction (i.e. the person's cognitive judgement of his/her life), the presence of positive feeling (i.e. positive affect), and the absence of negative feeling (i.e. negative affect) (Diener et al., 1999). While eudaimonic tradition focuses on human potential and includes concepts such as personal growth, self-realization, and purpose or meaning of life (Didino et al., 2019; Ryan & Deci, 2001; Ryff, 1989; Ryff & Keyes, 1995). Eudaimonic research considers positive psychological functioning and prosperity as a central element of psychological and social well-being (Didino et al., 2019; Keyes et al., 2002; Ryff, 1989; Keyes, 1998; Keyes & Lopez, 2002). These philosophical traditions have since been translated to contemporary psychology for the development of a science of well-being (Henderson, & Knight, 2012).

Mental Well-being

Concepts of mental health have changed in recent years. Mental health has traditionally been conceptualized as the absence of mental illness/psychopathology (Barry, 2009; Doré et al., 2017; Keyes, 2002; Keyes, 2005a; Lamers et al., 2010; Lukat et al., 2016) in which individuals were seen as either mentally ill or presumed to be mentally healthy (Keyes, 2005a; Lukat et al., 2016). Today, the World Health Organization (WHO) focuses on mental health as a positive state that is defined as “a state of well-being in which the individual realizes his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (World Health Organization, 2005, p. 2), and proposed to be more than just absence of illness (Doré et al., 2017). There are three components in this definition: 1) well-being, 2) effective functioning in individual life, and 3) effective functioning in community life, which together make up mental health (Lamers et al., 2010).

Thus, mental health is not the absence of mental illness but rather the foundation of well-being and effective functioning at an individual and social level (Doré et al., 2017; Keyes, 2002). In recent years, it is increasingly recognized that the absence of mental illness is not the same

as the presence of positive mental health (Lukat et al., 2016) and even more than the absence of mental disorders (World Health Organization, 2022). Thus, elements of positive mental health and mental health illness can be present at the same time: they are seen as independent but correlated concepts (Keyes, 2007; Lukat et al., 2016; Lutz & Mark, 1995). In this view, both positive mental health (often referred to as mental well-being) and mental disorder (often referred to as mental health problems, psychopathology or negative well-being) are required for complete mental health assessments and should be integrated in research also known as “dual-factor model of mental health” (Suldo & Shaffer, 2008). To fully capture the state of mental health, its assessment should integrate the spectrum of well-being and positive functioning, in addition to mental illness.

The two-continua model of mental health (Keyes, 2005a; Keyes, 2014) describe mental health and illness in ways that places them along a single continuum (Keyes, 2005a; Keyes, 2007; Keyes, 2014). However, Keyes asserted that mental health and illness belonged on two separate continuums due to them being distinct dimensions that are related and can co-exist simultaneously. The two-continua model allows the categorization of mental illness and level of mental health (Keyes, 2014). Keyes (2014) also identified implications pertaining to the model, which are: 1) the absence of mental illness does not imply the presence of mental health; 2) the presence of mental illness does not imply the absence of mental health; 3) the absence of mental illness does not mean the presence of mental health, but the presence of mental illness does not imply the absence of some level of good mental health; and 4) the level of mental health should differentiate level of functioning among individuals free of, and those with mental illness. These implications provide further clarification regarding the model and reiterates that all individuals, whether mentally healthy or mentally ill, are capable of experiencing both positive and negative states of feeling and functioning.

Based on this model, the MHC-SF (Keyes, 2005a) provides such a comprehensive assessment by measuring emotional, psychological, and social well-being (Doré et al., 2017; Keyes, 2005a). The MHC-SF developed by Keyes utilizes 14 items to gauge these three components of emotional, psychological, and social well-being that comprises a positive mental health (Keyes, 2010). Keyes (2002) identified emotional, psychological, and social well-being as criteria in diagnosing mental health, which is similar to the Diagnostic and Statistical Manual (DSM) using the same criteria to diagnose mental illness. These three components measure collectively both the absence and presence of mental health (Keyes, 2002). Positive mental health has been identified to be “a distinct indicator of mental well-being that is reliably assessed with the MHC-SF” (Lamers et al., 2010).

As mentioned above, the MHC-SF assess emotional, psychological, and social well-being (Doré et al., 2017; Keyes, 2005a). The emotional well-being “is a specific dimension of subjective well-being that consists of perceptions of avowed happiness and satisfaction with life and the balancing of positive and negative affects” (Keyes, 2013). Emotional well-being is encompassed within the hedonic tradition which places emphasis on feeling good about life. Additionally, this too belongs to the hedonic

tradition which emphasizes the maximization of positive feelings and the reduction of negative ones (Keyes, 2009).

Meanwhile, psychological well-being assesses how well an individual is functioning in their personal life (Robitschek & Keyes, 2009). Psychological well-being places emphasis on how well an individual manages their daily life, which includes the pursuit of meaningful goals and personal development (Keyes et al., 2002). Therefore, it is conceptualized as a private phenomenon (Keyes, 2009). As proposed by Ryff (1989) in a multidimensional model of the psychological well-being. The psychological well-being dimension of MHC-SF measures the six essential indicators for optimal functioning: 1) self-acceptance, 2) positive relations with others, 3) personal growth, 4) purpose in life, 5) environmental mastery, and 6) autonomy (Keyes et al., 2002).

Lastly, the social well-being assess how well an individual is functioning in their social life (Robitschek & Keyes, 2009). Social well-being is concerned with social tasks that occur within an individual's social structure and community (Keyes, 2009). Keyes (2002) developed five social dimensions to operationalize social well-being: 1) social coherence, 2) social actualization, 3) social integration, 4) social acceptance, and 5) social contribution.

The MHC-SF categorizes levels of mental health – flourishing, moderate mental health and languishing – based upon well-being and functioning within the past 30 days (Keyes et al., 2008). Flourishing is defined as the ability to “be filled with positive emotion and to be functioning well psychologically and socially” (Keyes, 2002). Criteria for flourishing entails “feeling at least one measure of hedonic well-being plus six or more measures of positive functioning almost every day during the past month” (Keyes, 2010, pp. 19–20). Keyes (2010) asserted that moderate mental health is defined as “individuals who are neither flourishing nor languishing” (p. 20). While the languishing defined as “the absence of mental health – a state of being mentally unhealthy – which is tantamount to being stuck or stagnant or feeling empty or feeling that life lacks interest or engagement” (Keyes, 2010, p. 20). A criterion for languishing entails “feeling at least one measure of hedonic well-being with six or more measures of positive functioning never or maybe once or twice during the past month” (Keyes, 2010, p. 20).

Psychosocial Well-being

Diener et al.'s (2010) psychosocial flourishing model has been developed to assess social-psychological well-being. This model of social-psychological well-being derived solely from the basis of eudaimonic traditions (Choudry et al., 2018; Diener et al., 2009; Diener et al., 2010; Hone et al., 2013). The flourishing focus solely on measuring social-psychological prosperity to capture major aspects of this type of “prosperity” (Diener et al., 2010; Younes & Alzahrani, 2018). Based on earlier humanistic psychology theories, researchers (see Ryff, 1989; Ryan & Deci, 2000; Ryff & Singer, 1998;) suggest that there are several universal human psychological needs, such as the need for competence, relatedness, and self-acceptance, and several of these characteristics are assessed in Flourishing Scale (Diener et al., 2010; Younes & Alzahrani, 2018).

In addition to the theories derived from the humanistic tradition, Diener et al. (2010) also relied on additional approaches to well-being in creating their model. Coming from different tradition, Putnam (2000) and Helliwell et al. (2010) suggest that “social capital” is basic to the well-being of societies (Diener et al., 2010). In another vein, Csikszentmihalyi (1990) discusses flow, interest, and engagement as basic to human well-being, forming the basis of “psychological capital” (Diener et al., 2010). Seligman (2002), Ryff (1989), Ryff and Singer (1998), and Steger et al. (2008) present arguments and data supporting the notion that purpose and meaning are beneficial to human functioning (Diener et al., 2010).

Although good social relationships were originally defined as having the support of others, it was emphasized that humans also need to support others (Diener et al., 2010). For instance, helping others is more from giving to others than from receiving help (Brown et al., 2003) and people gain more from giving to others than from receiving from them (Dunn et al., 2008). Finally, Peterson et al. (1988) and Scheier and Carver (2003) present evidence that optimism is important to successful functioning and well-being. Seligman (2002) argues that there are desirable feelings in addition to pleasant ones, and he points specifically to engagement or interest, and to involvement in activities that are meaningful and purposeful. Thus, Diener et al. (2010) created the FS measuring the essential components of these various theories of well-being.

The FS included several items on social relationships: having supportive and rewarding relationships, contributing to the happiness of others, and being respected by others (Diener et al., 2010). The survey also included an item on having a purposeful and meaningful life, and one on being engaged and interested in one's activities (Diener et al., 2010). Items were included tapping self-respect and optimism. Finally, the scale included an item on feeling competent and capable in the activities that are important to the respondent (Diener et al., 2010). Thus, the brief scale assesses major aspects of social-psychological functioning from the respondent's own point of view.

The FS (Diener et al., 2010) designed to briefly and easily assesses social-psychological well-being. This scale includes eight items, which measure a wide set of aspects of social-psychological prosperity that complement existing measures of well-being (Diener et al., 2010; Hone et al., 2013). The FS was first introduced as the Psychological Flourishing Scale in a 12-item format (Diener & Biswas-Diener, 2008; Schotanus-Dijkstra et al., 2016) and refined to eight items. The eight-items of FS assessing self-perceived success in areas identified as important for psychological flourishing, including relationships, meaning and purpose, self-esteem and optimism (Diener et al., 2010; Hone et al., 2013).

The MHC-SF has been validated and used in different languages such as Spanish (Perugini et al., 2017), Setswana (Keyes et al., 2008), Portuguese (Machado & Bandeira, 2015), French (Doré et al., 2017), and Dutch (Lamers et al., 2010; Luijten et al., 2019). The original MHC-SF elaborated in the United States (Keyes, 2002; Keyes, 2005b) has been adapted for countries such as Netherlands (Lamers et al., 2010; Luijten et al., 2019), Argentina (Perugini et al., 2017), South Africa (Keyes et al., 2008), Brazil (Machado, &

Bandeira, 2015), Canada (Doré et al., 2017), and cross-cultural (Joshani et al., 2013; Žemojtel-Piotrowska et al., 2018). Acceptable psychometric properties of the MHC-SF have been found in nationally representative sample of adolescents between the ages of 12 and 18 (Keyes, 2005b; Keyes, 2009), school-based sample of adolescent between the ages of 11 and 17 (Luijten et al., 2019), postsecondary students (Doré et al., 2017), university students (Žemojtel-Piotrowska et al., 2018), adults (Keyes et al., 2008; Perugini et al., 2017; Machado & Bandeira, 2015), general populations (Lamers et al., 2010) and combination of various group of students, patients and general population (Lukat et al., 2016). All these studies found a multi-factor structure using EFA and CFA, and adequate to excellent reliability with Cronbach's alpha values ranging from .74 to .96. Most previous validation studies also supported the validity of the MHC-SF.

Also, the FS has been validated and used in different languages such as Dutch (Schotanus-Dijkstra et al., 2016), Russian (Didino et al., 2019), Urdu (Choudhry et al., 2018), Chinese (Tong & Wang, 2017), and Persian (Fassih-Ramandi et al., 2020) languages. The FS also adapted in countries such Netherlands (Schotanus-Dijkstra et al., 2016), Russian (Didino et al., 2019), New Zealand (Hone et al., 2013), Pakistan (Choudhry et al., 2018), China (Tong, & Wang, 2017), and Iran (Fassih-Ramandi et al., 2020). The acceptable psychometric properties of the FS have been found in adults (Schotanus-Dijkstra et al., 2016; Didino et al., 2019; Choudhry et al., 2018) and nationally adult sample (Hone et al., 2013), as well as general population (Tong & Wang, 2017). All these studies found a single factor structure using EFA, PFA and CFA, and adequate to excellent reliability with Cronbach's alpha values ranging from .82 to .91. The validity of the FS also supported by all these previous studies.

Further studies remain limited and required to confirm the psychometric properties of MHC-SF and FS in Malaysian culture, especially among university students. Thus, the current study intended to validate the psychometric properties of the Malay versions of MHC-SF and FS. The current study adds to the psychometric validation of the MHC-SF and FS in ways of validity and reliability.

Method

Research Design

This study employed a cross-sectional research design using the questionnaire method. Using the pilot study data, the aims were to investigate the psychometric properties of the Mental Health Continuum-Short Form (MHC-SF) and Flourishing Scale (FS) in Malay language among university students in the state of Sabah, Malaysia.

Participants

The participants selected for this study enrolled in a public university during the second semester of 2019/2020 academic session. A total of 131 students (22.1% males and 77.9% females) between the ages of 19 and 26 ($M_{Age} = 21.01$, $SD = 1.68$) was selected using a non-random sampling method. All participants volunteered to participate

in this study. Questionnaires were administered by a research team in a public university located in the city of Kota Kinabalu, Sabah, Malaysia.

Measures

Mental well-being. The Mental Health Continuum-Short Form (MHC-SF) is derived from the long form (MHC-LF) which consists of seven items measuring emotional well-being, 18 item measuring psychological well-being, and 15 items measuring social well-being. The MHC-SF is validated for use with individuals aged 12 years or older (Keyes, 2005a). The MHC-SF consists of 14 items measuring emotional (EWB; 3 items), social (SWB; 5 items), and psychological (PWB; 6 items) well-being. It measures the degree of 1) EWB (items 1-3) defined in terms of positive affect and satisfaction with life; 2) SWB (items 4-8) that assess social acceptance, social actualization, social contribution, social coherence, and social integration; and 3) PWB (items 9-14) that assess dimensions of autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance. The MHC-SF also measures categorical assessment of mental health status with three categories: flourishing (i.e. high level of well-being), languishing (i.e. the absence of mental health), and moderate mental health (located between these two extremes). Responses were scored based on a 6-point Likert-type of scale from '1 (never)' to '6 (everyday),' which describe the frequency of experiencing various well-being symptoms during the past month.

Psychosocial well-being. The Flourishing Scale (FS) was originally developed by Diener et al. (2009) and has eight dimensions that measures important aspects of human functioning ranging from positive relationships to feelings of competence, to having meaning and purpose in life (Diener et al., 2010; Choudhry et al., 2018). Each item of the FS is answered based on a 7-point Likert scale from '1 (strongly disagree)' to '7 (strongly agree).' Scores can range from 8 (lowest scores) to 56 (highest scores) with high scores signifies that respondent view themselves in positive terms in important areas of functioning.

Procedures

Data collection was performed using questionnaires and it was done by the research team. Participants were informed that participation in the study was voluntary. Secrecy and confidentiality with regards to the participants' identity were ensured and explicitly indicated on the informed consent form. They were asked to fill in the consent form upon their agreement to participate in the study. The questionnaires took less than 20 minutes to complete.

The method used for translation of the MHC-SF and FS (see Appendix A) was a straightforward translation technique. Both the English versions of MHC-SF and FS translated into *Bahasa Malaysia* by the Translation and Editing Unit (UTUMS), Universiti Malaysia Sabah, Sabah. Revision over the version of translation and little modifications were done by the research team to ensure understandability and confirm the accuracy of the Malay version of MHC-SF and FS.

Statistical Analysis

Data were processed using the statistical software package IBM SPSS 25 and SmartPLS 3. The results were analyzed in terms of frequency distributions of gender and age. SmartPLS were employed to analyse the partial least squares-structural equation modeling (PLS-SEM). The measurement model assessment carried out to examine validity – convergent and discriminant validity – using the factor loadings, average variance extracted (AVE), cross-loadings, Fornell and Larcker's (1981) criterion, and heterotrait-monotrait (HTMT) criterion. While, reliability evaluation includes the assessment of composite reliability (CR) and Cronbach's alpha.

Results and Discussions

The current study intended to validate the Mental Health Continuum-Short Form (MHC-SF) and Flourishing Scale (FS) in *Bahasa Malaysia*. Thus, analysis is performed to

carry out the reliability and validity of the Mental Health Continuum-Short Form (MHC-SF) for mental well-being constructs: emotional, social and psychological well-being, and Flourishing Scale (FS) for psychosocial well-being construct.

Convergent Validity of Mental Well-being and Psychosocial Well-being Constructs

Convergent validity tested through the analysis of factor loadings and average variance extracted (AVE). Hair et al. (2014) suggested that in order to consider an acceptable convergent validity, the factor loadings and the AVE must be assessed. The factor loadings must be more than 0.60 and AVEs must be more than 0.50 to be acceptable for convergent validity (Bahari et al., 2017; Hair et al., 2014, 2017; Zainudin, 2015). As presented in Table 1, the values of factor loadings is above 0.60 and AVEs is above 0.50 for all constructs, which suggests good convergent validity.

Table 1

Assessment of Reliability and Convergent Validity of Mental Well-Being and Psychosocial Well-Being Constructs

Constructs	Items	Factor Loadings	Average Variance Extracted	Cronbach's alpha	Composite Reliability
Emotional well-being	EWB1	0.797	0.756	0.837	0.902
	EWB2	0.922			
	EWB3	0.885			
	SWB1	0.734			
Social well-being	SWB2	0.757	0.564	0.743	0.838
	SWB3	0.762			
	SWB5	0.751			
	PWB1	0.782			
	PWB2	0.758			
Psychological well-being	PWB3	0.749	0.572	0.848	0.888
	PWB4	0.601			
	PWB5	0.796			
	PWB6	0.830			
	FLO1	0.770			
	FLO2	0.772			
	FLO3	0.819			
	FLO4	0.692			
Psychosocial well-being	FLO5	0.811	0.588	0.899	0.919
	FLO6	0.813			
	FLO7	0.759			
	FLO8	0.685			

Note: SWB4 were deleted due to factor loading < 0.60.

Discriminant Validity of Mental Well-being and Psychosocial Well-being Constructs

Discriminant validity is defined as one condition in which two or more distinct concepts did not show a significant correlation (Sekaran & Bougie, 2016). In order to differentiate items between constructs, discriminant validity can be evaluated by examining the cross-loadings assessment, Fornell and Larcker's (1981) criterion, and Heterotrait Monotrait (HTMT) criterion.

Cross-loadings (also known as "item-level discriminant validity") "is shown when each measurement item correlates weakly with all other constructs except for the one which it

is theoretically associated" (Gefen & Straub, 2005, p. 92). In PLS, each indicator loading should be greater than all of its cross-loadings (Barclay et al., 1995; Chin, 1998; Henseler et al., 2015). As presented in Table 2, all cross-loadings is below than the indicator loadings, which indicates good discriminant validity of mental well-being and psychosocial well-being constructs.

Meanwhile for Fornell and Larcker criterion (1981) the square root of the AVE was compared with the correlation of other constructs. If the AVE is larger than its correlations of the other constructs, it indicates that the discriminant validity is achieved. Table 3 shows the latent variable correlations and the square root of the AVEs demonstrated higher values than the equivalent row and column values.

Thus, they prove that all constructs are distinct from each other. However, it was found that the square root of the AVE of psychological well-being and psychosocial well-being is lower than the correlation coefficient of both constructs. Probably there are few items of psychological well-being and psychosocial well-being constructs are measuring the same thing. In other words, it contains the overlapping items from the respondent's perception in the affected constructs.

Discriminant validity also tested using the Heterotrait Monotrait (HTMT) criterion calculated using the formula as in Henseler et al. (2015). The HTMT values close to 1.0 indicates a lack of discriminant validity. As shown in Table 4 the values are below 0.9 which convincingly supports discriminant validity. As suggested by Henseler et al. (2015) the HTMT results indicated discriminant validity according to the HTMT_{0.85} and HTMT_{0.90} criterions.

Table 2

Assessment of Loadings and Cross-Loadings of Mental Well-Being and Psychosocial Well-Being Constructs

Items	Emotional well-being	Social well-being	Psychological well-being	Psychosocial well-being
EWB1	0.797	0.388	0.435	0.505
EWB2	0.922	0.521	0.575	0.660
EWB3	0.885	0.491	0.573	0.595
SWB1	0.450	0.734	0.534	0.534
SWB2	0.416	0.757	0.524	0.497
SWB3	0.422	0.762	0.425	0.483
SWB5	0.333	0.751	0.450	0.488
PWB1	0.579	0.486	0.782	0.596
PWB2	0.421	0.426	0.758	0.579
PWB3	0.443	0.463	0.749	0.618
PWB4	0.199	0.397	0.601	0.452
PWB5	0.493	0.564	0.796	0.619
PWB6	0.577	0.574	0.830	0.664
PSWB1	0.703	0.501	0.639	0.770
PSWB2	0.548	0.547	0.550	0.772
PSWB3	0.675	0.589	0.627	0.819
PSWB4	0.313	0.418	0.562	0.692
PSWB5	0.493	0.528	0.696	0.811
PSWB6	0.557	0.572	0.624	0.813
PSWB7	0.439	0.399	0.572	0.759
PSWB8	0.344	0.522	0.512	0.685

Table 3

Fornell and Larcker Criterion Assessment of Mental Well-Being and Psychosocial Well-Being Constructs

Constructs	1	2	3	4
1. Emotional well-being	0.869			
2. Social well-being	0.541	0.751		
3. Psychological well-being	0.611	0.646	0.756	
4. Psychosocial well-being	0.680	0.668	0.783	0.767

Note: Diagonal elements highlighted in bold represent the square root of AVE.

Table 4

Heterotrait Monotrait (HTMT) Criterion Assessment of Mental Well-Being and Psychosocial Well-Being Constructs

Constructs	1	2	3	4
1. Emotional well-being				
2. Social well-being	0.678			
3. Psychological well-being	0.707	0.808		
4. Psychosocial well-being	0.761	0.812	0.891	

The Internal Reliability for the Instruments Measuring Mental Well-being and Psychosocial Well-being Constructs

We tested the internal consistency of all constructs through Cronbach's alpha and composite reliability (CR). Table 1 shows that the values of Cronbach's alpha and CR of all constructs is above 0.70. Cronbach's alpha values above the standard value of 0.70 (Nunally, 1978; Robinson

et al., 1991) and CR values above the standard value of 0.708 (Hair et al., 2010; Hair et al., 2014) is an accepted level of internal consistency. Thus, the coefficient values of all constructs indicated an acceptable internal consistency.

Limitations

The limitation of the current study is that only undergraduate students who are literate in *Bahasa Malaysia* were included in the study. Therefore, the results cannot be generalized to all students especially those who are non-Malaysian and non-Malaysian mother tongue. This study focuses only on undergraduate students from a public university in Sabah which would not be able to be generalized for each university student in Malaysia in terms of their well-being status. The study is relatively including the cross-sectional design with a retrospective report of mental well-being and psychosocial well-being in the past month. Another limitation is the pilot study which involves a small sample of participants. Nevertheless, the sample size met the data analysis requirements for the pilot study.

Conclusion

The findings of this study support the idea that MHC-SF and FS are culturally valid and reliable. The current study shows that MHC-SF and FS in *Bahasa Malaysia* have a sufficient validity and reliability. Nevertheless, further research is still required to validate the scales in a wide range of contexts. Although this study uses pilot study data, the findings of this study were consistent with previous studies. The MHC-SF and FS are valid and reliable to be used in the context of Malaysian university students, especially in the state of Sabah.

Acknowledgements

We would like to express our appreciation to the research participants for their willingness to participate, their responses, and feedback throughout the data collection process. Thank you very much.

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APPENDIX A

Mental Health Continuum-Short Form (Bahasa Malaysia Version)

Arahan: Berikut merupakan 14 pertanyaan mengenai perasaan yang anda mungkin pernah atau tidak pernah alami. Nyatakan respons anda menggunakan skala 1-6 bagi menggambarkan kekerapan perasaan anda sepanjang sebulan yang lalu.

	Sepanjang sebulan yang lalu, berapa kerap anda berasa...	Tidak pernah	Sekali atau dua	Lebih kurang sekali seminggu	Lebih kurang dua atau tiga kali seminggu	Hampir setiap hari	Setiap hari
1.	gembira?	1	2	3	4	5	6
2.	berminat dengan kehidupan?	1	2	3	4	5	6
3.	berpuas hati dengan kehidupan?	1	2	3	4	5	6
4.	anda mempunyai sesuatu yang penting yang boleh disumbang kepada masyarakat?	1	2	3	4	5	6
5.	diri anda sebahagian daripada satu komuniti (seperti kumpulan sosial, atau kejranaan anda)?	1	2	3	4	5	6
6.	masyarakat kita sesuatu yang baik, atau semakin baik, bagi semua golongan?	1	2	3	4	5	6
7.	bahawa manusia pada hakikatnya adalah baik?	1	2	3	4	5	6
8.	bahawa cara masyarakat kita berfungsi sememangnya munasabah?	1	2	3	4	5	6
9.	bahawa anda menyukai sebahagian besar personaliti anda?	1	2	3	4	5	6
10.	bahawa anda berkeupayaan mengurus tanggungjawab harian anda?	1	2	3	4	5	6
11.	bahawa anda mempunyai hubungan yang mesra dan saling percaya dengan orang lain?	1	2	3	4	5	6
12.	bahawa anda mempunyai pengalaman yang telah mencabar anda untuk berkembang dan menjadi seorang yang lebih baik?	1	2	3	4	5	6
13.	yakin untuk berfikir atau mengutarakan idea dan pendapat sendiri?	1	2	3	4	5	6
14.	hidup anda mempunyai arah tuju atau makna?	1	2	3	4	5	6

Flourishing Scale (Bahasa Malaysia Version)

Arahan: Berikut adalah lapan pernyataan yang anda mungkin bersetuju atau tidak bersetuju. Nyatakan persetujuan anda bagi setiap item dengan memberi respons menggunakan skala 1-7.

		Amat tidak bersetuju	Tidak bersetuju	Agak tidak bersetuju	Tidak bersetuju mahupun bersetuju	Agak bersetuju	Bersetuju	Amat bersetuju
1.	Saya menjalani kehidupan yang mempunyai tujuan dan makna.	1	2	3	4	5	6	7
2.	Hubungan sosial saya menyokong dan memberi kepuasan.	1	2	3	4	5	6	7
3.	Saya melibatkan diri dan berminat dengan aktiviti harian saya.	1	2	3	4	5	6	7
4.	Saya menyumbang secara aktif kepada kebahagiaan dan kesejahteraan orang lain.	1	2	3	4	5	6	7
5.	Saya kompeten dan berupaya dalam melakukan aktiviti-aktiviti yang penting pada diri saya.	1	2	3	4	5	6	7
6.	Saya seorang yang baik dan menjalani kehidupan yang bahagia.	1	2	3	4	5	6	7
7.	Saya optimistik akan masa depan saya.	1	2	3	4	5	6	7
8.	Orang lain menghormati saya.	1	2	3	4	5	6	7