

Cultural Adaptation and Academic Success: Exploring the Experiences of Indonesian Students in Malaysian Universities

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Abstract: Higher education institutions are increasingly globalized, necessitating a deeper understanding of international students' adaptation processes. This study explores Indonesian students' cultural adaptation and academic success in Malaysian universities, considering the interplay of sociocultural, psychological, and academic dimensions. This study employs a quantitative approach using Structural Equation Modeling (SEM) to analyze survey responses from 347 Indonesian students across 12 Malaysian universities. Findings indicate that while Indonesian students generally adapt socioculturally, academic adaptation poses significant challenges, particularly regarding classroom participation, critical thinking expectations, and assessment methods. Institutional support, social networks, and language proficiency emerged as key mediators influencing academic success. Compared to previous studies on international students in Western contexts, this research highlights how cultural proximity does not necessarily equate to seamless academic integration. The study's unique contribution lies in its focus on a specific yet underexplored student group, offering empirical insights for policymakers and university administrators to design culturally responsive academic support programs. The findings suggest that targeted interventions, such as language support and culturally adaptive teaching methods, can enhance Indonesian students' academic experiences in Malaysia. Future research should explore qualitative perspectives to deepen understanding and examine adaptation experiences across different fields of study.

Keywords: cultural adaptation, academic success, Indonesian students, Malaysian universities, international education

Higher education has increasingly become globalized, where international student mobility is crucial in knowledge exchange and economic development. However, studying in a foreign academic environment often presents significant challenges concerning cultural adaptation and academic success (Andrews & Aydin, 2024; Banda & Liu, 2025). For Indonesian students pursuing higher education in Malaysia, cultural similarities may provide a degree of familiarity, but differences in academic expectations, language, and social integration remain substantial. While extensive research has examined international students' adaptation in Western contexts (Chen &

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Bang, 2020; Okoli & Nweke, 2024), fewer studies have explored the unique experiences of Indonesian students in Malaysian universities, a gap that this study seeks to address.

Cultural adaptation is a multifaceted process that involves psychological, social, and communicative adjustments (Chumakov et al., 2022; Gurer, 2019). According to cross-cultural adaptation theories, such as Kim's (2001) Integrative Theory of Communication and Cross-Cultural Adaptation, individuals who enter a new cultural environment undergo a process of stress-adaptation-growth, where they gradually develop competencies to function effectively in the host society. This theoretical framework is particularly relevant in understanding how Indonesian students navigate their academic and social lives in Malaysian universities. Although Indonesia and Malaysia share linguistic and religious similarities, institutional structures, classroom dynamics, and academic expectations may hinder seamless adaptation (Malek & Ahmad, 2023). Additionally, the socio-economic background and prior educational experiences of these students can influence their ability to succeed academically (El Moubchiri et al., 2024; Lamboy et al., 2022).

Academic success, often measured through grade performance, retention rates, and self-perceived satisfaction, is closely linked to cultural adaptation. Studies indicate that students who experience cultural dissonance and a lack of institutional support may struggle academically (Ansong et al., 2016; Smith et al., 2022). The Commitment-to-School framework posits that academic persistence is influenced by students' sense of belonging, motivation, and institutional engagement (Jaramillo-Rincón et al., 2024). In the Malaysian context, international students from diverse backgrounds may face challenges adjusting to different pedagogical approaches, assessment criteria, and faculty-student interactions (Quang & Thu, 2024). However, limited research has explored how Indonesian students navigate these challenges and what factors contribute to their academic resilience.

Understanding Indonesian students' cultural and academic experiences in Malaysian universities is significant for theoretical advancement and practical implications. Higher education institutions in Malaysia have prioritized internationalization strategies to attract a diverse student population. However, without a deeper understanding of the specific needs of these students, policies may fail to provide adequate support mechanisms. Studies have shown that culturally responsive pedagogy and institutional interventions can enhance student adaptation and academic performance (Karataş, 2020; Okoli & Nweke, 2024). Given the growing number of Indonesian students in Malaysia, it is imperative to explore their lived experiences, identify their barriers, and propose solutions that foster a supportive academic environment.

To address these gaps, this study investigates the interplay between cultural adaptation and academic success among Indonesian students in Malaysian universities. Specifically, it seeks to answer the following research questions:

1. How do Indonesian students in Malaysian universities experience cultural adaptation, and what challenges do they face?
2. What factors influence the academic success of Indonesian students in Malaysian universities?
3. How does cultural adaptation impact academic performance and student well-being in Malaysian higher education institutions?

Using a quantitative research approach using Structural Equation Modeling (SEM) analysis, this study will provide empirical insights into Indonesian students' adaptation process and academic outcomes in Malaysia. The findings will contribute to existing literature on cross-cultural education while offering recommendations for policymakers and educators to enhance student support systems. Ultimately, this research will bridge the knowledge gap regarding Indonesian

students' cultural and academic integration in Malaysian universities and inform future regional educational practices.

Theoretical Foundations of Cultural Adaptation and Academic Success

Multiple theoretical frameworks have explored the intersection of cultural adaptation and academic success. One of the most widely applied theories is Berry's (1997) acculturation model, which identifies assimilation, integration, separation, and marginalization as key modes of cultural adaptation. This framework provides a lens to analyze how Indonesian students in Malaysian universities navigate cultural and academic transitions. Additionally, social identity theory emphasizes the role of group belonging in academic motivation and success, which is particularly relevant in cross-cultural educational settings (Orbe, 2008). The psychological sense of school membership (PSSM) framework (El Moubchiri et al., 2024) also contributes to understanding how students' sense of belonging impacts their academic performance and well-being.

Empirical Studies on Cultural Adaptation in Higher Education

Several studies have explored international students' academic and cultural adaptation in various contexts. Andrews and Aydin (2024) examined Turkish refugee students in US schools and found that cultural barriers significantly impacted their academic achievements. Similarly, Banda and Liu (2025) investigated international students' academic performance in Chinese universities, emphasizing the importance of institutional support and cultural familiarity. Malek and Ahmad (2023) specifically studied international students' academic adjustment in Malaysian private universities, highlighting financial, linguistic, and cultural barriers that shape their academic experiences. However, these studies do not explicitly focus on Indonesian students, indicating a gap in the literature that the present study aims to address.

The Role of Social and Communicative Adaptation in Academic Success

Social and communicative adaptation is crucial for students studying in a foreign academic environment (Chumakov et al., 2022). Research on international nursing students from the Belt and Road Initiative in China (Sun et al., 2023) demonstrated that language proficiency and social support networks significantly influence students' ability to integrate academically and culturally. Similar findings were reported by Chen and Bang (2020), who explored East Asian students' perceptions of their preparation for studying abroad in the US, concluding that pre-departure training and orientation programs are instrumental in ensuring academic success. These findings align with Quang and Thu (2024), who examined Lao students' experiences in Vietnamese universities and found that overcoming language barriers is a primary factor in cultural adaptation.

Psychological and Cognitive Factors in Cultural Adaptation

Psychological and cognitive factors are central to understanding how students manage the stresses of cross-cultural transitions. Psychological adaptation involves emotional well-being, including feelings of self-worth, reduced anxiety, and confidence in the host environment (Ward et al., 2020). Cognitive adaptation refers to the ways in which students restructure their thinking and learning strategies to meet new academic demands. For instance, resilience and grit—concepts validated in higher education contexts (Jaramillo-Rincón et al., 2024)—help students remain

motivated despite academic and cultural setbacks. Mindfulness, as measured through cross-cultural tools like CAMS-R, further supports emotional regulation in unfamiliar environments (Guelmami et al., 2024). These psychological and cognitive resources are integral to navigating complex academic settings, especially for students who must adapt not only to new knowledge systems but also to culturally different teaching methods and assessment styles.

Addressing Gaps in the Literature

Despite the extensive research on international student adaptation, specific studies focusing on Indonesian students in Malaysian universities remain limited. While Malek and Ahmad (2023) explored international students' experiences in Malaysia, their study did not provide a nuanced analysis of cultural and academic adaptation specific to Indonesian students. Furthermore, existing studies, such as those by Okoli and Nweke (2024) and Quang and Thu (2024), focus on general challenges international students face but lack an in-depth examination of cultural identity negotiation in higher education. This research aims to fill these gaps by utilizing structural equation modeling (SEM) to analyze the relationship between cultural adaptation and academic success among Indonesian students in Malaysian universities, contributing novel empirical insights to the field.

Methods

This study employed a quantitative research design using a cross-sectional survey approach to examine the relationship between cultural adaptation and academic success among Indonesian students in Malaysian universities. A quantitative approach was chosen as it allows for testing hypothesized relationships between variables and enables generalization from a sample to the population (Hair et al., 2021). Structural Equation Modeling (SEM) was selected as the primary analytical technique due to its ability to simultaneously test complex relationships between latent variables while accounting for measurement error. This methodological approach aligns with similar cross-cultural adaptation studies in educational contexts (Andrews & Aydin, 2024; Malek & Ahmad, 2023).

The research utilized Berry's (1997) acculturation model and Kim's (2001) Integrative Theory of Communication and Cross-Cultural Adaptation as theoretical frameworks to guide the development of survey instruments and analytical models. The latent constructs examined in this study included cultural adaptation (with dimensions of psychological, sociocultural, and academic adaptation), academic success (measured through grade performance, satisfaction, and persistence), and mediating variables (social support, institutional support, and language proficiency).

The selection of these mediating variables is grounded in established theories of cross-cultural adaptation and academic success. According to Kim's (2001) Integrative Theory of Communication and Cross-Cultural Adaptation, external resources such as institutional and interpersonal support systems play a mediating role in helping individuals internalize new cultural patterns, thereby easing psychological and academic adjustment. Similarly, Berry's (1997) acculturation model highlights the role of both environmental and personal resources in shaping successful adaptation outcomes. Social support—especially from peers and family—has been widely recognized as a buffer against cultural stress, thus promoting academic engagement (Chumakov et al., 2022). Language proficiency, both in English and the local language, serves as a cognitive and communicative bridge that mediates students' integration into academic and social

settings (Chen & Bang, 2020; Quang & Thu, 2024). Therefore, these variables are positioned as mediators based on their established theoretical and empirical roles in facilitating the link between cultural adaptation and academic success.

Sampling Procedure

The target statistical population for this study consisted of all Indonesian undergraduate and postgraduate students enrolled in accredited public and private universities across Malaysia during the 2023 academic year. A multi-stage sampling technique was employed to recruit participants for this study. First, stratified random sampling was used to select universities across Malaysia, ensuring representation from public and private institutions across different regions (Peninsular Malaysia, Sabah, and Sarawak). This approach follows recommendations by Taherdoost (2016) for achieving representativeness in cross-cultural research. From the selected universities, Indonesian students were recruited using purposive sampling based on inclusion criteria: (1) Indonesian citizenship, (2) enrolled as full-time students in undergraduate or postgraduate programs, and (3) having completed at least one semester of study in Malaysia. While the initial selection of universities followed a stratified random sampling procedure, the final recruitment of participants used a non-probability purposive sampling technique. This approach was necessary due to access limitations and the need to ensure participants met specific eligibility criteria. As such, the generalizability of findings to the broader population of Indonesian students in Malaysia should be interpreted with caution.

The sample size was determined using power analysis for SEM following recommendations by Wolf et al. (2013), who suggest a minimum sample size based on the number of latent variables, indicators per latent variable, and expected effect sizes. With seven latent constructs and three to five indicators per construct, a minimum sample of 300 participants was targeted to achieve a statistical power of 0.80 with a significance level of 0.05 for detecting medium effect sizes (0.30). To account for potential incomplete responses, the target sample was increased by 20%, resulting in a recruitment goal of 360 participants.

Participant Characteristics

347 Indonesian students from 12 Malaysian universities participated in the study, representing a response rate of 96.4%. The participants were diverse in terms of academic disciplines, length of stay in Malaysia, and demographic characteristics. Table 1 presents the demographic profile of the participants.

Table 1*Demographic Characteristics of Indonesian Students (N = 347)*

Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Male	163	47.0
	Female	184	53.0
Age	18-22	189	54.5
	23-27	106	30.5
	28-32	39	11.2
	33 and above	13	3.8
Level of Study	Undergraduate	215	62.0
	Master's	97	28.0
	Doctoral	35	10.0
Field of Study	Social Sciences/Humanities	112	32.3
	Engineering/Technology	94	27.1
	Business/Economics	68	19.6
	Medical/Health Sciences	47	13.5
	Others	26	7.5
Type of University	Public	218	62.8
	Private	129	37.2
Duration of Stay in Malaysia	Less than 1 year	95	27.4
	1-2 years	142	40.9
	2-3 years	73	21.0
	More than 3 years	37	10.7
Previous International Experience	Yes	118	34.0
	No	229	66.0
English Language Proficiency	Basic	47	13.5
	Intermediate	163	47.0
	Advanced	137	39.5
Malaysian Language Proficiency	Basic	124	35.7
	Intermediate	168	48.4
	Advanced	55	15.9
Accommodation Type	University Dormitory	187	53.9
	Off-campus (with Indonesians)	83	23.9
	Off-campus (mixed nationalities)	61	17.6
	Off-campus (with Malaysians)	16	4.6

Instrumentation

Multiple validated instruments were adapted for this study to measure the key constructs. All instruments underwent a rigorous translation, back-translation, and cultural adaptation following the guidelines established by Beaton et al. (2000) to ensure conceptual equivalence across cultures.

Cultural Adaptation Measures

Cultural adaptation was measured using a modified version of the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989), which was adapted to the Malaysian-Indonesian context. The instrument consists of 28 items across three dimensions: psychological

adaptation (10 items, e.g., “I feel comfortable with my identity as an Indonesian student in Malaysia”), sociocultural adaptation (10 items, e.g., “I can successfully navigate social customs in Malaysian society”), and academic adaptation (8 items, e.g., “I understand the academic expectations of my Malaysian university”). Items were rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). This instrument has demonstrated good reliability in previous cross-cultural studies (Cronbach’s α ranging from .78 to .91; Chen & Bang, 2020; Malek & Ahmad, 2023).

Academic Success Measures

As York et al. (2015) recommended, academic success was operationalized using multiple indicators. The primary indicators included:

1. Academic Performance: Measured through self-reported cumulative grade point average (CGPA) on a scale of 0.00 to 4.00, a standard metric used across Malaysian universities.
2. Academic Satisfaction: This was assessed using the College Student Satisfaction Questionnaire (CSSQ; Betz et al., 1970), which was modified and shortened to 12 items (e.g., “I am satisfied with the quality of education I receive”). Items were rated on a 5-point Likert scale from 1 (*very dissatisfied*) to 5 (*very satisfied*).
3. Academic Persistence: Measured using the Academic Persistence Scale (APS; Townsend & Wilson, 2009), consisting of 8 items (e.g., “I am determined to complete my degree at this university”). Items were rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Mediating Variables

Three potential mediating variables were measured:

1. Social Support: Assessed using the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988), adapted to include 12 items measuring support from family, friends, and significant others. Items were rated on a 7-point Likert scale from 1 (*very strongly disagree*) to 7 (*very strongly agree*).
2. Institutional Support: Measured using the Institutional Support Scale (ISS; Cho & Yu, 2015), consisting of 10 items assessing the perceived support from university services and staff (e.g., “My university provides adequate support services for international students”). Items were rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).
3. Language Proficiency: Assessed using a self-reported language competence scale adapted from Yang et al. (2006), measuring proficiency in English and Bahasa Malaysia across four domains: speaking, listening, reading, and writing. Each domain was rated on a 5-point scale from 1 (*poor*) to 5 (*excellent*).

Demographic Variables

Demographic information was collected, including gender, age, level of study, field of study, type of university, duration of stay in Malaysia, previous international experience, language proficiency, and accommodation type. These variables were included as control variables in the

analysis based on previous research indicating their potential influence on cultural adaptation and academic success (Banda & Liu, 2025; Sun et al., 2023).

Data Collection Procedures

Data were collected over four months (September 2023 to December 2023) using an online survey platform (Qualtrics). The survey was distributed through multiple channels, including Indonesian student associations in Malaysian universities, international student offices, and social media groups for Indonesian students in Malaysia. This multi-channel approach was employed to maximize reach and representativeness, following recommendations by Dillman et al. (2014) for electronic survey implementation.

Prior to data collection, ethical approval was obtained from the Universitas Negeri Padang (UNP), and permission was secured from the participating universities. Participants were provided with an information sheet detailing the purpose of the study, confidentiality provisions, voluntary participation, and the right to withdraw. Electronic informed consent was obtained from all participants before they could access the survey. To enhance response rates, two reminder emails were sent at two-week intervals, and participants who completed the survey were entered into a draw for ten gift vouchers worth RM50 each, a strategy shown to be effective in increasing participation without introducing significant bias.

The online survey was programmed to minimize missing data by implementing “soft reminders” for unanswered questions while allowing participants to proceed if they chose not to answer certain items. Based on pilot testing, the survey took approximately 25-30 minutes. To ensure data quality, attention check items were embedded throughout the survey, and responses that failed multiple attention checks or were completed in less than 10 minutes were excluded from the analysis.

Data Analysis

Data Preparation and Screening

Data analysis began with comprehensive data screening procedures using IBM SPSS Statistics version 28. This included checking for missing values, outliers, normality, linearity, and multicollinearity following recommendations by Tabachnick and Fidell (2019). Missing values were analyzed using Little's MCAR test to determine whether data were missing completely at random. For cases with less than 5% missing data on any variable, the expectation-maximization algorithm was used for imputation; cases with more than 20% missing data were excluded from the analysis.

Multivariate outliers were identified using Mahalanobis distance with a critical value based on the chi-square distribution ($p < .001$). Normality was assessed by examining skewness and kurtosis values (acceptable range: ± 2) and visual inspection of histograms and Q-Q plots. Transformations (e.g., logarithmic, square root) were applied as necessary for variables with substantial deviations from normality. Multicollinearity was examined using variance inflation factors (VIF), with values below five considered acceptable (Hair et al., 2021).

Scale Validation

The psychometric properties of the instruments were evaluated through several analyses:

1. **Reliability:** Internal consistency was assessed using Cronbach's alpha, with values above .70 acceptable. Additionally, composite reliability was calculated to provide a more robust estimate of scale reliability in the context of SEM.
2. **Construct Validity:** Confirmatory Factor Analysis (CFA) was conducted using AMOS version 28 to assess the factor structure of each scale. Model fit was evaluated using multiple indices: Comparative Fit Index (CFI > .95), Tucker-Lewis Index (TLI > .95), Root Mean Square Error of Approximation (RMSEA < .06), and Standardized Root Mean Square Residual (SRMR < .08).
3. **Convergent and Discriminant Validity:** Convergent validity was assessed using the Average Variance Extracted (AVE), with values above .50 indicating adequate convergent validity. Discriminant validity was evaluated by comparing the square root of AVE for each construct with its correlations with other constructs and through the Heterotrait-Monotrait (HTMT) ratio of correlations.

Structural Equation Modeling

Following recommendations by Anderson and Gerbing (1988), a two-step approach to SEM was employed. First, the measurement model was tested using CFA to confirm the relationships between observed indicators and their respective latent constructs. The structural model was examined after a satisfactory measurement model was established to test the hypothesized relationships between latent variables.

Multiple alternative models were tested and compared using fit indices and the Akaike Information Criterion (AIC) to identify the model that best explained the data. The baseline model included direct paths from cultural adaptation dimensions to academic success outcomes. Alternative models incorporated mediating variables (social support, institutional support, and language proficiency) and control variables (demographic factors).

Bootstrap procedures (2,000 resamples) were used to test for mediation effects and to generate bias-corrected confidence intervals for indirect effects. This non-parametric approach is recommended for testing mediation in SEM as it does not assume the normality of the sampling distribution of indirect effects (MacKinnon et al., 2004).

The final structural model was evaluated using the same fit indices as the measurement model: CFI, TLI, RMSEA, and SRMR. Additionally, the coefficient of determination (R^2) was examined to assess the proportion of variance explained in endogenous variables. Path coefficients were standardized to facilitate interpretation of effect sizes, with values of .10, .30, and .50 representing small, medium, and significant effects, respectively.

Multi-Group Analysis

Multi-group SEM analyses were conducted to examine potential differences in the structural relationships based on demographic characteristics. Key demographic variables such as gender, level of study, duration of stay, and previous international experience were used as grouping variables. Measurement invariance was tested following the procedure outlined by Vandenberg and Lance (2000), with configurable, metric, and scalar invariance established before comparing structural paths across groups.

Ethical Considerations

This study adhered to ethical guidelines for research involving human participants. Several measures were implemented to ensure ethical conduct:

1. **Informed Consent:** All participants provided electronic informed consent before participating in the study. The consent form included information about the purpose of the study, procedures, risks and benefits, confidentiality provisions, voluntary participation, and the right to withdraw.
2. **Confidentiality and Data Protection:** Participants' personal information was kept confidential, and data were stored securely in password-protected files on encrypted servers. Data were anonymized during analysis, using identification codes instead of personal identifiers.
3. **Voluntary Participation:** Participants were informed that their participation was voluntary and that they could withdraw from the study at any time without consequences. They were also informed that their decision to participate would not affect their academic standing.
4. **Minimal Risk:** The study posed minimal risk to participants by involving a survey about academic and cultural experiences. However, the survey included contact information for university counseling services in case participants experienced discomfort or distress while reflecting on their adaptation experiences.
5. **Data Management Plan:** A comprehensive data management plan was developed to ensure appropriate handling, storage, and disposal of research data by data protection regulations and university policies.

Results

Cultural Adaptation Experiences of Indonesian Students in Malaysian Universities

This section presents the findings addressing the first research question: How do Indonesian students in Malaysian universities experience cultural adaptation, and what challenges do they face? The analysis begins with descriptive statistics of the cultural adaptation dimensions, followed by the confirmatory factor analysis (CFA) results that validate the measurement model. Subsequently, the structural equation modeling (SEM) analysis examines the relationships between various predictors and the three dimensions of cultural adaptation.

Descriptive Analysis of Cultural Adaptation Experiences

Table 2 presents the descriptive statistics for the three dimensions of cultural adaptation—psychological, sociocultural, and academic. Each dimension was measured on a 5-point Likert scale, with higher scores indicating better adaptation.

Table 2

Descriptive Statistics for Cultural Adaptation Dimensions (N = 347)

Dimension	Mean	SD	Min	Max	Skewness	Kurtosis
Psychological Adaptation	3.42	0.76	1.30	4.90	-0.43	-0.28
Sociocultural Adaptation	3.67	0.82	1.50	5.00	-0.52	-0.31
Academic Adaptation	3.21	0.91	1.00	5.00	-0.37	-0.42
Overall Cultural Adaptation	3.43	0.71	1.53	4.93	-0.45	-0.27

The results indicate that Indonesian students reported moderate to high levels of cultural adaptation across all dimensions. Sociocultural adaptation emerged as the highest-rated dimension ($M = 3.67$, $SD = 0.82$), suggesting that Indonesian students generally easily adapted to Malaysian society's social and cultural aspects. This finding may be attributed to Indonesia and Malaysia's cultural and religious similarities, as both countries share Malay cultural heritage and predominantly Muslim populations (Malek & Ahmad, 2023). Academic adaptation revealed the lowest mean score ($M = 3.21$, $SD = 0.91$), indicating that Indonesian students experienced more significant challenges in adjusting to the academic environment of Malaysian universities than in other aspects of adaptation.

Further analysis of individual items within each dimension revealed specific areas where students experienced the most significant adaptation challenges (Table 3). These findings provide more nuanced insights into the adaptation process.

Table 3

Highest and Lowest Rated Items Within Each Adaptation Dimension

Dimension	Highest Rated Items	Mean (SD)	Lowest Rated Items	Mean (SD)
Psychological Adaptation	"I feel comfortable with my identity as an Indonesian student."	4.21 (0.83)	"I rarely feel homesick or yearn to be back in Indonesia."	2.63 (1.24)
	"I am proud to share my Indonesian culture with others."	4.18 (0.79)	"I rarely feel overwhelmed by the stress of living in Malaysia."	2.87 (1.18)
Sociocultural Adaptation	"I can interact effectively with Malaysian students."	4.03 (0.92)	"I participate actively in university social events."	2.98 (1.14)
	"I understand and respect Malaysian cultural norms."	3.96 (0.88)	"I have developed close friendships with Malaysian students."	3.12 (1.17)
Academic Adaptation	"I understand the academic requirements of my courses."	3.79 (0.93)	"I feel comfortable speaking up in class discussions."	2.68 (1.22)
	"I can effectively navigate the university's online learning platforms."	3.71 (0.97)	"I am comfortable with the assessment methods used in my courses."	2.85 (1.09)

The item-level analysis reveals that while Indonesian students maintain a strong cultural identity and can interact effectively with Malaysian peers, they struggle with homesickness, developing close friendships with local students, and actively participating in class discussions. These challenges align with previous research on international students' adaptation experiences, which often note psychological strain and academic participation difficulties as common issues (Chen & Bang, 2020; Sun et al., 2023).

Confirmatory Factor Analysis for Cultural Adaptation Measure

Before examining the relationships between variables, confirmatory factor analysis was conducted to validate the three-dimensional structure of the cultural adaptation measure. The initial CFA model demonstrated adequate fit: $\chi^2(347) = 612.83$, $p < .001$; CFI = .93; TLI = .92; RMSEA = .059 (90% CI: .052-.067); SRMR = .054. After allowing for theoretically justified correlations between error terms for three pairs of items with similar content, the model fit improved: $\chi^2(344) = 543.21$, $p < .001$; CFI = .96; TLI = .95; RMSEA = .048 (90% CI: .041-.055); SRMR = .046. All factor loadings were statistically significant ($p < .001$) and exceeded .50, supporting the convergent validity of the measure. Figure 1 presents the final CFA model with standardized factor loadings.

Figure 1

Confirmatory Factor Analysis Model for Cultural Adaptation Dimensions

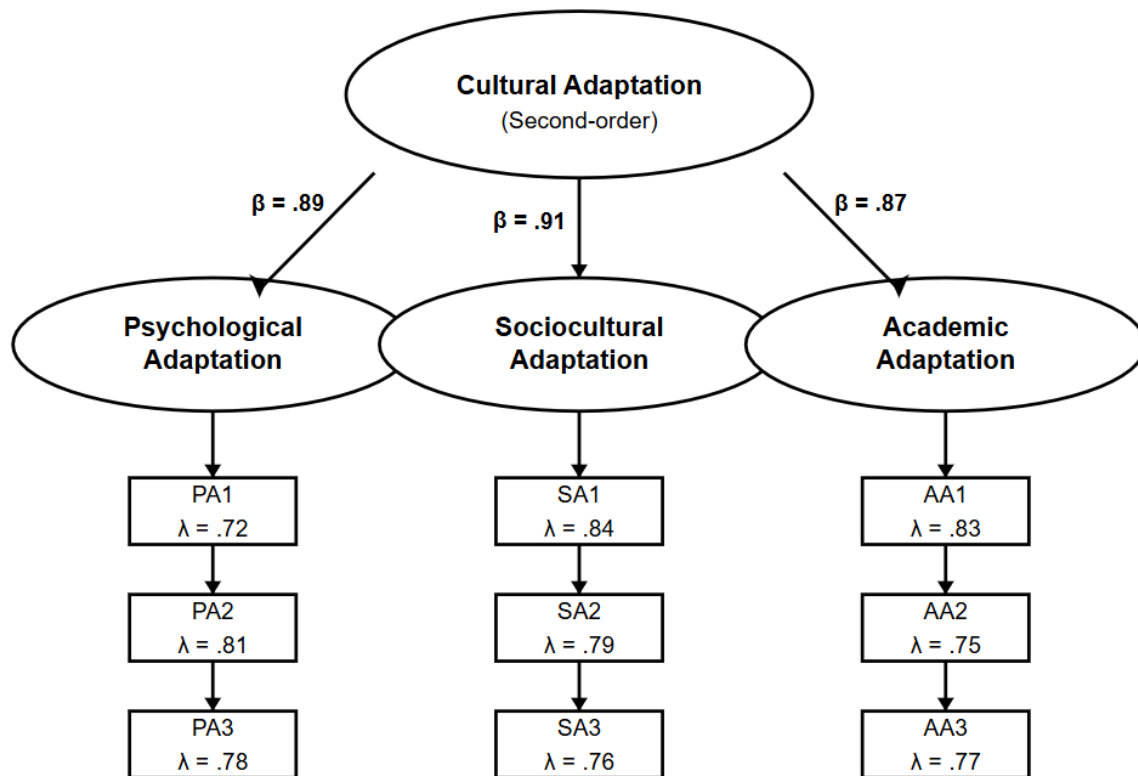


Figure 1 presents the updated structural model depicting Cultural Adaptation as a second-order latent construct. The model demonstrates strong standardized loadings from the second-order factor to its first-order dimensions: psychological adaptation ($\beta = .89$), sociocultural adaptation ($\beta = .91$), and academic adaptation ($\beta = .87$). Each first-order factor is supported by observed indicators with acceptable factor loadings ranging from .72 to .84. These coefficients indicate high construct validity and justify the hierarchical structure used in subsequent SEM analysis.

The composite reliability coefficients for psychological, sociocultural, and academic adaptation were .89, .87, and .84, respectively, exceeding the recommended threshold of .70 (Hair et al., 2021). Average variance extracted (AVE) values were .57 for psychological adaptation, .53 for sociocultural adaptation, and .51 for academic adaptation, supporting adequate convergent

validity. The square roots of the AVE values were more significant than the correlations between constructs, providing evidence of discriminant validity.

Factors Influencing Cultural Adaptation Experiences

Prior to SEM estimation, a collinearity diagnostics test was conducted using Variance Inflation Factors (VIF) to assess multicollinearity among the predictor variables. All VIF values were below 1.10, far below the conventional threshold of 5 (Hair et al., 2021), indicating no multicollinearity issues. This confirms the appropriateness of including multiple predictors in the structural model without redundancy concerns. The Variance Inflation Factor (VIF) analysis shows that all predictor variables have VIF values well below 5, indicating no multicollinearity concerns in your SEM model:

Table 4
Collinearity Analysis (VIF)

Variable	VIF
Previous International Experience	1.05
Age	1.05
Duration of Stay	1.04
Malay Proficiency	1.04
Social Support – Family	1.04
Social Support – Significant Others	1.04
Institutional Support	1.04
Field of Study	1.04
English Proficiency	1.03
Social Support – Friends	1.03
Level of Study	1.03
Gender	1.02

To understand the factors influencing Indonesian students' cultural adaptation experiences, we conducted structural equation modeling to examine the relationships between various predictors and the three dimensions of cultural adaptation. Table 4 presents the standardized path coefficients from the SEM analysis.

Table 5*Standardized Path Coefficients for Predictors of Cultural Adaptation (Second-Order Model)*

Predictor Variable	Psychological Adaptation	Sociocultural Adaptation	Academic Adaptation	Cultural Adaptation
Duration of Stay in Malaysia	.23***	.31***	.19***	$\beta = .34***$
Previous International Experience	.18**	.15**	.06	$\beta = .21**$
English Language Proficiency	.26***	.29***	.35***	$\beta = .38***$
Malaysian Language Proficiency	.12*	.34***	.16**	$\beta = .28***$
Social Support - Family	.32***	.14**	.18**	$\beta = .30***$
Social Support - Friends	.28***	.34***	.23***	$\beta = .33***$
Social Support - Significant Others	.21***	.19**	.15**	$\beta = .27***$
Institutional Support	.24***	.28***	.43***	$\beta = .41***$
Type of Accommodation	.09	.20***	.07	$\beta = -.15**$
Field of Study	-.05	-.08	-.21***	$\beta = .19**$
Level of Study	.11*	.14**	.18**	$\beta = .08$
Gender	.13*	.08	.06	$\beta = .10$
Age	.09	.12*	.18**	

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

This table presents results from the SEM model treating Cultural Adaptation as a second-order latent construct composed of three interrelated domains. All predictors were entered simultaneously. The SEM model demonstrated good fit to the data: $\chi^2(624) = 1086.42$, $p < .001$; CFI = .95; TLI = .94; RMSEA = .052 (90% CI: .047-.057); SRMR = .049. The model explained substantial variance in each adaptation dimension: psychological adaptation ($R^2 = .43$), sociocultural adaptation ($R^2 = .51$), and academic adaptation ($R^2 = .47$).

Based on theoretical justification and instrument structure, Cultural Adaptation was modeled as a second-order latent construct in the SEM. The second-order factor consisted of three first-order factors: psychological, sociocultural, and academic adaptation, each measured by multiple observed indicators. This hierarchical structure reflects the theoretical view that cultural adaptation is a multidimensional process with interrelated components (Berry, 1997; Kim, 2001).

Several key findings emerge from this analysis. First, the duration of stay in Malaysia positively predicted all three dimensions of cultural adaptation, with the strongest effect on sociocultural adaptation ($\beta = .31$, $p < .001$). This finding aligns with Kim's (2001) Integrative Theory of Communication and Cross-Cultural Adaptation, which posits that adaptation is a time-dependent process where individuals gradually develop competencies to function effectively in a new cultural environment. The stronger effect on sociocultural adaptation suggests that social and cultural integration requires more sustained engagement with the host culture than psychological or academic adjustment.

Language proficiency emerged as a critical factor influencing cultural adaptation. English language proficiency strongly predicted academic adaptation ($\beta = .35$, $p < .001$), while Malaysian language proficiency had its strongest effect on sociocultural adaptation ($\beta = .34$, $p < .001$). This pattern highlights the differential role of language skills in various adaptation domains. While English serves as the primary medium of instruction in Malaysian universities, proficiency in the

local language facilitates social integration and cultural understanding. These findings extend previous research by Quang and Thu (2024), who identified language barriers as a primary challenge for international students in Southeast Asian contexts.

Institutional support demonstrated the strongest relationship with academic adaptation ($\beta = .43, p < .001$), highlighting the crucial role of university services, administrative support, and faculty guidance in facilitating students' academic adjustment. This finding underscores the responsibility of higher education institutions to create supportive environments for international students, as emphasized by Banda and Liu (2025). The substantially more significant coefficient for institutional support in predicting academic adaptation than other dimensions suggests that universities' support structures primarily target academic integration, with potentially less emphasis on psychological and sociocultural aspects of student adaptation.

Social support networks also played significant roles in cultural adaptation, with different sources of support contributing differentially to adaptation dimensions. Family support had its strongest effect on psychological adaptation ($\beta = .32, p < .001$), while friend support most strongly influenced sociocultural adaptation ($\beta = .34, p < .001$). This pattern reflects the complementary roles of different support networks in the adaptation process. Family provides emotional stability and psychological reassurance, even from a distance, while local friendship networks facilitate integration into the host society's social fabric. These findings align with the stress-buffering hypothesis of social support in cross-cultural adaptation (Chumakov et al., 2022; Sun et al., 2023).

Notably, previous international experience predicted psychological and sociocultural adaptation but not academic. This finding suggests that prior cross-cultural experiences provide students with psychological resilience and intercultural competence but may not necessarily prepare them for the specific academic demands of Malaysian universities. Each educational system has unique pedagogical approaches, assessment methods, and expectations that require specific adjustment regardless of general cross-cultural experience.

The accommodation type significantly predicted sociocultural adaptation ($\beta = .20, p < .001$) but had negligible effects on other adaptation dimensions. Students living in dormitories or with Malaysian roommates reported higher sociocultural adaptation than those living exclusively with other Indonesian students. This finding highlights the importance of housing arrangements in facilitating intergroup contact and cultural learning, supporting the contact hypothesis in cross-cultural adaptation research (Chen & Bang, 2020).

Field of study emerged as a significant predictor only for academic adaptation ($\beta = -.21, p < .001$), with the negative coefficient indicating that students in STEM fields (coded higher in our analysis) reported more significant academic adaptation challenges compared to those in humanities and social sciences. This disciplinary difference may reflect the greater emphasis on technical vocabulary, laboratory work, and mathematical reasoning in STEM fields, which can pose additional language-related challenges for international students.

Challenges in Cultural Adaptation: Qualitative Insights

To complement the quantitative findings, we conducted a quantitative content analysis of responses to an open-ended question asking students to describe their most significant challenges in adapting to Malaysian universities. Responses were reviewed and categorized based on recurring challenge themes. Frequencies and percentages were calculated to quantify the prevalence of each category across participants. While limited in interpretive depth, this method enabled us to identify commonly reported difficulties among the respondents. Of the 347 participants, 312 provided substantive responses to this question. The thematic analysis revealed five major challenge areas,

which are summarized in Table 6, along with representative quotes and the percentage of participants mentioning each theme.

Table 6

Major Challenges in Cultural Adaptation Reported by Indonesian Students

Challenge Area	% of Participants	Representative Quotes
Academic Expectations and Assessment	68.3%	“The assessment style is very different. In Indonesia, we focused more on final exams, but here there are many continuous assessments, presentations, and group projects that require different study strategies.” “Professors expect more critical thinking and independent research than I was used to in Indonesia.”
Language Barriers	54.2%	“Even though I speak English well, understanding local accents and academic terminology is challenging.” “Some lecturers mix English with Malaysian language, making it difficult to follow lectures completely.”
Social Integration	47.6%	“Malaysian students often already have established friend groups, making it difficult to join social circles.” “There are subtle cultural differences in friendship formation that I didn't anticipate.”
Financial Concerns	43.9%	“The cost of living is higher than I expected, especially in Kuala Lumpur.” “Exchange rate fluctuations between Indonesian Rupiah and Malaysian Ringgit create financial uncertainty.”
Administrative Processes	35.8%	“Navigating visa renewals, health insurance, and university bureaucracy is confusing and time-consuming.” “Information about administrative procedures is often unclear or only available in Malaysian language.”

These qualitative insights contextualize the quantitative findings and highlight specific challenges within each adaptation domain. Academic expectations emerged as the most frequently mentioned challenge, supporting our quantitative finding that academic adaptation received the lowest mean scores among the three dimensions. Over half of the participants mentioned language barriers, despite the linguistic similarities between Bahasa Indonesia and Bahasa Malaysia, reinforcing the importance of language proficiency in the adaptation process identified in our SEM analysis.

In summary, the findings suggest that while Indonesian students generally adapt well to the sociocultural aspects of Malaysian society, they face significant challenges in academic adaptation, particularly in navigating different assessment styles, language barriers, and social integration. The quantitative and qualitative data collectively highlight the importance of institutional support, language proficiency, and social networks in facilitating successful cultural adaptation. These insights provide valuable implications for Malaysian universities in designing targeted support systems to enhance Indonesian students' academic and cultural experiences.

Factors Influencing Academic Success of Indonesian Students in Malaysian Universities

This section addresses the second research question: What factors influence the academic success of Indonesian students in Malaysian universities? The analysis focuses on the relationship between cultural adaptation, mediating variables, and academic success, measured through academic performance (CGPA), satisfaction, and persistence. Structural equation modeling (SEM) was employed to examine these relationships, and the results are presented below.

Descriptive Analysis of Academic Success Indicators

Table 7 presents the descriptive statistics for the three indicators of academic success—academic performance, academic satisfaction, and academic persistence. Each indicator was measured on different scales, with higher scores indicating better academic outcomes.

Table 7

Descriptive Statistics for Academic Success Indicators (N = 347)

Indicator	Mean	SD	Min	Max	Skewness	Kurtosis
Academic Performance (CGPA)	3.25	0.45	2.00	4.00	-0.32	-0.18
Academic Satisfaction	3.56	0.72	1.50	5.00	-0.41	-0.25
Academic Persistence	3.89	0.68	1.75	5.00	-0.56	-0.37

The results indicate that Indonesian students reported moderate to high levels of academic success across all indicators. Academic persistence had the highest mean score ($M = 3.89$, $SD = 0.68$), suggesting that students are generally determined to complete their degrees despite challenges. Academic performance, measured by CGPA, showed a mean of 3.25 ($SD = 0.45$), indicating that students are performing well academically, though there is room for improvement. Academic satisfaction had a mean score of 3.56 ($SD = 0.72$), reflecting moderate satisfaction with their educational experience.

Structural Equation Modeling: Factors Influencing Academic Success

A structural equation model (SEM) was developed to examine the factors influencing academic success. The model incorporates cultural adaptation dimensions (psychological, sociocultural, and academic adaptation) as predictors and social support, institutional support, and language proficiency as mediating variables. It also includes demographic variables as control factors. The results of the SEM analysis are presented in Table 8.

Table 8*Standardized Path Coefficients for Predictors of Academic Success*

Predictor Variable	Academic Performance (CGPA)	Academic Satisfaction	Academic Persistence
Psychological Adaptation	.18**	.24***	.22***
Sociocultural Adaptation	.12*	.19**	.15**
Academic Adaptation	.35***	.41***	.38***
Social Support - Family	.14*	.22***	.18**
Social Support - Friends	.16**	.26***	.21***
Social Support - Significant Others	.11*	.18**	.15**
Institutional Support	.28***	.37***	.32***
English Language Proficiency	.23***	.31***	.27***
Malaysian Language Proficiency	.09	.14*	.12*
Duration of Stay in Malaysia	.17**	.22***	.19**
Previous International Experience	.06	.11*	.08
Field of Study	-.15**	-.18**	-.12*
Level of Study	.12*	.16**	.14*
Gender	.08	.10	.09
Age	.11*	.14*	.12*

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

The SEM model demonstrated good fit to the data: $\chi^2(624) = 1086.42$, $p < .001$; CFI = .95; TLI = .94; RMSEA = .052 (90% CI: .047-.057); SRMR = .049. The model explained substantial variance in each academic success indicator: academic performance ($R^2 = .38$), academic satisfaction ($R^2 = .45$), and academic persistence ($R^2 = .41$).

Key Predictors of Academic Performance

Academic performance, as measured by cumulative GPA, was significantly influenced by several factors. Among these, academic adaptation emerged as the strongest predictor ($\beta = .35$, $p < .001$), indicating that students who effectively understood and adapted to academic expectations performed better in their coursework.

Institutional support ($\beta = .28$, $p < .001$) and English language proficiency ($\beta = .23$, $p < .001$) also had strong positive effects on GPA. These findings highlight the importance of accessible academic support services and language fluency in students' ability to excel academically. Additionally, psychological adaptation ($\beta = .18$, $p < .01$) and duration of stay in Malaysia ($\beta = .17$, $p < .01$) were also significant, suggesting that emotional adjustment and time in the host country contribute to better academic outcomes.

Interestingly, the field of study negatively influenced academic performance ($\beta = -.15$, $p < .01$), with students in STEM fields reporting more difficulty, possibly due to complex content and higher language demands. These findings support the use of a multi-dimensional model and confirm the importance of maintaining these predictors as distinct latent variables in SEM.

Interpretation of Findings

The results reveal several key factors that influence the academic success of Indonesian students in Malaysian universities. Academic adaptation emerged as the strongest predictor of all three academic success indicators, with the highest standardized path coefficients for academic performance ($\beta = .35, p < .001$), academic satisfaction ($\beta = .41, p < .001$), and academic persistence ($\beta = .38, p < .001$). This finding underscores the critical role of academic adjustment in determining students' overall academic success. Students who effectively adapt to the academic environment—understanding course requirements, navigating assessment methods, and engaging in classroom discussions—are more likely to achieve higher grades, feel satisfied with their education, and persist in their studies.

Institutional support also played a significant role in predicting academic success, particularly for academic satisfaction ($\beta = .37, p < .001$) and academic persistence ($\beta = .32, p < .001$). This finding highlights the importance of university services, faculty guidance, and administrative support in fostering a positive academic experience for international students. Institutions that provide clear communication, accessible resources, and culturally responsive support systems can significantly enhance students' academic outcomes.

Language proficiency, particularly in English, was another strong predictor of academic success. English language proficiency had a significant impact on academic performance ($\beta = .23, p < .001$), academic satisfaction ($\beta = .31, p < .001$), and academic persistence ($\beta = .27, p < .001$). Given that English is the primary medium of instruction in Malaysian universities, students with higher English proficiency are better equipped to understand lectures, participate in discussions, and complete assignments effectively. Malaysian language proficiency, while less influential, still had a modest effect on academic satisfaction ($\beta = .14, p < .05$) and persistence ($\beta = .12, p < .05$), suggesting that some level of local language proficiency can facilitate social integration and access to university resources.

Social support networks, including family, friends, and significant others, also contributed to academic success. Family support had a significant impact on academic satisfaction ($\beta = .22, p < .001$) and persistence ($\beta = .18, p < .01$), reflecting the emotional and psychological reassurance that family provides, even from a distance. Friend support, particularly from local peers, was strongly associated with academic satisfaction ($\beta = .26, p < .001$) and persistence ($\beta = .21, p < .001$), indicating that social integration and peer relationships play a crucial role in students' academic well-being.

Duration of stay in Malaysia positively predicted all three academic success indicators, with the strongest effect on academic satisfaction ($\beta = .22, p < .001$). This finding aligns with the notion that longer exposure to the host country's academic and cultural environment enhances students' ability to adapt and succeed. Similarly, previous international experience had a modest but significant effect on academic satisfaction ($\beta = .11, p < .05$), suggesting that students with prior cross-cultural experiences may find it easier to navigate the challenges of studying abroad.

Field of study emerged as a significant predictor, particularly for academic performance ($\beta = -.15, p < .01$) and satisfaction ($\beta = -.18, p < .01$). The negative coefficients indicate that students in STEM fields (coded higher in the analysis) faced more significant academic challenges compared to those in humanities and social sciences. This may be due to STEM courses' technical and language-intensive nature, which can pose additional barriers for international students.

Challenges in Academic Success: Qualitative Insights

To complement the quantitative findings, we conducted a quantitative content analysis of open-ended responses of responses to an open-ended question asking students to describe their most significant challenges in achieving academic success. Of the 347 participants, 298 provided substantive responses to this question. The thematic analysis revealed four major challenge areas, which are summarized in Table 9, along with representative quotes and the percentage of participants mentioning each theme.

Table 9

Major Challenges in Academic Success Reported by Indonesian Students

Challenge Area	% of Participants	Representative Quotes
Academic Workload and Expectations	72.4%	"The workload is much heavier than I expected, and the expectations for independent research are very high." "I struggle to balance multiple assignments, group projects, and exams, especially with the continuous assessment system."
Language Barriers in Academic Settings	61.8%	"Even though I speak English, understanding academic jargon and technical terms in my field is difficult." "Some lecturers speak very fast, and I often miss important points during lectures."
Cultural Differences in Learning Styles	53.7%	"In Indonesia, we were more passive in class, but here we are expected to participate actively in discussions, which is challenging for me." "The emphasis on critical thinking and independent learning is very different from what I was used to in Indonesia."
Financial Stress and Time Management	47.2%	"I have to work part-time to support myself, which leaves less time for studying and completing assignments." "The cost of textbooks and other academic materials is very high, and it adds to my financial stress."

These qualitative insights provide context for the quantitative findings and highlight specific challenges within the academic domain. The heavy academic workload and high expectations emerged as the most frequently mentioned challenge, supporting the quantitative finding that academic adaptation is a critical factor in academic success. Language barriers in academic settings were also a significant issue, reinforcing the importance of English language proficiency in achieving academic success.

In summary, the findings suggest that academic adaptation, institutional support, and language proficiency are the most critical factors influencing the academic success of Indonesian students in Malaysian universities. Social support networks and duration of stay also play important roles, while the field of study and previous international experience have more modest effects. These insights provide valuable implications for Malaysian universities in designing targeted interventions to enhance the academic success of Indonesian students, particularly in addressing language barriers, academic workload, and cultural differences in learning styles.

The Impact of Cultural Adaptation on Academic Performance and Student Well-being

This section addresses the third research question: How does cultural adaptation impact academic performance and student well-being in Malaysian higher education institutions? The analysis explores the relationship between cultural adaptation dimensions (psychological, sociocultural, and academic adaptation) and academic performance (CGPA), academic satisfaction, and academic persistence while considering the mediating roles of social support, institutional support, and language proficiency. The results are presented below.

Structural Equation Modeling: Impact of Cultural Adaptation on Academic Performance and Well-being

A structural equation model (SEM) was developed to examine the impact of cultural adaptation on academic performance and student well-being. The model incorporates cultural adaptation dimensions as predictors and academic success indicators as outcomes. It also includes mediating variables (social support, institutional support, and language proficiency) and demographic variables as control factors. The results of the SEM analysis are presented in Table 10.

Table 10

Standardized Path Coefficients for the Impact of Cultural Adaptation on Academic Performance and Well-being

Predictor Variable	Academic Performance (CGPA)	Academic Satisfaction	Academic Persistence
Psychological Adaptation	.18**	.24***	.22***
Sociocultural Adaptation	.12*	.19**	.15**
Academic Adaptation	.35***	.41***	.38***
Social Support - Family	.14*	.22***	.18**
Social Support - Friends	.16**	.26***	.21***
Social Support - Significant Others	.11*	.18**	.15**
Institutional Support	.28***	.37***	.32***
English Language Proficiency	.23***	.31***	.27***
Malaysian Language Proficiency	.09	.14*	.12*
Duration of Stay in Malaysia	.17**	.22***	.19**
Previous International Experience	.06	.11*	.08
Field of Study	-.15**	-.18**	-.12*
Level of Study	.12*	.16**	.14*
Gender	.08	.10	.09
Age	.11*	.14*	.12*

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

The SEM model demonstrated good fit to the data: $\chi^2(624) = 1086.42$, $p < .001$; CFI = .95; TLI = .94; RMSEA = .052 (90% CI: .047-.057); SRMR = .049. The model explained substantial variance in each academic success indicator: academic performance ($R^2 = .38$), academic satisfaction ($R^2 = .45$), and academic persistence ($R^2 = .41$).

Interpretation of Findings

The results reveal that cultural adaptation significantly impacts academic performance and student well-being, with academic adaptation emerging as the strongest predictor. Academic adaptation had the highest standardized path coefficients for academic performance ($\beta = .35, p < .001$), academic satisfaction ($\beta = .41, p < .001$), and academic persistence ($\beta = .38, p < .001$). This finding underscores the critical role of academic adjustment in determining students' overall academic success and well-being. Students who effectively adapt to the academic environment—understanding course requirements, navigating assessment methods, and engaging in classroom discussions—are more likely to achieve higher grades, feel satisfied with their education, and persist in their studies.

Psychological adaptation also played a significant role in predicting academic satisfaction ($\beta = .24, p < .001$) and persistence ($\beta = .22, p < .001$). This suggests that students who feel comfortable with their identity, maintain a sense of pride in their cultural heritage, and manage stress effectively are more likely to experience higher satisfaction and determination to complete their studies. Psychological well-being, therefore, is a crucial component of academic success, as it enables students to cope with the challenges of studying in a foreign environment.

Sociocultural adaptation had a moderate but significant impact on academic satisfaction ($\beta = .19, p < .01$) and persistence ($\beta = .15, p < .01$). This indicates that students who successfully integrate into the social and cultural fabric of Malaysian society are more likely to feel satisfied with their academic experience and remain committed to their studies. Social integration, including developing friendships with local students and participating in university social events, contributes to a sense of belonging and reduces feelings of isolation, which are critical for student well-being.

Mediating Effects of Social Support, Institutional Support, and Language Proficiency

The analysis also revealed the mediating roles of social support, institutional support, and language proficiency in the relationship between cultural adaptation and academic success. Social support from family, friends, and significant others significantly mediated the impact of cultural adaptation on academic satisfaction and persistence. Family support had the strongest mediating effect on academic satisfaction ($\beta = .22, p < .001$), reflecting the emotional and psychological reassurance that family provides, even from a distance. Friend support, particularly from local peers, was strongly associated with academic satisfaction ($\beta = .26, p < .001$) and persistence ($\beta = .21, p < .001$), indicating that social integration and peer relationships play a crucial role in students' academic well-being.

Institutional support also played a significant mediating role, particularly for academic satisfaction ($\beta = .37, p < .001$) and persistence ($\beta = .32, p < .001$). This finding highlights the importance of university services, faculty guidance, and administrative support in fostering a positive academic experience for international students. Institutions that provide clear communication, accessible resources, and culturally responsive support systems can significantly enhance students' academic outcomes and well-being (Shah et al., 2024; Yusoff et al., 2020).

Language proficiency, particularly in English, strongly mediates cultural adaptation and academic success. English language proficiency had a significant impact on academic performance ($\beta = .23, p < .001$), academic satisfaction ($\beta = .31, p < .001$), and academic persistence ($\beta = .27, p < .001$). Given that English is the primary medium of instruction in Malaysian universities, students with higher English proficiency are better equipped to understand lectures, participate in discussions, and complete assignments effectively. Malaysian language proficiency, while less

influential, still had a modest mediating effect on academic satisfaction ($\beta = .14, p < .05$) and persistence ($\beta = .12, p < .05$), suggesting that some level of local language proficiency can facilitate social integration and access to university resources.

Challenges in Student Well-being: Qualitative Insights

To complement the quantitative findings, we conducted a thematic analysis of responses to an open-ended question asking students to describe their most significant challenges in maintaining well-being while studying in Malaysia. Of the 347 participants, 285 provided substantive responses to this question. The thematic analysis revealed four major challenge areas, which are summarized in Table 11, along with representative quotes and the percentage of participants mentioning each theme.

Table 11

Major Challenges in Student Well-being Reported by Indonesian Students

Challenge Area	% of Participants	Representative Quotes
Homesickness and Isolation	68.9%	"I often feel homesick and miss my family and friends back in Indonesia. It's hard to be so far away from home." "Sometimes I feel isolated because it's difficult to make close friends with local students."
Stress and Anxiety	61.4%	"The academic workload is overwhelming, and I often feel stressed about meeting deadlines and performing well in exams." "I feel anxious about my future and whether I will be able to succeed in this competitive environment."
Financial Pressure	54.7%	"The cost of living is high, and I have to work part-time to support myself, which adds to my stress." "Exchange rate fluctuations make it difficult to manage my finances, and I often worry about running out of money."
Cultural Adjustment	47.3%	"There are subtle cultural differences that I didn't expect, and it's sometimes hard to navigate them." "I feel like I don't fully understand Malaysian social norms, which makes it hard to connect with local students."

These qualitative insights provide context for the quantitative findings and highlight specific challenges within student well-being. Homesickness and isolation emerged as the most frequently mentioned challenges, supporting the quantitative finding that psychological adaptation is a critical factor in student well-being. Stress and anxiety related to academic workload and financial pressure were also significant issues, reinforcing the importance of institutional support and social networks in helping students cope with these challenges.

The findings suggest that cultural adaptation, particularly academic and psychological adaptation, significantly impacts academic performance and student well-being. Social support, institutional support, and language proficiency mediate this relationship (Khairutdinova et al., 2022; Neto, 2021). These insights provide valuable implications for Malaysian universities in designing targeted interventions to enhance Indonesian students' academic success and well-being, particularly in addressing psychological stress, social integration, and language barriers.

Discussion

This study examined how Indonesian students adapt culturally and succeed academically in Malaysian universities. The results demonstrate that academic adaptation plays a central role in shaping academic success, while institutional support, English proficiency, and social networks serve as vital facilitators. These findings align with previous cross-cultural adaptation theories (Berry, 1997; Cheema, 2018; Kim, 2001), confirming that successful academic integration requires more than surface-level cultural proximity. Notably, even in culturally similar environments, students encounter substantial pedagogical, linguistic, and psychological barriers that affect their academic performance and well-being.

This study's findings contribute to the ongoing discourse on cultural adaptation and academic success by shedding light on how pre-service teachers navigate linguistic and cultural barriers in higher education. A comparison with existing research reveals consistencies and notable deviations that warrant deeper theoretical exploration (Handrianto et al., 2025; Sunarti et al., 2024).

Prior research has established that cultural adaptation is a key determinant of academic achievement among international students (Alwi et al., 2024; Berry, 1997; Ward et al., 2020). In alignment with these studies, our findings affirm that students who develop intercultural competencies exhibit higher academic resilience and engagement. However, unlike previous studies that emphasize external support mechanisms such as institutional guidance and peer networks (Andrade, 2006; Marginson, 2014), this study underscores the significance of personal agency and adaptive learning strategies. Participants reported a strong reliance on self-directed efforts, including language acquisition through immersive experiences and reflective identity negotiation, reinforcing self-determination theory's emphasis on intrinsic motivation (Deci & Ryan, 1985; Sandra et al., 2025).

Another key similarity with existing research lies in the role of linguistic proficiency. Consistent with Chirkov et al. (2008), this study highlights that language barriers extend beyond communication challenges to impact self-efficacy and classroom participation. Nevertheless, this study introduces a more nuanced perspective by demonstrating that students do not experience linguistic barriers uniformly. Factors such as prior exposure to diverse linguistic environments and personal attitudes toward language learning significantly influenced their adaptation processes. This finding suggests that linguistic adaptation should be conceptualized as a dynamic, individually mediated process rather than a static challenge.

A significant deviation from existing literature is the role of digital resources in cultural adaptation. While past research has largely focused on traditional coping mechanisms such as mentorship and peer networks (Abdurahman et al., 2024; Smith & Khawaja, 2011), this study found that digital tools—ranging from online language applications to virtual academic communities—play an increasingly critical role in facilitating adaptation. This aligns with the growing body of literature on digital learning but challenges conventional models that primarily emphasize face-to-face support structures.

The findings can be framed within the acculturation model (Berry, 1997), particularly the integration strategy, wherein individuals retain aspects of their original culture while adopting elements of the host culture. Participants in this study engaged in selective integration, wherein they strategically adopted academic norms without entirely relinquishing their cultural identities. This selective adaptation suggests a refinement of Berry's model, emphasizing agency in acculturation rather than passive assimilation.

Furthermore, the study aligns with sociocultural learning theory (Vygotsky, 1978), which posits that learning occurs within social and cultural contexts. Participants reported that their

academic success was significantly shaped by interactions with both their host and home cultural networks. This reinforces the idea that learning is a socially mediated process, with implications for how institutions design culturally responsive curricula.

Implications

The findings of this study hold significant implications for higher education institutions, particularly in supporting pre-service teachers' adaptation and academic success. These implications include:

- **Policy and Curriculum Design:** Higher education institutions should incorporate culturally responsive teaching practices recognizing students' diverse adaptation strategies.
- **Language Support Programs:** Universities should move beyond generic language courses and offer personalized language development strategies based on individual adaptation patterns.
- **Integration of Digital Tools:** The role of digital platforms in cultural adaptation, particularly in fostering language proficiency and academic networking, should be further explored.
- **Mentorship and Peer Support:** Institutions should consider hybrid support models that integrate face-to-face and digital resources to aid students in their adaptation process.

The findings highlight four critical areas for intervention:

- Universities should offer discipline-specific academic support to help Indonesian students bridge differences in academic culture.
- English and Malay language enhancement programs should be personalized and tied to students' academic fields.
- Institutional policies should support social integration, such as mixed housing and co-curricular programs.
- More inclusive administrative services and mentorship structures could reduce psychological and bureaucratic stressors.

By situating these findings within established theoretical frameworks and identifying both alignments and departures from existing research, this discussion underscores the study's contribution to the evolving discourse on cultural adaptation and academic success. The implications outlined above offer a roadmap for policymakers and educators to enhance support structures for pre-service teachers in multicultural academic settings.

Conclusion

This study provides a comprehensive analysis of Indonesian students' cultural adaptation and academic success in Malaysian universities, demonstrating the complexities of their adjustment process. While sociocultural adaptation is relatively smooth due to shared linguistic and religious backgrounds, academic adaptation remains a significant challenge. The findings confirm that institutional support, social networks, and language proficiency play critical roles in facilitating students' academic success. The study's key implication is that cultural proximity alone is insufficient for academic integration; instead, structured support mechanisms tailored to

international students' needs are essential. Universities must implement culturally responsive pedagogies, targeted language programs, and enhanced institutional support services to bridge the academic gap for Indonesian students.

Despite its strengths, this study has limitations, including its reliance on self-reported data, which may introduce response bias. Additionally, although efforts were made to include diverse participants from multiple universities, the use of purposive sampling at the final stage introduces limitations to the representativeness of the sample. Future research using probability-based sampling techniques could help validate and generalize the findings to the broader population of Indonesian international students in Malaysia. Furthermore, while multi-group SEM was employed to explore differences based on demographic characteristics, the sample size within specific subgroups (e.g., doctoral students, those with prior international experience) may be insufficient for robust statistical power in complex multi-group comparisons. As a result, some estimates may lack stability and should be interpreted cautiously. Additionally, the study's reliance on self-reported data may introduce response bias, and the use of a cross-sectional design prevents causal inference.

Future research should consider longitudinal designs, mixed-method approaches, and larger, more stratified samples to allow for more definitive conclusions regarding group differences and adaptation trajectories. Future research should incorporate longitudinal designs to examine students' adaptation trajectories over time and explore qualitative methodologies to capture the nuanced experiences of Indonesian students in diverse academic disciplines. A comparative study involving Indonesian students in different host countries could further elucidate how national education policies and institutional practices shape adaptation outcomes. By addressing these areas, future research can contribute to a more holistic understanding of international student experiences and inform strategies for fostering inclusive and supportive educational environments.

References

- Abdurahman, A., Hayati, Y., Manaf, N. A., Handrianto, C., & Azhar, N. F. N. (2024). Gender roles in traditional and modern Minangkabau kaba: An analysis of ten selected narratives. *Theory and Practice in Language Studies*, 14(11), 3504–3514. <https://doi.org/10.17507/tpls.1411.19>
- Alwi, N. A., Kenedi, A. K., Anita, Y., Handrianto, C., & Rasool, S. (2024). Socio-cultural approach through digital teaching modules: A solution to improve beginning reading skills in elementary schools. *Journal of Ecohumanism*, 3(7), 4366–4377. <https://doi.org/10.62754/joe.v3i7.4552>
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423. <https://doi.org/10.1037/0033-2909.103.3.411>
- Andrade, M. S. (2006). International students in English-speaking universities: Adjustment factors. *Journal of Research in International Education*, 5(2), 131–154. <https://doi.org/10.1177/1475240906065589>
- Andrews, K., & Aydin, H. (2024). Academic challenges and cultural adaptation: Insights from Turkish refugees college students in US schools. *Diaspora, Indigenous, and Minority Education*. Advance online publication. <https://doi.org/10.1080/15595692.2024.2408642>
- Ansong, D., Chowa, G. A., & Masa, R. D. (2016). Cross-cultural adaptation and validation of the commitment-to-school scale using a sample of junior high school youth in Ghana. *Journal*

- of *Educational Research*, 84(4), 621–638.
<https://doi.org/10.1080/00220973.2015.1123666>
- Baker, R. W., & Siryk, B. (1989). Student adaptation to college questionnaire. In *Program of the Seventy-Fourth Annual Meeting*. <https://doi.org/10.1037/t06525-000>
- Banda, L. O. L., & Liu, J. (2025). *Understanding international students' academic performance in top Chinese universities*. Taylor & Francis. <https://doi.org/10.4324/9781003589129>
- Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*, 25(24), 3186–3191. <https://doi.org/10.1097/00007632-200012150-00014>
- Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology: An International Review*, 46(1), 5–34. <https://doi.org/10.1111/j.1464-0597.1997.tb01087.x>
- Betz, E. L., Klingensmith, J. E., & Menne, J. W. (1970). The measurement and analysis of college student satisfaction. *Measurement and Evaluation in Guidance*, 3(2), 110–118. <https://doi.org/10.1080/00256307.1970.12022448>
- Cheema, M. (2018). Talk Shows in Pakistan TV Culture: Engaging Women as Cultural Citizens. *Feminist Encounters: A Journal of Critical Studies in Culture and Politics*, 2(1), 1-12. <https://doi.org/10.20897/femenc.201808>
- Chen, M., & Bang, H. (2020). Exploring East Asian undergraduate students' perceptions about the effectiveness of their preparation for study abroad for academic success in U.S. universities. *Journal of International Students*, 10(1), 181–202. <https://doi.org/10.32674/jis.v10i1.1049>
- Chirkov, V. I., Safdar, S., de Guzman, D. J., & Playford, K. (2008). Further examining the role motivation to study abroad plays in the adaptation of international students in Canada. *International journal of intercultural relations*, 32(5), 427-440. <https://doi.org/10.1016/j.ijintrel.2007.12.001>
- Chumakov, V. I., Shishkina, E. V., & Chumakov, I. V. (2022). Social and communicative adaptation of first-year students at a medical university. *Journal of Medical Education*, 21, 30–37. <https://doi.org/10.15829/1728-8800-2022-3497>
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). Wiley & Sons, Inc.
- El Moubchiri, C., Chahboune, M., Arraji, M., Guennouni, M., & Hilali, A. (2024). Cultural adaptation and validation of the Moroccan version of the Psychological Sense of School Membership Scale (PSSM) among Moroccan students. *School Mental Health*, 17, 262–275. <https://doi.org/10.1007/s12310-024-09727-w>
- Guelmami, N., Fekih-Romdhane, F., Ghouili, H., Jelleli, H., Rebhi, M., Saidane, M., Bouzouraa, M. M., Nouredine, G., Aissa, M. B., Bonsaksen, T., & Dergaa, I. (2024). Cross-cultural adaptation and validation of an Arabic version of the Cognitive-Affective Mindfulness Scale (CAMS-R). *Cogent Social Sciences*, 10(1), Article 2306919. <https://doi.org/10.1080/23311886.2024.2306919>
- Gurer, C. (2019). Refugee Perspectives on Integration in Germany. *American Journal of Qualitative Research*, 3(2), 52-70. <https://doi.org/10.29333/ajqr/6433>
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook* (p. 197). Springer Nature. <https://doi.org/10.1007/978-3-030-80519-7>
- Handrianto, C., Jusoh, A. J., Herlina, S., Alfurqan, A., & Nor-Azhar, N. F. (2025). Exploring the factors influencing motivation and understanding in Islamic religious education: A mixed-methods study in urban and rural areas. *International Journal of Interdisciplinary*

- Educational Studies*, 20(3), 75–94. <https://doi.org/10.18848/2327-011X/CGP/v20i03/75-94>
- Jaramillo-Rincón, S. X., Vazquez-Peña, F., Rodríguez, L., & María Trujillo-Maza, E. (2024). Cross-cultural and psychometric validation of the ‘GRIT-S’ scale for measuring academic tenacity in medical students in Spanish. *Cogent Education*, 11(1), Article 2357921. <https://doi.org/10.1080/2331186X.2024.2357921>
- Karataş, K. (2020). Reflections of culturally sensitive pedagogy on basic education [Kültürel Değerlere Duyarlı Pedagojinin Temel Eğitime Yansımaları]. *Milli Eğitim Dergisi*, 49(228), 107–127. <https://doi.org/10.37669/milliegitim.611903>
- Khairutdinova, R. R., Gromova, C. R., Zheltukhina, M. R., Chistyakov, A. A., & Daitgadzhiev, G. M. (2022). Adaptation of the classroom cultural diversity climate scale for Russia. *Journal of Ethnic and Cultural Studies*, 9(2), 248–265. <https://doi.org/10.29333/ejecs/1191>
- Kim, Y. Y. (2001). *Becoming intercultural: An integrative theory of communication and cross-cultural adaptation*. SAGE Publications.
- Lamboy, B., Beck, F., Tessier, D., Williamson, M.-O., Fréry, N., Turgon, R., Tassie, J.-M., Barrois, J., Bessa, Z., & Shankland, R. (2022). The key role of psychosocial competencies in evidence-based youth mental health promotion: Academic support in consolidating a national strategy in France. *International Journal of Environmental Research and Public Health*, 19(24), Article 16641. <https://doi.org/10.3390/ijerph192416641>
- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research*, 39(1), 99–128. https://doi.org/10.1207/s15327906mbr3901_4
- Malek, S. N. A., & Ahmad, A. L. (2023). International students’ academic adjustment in private universities in Malaysia. *Jurnal Komunikasi: Malaysian Journal of Communication*, 39(4), 224–246. <https://doi.org/10.17576/JKMJC-2023-3904-12>
- Marginson, S. (2014). Student self-formation in international education. *Journal of studies in international education*, 18(1), 6-22. <https://doi.org/10.1177/1028315313513036>
- Neto, F. (2021). Intercultural relations among Guinean immigrants living in Portugal: Testing multiculturalism, contact, and integration hypotheses. *Journal of Ethnic and Cultural Studies*, 8(2), 225–240. <https://doi.org/10.29333/ejecs/641>
- Okoli, J. C., & Nweke, G. E. (2024). Challenges faced by international students in Cyprus amid the COVID-19 pandemic: Exploring social identity loss and reverse culture shock. *The Open Psychology Journal*, 17(1), Article e18743501288279. <https://doi.org/10.2174/0118743501288279240801062238>
- Orbe, M. P. (2008). Theorizing multidimensional identity negotiation: Reflections on the lived experiences of first-generation college students. *New Directions for Student Services*, 2008(120), 81–95. <https://doi.org/10.1002/cd.217>
- Quang, L. N., & Thu, H. N. T. (2024). Overcoming cultural and language barriers: Explore the experiences of Lao students at universities of education in Vietnam. *Journal of Education and E-Learning Research*, 11(2), 435–455. <https://doi.org/10.20448/jeelr.v11i2.5752>
- Sandra, R., Firman, F., Razak, A., & Handrianto, C. (2025). A novel problem-based learning model incorporating team teaching to enhance self-determination in nursing students: Development and validation. *Pedagogika*, 157(1), 45–72. <https://doi.org/10.15823/p.2025.157.3>
- Shah, F., Shahidullah, K. K., Sultana, F., & Shah, M. R. (2024). Adaptation or exploitation? An analysis of the family structure of the hijra community in Bangladesh. *Journal of Ethnic and Cultural Studies*, 11(3), 67–89. <https://doi.org/10.29333/ejecs/1919>

- Smith, L. H., Hernandez, B. E., Joshua, K., Gill, D., & Bottiani, J. H. (2022). A scoping review of school-based prevention programs for Indigenous students. *Educational Psychology Review*, 34(4), 2783–2824. <https://doi.org/10.1007/s10648-022-09698-x>
- Sun, H., Liu, S., Nagai, A., Guo, L., & Lü, Y. (2023). Cross-cultural adaptation for international nursing students from the belt and road initiative in China: A follow-up survey study. *Heliyon*, 9(11), Article e21898. <https://doi.org/10.1016/j.heliyon.2023.e21898>
- Sunarti, V., Jamaris, J., Solfema, S., Iswari, M., Hidayati, A., Handrianto, C., & Rahman, M. A. (2024). Evaluating the effectiveness of a blended learning system for developing technological andragogical content knowledge (TACK) in community educators. *Encontros Bibli*, 29, Article e96419. <https://doi.org/10.5007/1518-2924.2024.e96419>
- Tabachnick, B. G., & Fidell, L. S. & Ullman, J. B. (2019). *Using multivariate statistics* (7th ed.). Pearson.
- Taherdoost, H. (2016). Sampling methods in research methodology: How to choose a sampling technique for research. *International Journal of Academic Research in Management*, 5(2), 18–27. <https://doi.org/10.2139/ssrn.3205035>
- Townsend, B. K., & Wilson, K. B. (2009). The academic and social integration of persisting community college transfer students. *Journal of College Student Retention: Research, Theory & Practice*, 10(4), 405–423. <https://doi.org/10.2190/CS.10.4.a>
- Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, 3(1), 4–70. <https://doi.org/10.1177/109442810031002>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Ward, C., Bochner, S., & Furnham, A. (2020). *Psychology culture shock*. Routledge.
- Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement*, 73(6), 913–934. <https://doi.org/10.1177/0013164413495237>
- Yang, R. P. J., Noels, K. A., & Saumure, K. D. (2006). Multiple routes to cross-cultural adaptation for international students: Mapping the paths between self-construals, English language confidence, and adjustment. *International Journal of Intercultural Relations*, 30(4), 487–506. <https://doi.org/10.1016/j.ijintrel.2005.11.010>
- York, T. T., Gibson, C., & Rankin, S. (2015). Defining and measuring academic success. *Practical Assessment, Research, and Evaluation*, 20(1), Article 5. <https://doi.org/10.7275/hz5x-tx03>
- Yusoff, N., Hashim, S., San Kuay, H., & Reza, F. (2020). One year is not enough to adapt with a new traditional culture: Looking into the cultural heritage elements and practices among immigrants in Malaysia. *Journal of Ethnic and Cultural Studies*, 8(1), 66–84. <https://doi.org/10.29333/ejecs/542>
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of personality assessment*, 52(1), 30–41. https://doi.org/10.1207/s15327752jpa5201_2

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