

Student Well-Being in Cross-Cultural Education: Psychological Dimensions and a Network Analysis of Indonesian Students in China

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ABSTRACT: Studies on the well-being of Indonesian diaspora students in China remain limited and tend to focus primarily on economic aspects, while psychological dimensions in cross-cultural education have not been comprehensively explored. The purpose of this study was to analyze the level of psychological well-being among Indonesian diaspora students in China and to identify the roles of betweenness, closeness, and strength among well-being dimensions through a network analysis approach. The study methodology employed a quantitative approach using a cross-sectional survey design. Data were collected through questionnaires measuring five dimensions of psychological well-being and analyzed using descriptive statistics and network analysis. The findings revealed that the positive psychological well-being of Indonesian diaspora students was categorized as very high, as indicated by strong learning enthusiasm and adaptability in cross-cultural environments. The dimensions of motivation and engagement occupied central positions as the main connectors within the well-being network, while satisfaction and happiness contributed to maintaining psychological well-being stability, whereas other dimensions demonstrated more limited or transitional contributions. The implications of this study highlight the importance of strengthening motivation, engagement, and social support in fostering sustainable well-being among diaspora students. Therefore, diaspora student communities and educational institutions abroad should develop programs that encourage active student engagement.

Keywords: cross-cultural education, network analysis, psychological dimensions, student well-being.

ABSTRAK: Studi mengenai kesejahteraan mahasiswa diaspora Indonesia di China masih terbatas dan cenderung berfokus terutama pada aspek ekonomi, sementara dimensi psikologis dalam pendidikan lintas budaya belum banyak dieksplorasi secara komprehensif. Tujuan penelitian ini adalah untuk menganalisis tingkat kesejahteraan psikologis mahasiswa diaspora Indonesia di China serta mengidentifikasi peran betweenness, closeness, dan strength antar dimensi kesejahteraan melalui pendekatan analisis jaringan. Metodologi penelitian menggunakan pendekatan kuantitatif dengan desain survei cross-sectional. Data dikumpulkan melalui kuesioner yang mengukur lima dimensi kesejahteraan psikologis dan dianalisis menggunakan statistik deskriptif serta analisis jaringan. Hasil penelitian menunjukkan bahwa kesejahteraan psikologis positif mahasiswa diaspora Indonesia berada pada kategori sangat tinggi, yang ditandai dengan tingginya semangat belajar dan kemampuan adaptasi dalam

lingkungan lintas budaya. Dimensi motivasi dan keterlibatan menempati posisi sentral sebagai penghubung utama dalam jaringan kesejahteraan, sementara kepuasan dan kebahagiaan berkontribusi dalam menjaga stabilitas kesejahteraan psikologis, sedangkan dimensi lainnya menunjukkan kontribusi yang lebih terbatas atau bersifat transisional. Implikasi penelitian ini menegaskan pentingnya penguatan motivasi, keterlibatan, dan dukungan sosial dalam membangun kesejahteraan berkelanjutan mahasiswa diaspora. Oleh karena itu, komunitas mahasiswa diaspora dan institusi pendidikan di luar negeri perlu mengembangkan program yang mendorong keterlibatan aktif mahasiswa.

Kata Kunci: analisis jaringan, dimensi psikologis, kesejahteraan mahasiswa, pendidikan lintas budaya.

INTRODUCTION

Well-being is a state of comprehensive well-being, encompassing physical, mental, emotional, and social health, enabling a person to live a comfortable, meaningful, and productive life. Well-being refers to self-satisfaction (Gasper, 2007). Positive or pleasant emotions are part of well-being (Joshi, 2010). It encompasses the fulfillment of basic human needs such as a fair income, social protection, and access to adequate health services, education, and public facilities (Riyanto & Kovalenko, 2023; Putra et al., 2022). Well-being is closely linked to the lives of diasporas, individuals or groups living far from their homeland. For diaspora students abroad, well-being encompasses unique challenges such as cultural adaptation, homesickness, and efforts to maintain authentic identity and values in a new environment.

Based on data from the Ministry of Law and Human Rights, the Indonesian diaspora is estimated to reach more than 6 to 9 million people by 2023. In 2024, the General Elections Commission (KPU) recorded 4,694,484 Indonesian citizens living abroad. The largest numbers are in Malaysia (2,540,450), Saudi Arabia (857,613), Taiwan (238,639), Singapore (198,444), China (175,028), the United States (117,085), Brunei Darussalam (63,025), Australia (62,663), Jordan (46,586), and Qatar (37,669). Thus, the majority of Indonesian citizens abroad in 2024 will be concentrated in Asia.

China is a popular destination for the Indonesian diaspora due to its strategic position in Asia, with rapid and stable economic growth, offering numerous employment, educational, and business opportunities. Diaspora networks serve as channels for knowledge transfer, maintaining relationships that enrich personal identity and the country's cultural landscape (Ling & Guo, 2020; Huang et al., 2015; Guo, 2014). As the world's second-largest economy, China boasts a thriving industrial, trade, and technological sector, opening up opportunities for foreign workers, including those from Indonesia. These countries contribute to China's development through remittances, investment, and cultural exchange (Song-Agócs & Michalkó, 2022; Afonasiyeva, 2023). Furthermore, the geographical proximity between Indonesia and China facilitates mobility, both in terms of distance and travel costs. Another contributing factor is the close diplomatic relations and economic cooperation between the two countries, creating a conducive climate for Indonesians to network, develop businesses, or pursue further studies in China.

Research on the Indonesian student diaspora has so far been limited and has generally focused on economic aspects or diplomatic relations. The ability to navigate cultural differences through network formation helps strengthen their cultural identity while simultaneously adopting elements of local culture (Siagian & Tike, 2019). The diaspora also plays an important role in national development (Zuhri et al., 2023; Stümer, 2022). The involvement of diaspora communities in various sectors such as health, education, and entrepreneurship confirms their capacity to act as agents of change in both local and global contexts (Abrori et al., 2023; A'yun et al., 2022).

Meanwhile, more personal and psychological dimensions such as satisfaction and happiness, motivation and engagement, feelings of acceptance and support, achievement and success, as well as identity and authenticity have not been explored in depth. In fact, these factors are important determinants of diaspora well-being, influencing how individuals adapt, survive, and thrive in new environments. Existing studies tend to generalize diaspora well-being through economic indicators or social integration without linking the subjective experiences of the Indonesian diaspora in China to the dimensions that shape their well-being. Therefore, a stronger theoretical foundation is needed to explain how social relationships and connectedness within diaspora networks influence students' psychological well-being in a more comprehensive manner.

Social Capital Theory (Putnam, 2000) emphasizes that the quality of social relationships, in the form of trust, norms, and networks, can strengthen satisfaction and happiness through closeness to the community. In the context of this study, the theory serves as a foundation for analyzing how betweenness, closeness, and strength within social networks function as social resources that support the well-being of Indonesian diaspora students in China. Similarly, *Self-Determination Theory* (Ryan & Deci, 2000) states that individuals' motivation and engagement increase when the basic need for relatedness is fulfilled through networks that support achievement and success. This theory is relevant to the purpose of the study because it helps explain how supportive social relationships can enhance motivation, adaptation, and engagement among diaspora students in academic and social environments abroad.

Furthermore, *Integrative Theory* (Tajfel et al., 2001) suggests that individuals' identity and authenticity are strongly influenced by the strength of relationships within social groups. This perspective supports the objective of the study to understand how social interaction and connectedness shape identity, sense of belonging, and psychological well-being among diaspora students. Therefore, the integration of these three theoretical frameworks provides a strong conceptual foundation for explaining the relationship between social network structures and the dimensions of diaspora well-being in a more comprehensive way.

Thus, there remains a significant research gap in studies on the well-being of the Indonesian diaspora in China. Most previous studies have primarily focused on economic aspects, cultural adaptation, or academic experiences, while research comprehensively analyzing the interrelationships among dimensions of

psychological well-being remains very limited. In addition, prior studies generally employed conventional approaches that examined variables separately, and therefore were unable to explain how betweenness, closeness, and strength interact in shaping satisfaction, motivation, acceptance, achievement, and identity, which ultimately determine the well-being of the Indonesian diaspora in China. Therefore, an approach capable of revealing the interconnected patterns among dimensions of well-being in a deeper and more comprehensive manner is needed.

Network analysis of betweenness, closeness, and strength is proposed as a solution in this study because it can provide a deeper understanding of how social relationships directly shape the well-being of the Indonesian diaspora in China. Network analysis is used to analyze the structure of ties (Wellman, 1983). In network analysis, variables are represented as nodes, and their interactions produce associations (Huth et al., 2023). Observed variables are called nodes, while the estimated connection lines between nodes are referred to as edges (JASP Team, 2018). Each node represents a phenomenon, and edges between nodes indicate conditional independence relationships (Yang et al., 2024).

The unique contribution of this study lies in the use of a network analysis approach to identify the most central and influential dimensions of well-being in the lives of Indonesian diaspora students in China. This approach not only maps who is connected to whom, but also evaluates the closeness and strength of these relationships in supporting psychological well-being. By analyzing social networks, this study can uncover interaction patterns that serve as important resources for the diaspora, whether in obtaining emotional support, access to information, or economic and social opportunities. Therefore, this study not only fills the gap in previous research but also offers a more comprehensive methodological approach for understanding the determinants of well-being among diaspora students abroad.

The findings of this study are expected to not only enrich the academic literature with theoretical and methodological contributions but also provide practical contributions in the form of social network-based strategies for strengthening and sustainably improving diaspora well-being. Improving well-being across demographics (Ward et al., 2023), and meeting basic needs such as fair income, social protection, and access to adequate health services, education, and public facilities (Riyanto & Kovalenko, 2023; Putra et al., 2022). And diaspora engagement policies are crucial to effectively optimize their contributions (King et al., 2022).

This research has strategic implications for Indonesia and other countries with diasporas. For Indonesia, this research offers an important foundation for formulating policies for diaspora protection and strengthening by emphasizing the role of Betweenness, closeness, and the strength of social networks in shaping well-being. By considering dimensions of well-being such as satisfaction and happiness, motivation and engagement, feelings of acceptance and support, achievement and success, and identity and authenticity, the Indonesian student diaspora can be more strengthened in accessing economic, educational, and

social support opportunities, while maintaining strong ties to their homeland. This will strengthen the diaspora's role as an agent of national development, a diplomatic partner, and a connector of global networks. Meanwhile, for other countries, this research presents an analytical model that can be adapted to understand and improve the well-being of their diaspora communities. Thus, this research has implications for the development of more inclusive transnational policies, supporting diaspora adaptation, and maximizing their contribution to strengthening international relations and creating sustainable social stability.

The purpose of this study is to analyze Betweenness, closeness, and strength in social networks as key factors shaping the well-being of Indonesian diaspora students in China. Emphasis is given to how the dimensions of well-being—satisfaction and happiness, motivation and engagement, feelings of acceptance and support, achievement and success, and identity and authenticity are influenced by the structure, quality, and interactions within the diaspora community. The research questions proposed are: 1) What is the profile of well-being of Indonesian diaspora students in China?; and 2) What are the betweenness, closeness, and strength of each dimension of well-being of Indonesian diaspora students in China, as key factors of social networks?.

Literatur Review

Well-being Diaspora

Well-being is a broad and complex construct with many facets (Tov, 2018). This concept is viewed as a multidimensional construct that relates not only to material aspects but also encompasses emotional and psychological dimensions that play a crucial role in an individual's life (Wang, 2024). Broadly speaking, well-being encompasses the fulfillment of basic human needs such as a fair income, social protection, and access to adequate healthcare, education, and public facilities (Riyanto & Kovalenko, 2023; Putra et al., 2022). These aspects provide the foundation for individuals and communities to live securely, productively, and optimally develop their potential. Furthermore, diaspora well-being emphasizes the importance of conditions that enable individuals outside their homeland to maintain a good quality of life, maintain their identity, and maintain healthy social connections in their new environment. Thus, the well-being of Indonesian students abroad encompasses both subjective and objective living conditions that influence their quality of life in their host country.

Factors Affecting the Well-being of the Diaspora

The dimensions of well-being are not limited to physical, mental, social, financial, and spiritual aspects (King et al., 2024; Ling et al., 2022), but are also influenced by broader psychosocial factors. Research shows that character strengths play a significant role in enhancing well-being across demographics (Ward et al., 2023). Furthermore, adaptive psychological skills are closely linked to well-being, as they help individuals navigate life's challenges more effectively (Oliveira et al., 2024). The environment also plays a role (Gaete Sepúlveda et al., 2025). Positive family dynamics contribute to well-being, serving as a protective

factor while strengthening resilience in the face of difficult situations (Meekaew et al., 2024; Hill et al., 2023). Socioeconomic status is also a key determinant of subjective well-being (Livingston et al., 2022). Specifically, the well-being of diaspora students is shaped by satisfaction, happiness, motivation, engagement, acceptance, support, achievement, identity, and authenticity. Social network factors, closeness, and the quality of relationships further strengthen these conditions.

Impact of Well-being on the Diaspora

Well-being plays a crucial role in the lives of diaspora students abroad, as it encompasses psychological, social, economic, and spiritual aspects. Mental well-being positively impacts psychological well-being, emotional stability, and functional health (Newson et al., 2022; Smith et al., 2017). This directly impacts overall health outcomes (Teh et al., 2013). Furthermore, spiritual well-being has been shown to improve individuals' quality of life and help them cope with the stresses of living in a new environment (Durmuş & Alkan, 2021; Hajiaghababaei et al., 2018; Pilger et al., 2017). Parental well-being, encompassing economic, psychological, and social dimensions, plays a significant role in determining their children's quality of life (Thiyagarajan et al., 2019). Strong social support can also minimize adaptation difficulties and improve the quality of life of diaspora families (Taziki et al., 2021). Overall, the high level of well-being among diaspora students impacts their ability to adapt, contribute to society, and strengthen relationships with both their home and destination countries.

Well-Being Dimensions and Network Analysis

Well-being dimensions encompass various psychological and social aspects that influence individuals' quality of life, including life satisfaction, happiness, motivation, engagement, feelings of acceptance, social support, achievement, and identity (Ward et al., 2023). In the context of diaspora students, these dimensions become important factors that determine individuals' ability to adapt, survive, and thrive in new cultural environments (Aksel, 2022). Recent studies have shown that the well-being of international students is influenced not only by economic factors but also by the quality of social relationships and the sense of connectedness within academic and social communities (Chen & Li, 2021; Liu et al., 2023). Therefore, network analysis is considered a relevant analytical technique because it is capable of mapping the interconnections among well-being dimensions through the structure of social relationships formed within diaspora communities. In network analysis, each dimension is represented as a node, while the relationships among dimensions are represented through edges that indicate the strength and closeness of these relationships (Huth et al., 2023). This approach enables researchers to identify the most central and influential dimensions affecting the well-being of diaspora students, thereby providing a more comprehensive understanding of the psychological and social interaction patterns that shape their well-being in international environments.

RESEARCH METHOD

Data Collection and Samples

This study employed a quantitative approach with a cross-sectional survey design. The cross-sectional method is considered highly effective in research (Ntege, 2023) because it allows researchers to collect data from respondents at a specific point in time efficiently, thereby enabling the rapid and systematic identification of conditions, relationships, and patterns among variables within a population. In addition, the cross-sectional design is widely used in social and psychological research because it is capable of providing empirical descriptions of population characteristics and relationships among variables without requiring a long observation period (Wang & Cheng, 2020).

The psychological well-being questionnaire instrument (WB = 16 items) consists of five indicators: satisfaction and happiness (WB1), motivation and engagement (WB2), feelings of acceptance and support (WB3), achievement and success (WB4), and identity and authenticity (WB5). This instrument was adapted from our previous study on the Indonesian diaspora in Taiwan, which demonstrated strong psychometric properties, including the highest Average Variance Extracted (AVE) value of 0.82, indicating that 82% of the variance in the items is explained by the construct and reflecting excellent validity (Hanum et al., 2025).

The questionnaire instrument in this study used Google Forms to obtain data accurately and relatively quickly. The study population consisted of all Indonesian students and their families currently residing in China. The research subjects were members of the Indonesian diaspora in China who were selected using a probability random sampling technique. This technique was employed because it provides every member of the population with an equal opportunity to be selected as a sample, thereby minimizing sampling bias and increasing the representativeness of the research data. The sampling process was conducted by randomly distributing questionnaires to members of the Indonesian diaspora across various regions and educational institutions in China. Therefore, the obtained sample was expected to comprehensively represent the characteristics of the Indonesian diaspora population in China, enabling the findings to provide a more valid description of diaspora well-being conditions.

Based on survey data involving the Indonesian student diaspora living in China (Table 1), the majority of the diaspora have a high educational background. A total of (76.47%) of the diaspora are Bachelor's (S1) graduates, followed by (11.76%) Master's (S2) graduates, and each (2.94%) for Doctoral (S3), Diploma, High School, and anonymous (not listed) graduates. This high level of education indicates that the Indonesian diaspora in China tends to have strong educational capital. Education plays a crucial role in shaping well-being because it influences an individual's ability to build networks, expand cross-cultural relationships, and adapt socially and professionally in a foreign environment.

In terms of gender, the survey shows a predominance of female diaspora participants (76.47%), compared to only (23.53%) for males. This composition may reflect a high level of participation in research activities or a greater openness in

sharing their experiences abroad. This situation also provides an opportunity to better understand how well-being is shaped from a gender perspective, particularly in facing the challenges of being a woman living in a foreign country like China, both socially, culturally, and economically.

Judging from the age range, the majority of the diaspora are in the young age group, namely 17–30 years old, which covers (67.65%) of the total diaspora. The 31–40 age group amounts to (20.59%), while the remaining (11.76%) are aged over 40. This fact indicates that the majority of the Indonesian diaspora in China are in their productive age, which is usually closely related to important phases of life such as further study, entering the workforce, or starting a family. This situation is very relevant in the context of research on well-being, because youth is often a challenging period that requires social support and personal resilience in facing the dynamics of life in a new environment.

In terms of religion, the data shows significant diversity among the diaspora. The majority are Muslim (52.94%), followed by Christian (26.47%), Buddhist (14.71%), and Confucian (2.94%) and self-identified as atheist (2.94%). This religious diversity reflects the plurality of spiritual identities within the Indonesian diaspora community in China. From a well-being perspective, this diversity can be a wealth that strengthens tolerance, mutual understanding, and collaboration within the diaspora community. However, if not managed properly, these differences also have the potential to create social barriers that can hinder integration and social cohesion.

Overall, the demographic characteristics of the Indonesian student diaspora in China depict a predominantly young, highly educated, female, and diverse community of Indonesian students in China. These characteristics provide a rich picture for analysis in the context of well-being.

Table 1. Sample characteristics

Educational level	f	%
Diploma (D1/D2/D3/D4)	1	2.94
Doctoral (S3)	1	2.94
Master's (S2)	4	11.76
Bachelor's (S1)	26	76.47
Senior High School (SMA)	1	2.94
Anonym	1	2.94
Gender	f	%
Male	8	23.53
Female	26	76.47
Age	f	%
17-30	23	67.65
31-40	7	20.59
> 40	4	11.76
Religion	%	%
Muslim	18	52.94
Christian	9	26.47

Buddhist	5	14.71
Confucian	1	2.94
Atheist	1	2.94

Data Analysis

Data were analyzed using descriptive statistical techniques and network analysis. Descriptive statistics involve assessing the level of well-being of the diaspora based on the range of values of x (mean). If $x > 60$, the results are included in the Very Good category. Values between $50 < x \leq 60$ are categorized as Good, while $40 < x \leq 50$ are in the Moderate category. For values of $30 < x \leq 40$, the results are considered Poor, and if $x \leq 30$, it is categorized as Very Poor. In addition, it also involves frequency and percentage. Descriptive measurements allow for effective summaries, thus assisting in assessment (Lobchuk et al., 2023). Descriptive statistics use SPSS software. Network analysis is used to analyze Betweenness, Closeness, and Strength of Dimensions of well-being. The ability to map complex relational structures (Verma et al., 2017). Network analysis uses JASP software. JASP data visualization significantly improves the interpretability of network analysis. Studies have shown that JASP visual output simplifies the communication of analysis results (Linden et al., 2019).

RESULT AND DISCUSSION

Well-Being Profile of Indonesian Student Diaspora in China

The psychological well-being of Indonesian students in China showed considerable variation (Figure 1). Sixteen of the Indonesian students felt they were in "very good" condition, and 13 others were in the "good" category. Meanwhile, four of the students were in the "moderate" category, and only one was in the "poor" category. Interestingly, none of the students felt they were in the "very poor" category, suggesting that overall, their well-being tended to be good.

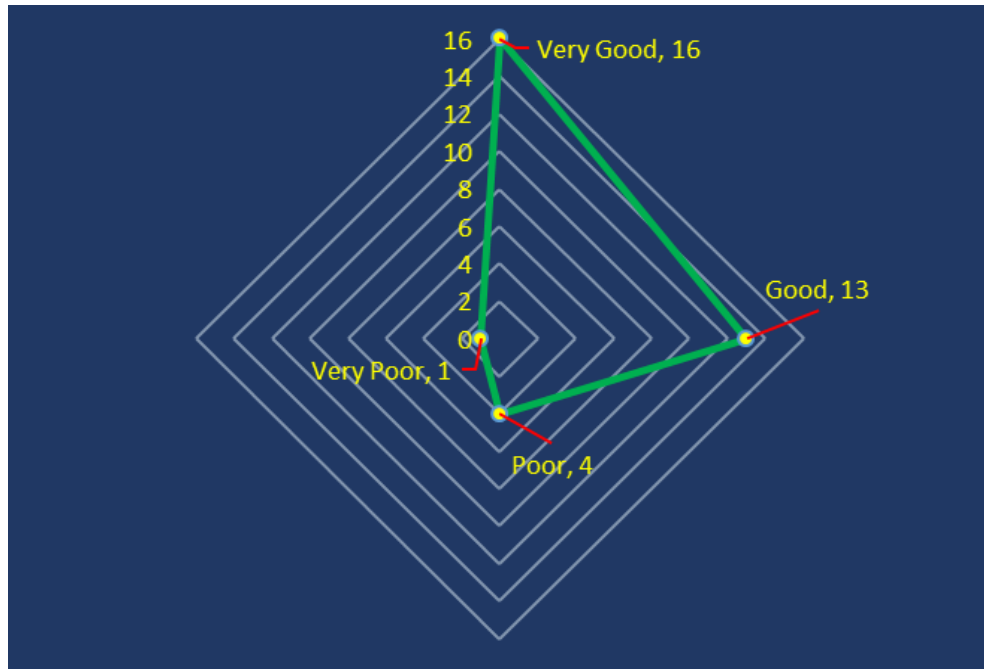


Figure 1. Diaspora Well-Being Level

Based on the calculation results, the average value obtained was 64.47. This value is in the range of $64.00 < x$ so it is included in the very good category. Thus, the results of this analysis strengthen previous findings that in general the Well-being of the Indonesian diaspora in China is considered to be in a very good condition, reflecting the presence of satisfaction and happiness, motivation and involvement, feelings of acceptance and support, achievement and success, identity and authenticity.

The majority of the diaspora are very enthusiastic about learning new things at school, campus, or work, with a percentage reaching (88.24%). This reflects the diaspora's high enthusiasm for continuing to develop themselves and adopt new knowledge as part of their journey (Table 2). Furthermore, (78.24%) of the diaspora feel they fit in and that what they do in their environment is very important, indicating a strong sense of connection and meaning in their activities.

Furthermore, the diaspora also demonstrated positive levels of confidence and happiness regarding their roles. Approximately (74.71%) felt successful as students or workers, and (81.76%) felt they could be themselves in their environment. This confidence was further reinforced by the fact that (83.53%) felt treated with respect, and (85.29%) believed the lessons they learned would help them in the future, indicating high levels of social support and optimism for the future.

Furthermore, the diaspora enjoyed the process of completing assignments and projects, with (80.00%) and (79.41%) feeling successful in completing their assignments. High levels of happiness (81.76%) and a sense of achievement (78.82%) indicated positive psychological well-being. These findings suggest that the diaspora as students enjoy good well-being in both learning and working, with strong social support and high motivation for success and personal development.

Table 2. Diaspora Psychological Well-Being Dimension

Well-being Dimension	Total	%
Satisfaction and happiness (WB1)		
My happiness comes when studying at school, college, or work.	139	81.76
At school, college, and work, I have always been treated with respect.	142	83.53
Motivation and engagement (WB2)		
I feel enthusiastic every time I get the opportunity to learn something new at school, college, or work.	150	88.24
The activities I do at school, college, and work are always interesting to me.	137	80.59
I believe that schools, campuses and workplaces have an important role and need to be carried out seriously.	143	84.12
Every project and assignment I work on at school, college, or work is always a fun experience.	136	80.00
Feeling accepted and supported (WB3)		
I can adapt well so I feel comfortable at school, campus and my workplace.	133	78.24
The school, campus, and workplace environments give me space to remain myself.	139	81.76
At school, college, and work, I feel noticed and cared for by the people around me.	133	78.24
Achievements and success (WB4)		
I am a successful person both in my role as a student and as a worker.	127	74.71
I always do my best at school, college and work.	139	81.76
For me, it is important to always show good achievements at school, college, or at work.	134	78.82
I have successfully completed various assignments at school, campus, and at work.	135	79.41
The tasks I do at school, college, and at work always result in positive results.	127	74.71
Identity and authenticity (WB5)		
I feel that my tasks and activities at school, campus, and at work have important value.	133	78.24
I am sure that the knowledge and experience I have gained at school, college and at work will be useful in my life.	145	85.29

Betweenness, Closeness, and Strength of Each Dimension of Well-Being of Indonesian Student Diaspora in China

The centrality measures analysis (Table 3 & Figure 2) shows that the WB2 dimension occupies the most central position in the network. High values of betweenness (1.33), closeness (1.09), strength (1.27), and expected influence (1.27) confirm its role as the main connector and the dimension with the strongest closeness and connectedness. This finding indicates that WB2 is a key aspect in shaping the well-being of the Indonesian diaspora in China, as it functions as a central connector that influences other dimensions. Meanwhile, the WB1 dimension is also consistently positive across all dimensions with betweenness

(0.82), closeness (0.53), and strength and expected influence (0.69). Although its value is lower than WB2, WB1 still plays a stable supporting role and helps strengthen the foundation of the well-being of the Indonesian student diaspora in China.

In contrast, WB4 and WB5 show low scores across almost all dimensions, with limited connectedness indicators. WB4 shows closeness (-0.85), strength (-1.01), and expected influence (-1.01), while WB5 has even lower scores with closeness (-1.25) and strength (-0.92). This condition confirms that both dimensions contribute less to the well-being of the Indonesian diaspora in China. WB3 occupies an intermediate position, indicated by betweenness (-0.71), positive closeness (0.47), and strength approaching neutral (-0.04). This position reflects a transitional role that can support the well-being of the Indonesian student diaspora in China, although its role is more limited than WB2 and WB1.

Tabel 3. Centrality Measures Dimension

Demension	Network			
	Betweenness	Closeness	Strength	Expected influence
WB1	0.82	0.53	0.69	0.69
WB2	1.33	1.09	1.27	1.27
WB3	-0.71	0.47	-0.04	-0.04
WB4	-0.71	-0.85	-1.01	-1.01
WB5	-0.71	-1.25	-0.92	-0.92

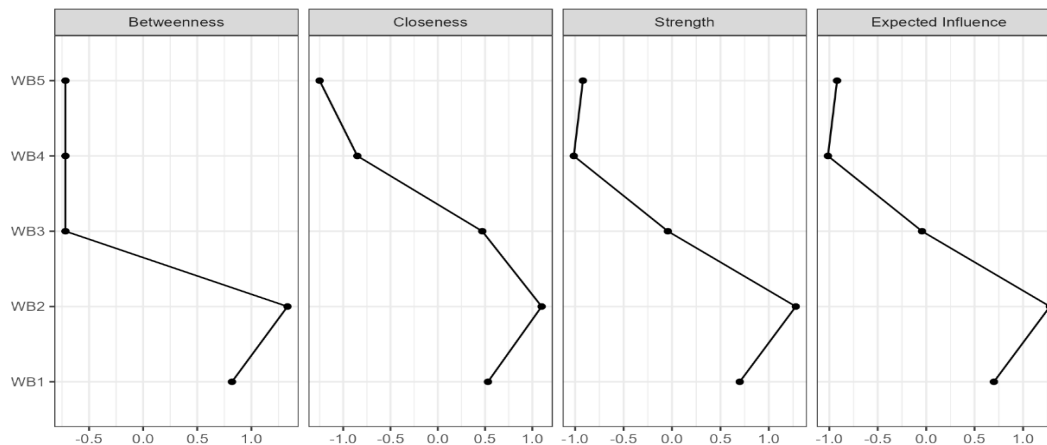


Figure 2. Visualization of Centrality Measures

The results of the clustering analysis using four calculation methods, namely the Barratt, Onnela, WS, and Zhang methods, show variations in contributions between well-being dimensions in the network (Table 4). Dimensions WB3 and WB4 obtained relatively high coefficients in several methods. WB3 recorded the highest coefficient in the Onnela method (1.53) and also showed positive coefficients in the Barratt method (1.08) and the WS method (1.09). Dimension WB4 had high coefficients in the Barratt method (1.08), the WS method (1.09), and the Zhang method (1.244). This pattern confirms that these

two dimensions have an important role in strengthening the closeness network, thereby supporting the social cohesion of the Indonesian student diaspora in China.

In contrast, Dimensions WB1, WB2, and WB5 exhibit low coefficients across most methods. WB1 and WB2 recorded negative values in the Barratt and WS methods, while WB5 obtained the lowest coefficient in the Onnela (-1.06) and Barratt (-0.96) methods. These results indicate that these three dimensions play a less significant role in shaping the proximity network. These findings also demonstrate that although WB2 previously held a central position based on centrality measures, its contribution to internal connectedness is relatively limited, making its role more cross-dimensional than strengthening social groups around the Indonesian student diaspora in China.

Tabel 4. Clustering Measures Dimension

Demension	Network			
	Barrat	Onnela	WS	Zhang
WB1	-0.58	-0.25	-0.73	-0.93
WB2	-0.61	0.35	-0.73	-0.99
WB3	1.08	1.53	1.09	-0.07
WB4	1.08	-0.57	1.09	1.24
WB5	-0.96	-1.06	-0.73	0.76

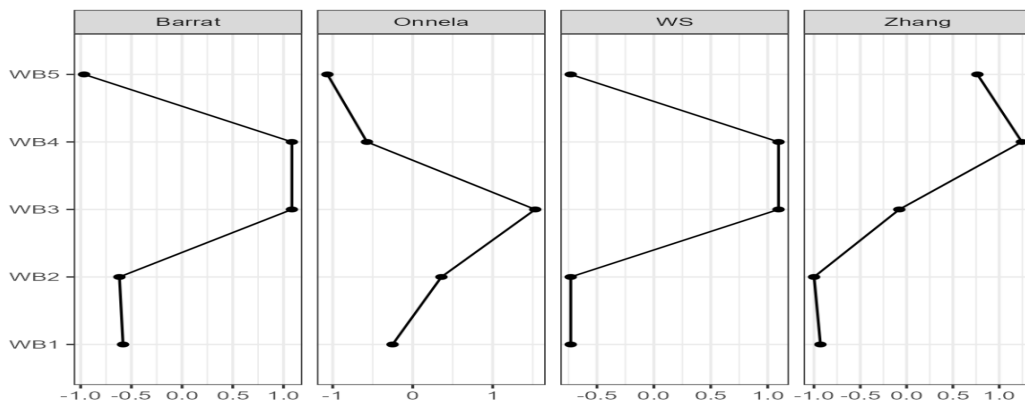


Figure 3. Visualization of Clustering Measures Dimension

The weight matrix shows that the strongest connection is between dimensions WB1 and WB2 (0.53). This relationship indicates a close interconnection, which strengthens the role of both in the structure of the welfare network of the Indonesian diaspora in China. In addition, dimensions WB2 and WB3 (0.48) also form an important bond, which places WB2 as a link between the core dimensions and other dimensions. Dimensions WB1 and WB4 (0.39) appear as the next pair with a fairly high connection, indicating the contribution of WB4, which, although weak in centrality, still plays a role in the connection.

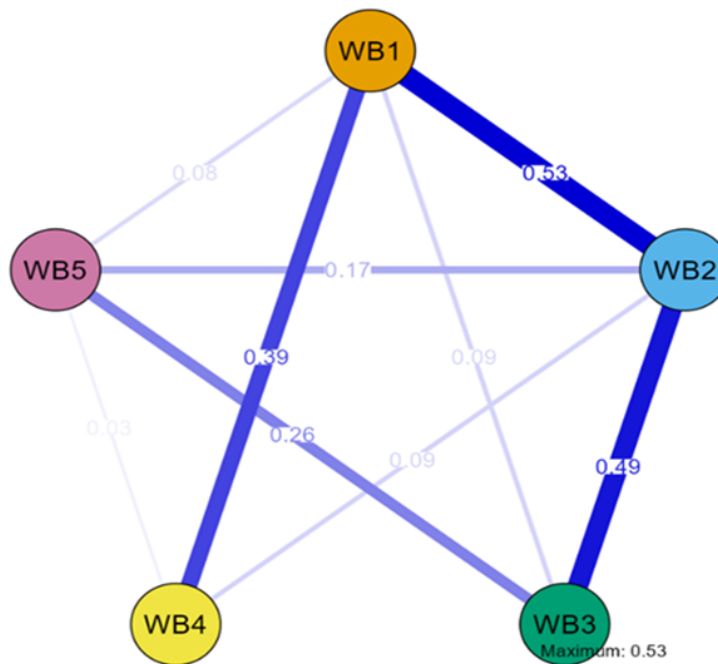


Figure 4. Visualization of Dimensional Interconnections and Their Weights

In contrast, low weight values were found in the connections between dimensions WB4 and WB5 (0.03) and WB4 and WB3 (0.00). Meanwhile, WB5 showed limited connections, with the highest ties only with WB3 (0.26), but relatively small with other dimensions. This pattern shows that dimension WB2 remains a central link between dimensions, while WB1 strengthens structural proximity, and WB3 functions as a moderate bridge. In contrast, WB4 and WB5 are in a more marginal position in the network.

Discussion

The well-being of Indonesian diaspora students in China is generally considered excellent. Most of the diaspora demonstrate high enthusiasm for learning and adapting to new experiences, both at school, on campus, and in the workplace. This finding aligns with the research of Hanum et al. (2025) on the Indonesian diaspora in Taiwan. This reflects their positive spirit in developing themselves and improving their skills in accordance with the new environment they encounter. This condition can also be explained through *Social Capital Theory* proposed by Putnam (2000), which emphasizes that the quality of social relationships, trust, norms, and social networks can enhance individual satisfaction and happiness. In the context of diaspora students, social support from academic environments, diaspora communities, and relationships with local communities plays an important role in facilitating adaptation processes and improving their psychological well-being in a new environment.

In addition, Self-Determination Theory developed by Ryan & Deci (2000) explains that individuals' motivation and engagement increase when the basic need for relatedness is fulfilled through supportive social networks that encourage achievement and success. However, despite their strong enthusiasm for learning,

not all diaspora students feel they have fully achieved success as students or workers. This condition often leads diaspora students to develop dual identities that may challenge their sense of achievement within educational systems or workplaces abroad (Ling & Guo, 2020). Perceptions of academic and professional achievement remain diverse, particularly regarding the outcomes obtained from daily tasks or work. From the perspective of *Self-Determination Theory*, this condition indicates that psychological needs related to competence and self-recognition have not been fully fulfilled. Therefore, diaspora students need to enhance their spiritual well-being, which has been shown to improve individuals' quality of life and help them cope with stress while living in a new environment (Durmuş & Alkan, 2021; Hajiaghababaei et al., 2018; Pilger et al., 2017). Thus, although their psychological well-being in cross-cultural education is generally good, their sense of success and self-achievement still needs to be strengthened through stronger social support and the fulfillment of individual psychological needs.

The diaspora motivation and engagement (WB2) dimension occupies the most central position in the network, reflected in its role as the primary link between the well-being dimensions of the Indonesian diaspora in China. This is due to the desire for social and political affiliation as the primary motivator for engagement (Syrett & Keles, 2022), and the commitment to contribute to their communities across cultural frameworks (Mukhamejanova & Konurbayeva, 2023). Values for betweenness, closeness, strength, and expected influence are high compared to other dimensions. A high betweenness value in WB2 indicates its role as the primary link bridging relationships between well-being dimensions, thus heavily dependent on the flow of influence. High closeness confirms that WB2 is close to almost all other dimensions, allowing this aspect to reach and influence more quickly and efficiently. Meanwhile, prominent strength indicates strong and stable direct connections with various other dimensions, thus strengthening WB2's position in the network. Furthermore, high expected influence indicates that WB2's influence is not limited to direct relationships but also extends indirectly throughout the network. Who will advocate for their rights and interests (Sendhardt, 2021; Walton-Roberts & Judge, 2023). Thus, motivation and engagement serve as core dimensions that facilitate the connectedness and integration of the well-being dimensions of Indonesian diaspora students in China.

Although the diaspora satisfaction and happiness dimension (WB1) scores lower on the betweenness, closeness, strength, and expected influence scale than WB2, its presence remains significant as a supporting factor, particularly in terms of individual emotional and psychological satisfaction (Li & Chan, 2020). Active participation in various activities, such as cultural festivals, can foster feelings of happiness, pride, and emotional satisfaction (Gedecho et al., 2023). This indicates that WB1 plays a role in maintaining the stability of relationships between dimensions and contributing to strengthening the structure of the well-being network. With its positive consistency, satisfaction and happiness can be understood as supporting elements that help strengthen the foundation of the well-being of the Indonesian diaspora in China, although not centrally positioned.

This role remains crucial because it maintains inter-dimensional betweenness while ensuring sustainable network integration.

In contrast, the dimensions of achievement and success (WB4) and identity and authenticity (WB5) appear to contribute less significantly to the well-being of the Indonesian diaspora in China. This is due to the inability to manage identity, which can potentially obscure individual aspirations and cultural authenticity (Grossman, 2024), a distorted understanding of their lived experiences, including struggles and failures (Khosravi, 2018), and the inability to cultivate an identity by prioritizing communal matters over personal ones (Ugurlu, 2014). Limited betweenness and low strength and influence indicate that these two dimensions have not yet played a key role in network integration. This indicates that the aspects reflected in WB4 and WB5 still need to be strengthened to have a more tangible impact on diaspora well-being. Meanwhile, feelings of acceptance and support (WB3) are in an intermediate position with transitional characteristics. Because connections between newcomers and long-time residents are needed to strengthen emotional support systems for individuals in the diaspora (McSweeney & Nakamura, 2019), navigate their identities through a shared cultural landscape (Finlay, 2017), and use of technology can foster and maintain social relationships, thereby providing emotional support (Lim & Pham, 2016). Its positive association with several other dimensions suggests the potential to function as a secondary link, although its strength and influence are not yet dominant enough. Thus, feelings of acceptance and support can be seen as a balancing element that complements the central role of diaspora motivation and engagement, and a stable support of diaspora satisfaction and happiness, despite its relatively limited contribution.

Based on the results of this study, several important aspects need to be considered in strengthening the well-being of Indonesian diaspora students in China. First, motivation and engagement are central, requiring strategies to encourage active participation, enthusiasm for learning, and social and professional engagement. Structured self-development programs (Latukha et al., 2022), training, and collaborative spaces are key to maintaining and strengthening these aspects. Second, satisfaction and happiness serve as pillars of stability, so community support (Syrett & Keles, 2022), social networks (Rodica & Rosca, 2020), and psychosocial services need to be strengthened to maintain emotional well-being. Third, dimensions that still show limited contribution require more attention to have a tangible impact on well-being integration. Fourth, transitional aspects have the potential to be developed as secondary bridges, for example through mentoring or assistance programs. In this way, the well-being in cross-cultural education of Indonesian diaspora students in China can be developed in a more comprehensive and sustainable manner.

CONCLUSION

The positive psychological well-being of Indonesian diaspora students in China is considered very good, demonstrated by their high enthusiasm for learning and adapting to their new environment. However, their sense of success and

academic and professional achievement still need to be improved to optimize their well-being in cross-cultural education. Motivation and engagement occupy the most central positions as the main link between the dimensions of well-being, with a broad and stable influence. Satisfaction and happiness act as supporting factors that maintain stability and strengthen the foundation of the well-being of Indonesian diaspora students. Conversely, the other two dimensions show limited contributions and require strengthening to play a more significant role in network integration. One dimension, meanwhile, is in a transitional position, functioning as a counterbalance that complements the central and supporting role in shaping well-being. Self-development and mentoring programs focused on enhancing the sense of success and academic and professional achievement of diaspora students are needed. Furthermore, dimensions with limited contributions need to be strengthened through community support, training, and collaborative networks to optimize well-being integration. Practically, these findings can serve as a basis for educational institutions and diaspora organizations in designing more targeted support programs to enhance students' sense of achievement and competence. In addition, the results of this study can also be used by policymakers in Indonesia and China to strengthen social and academic integration strategies for diaspora students.

This study has several limitations. *First*, the data used is limited to the Indonesian student diaspora in China, so the findings cannot be generalized to diasporas in other countries with different social and cultural contexts. *Second*, the use of a cross-sectional design only captures well-being conditions at a single time point, making it impossible to analyze changes or causal relationships longitudinally. Therefore, future research is recommended to use a longitudinal design to monitor the dynamics of diaspora well-being over time. Furthermore, reliance on questionnaire instruments has the potential to introduce subjective bias; the use of mixed methods approaches such as in-depth interviews or observation could provide a more comprehensive understanding.

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Authors' Contribution

All authors have reviewed and approved the final version of the article for publication.

Conflicts of Interest

The authors declare that there is no conflict of interest in this research and the writing of this article.

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Data Availability Statement

The data supporting this study are available from the corresponding author upon reasonable request.

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