

Mentoring relationships as an enhancer of mentees' success

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ABSTRACT

A review of the recent studies about tertiary education student development reveals that when mentors do not practice effective relationships in mentoring programs regardless of how well designed the mentoring programs are, the goals will not be achieved. Even though many studies have been done, the role of mentoring relationships as a vital predicting variable is largely ignored in the tertiary education mentoring research literature. Hence, the current study is done to investigate the effect of mentoring relationships on mentees' success. A cross-sectional method is used to collect survey questionnaires from undergraduate students in teaching-based universities in Sarawak. The SmartPLS is utilized to assess the quality of the study instrument and test the research hypotheses. The findings of the SmartPLS path model analysis reveal that implementation of comfortable communication and sufficient support by mentors in structured and unstructured mentoring activities has been an important antecedent of mentees' career and leadership development. Thus, this finding may be used as significant guidelines by practitioners to understand diverse paradigms of mentoring relationship construct and planning collaborative and developmental mentoring programs to prepare mentees to become potential leaders in the 21st century of global market challenges and difficulties.

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1. INTRODUCTION

Top colleges and universities in the world have widely practiced mentoring to complement the regular academic curriculums to achieve their students' objectives and equip them to be successful people in the real world of work and society after graduation [1], [2]. As an informal learning program, mentoring has actively promoted collaboration, partnership, and developmental learning, which stimulates mentors to help mentees achieve what they want to be and prepare them to succeed in the industry and society [3], [4]. In a Malaysian tertiary education system, mentoring has recently been a critical policy in the Malaysian education development plans for higher education, where it is viewed as a new learning delivery mode to produce balanced and holistic graduates with an entrepreneurial mindset, job creators, and cultivate lifelong learning that can meet the 21st century of global market challenges and difficulties [5].

Malaysian Higher Education Ministry provides autonomous power to the leadership of the public colleges and universities to plan and implement mentoring policies according to their own strategies and

goals respectively. In the administration of university mentoring policies, faculties, schools, and/or departments are identified as the backbone of academic responsibility centers, which are empowered by their leadership to establish specific objectives, content, implementation modes, and procedures to meet their tertiary institutions' operational, tactical, and strategic planning [6]. For example, leaders at the academic responsibility centers can use their discretions to appoint internal mentors (e.g., lecturers), external mentors (e.g., industrialists and/or professional trainers from outside their centers and universities), assign mentees (e.g., undergraduate students) to their mentors, and implement structured and unstructured mentoring programs. The mentoring practices are seen by the majority of mentees as very helpful because mentors can play significant roles as a teacher, supporter, advisor, and role model in helping them to develop new identities and competence, improve study performance, upgrade career prospects, develop leadership skills, and thus facilitate their success in handling life independently [3]. Although such mentoring relationships have actively been implemented, their effect on mentee success is little known because of the paucity of empirical evidence published in Malaysia. Therefore, it is crucial to analyze the effectiveness of mentoring relationships in the context of public tertiary education institutions.

Many established studies on tertiary education student development have discovered the significant antecedents of mentoring effectiveness, namely mentees' traits (e.g., intellectual ability, self-confidence, and adapt to new environments) [7], [8] and faculty environment (e.g., learning method, instructional materials, education technology, and mentoring types) [9]–[11]. Even though these mentoring effectiveness antecedents have received substantial acceptance, however, the assessment of the impact of mentoring relationships has limited publications [12], [13]. At the faculty, school, and/or department levels, mentoring relationships are often practiced through structured mentoring mode (e.g., mentoring activities are organized according to structured processes and coordinated processes, proper action plans, standard norms, fix schedules, and particular goals) and unstructured mentoring mode (e.g., mentoring activities are handled based on specific demands, spontaneous and ad-hoc) to achieve their institutions and students' goals [1].

The significant roles of such mentoring relationships are widely recognized as a leading edge of tertiary education student development programs. Undeniably, mentoring relationships have been viewed as a great program when some latest university mentoring studies published in the 21st century disclosed that goals of well-structured and unstructured mentoring programs will not be accomplished if mentors have not implemented effective relationships in the mentoring programs [12], [14]. Effective mentoring relationships comprise two salient dimensions, namely comfortable communication (i.e., communication openness and interpersonal communication) [15], [16], and sufficient support (i.e., moral aid and instrumental aid [17], [18]). Further studies advocate that the ability of mentors to appropriately perform the mentoring relationships in structured and unstructured mentoring activities may have a significant impact on mentees' success, by promoting career development [12], [15] and leadership development [13], [14]. Although this relationship has been much researched, the effect size and nature of mentoring relationships as a significant antecedent is not thoroughly discussed in the tertiary education student development research literature, in which further exploration of this issue is imperative [13], [16].

To address this gap, many researchers have disclosed that this situation may be caused by several important reasons. First, a bulk of past studies paid more attention to conceptually discussing the internal features of graduate and undergraduate mentoring practices, such as definitions, types, and significance of the constructs in diverse tertiary education institutions [4], [6]. Second, a simple causal model was applied to describe two major associations: i) between specific respondents' attitudes (e.g., different mentor gender) and specific types of mentoring relationships (e.g., peer, academic mentoring, career mentoring, and psychosocial mentoring), and ii) between specific types of mentoring relationships and specific mentees' advancement (e.g., study performance, STEM, and health) [19], [20]. Correlation between such constructs is measured using a simple statistical tool (e.g., descriptive, and bivariate statistics). The results only showed the strength and nature of the association between the studied constructs, but the effect size of the mentoring relationship in upgrading mentee success is neglected in the correlation analysis [13], [15]. Consequently, this study paradigm only produces general recommendations and they may not offer useful guidelines to be used by practitioners in understanding the diverse paradigms of mentoring relationship concept and establishing high-quality mentoring relationship practices to develop potential leaders that meet the 21st century global market requirements [12], [14].

This study provides three important contributions to the existing literature. First, it adds to previous studies by promoting mentoring relationships that are stimulated by mentors' roles rather than mentees' traits and faculty environment, in which mentors' comfortable communication and sufficient support act as an important predictor of mentees' success [16], [21]. Second, it extends the mentees' success literature by exploring mentoring relationships as a major predictor, which has been understudied. Mentoring relationships may directly upgrade mentees' success [12], [13]. Third, the pioneer effort to specifically examine the combined effects of mentoring relationships in influencing mentees' success, revealing that mentees' success

is strongly affected by two major factors, including mentors' comfortable communication and sufficient support [14], [15]. Finally, this study has specifically applied the notion of leadership development theory [22]–[25], and career development theory [26], [27] in tertiary education mentoring, whereby it predicts that the relationship between mentors and mentees through structured and unstructured mentoring modes can directly affect mentees' success. This prediction can be proven by testing the causal relationship in the hypothesized model. Thus, the dearth of existing empirical evidence forces the researcher to widen the literature by assessing the effect of mentoring relationships on mentees' success.

This study has four major constructs, namely comfortable communication, sufficient support, mentees' career development, and mentees' leadership development. First, comfortable communication is generally defined as mentors dealing with different mentees' backgrounds using communication openness (e.g., mentors deliver accurate, reliable, and honest information to mentees) [16], [28] and interpersonal communication (e.g., mentors exchange and share their feelings, knowledge, thoughts, and experiences with mentees) [15], [29]. Further studies in tertiary education mentoring prove that the ability of mentors to execute comfortable communication will assist mentees in clearly understanding the objectives, content, procedures, roles, and advantages of mentoring programs. As a result, this communication practice may stimulate mentees to achieve what they want to be, such as career development [12], [16] and leadership development [14], [21].

Second, sufficient support is broadly defined as mentors dealing with diverse mentees' backgrounds using moral aid (e.g., encouragement, confidence, patience, empathy, and responsiveness) and instrumental aid (e.g., study skills, experiential learning techniques, career knowledge, problem-solving techniques, social collaboration skills and lending some money) [17]. These support practices will help mentees to fulfill their needs and expectations, such as learning and mastering up-to-date skills, essential knowledge, and positive behavior to handle daily life and achieve aims in higher education institutions [18]. Therefore, this condition may lead to increased positive mentees outcomes, especially career development [12], [16] and leadership development [14], [30].

Third, career development is broadly interpreted as students who are actively involved in relevant career-related processes (e.g., provision of information, counseling, curriculum, and program interventions) in tertiary education institutions that may inspire them to choose particular professions (e.g., area of study/major) based on their physical and/or psychological needs in developing their maturity in career aspirations. This planned process may help them to advance their career opportunities in the future (e.g., prepare for the working world) [31], [32].

Academic responsibility centers, such as faculties, schools, and/or, departments play significant roles in planning, implementing, and monitoring mentoring activities to improve mentees' career paths through career planning and career decision. In a career planning stage, mentees and mentors will work together to determine the important milestones: i) Identify their career objectives; ii) Assess skills needed; iii) Choose major and career interests; iv) Explore career-related interests; v) Develop skills for writing resumes and cover letters; vi) Find internships and employment; and vii) Pursue professional and graduate school. Subsequently, mentees and mentors will consider several important factors to make meaningful career decisions, especially selecting particular careers that align with mentees' interests, relate to practical aspects of life, and find a good fit in relation to the labor market demands [31], [33]. Further, some current studies about tertiary education mentoring support that mentees' career development is a significant outcome of mentoring relationships [12], [15].

Finally, leadership development is extensively investigated for general student activities (e.g., student unions and voluntary activities), and students in specific academic disciplines (e.g., STEM and medical students) that are actively involved on campus and off-campus social activities [34], [35]. The important ideas from the studies show that mentees' leadership development is usually interpreted as undergraduate students' willingness to put a greater effort to build leadership qualities by mastering both skills, namely technical skills (e.g., medicine, engineering, science, mathematics, and technology), and soft skills (e.g., management skills, interpersonal skills, business knowledge, intrapersonal skills, character development and leadership study) [35], [36].

A developmental relationship established between mentors and mentees is an important mechanism that inspires mentees to develop leadership skills [13], [30]. For example, involving mentees in socialization (e.g., adjusting to a new organization or role), building mentees' personal attributes (e.g., communication, helping others, integrity, and honesty), and inculcating mentees' ethical reasoning and morality (e.g., respect the rights and wrongs in the intellectual work) in engaging with on and off-various campus activities have provided opportunities for them in practicing good leadership roles. This practice may prepare mentees to become successful leaders in the future [34], [36]. Hence, various recent studies about tertiary education mentoring advocate that the development of mentees' leadership skills is a significant result of mentoring relationships [13], [14].

Influence of mentoring relationships on mentees' career development is uniform with the concept of career development theory. For example, Super's Career Development Stages Theory [26] explains that individuals can plan their career development stages based on chronological age or through career transition. For example, individuals usually plan career choices according to their development stages, which begin from: i) Growth (development of self-concept, attitudes, needs, and general world of work); ii) Exploration (knowledge from classes, work hobbies, tentative choice, and skill development); iii) Establishment (entry-level skill-building and stabilization through work experience); iv) Maintenance (continual adjustment process to improve position); and v) Disengagement (reduced output, prepare for retirement).

Conversely, Krumboltz's Social Learning Theory of Career Development [27] describes that individuals often make their career decisions according to four major influences: i) Genetic endowment and special abilities (innate abilities); ii) Environmental conditions and events (technological advancement); iii) Task approach skills (e.g., skills needed to choose a career path); and iv) Instrumental and associative learning experiences (learn from other people). The use of these theories in a tertiary education student development program shows that the development of mentees' career paths is strongly affected by mentoring relationships [12], [16].

Several previous studies demonstrated that mentors' communication and support as important antecedents of mentees' career development. Some empirical studies have assessed undergraduate mentoring programs using different tertiary education institutions, such as perceptions of 311 undergraduate students at the University of Canakkale Onsekiz Mart in Turkey [15], 270 final year students at Jakarta, Bogor, Depok, Tangerang, Bekasi regions, in Indonesia [16] and 222 students at Sultan Qaboos University, Oman [12]. These studies acknowledged two important findings. First, mentors implemented comfortable communication in mentoring activities by sharing success stories with mentees, encouraging and advising mentees to handle anxiety and plan their future careers [15], explaining clearly to mentees about the goals and prospects of career choices, and building their self-confidence about career interests [16], and using augmented reality and virtual reality technologies to increase mentees' understanding of career choices and courses taken at the university that match the present market needs [12].

Second, mentors provided sufficient support in mentoring programs by providing challenging assignments, protecting mentees from adverse forces, helping mentees to have a positive vision, preparing mentees for a better career, providing mentees with social networks, and assisting mentees to increase self-esteem and confidence levels [15], assisting mentees to choose interesting academic disciplines, determine career choices, improve study achievements, provide material aid, adapt with new environments and prepare them to get a suitable job in society [16], and using augmented reality and virtual reality approaches to engage and motivate mentees to relate career options with the courses available at the university and transfer their theoretical knowledge to a real industrial problem without the need of incurring any [12]. Mentors' ability to properly conduct the communication and support styles in structured and unstructured mentoring relationships had inspired mentees to improve their career development [12], [15], [16].

The effect of mentoring relationships on mentees' leadership development is uniform with the essence of higher education student leadership development theory. For example, the Higher Education Research Institute of UCLA's social change model of leadership development [22] addresses that purposeful, collaborative, values-based processes are important leadership components that may foster positive social change. It was later used in [23] study and served as the foundation of the Multi-Institutional Study of Leadership [23], [24]. This model identifies three groups of leadership values, namely individual level (consciousness of self, congruence, and commitment), group level (common purpose, collaboration, and controversy with civility), and community/societal level (citizenship) may foster positive social change.

Conversely, Astin's input-environment-outcome model [25] posits that the combination of students' precollege characteristics (e.g., students bring to college such as CPA) and the college environment (e.g., breadth of experiences such as academic, social, and personal that occur during college) may enhance students' achievements (e.g., personal development aspects of leadership such as developing public speaking, interpersonal communication skills, conflict management skills, increased self-awareness, and increased self-confidence). Application of the theories in tertiary education student development displays that the development of mentees' leadership skills is strongly influenced by mentoring relationships [13], [30].

Several studies have found that mentors' communication and support are significant determinants of mentees' leadership development. For example, several previous surveys have evaluated undergraduate mentoring programs using different sample features, such as perceptions of 115,632 students at 101 institutions participated from the United States [30], perceptions of 22 students from semi-structured interviews at one university in the United Arab Emirates [21], perceptions of 373 third-year Normal University students in China [14], and perceptions of 17 mentors and 20 students at a university in northern New Jersey, United States [13]. These studies reported two significant findings: First, mentors practiced comfortable communication in mentoring relationships using several instruments, such as giving verbal

persuasion, understanding mentees' needs and strengthening cooperation between mentees in learning new knowledge and skills [21], and advising mentees to talk about social issues, acting on social matters, defining challenging issues and suggesting possible solutions [14], and advising mentees about study responsibilities through face to face meetings and social media [13].

Second, mentors implemented sufficient support in mentoring activities using certain methods, such as coaching mentees to improve personal development (e.g., building self-confidence, responsibility, time management, and communication) and leadership development (e.g., showing a role model) [30], sharing explicit and tacit knowledge with mentees, helping mentees to become role models through teaching experiences and improving their self-confidence, organizational and leadership skills [21], teaching mentees to improve social skills through student unions and community service projects voluntarily [14], and create an atmosphere that promotes mentees' self-esteem and confidence about their ability to perform responsibilities for the long-term success [13]. Mentors' ability to properly perform the communication and support styles in structured and unstructured mentoring programs could upgrade the capability of mentees to improve their leadership development [13], [14], [21], [30].

The literature has been used to formulate the hypotheses of the study, such as: Mentors' comfortable communication is positively correlated with mentees' career development (H1); Mentors' sufficient support is positively correlated with mentees' career development (H2); Mentors' comfortable communication is positively correlated with mentees' leadership development (H3); and Mentors' sufficient support is positively correlated with mentees' leadership development (H4). Based on the research hypotheses, the conceptual framework is exhibited in Figure 1.

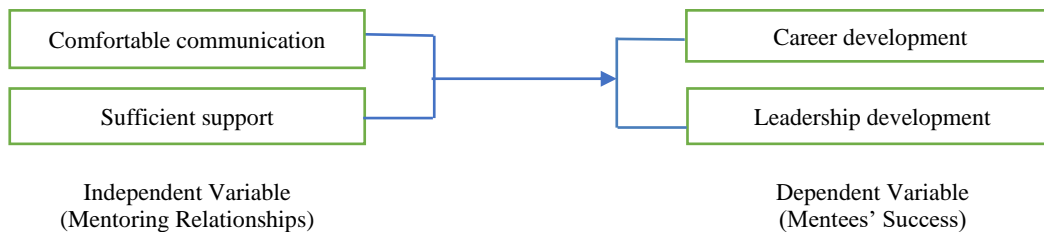


Figure 1. Conceptual framework

2. RESEARCH METHOD

2.1. Research design and sample

A survey method is applied as a research strategy, which allows the researcher to use a cross-sectional research design as the main procedure to collect data. A purposive sampling technique is used to collect 721 usable survey questionnaires from undergraduate students who study at the Malaysian public universities in Sarawak. Most respondents are females (70.9%), aged between 22-24 years old (51.9%), Malaysian higher school certificate holders (42.0%), third-year students (38.4%), cumulative grade point average holders from 2.51 to 3.00 (38.3%), bachelor program students (68.9%), and male mentors (38.6%).

2.2. Research variable

The survey questionnaire is prepared according to the higher education mentoring literature. To maintain the consistency of the question meanings, a back-to-back translation technique is used to translate the questionnaire into English and Malay languages. The survey questionnaire consists of four parts: First, mentors' comfortable communication (CMCT) consists of five items adapted from the tertiary institution mentoring communication literature [3], [29], [37]. The components of CMCT are explanation, advice, discussion, and feedback. Second, mentors' sufficient support (SPPT) consists of eight items adapted from the tertiary institution mentoring support literature [3], [37]. The components of SPPT are encouragement, caring, tips, and constructive criticism. Third, mentees' career development (CERR) has seven items adapted from the tertiary institution students' career development literature [12] [16]. The components of CERR are assignments, guidance, responsibility, and strategy. Finally, mentees' leadership development (LDSP) consists of six items adapted from the higher education students' leadership development literature [21], [22], [38]. The components of LDSP are speaking, leading, role model, decision-making, and relationship. The whole items are measured using a seven-item Likert scale ranging from strongly disagree/dissatisfied=1 to strongly agree/satisfied=7. Respondents' characteristics are used as controlling variables because this study emphasizes student perceptions.

2.3. Data analysis technique

The SmartPLS is used to analyze the survey questionnaire data to ensure latent variable scores are delivered, deal with small sample size problems, estimate simple and complex study models, and handle stringent assumptions that relate to the distribution of variables and error terms in measurement models [39]. In the first step of data analysis, the measurement model (the relationship between variables and their indicators) is assessed using confirmatory factor analysis. Hence, the structural model (the relationship between the variables of interest) is tested using structural equation modeling [40].

3. RESULTS AND DISCUSSION

3.1. Results

Prior to data analysis, the SPSS program is employed to filter the survey questionnaire data, determine the adequacy of sample size, and detect the response bias. The study questionnaire data have no missing values, straight-lining answers, and extreme values, as well as met the normal data distribution assumptions (all items have Kurtosis and Skewness values less than ± 2.0) [40]. The adequacy of the sample is assessed based on the rule of thumb, that is the biggest number of formative indicators in the survey questionnaire should have more than 10 times, and items for measurement models have outer loading higher than the standard threshold of 0.70 [40]. The study sample exceeds the minimum sample size of at least 80 respondents as determined by the rule. Further, the response bias is assessed based on Harman's single factor test, where the value of variance percentage for all items is 38.365, signifying that response bias does not present in the questionnaire data.

Table 1 shows that the loadings for all constructs are greater than 0.70, and the values of average variance extracted (AVE) for all constructs are higher than 0.50 [39]. This indicates that the convergent validity analysis criteria is met. The values of composite reliability for all constructs are higher than 0.80 [41], showing that the measurement scale has high internal consistency.

Table 1. The outcomes of convergent validity analysis

Construct	Number of Item	Factor loading	AVE	Composite reliability
CMCT	5	0.763-0.839	0.649	0.902
SPPT	8	0.803-0.799	0.602	0.924
CERR	7	0.803-0.838	0.669	0.934
LDSP	6	0.810-0.848	0.670	0.924

Table 2 depicts values of Heterotrait-monotrait (HTMT) ratio of correlation for all constructs were less than 0.90. The values of confidential interval for all constructs shown in the parenthesis were less than 1.0 [40], indicates that the constructs have satisfied the criteria of discriminant validity analysis. Table 3 displays that the means for all constructs are between 4.2250 and 5.6272, showing that majority of participants view the levels of CMCT, SPPT, CERR, and LDSP begin from high (4) to the highest level (7). Besides, the values of variance inflation factor for the relationship between the variables of interest are smaller than 5.0, showing that the collinearity problem is not present in such relationships [40].

Table 2. The outcomes of discriminant validity analyses

Construct	HTMT			
	CMCT	SPPT	CERR	LDSP
CMCT				
SPPT	0.509			
CERR	0.477	0.495		
	(0.199, 0.367)	(0.227, 0.404)		
LDSP	0.549	0.572	0.679	
	(0.231, 0.302)	(0.309, 0.400)		

Note: The values in the parenthesis are the values of confidential interval at 2.5% and 97.5%

Table 3. The outcomes of variance inflation factor and descriptive statistics

Construct	Mean	Standard deviation	Variance inflation factor			
			CMCT	SPPT	CERR	LDSP
CMCT	5.6272	.81625			1.259	1.259
SPPT	4.2250	.74024			1.259	1.259
CERR	5.4030	.91116				
LDSP	5.5328	.83361				

The structural model test shows the results of model fit, model strength, effect size, predictive relevance, predictive performance, and importance-performance map analysis. The outcomes of the model fit test show that the value of the standardized root means square residual (SRMR) is 0.086, which is lower than 0.1 [40]. This result confirms that this model has a good fit. The results of the model strength test (R^2) present that CMCT and SPPT have contributed 27% of the variance in CERR, which is higher than 0.26 [42], signifying that this model has a substantial effect. Meanwhile, CMCT and SPPT have contributed 35% of the variance in LDSP, which is higher than 0.26 [42], signifying that this model has a substantial effect.

The results of the effect size test (f^2) reveal that the association between CMCT and CERR has an f^2 value of 0.088, which is higher than 0.02 and smaller than 0.15 [40], denotes that it has a small effect on CERR. The association between SPPT and CERR has an f^2 value of 0.115, which is higher than 0.02 and lower than 0.15 [40], indicating that it has a small effect on CERR. The association between CMCT and LDSP has an f^2 value of 0.122, which is higher than 0.02 and lower than 0.15 [38], indicating that it has a small effect on LDSP. The association between SPPT and LDSP has an f^2 value of 0.173, which is higher than 0.02 and lower than 0.15 [40], indicating that it has a small effect on LDSP.

The results of the predictive relevance test (Q^2) display that CERR has a Q^2 value of 0.177, and LDSP has a Q^2 value of 0.231, indicating that it has predictive relevance [40]. The results of the predictive performance test (Q^2 -predict) display that all items in the PLS-SEM (0.133 to 0.266) and linear regression model RMSE (0.121 to 0.253) have values higher than zero, showing that the prediction errors are distributed symmetrically. PLS-SEM values for all items (-0.002 to -0.048) have lower prediction errors compared to the item values for linear regression model RMSE (0.002 to 0.048), showing that this model has high predictive power [43].

Table 4 shows the outcomes of the research hypothesis testing: First, CMCT is positively and significantly associated with CERR ($\beta = 0.281$; $t = 6.793$), therefore H1a is supported. Second, SPPT is positively and significantly associated with CERR ($\beta = 0.386$; $t = 7.351$), therefore H1b is supported. Third, CMCT is positively and significantly associated with LDSP ($\beta = 0.371$; $t = 8.810$), therefore H2a is supported. Fourth, SPPT is positively and significantly associated with LDSP ($\beta = 0.376$; $t = 9.757$), therefore H2b is supported. The outcome shows that mentees' career development and mentees' leadership development are significant results of mentors' communication, and support.

Table 4. Outcomes of testing the H1a, H1b, H2a, and H2b

Hypothesis	Beta value	T Statistics	Result	R ²	Decision
H1a: CMCT→CERR	0.281	6.793	Supported	0.268	Substantial effect
H1b: SPPT→CERR	0.386	7.351	Supported		
H2a: CMCT→LDSP	0.371	8.810	Supported	0.350	Substantial effect
H2b: SPPT→LDSP	0.376	0.757	Supported		

Note: Significant at *t statistics > 1.96 (two-tail test)

Finally, the importance-performance map analysis (IPMA) test presents two important outcomes, namely LDSP is the highest important (0.589) and the lowest performance (69.694). While CERR is the lowest important (0.516) and the highest performance (71.948). This test result identifies that LDSP should be given more attention to upgrade the effectiveness of the undergraduate mentoring program.

3.2. Discussion

3.2.1. Mentoring relationships are significant predictors of mentees' career development

Hypothesis 1 (H1) and Hypothesis 2 (H2) were supported. This result supports that mentors' comfortable communication and sufficient support have enhanced mentees' career development. This finding is consistent with the essence of Super's Career Development Stages Theory [26] and Krumboltz's social Learning Theory of Career Development [27], which disclose that comfortable communication and sufficient support implemented in mentoring programs are significant forms of collaborative and developmental relationships. This healthy environment will stimulate mentees to appropriately plan their career choices and this decision may lead them to make proper preparations to get better opportunities in the world of work. Hence, the essence of the theories has received strong support from previous empirical studies, which uncover that the ability of mentors to appropriately adopt comfortable communication (e.g., clarity of mentoring information and interpersonal communication) and mentors provide sufficient support (e.g., moral and instrumental aid) in structured and unstructured mentoring methods have been a significant antecedent of mentees' career development in different tertiary education institutions [12], [15], [16].

3.2.2. Mentoring relationships are significant determinants of mentees' leadership development

Hypothesis 3 (H3) and Hypothesis 4 (H4) were supported. This result advocates that mentors' comfortable communication and sufficient support have upgraded mentees' leadership development. This finding is in accordance with the notion of the Higher Education Research Institute of UCLA's social change model of leadership development [22] and input-environment-outcome model [25], which reveal that comfortable communication and sufficient support practiced in mentoring programs are important types of collaborative and developmental relationships. This practice will strongly inspire mentees to develop their leadership roles in tertiary education institutions, and this may help mentees to make appropriate preparations to become potential leaders in the industry and society. The notion of the theory has received strong backing from past empirical studies, which disclose that the capability of mentors to properly execute comfortable communication (e.g., clarity of mentoring information and interpersonal communication) and mentors implement sufficient support (e.g., moral and instrumental aid) in structured and unstructured mentoring activities have been an important predictor of mentees' leadership development in respective tertiary education institutions [13], [14], [21], [30].

The IPMA results have identified the critical mentee success problem, which is mentees' leadership development. This may guide practitioners to overcome this issue by improving certain aspects of mentoring programs. Firstly, formal mentoring programs should create a specific leadership module to assist mentees in developing positive leadership traits and behavior, such as goal attainment, honesty, encouragement, good listening, decision making, hard-working, relationship, and willingness to assist others. These leadership skills may prepare mentees to become good leaders in society. Secondly, mentors should be selected from various backgrounds, such as lecturers, advanced students, professional consultants, and industrialists to conduct workshops on leadership thoughts and facilitate them to practice new problem-solving techniques through action-oriented modes, such as public speaking, simulation, and role-play.

Thirdly, learning methods that focus on one and group meetings should be diversified through blended learning, active learning, learning by observation, and learning by doing via face-to-face and online meetings. This learning method will help mentees to develop positive leadership personalities and positive mindsets that may lead to upgraded capabilities in handling study, career, financial and social problems. Finally, mentoring training methods and content should be provided to mentors at the faculty level. This training content needs to pay more attention to increasing mentors' knowledge about adults' physiological and psychological needs, as well as adult learning approaches. To master the knowledge, practical training methods via face-to-face and online meetings should be used to enhance the capability of mentors to implement inspiration, counseling, and guidance for improving mentees' traits and behavior. If the suggestion is heavily considered this may inspire mentees to support their mentoring's strategy and goals.

4. CONCLUSION

The study tested a conceptual framework developed based on the tertiary education mentoring program research literature. The measurement model analysis confirms that the study instrument has satisfied the standards of validity and reliability analyses. Thus, the results of structural equation modelling analysis reveal that mentors' communication and support are significant predictors of mentees' career and leadership development. This result also has supported and extended tertiary education mentoring program research literature mostly published in Western and Asian countries. Therefore, current research and practice within tertiary education institutions need to incorporate communication and support as key indicators of the undergraduate mentoring program domain. This study further proposes that the competency of mentors to properly perform comfortable communication and provide sufficient support will be significant predictors of subsequent positive mentee attitudes and behavior (e.g., self-efficacy, study performance, and psychosocial skills). Therefore, this positive outcome may lead to maintaining and upgrading the performance of tertiary education institutions in a time of global university ranking.

The study conclusion should consider the methodological and conceptual limitations. First, cross-sectional research data generally explain the respondents' attitudes toward the association between the study constructs. Second, this study has not discussed the association between components of the study constructs. Third, this study has only used the respondents' characteristics as controlling variables and their influence is not measured in the association between the study constructs. Thirdly, data of this study are gathered from a purposive sampling technique, and they may not be sufficient to represent the study population. Finally, the study respondents are only taken from two established public universities owned by the Malaysian federal government in Sarawak. These constraints may reduce the generalizability of the study results to other tertiary education institutions.

The study proposes some recommendations to improve future research. First, some important respondents' characteristics, such as gender, age, education, academic performance, and mentor gender should be considered in future research because they may provide meaningful approaches to understanding their diverse attitudes toward the association between the study constructs. Second, longitudinal studies should be considered if future research wants to explain the patterns of change and the direction and magnitude of causal relationships between the study constructs. Third, different types of tertiary education institutions at different states in Malaysia should be considered in future research because they may increase our understanding of the performance of the hypothetical models. Fourth, other dimensions of the undergraduate mentoring program, such as adult learning style, delivery mode, and relationship type should be considered in future research because they have widely been recognized as a predictor of mentee outcomes. Finally, other mentee outcomes such as study achievement, self-efficacy, and psychosocial skills should be considered because they have been emphasized in the undergraduate mentoring program research literature. Therefore, the recommendations need to be further discussed in future research.

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