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Academic Resiliency, Social and Emotional Learning, and Intercultural Communication of Students: A Structural Equation Model on Interpersonal Communicative Competence

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Aims: This study aimed to determine the best model for students' interpersonal communicative competence, influenced by academic resiliency, intercultural communication, and social and emotional learning.

Study Design: A non-experimental quantitative research design employing descriptive, predictive, and structural equation modeling was utilized.

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Place and Duration of Study: The study was conducted among 456 AB-Filipino and BSED Filipino students in Region XII, Philippines.

Methodology: The data collected from an adapted survey questionnaire were analyzed using measures such as mean, Pearson product-moment correlation coefficient, linear regression, and structural equation modeling.

Results: The results revealed that academic resiliency, social and emotional learning, intercultural communication, and interpersonal communicative competence of students achieved a high descriptive level, indicating frequent manifestation among the respondents. Furthermore, social and emotional learning and intercultural communication emerged as statistically significant predictors of interpersonal communicative competence. However, academic resiliency did not demonstrate statistical significance as a predictor of interpersonal communicative competence. Nonetheless, the overall model suggests that these three predictors together can significantly predict interpersonal communicative competence.

Conclusion: It was found that intercultural communicative competence significantly influenced interpersonal communicative competence, the endogenous variable. Lastly, Model 3 met all the goodness-of-fit criteria, indicating it as the best-fit model for interpersonal communicative competence. It is considered relatively parsimonious due to its good fit with fewer parameters compared to the other models.

Keywords: Academic resiliency; social and emotional learning; intercultural competence; interpersonal communicative competence; structural equational modelling; education; Philippines.

ABBREVIATIONS

KAL	: Kaligtasan
KUS	
PAG	
KAT	: Katatagan
PNS	-
PSK	
KMD	: Kakayahang Maipadama ang
	Damdamin
KIS	: Kakayahang ipagtanggol ang Sarili
PAS	: Pagsisiwalat ng Sarili
KSS	: Kaalaman sa Sarili
SAK	: Sariling Kakayahan
KON	
PLA	: Plano
MAP	: Mababang Pagkabalisa
KMM	: Kakayahang maging Malapit
PPU	: Pamamahala sa Pakikipag-ugnayan
PKS	: Pagiging Kalamado sa Sosyal
	Sitwasyon
KAK	: Kakayahan
SAL	: Saloobin
KAA	: Kaalaman
KAM	
KAS	: Kasanayan
SUP	
PSI	: Pagsasaalang-alang sa iba
PAK	: Pakikiramay
4 INIT	DODUCTION

1. INTRODUCTION

Communication is very important in everyday life. If an individual has effective communication

skills, they have the ability to provide ideas and information, even in building good relationships without problems [1]. However, the lack of communication skills among graduates has become a problem for those entering jobs, both in the public and private sectors. One significant reason many job seekers fail interviews is their lack of interpersonal communication skills, which can hinder their integration into society, impact communication methods, and affect their ability manage problems effectively [2]. Low to interpersonal communication skills can lead to interpersonal problems that affect both internalizing and externalizing behaviors. Currently, students transitioning from childhood to adulthood, seeking independence from their parents, are in a critical period where interaction with their peers is crucial. This research is especially important for schools promoting BSED-Filipino and AB-Filipino programs to assess their interpersonal communication skills using the Filipino language. These students will become language teachers in the coming years. Furthermore, future researchers conducting similar studies will have a modern foundation to improve research related to interpersonal communication skills. Lastly, this research will be beneficial for schools and departments that offer language teaching programs and use Filipino as the medium of instruction [3]. This research corresponds to previous studies indicating that interpersonal relationships have an important influence on a person's life stage and selfdevelopment [4]. This is supported by previous

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studies demonstrating its potential to improve overall human health, strengthen academic resilience, ease problem-solving, and promote a conducive physical environment [5]. Resilience comprises positive attributes possessed by individuals, which can manifest during stressful life events to mitigate the development of negative outcomes [6]. Additionally, resilience is a concept rooted in notions of support, wellbeing, and strength. While some perspectives emphasize internal characteristics such as personality, values, thinking styles, beliefs, and support, an ecological perspective social considers resilience within the context of humanenvironment relationships, which vary across dimensions, periods, and social networks or organizations [7]. Variables such as interpersonal communication, self-disclosure, and social relaxation were significant predictors of resilience. The strong correlation observed between self-disclosure and the resilience factor of social resources underscores the fundamental role of these elements in building resilience [8].

multicultural Meanwhile, in academic environments, communication among individuals from diverse social and cultural backgrounds emphasizes either interpersonal or intercultural communication skills. Both interpersonal and intercultural communication skills are essential for international students varving social, cultural, and communication norms to facilitate successful interactions with their classmates. Interpersonal communication serves as the primary aspect intercultural facilitating intergroup and communication [9].

Interpersonal communication lies at the core of human existence. It is through communication that interpersonal relationships are established. maintained, and sometimes terminated. The quality of relationships-whether positive or negative-stands as one of the most influential psychosocial predictors of an individual's physical and mental health outcomes [10]. as Communication stands one of the fundamental elements in human, as positive and effective communication is crucial for fostering strong and healthy interpersonal relationships. The quality of communication directly influences the quality of relationships [11].

In academic achievement, interpersonal communication are significant factors that influence academic resiliency [12]. High academic resilience is associated with higher student academic achievement, increased class

participation, and fewer academic behavioral issues. Students with high academic resilience successfully navigate stressful situations and challenges due to their strong performance in cognitive aspects and effective problem-solving strategies [13].

Meanwhile, social and emotional learning (SEL) can be defined as the ability to recognize and manage emotions, effectively solve problems, and establish positive relationships with others. Research shows the crucial role of SEL in fostering strong student development and academic success. Extensive studies revealed that SEL skills are teachable, promote positive development, mitigate problem behaviors, and enhance students' academic achievements and civic engagement [14]. SEL is an educational model for improving the social-emotional skills of all students and a long-term educational program that connects school, home, and community. Although there has been active research to establish evidence-based practice (EBP) of SEL programs worldwide, the quality of SEL intervention studies, which are an important part of EBP evaluation, has rarely been investigated [15]. In addition, it was found that there is a significant positive correlation between selfesteem, interpersonal relationships, intercultural communicative competence. and cultural competence. Regression analysis showed that variance for cultural competence was significantly accounted for by self-esteem, interpersonal relationships, and intercultural communicative competence. The findings of the study suggest the need for cultural competency education programs designed at the appropriate grade level for students [16].

Based on the relationships of the variables above, this study intends to examine the most appropriate model for students' interpersonal communicative skills.

This conceptual framework outlines the study variables as follows: Firstly, academic resilience encompasses self-efficacy, perceived control, planning abilities, low anxiety levels, and competence. Secondly, social and emotional learning is characterized by self-knowledge, selfmanagement, resilience, recovery skills, selfconfidence, and safety awareness. Thirdly, intercultural communication involves selfdisclosure, empathy, composure in social settings, assertiveness, consideration for others, relationship management, emotional regulation, approachability, support. social and

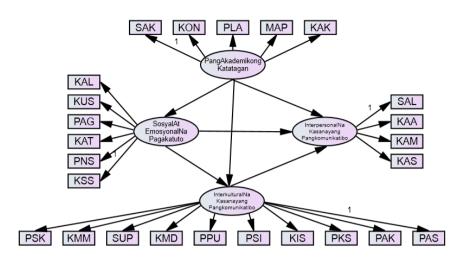


Fig. 1. Conceptual framework of the study

environmental adaptation. Fourthly, interpersonal communication abilities encompass attitudes, knowledge, awareness, and skills.

The study identifies the relationships among academic resilience, social and emotional intercultural communication, learning, and interpersonal communicative skills. Finally, the best-fit model for students' interpersonal communication skills was selected. It is important for schools offering BSED-Filipino and AB-Filipino programs to assess their students' interpersonal communicative skills in Filipino, as these students represent the next generation of language teachers. Future researchers in interpersonal communication skills will find an innovative platform to enhance their work. This study is grounded in the Socio-Ecological Model. Symbolic interactionism, founded by sociologists like George Herbert Mead and Herbert Blumer, holds significant importance in communication studies. Urie Bronfenbrenner's Socio-Ecological Model, which asserts that biological and environmental factors impact student growth and health, provides theoretical support for this research. These factors encompass family, community, cultural norms, economic conditions, political landscapes, legislative frameworks, and environmental services and supports [17]. The reciprocal cause-effect link between the self (or intrapersonal), behavior, and environment is supported by Social Cognitive Theory, upon which this study is anchored. According to this theory, each determinant-self, behavior, and environment-influences and is influenced by the These determinants form dynamic others. relationships that evolve with individual experience.

2. MATERIALS AND METHODS

2.1 Respondents

This study included public and private university students from Region XII, popularly known as SOCCSKSARGEN, which encompasses South Cotabato, Cotabato, Sultan Kudarat, Sarangani, and General Santos. These universities offer BSED Filipino and AB-Filipino. Due to their future Filipino language teachers' need for interpersonal communication skill, the researcher selected four institutions through preliminary investigation [18].

This survey included 456 respondents using raosoft calculator to get the exact data for a relevant structural model analysis. The researcher utilized stratified random sampling to give respondents a fair chance [19]. Stratified sampling strengthens the validity of study findings by ensuring that all segments of the population, reflecting its diversity, are represented proportionally. This approach allows for conclusions that are more broadly applicable to different groups within the population.

2.2 Instruments

The study used four questions to achieve its objectives. Rubin and Martin's instrument assessed students' interpersonal communication skills. The Development Study of Academic Resilience Scale for Gifted Young Scientists Education by Zulfikar, Hidayah, and Triyono assessed student academic resilience. The Development of a Social and Emotional Well-Being Scale Using ESEM and CFA: Synergistic Stories in Complex Models by Busath was also used to assess student social-emotional learning. Finally, Duisembekova's Beliefs about Intercultural Communicative Competence: The Development and Validation of a New Instrument was used to assess intercultural communication [20]. These questions were evaluated by Filipino language teachers to confirm their validity.

2.3 Research Design and Methodology

The research used a structural equation model for descriptive, correlational, and causaldesian. Interpersonal comparative communication, academic resiliency, intercultural communication, and social and emotional assessed descriptive learning were using analysis. Correlational and causal-comparative designs were used to determine variable correlations and choose the best variable to model students' interpersonal communication skills. Additionally, the researcher took additional precautions to assure research quality. Searching and downloading study guestions was the first step. Second, a specialist evaluated the questionnaires' reliability and correctness. Third, the researcher updated the questionnaires with advisers' feedback. Fourth, assessors validated questionnaires. Fifth, the researcher revised errors and incorporated validator suggestions before submitting the documents to UMERC for initial and final study approval. Sixth, after UMERC approval, the researcher received dean approvals and signatures to confirm data collection. Seventh, a statistician assessed the data for valid research. At the end of the paper, the researcher discussed the findings. This study used statistical approaches to find the best model for students' interpersonal communication skills. The measured students' mean interpersonal communication, academic resilience, intercultural skills, and social and emotional wellness. Pearson Product Moment Correlation was used to analyze students' communication. interpersonal academic resiliency, intercultural skills, and social and emotional learning. Multiple regression was used to identify student interpersonal communication predictors. The best model was chosen using the Structural Equation Model. Analysis of Moment Structure (AMOS) Goodness of Fit Statistics was used for the Alternative Model.

3. RESULTS AND DISCUSSION

3.1 Level of Academic Resiliency

Indicators of academic resiliency are shown in Table 1. Control had a high score ($\bar{x} = 3.91$, SD =

0.58). Next were self-efficacy ($\bar{x} = 3.67$, SD = 0.60), diligence ($\bar{x} = 3.58$, SD = 0.69), and plan ($\bar{x} = 3.42$, SD = 0.85). The low anxiety index showed moderate levels ($\bar{x} = 3.36$, SD = 0.81). Overall, students' academic resilience was high ($\bar{x} = 3.59$, SD = 0.54), indicating frequent resilience.

Indicators	SD Mea		Descriptive Level
Self-efficacy	0.60	3.67	High
Control	0.58	3.91	High
Plan	0.85	3.42	High
Low Anxiety	0.81	3.36	Moderate
Diligence	0.69	3.58	High
Overall	0.54	3.59	High

The result agreed Dwiastuti, et al.'s study showing high academic resiliency is associated with academic performance. It recommends improving school policy support [21]. Students' academic resiliency and performance during the pandemic were likewise linked in Amzil's study [22]. This shows that students are overcoming pandemic learning hurdles. Students with higher academic achievements exhibited greater resilience compared to those with fewer academic achievements. This study supports Valentin et al. [23] by demonstrating that high self-efficacy predicts academic stability. indicating that strong self-efficacy contributes to stability in various learning environments. This underscores the influence of self-efficacy on behavior, academic success, and learning within institutions, particularly academic colleges. where self-confident students set ambitious goals to succeed academically. Moreover, college presents significant challenges, and mental stability significantly impacts student performance [24]. Despite academic stress, especially during the pandemic, resilience has been instrumental in maintaining students' quality of life and helping them cope with pandemicrelated academic challenges [25].

3.2 Level of Social and Emotional Learning

Table 2 shows Social and Emotional Learning levels. All indicators showed high levels, with a total ($\bar{x} = 3.99$) and (SD = 0.48), indicating frequently occurrences. Self-confidence was the highest score ($\bar{x} = 4.19$, SD = 0.77). Self-awareness follows closely with ($\bar{x} = 4.15$) and (SD = 0.67), followed by resiliency, self-

management, and safety ($\bar{x} = 3.75$ and SD = 0.68).

Table 2. Level of social and emotionallearning

Indicators	SD	Mean	Descriptive Level
Self-awareness	0.67	4.15	High
Self-	0.65	3.82	High
management			
Perseverance	0.57	4.15	High
Bounce-back	0.67	3.84	High
Self-confidence	0.77	4.19	High
Safety	0.68	3.75	High
Overall	0.48	3.99	High

According to Dowling et al. [26] and Jones et al. [27], the acceptance and support of social and emotional learning programs shows their impact students' social and emotional skills. on academic performance, mental health, and overall well-being. Due to its ability to improve competence and psychosocial health, social and emotional learning programs offer unique ways to achieve goals [28]. The study by Thaintheerasombat, Supatarayan, and Chookhampaeng [29] on secondary school students showed that managing social and emotional aspects affects social and emotional intelligence skills differently depending on study period, gender, and age. Therefore, students emploving different learning methods exhibit varying levels of self-awareness. Awareness of one's emotions fosters emotional resilience, as emotional stability hinges on the ability to manage emotions and impulses [30-31]. Selfawareness aids in comprehending challenging emotions, particularly in uncertain circumstances [32]. These studies demonstrate that social and emotional learning programs enhance academic performance and mitigate problem behavior. These programs are grounded in theoretical frameworks for bolstering resilience and are directly linked to enhancing student resilience through social and emotional learning [33].

3.3 Level of Intercultural Communication

Table 3 shows students' intercultural communication skills. Results show high levels of closeness ($\bar{x} = 3.95$, SD = 0.71) and supportiveness ($\bar{x} = 3.71$, SD = 0.75). Additionally, social relaxation scored ($\bar{x} = 3.58$, SD = 0.68), indicating high levels. Students showed high levels of empathy ($\bar{x} = 3.50$, SD = 0.66) and assertiveness ($\bar{x} = 3.45$, SD = 0.59).

Interaction management scored $\bar{x} = 3.42$, SD = 0.62, indicating regular demonstration.

Table 3. Level of intercultural communication

Indicators	SD	Mean	Descriptive Level
Self-disclosure	0.75	3.20	Moderate
Empathy	0.66	3.50	High
Social	0.68	3.58	High
Relaxation			-
Assertiveness	0.59	3.45	High
Altercentrism	0.62	3.29	Moderate
Interaction	0.62	3.42	High
Management			
Expressiveness	0.81	3.49	High
Supportiveness	0.75	3.71	High
Immediacy	0.71	3.95	High
Environmental	0.58	3.39	Moderate
Control			
Overall	0.43	3.50	High

Empathy ($\bar{x} = 3.49$, SD = 0.81) and environmental control ($\bar{x} = 3.39$, SD = 0.58) indicate moderate levels. The scores for empathy ($\bar{x} = 3.29$, SD = 0.62) and self-disclosure (x = 3.20, SD = 0.75) indicate moderate student manifestation.

The study identified that students from different regions possess multicultural communication skills that require maintenance. According to Chen and Pan's study [34], some students lack direct cultural interactions, which limits their cultural awareness and knowledge. The lack of travel. exchanges. and interactions with foreigners further diminishes their cross-cultural experiences, thereby hindering their ability to communicate effectively with individuals from diverse cultures. To enhance their understanding of language and culture, students can benefit from studying communication patterns in various cultural contexts. Intercultural communication encompasses listening, speaking, reading, and writing, utilizing multidimensional learning strategies to enhance language proficiency and creativity [35].

3.4 Level of Interpersonal Communicative Competence

This table shows student intercultural communication skills. High levels of awareness ($\bar{x} = 3.87$ and SD = 0.51) and skill ($\bar{x} = 3.87$ and SD = 0.51) indicate frequent manifestation of these abilities. Additionally, moderate knowledge increase ($\bar{x} = 3.39$, SD = 0.61) indicates

occasional student demonstration. This indicator showed high levels ($\bar{x} = 3.95$, SD = 0.39), indicating students' strong interpersonal communication skills.

 Table 4. Level of interpersonal communicative competence

Indicators	SD	Mean	Descriptive
			Level
Attitudes	0.53	4.42	Very High
Knowledge	0.61	3.39	Moderate
Awareness	0.51	4.13	High
Skill	0.51	3.87	High
Overall	0.39	3.95	High

Interpersonal communication skills significantly influence behavior, particularly in educational settings where students require clear and effective communication with teachers. Speech. symbols, body language, and imagery serve as channels for conveying information, ideas, and self-expression in interpersonal communication. The primary goal of interpersonal communication is to foster mutual understanding and shared objectives [36]. Effective communication between message senders and recipients necessitates proficient interpersonal communication skills. Fulfilling responsibilities hinges on strong interpersonal skills, directly impacting the development of college students [37]. A lack of interpersonal interaction hampers socialization. Intercultural competence encompasses skills. attitudes, and knowledge essential for navigating diverse cultural contexts. Training in intercultural skills equips students to tackle future challenges [38]. Initiating changes to cultivate a positive

attitude towards learning communication skills involves structuring courses, mentoring, and implementing training initiatives in this area [39].

3.5 Significant Relationship of Academic Resiliency and Interpersonal Communicative Competence

Table 5 presents the significant relationship between academic stability and interpersonal communicative skills of students. There is a notable correlation between self-efficacy and awareness, with $r = 0.374^{**}$, as well as between self-efficacy and skill, with $r = 0.310^{**}$. Overall, self-efficacy demonstrates a positive correlation with general interpersonal communicative skills, with $r = 0.401^{**}$. Control exhibits a positive correlation with attitude ($r = 0.126^{**}$), knowledge $(r = 0.351^{**})$, awareness $(r = 0.368^{**})$, skill $(r = 0.368^{**})$ 0.461**), and general interpersonal communication skills ($r = 0.450^{**}$).

Additionally, a significant correlation is shown between the plan indicators of interpersonal communicative skills and knowledge (r = 0.359**), awareness (r = 0.222**), skill (r = 0.285**), and general interpersonal communicative skills ($r = 0.308^{**}$). Furthermore, low anxiety displays a positive correlation with physicality ($r = 0.241^{**}$), skill ($r = 0.185^{**}$), and general interpersonal communicative skills (r = 0.191**), but only a weak correlation with consciousness (r = 0.112^*). Meanwhile, ability shows a positive relationship also with knowledge (r = 0.340^{**}), skill (r = 0.335^{**}), 0.227**), awareness (r = and general interpersonal communicative skills ($r = 0.323^{**}$).

 Table 5. Significant relationship of academic resiliency and interpersonal communicative competence of students of students

Academic		Interpersona	I Communicativ	ve Competen	се
Resiliency	Attitudes	Knowledge	Awareness	Skill	Overall
Self-efficacy	.045	.374**	.310**	.401**	.392**
-	.336	.000	.000	.000	.000
Control	.126**	.351**	.368**	.461**	.450**
	.007	.000	.000	.000	.000
Plan	.012	.359**	.222**	.285**	.308**
	.806	.000	.000	.000	.000
Low Anxiety	.004	.241**	.112*	.185**	.191**
-	.938	.000	.016	.000	.000
Diligence	.024	.340**	.227**	.335**	.323**
	.603	.000	.000	.000	.000
Overall	.048	.430**	.309**	.418**	.420**
	.305	.000	.000	.000	.000

Attitude does not correlate with overall academic resilience (r = 0.048), but interpersonal knowledge, awareness, and competence do (r = 0.430**, 0.309**, and 0.418**, respectively). Based on the overall, academic resiliency and student interpersonal communication abilities are positively correlated (r = 0.420**). Academic resilience refers to the ability to overcome academic obstacles. Students who are academically stable often excel. Additionally, academically successful students possess strong interpersonal communication skills, enabling effective interactions with peers, teachers, and others [39]. According to Seo and Kwon's study [40], interpersonal communication skills also students' impact academic resilience. Regression analysis results indicate that family dynamics, interpersonal interactions, personality traits, and academic achievements influence academic resilience.

3.6 Significant Relationship between Social and Emotional Learning and Interpersonal Communicative Competence of Students

Table 6 shows how social and emotional learning affects interpersonal communication. The results show that self-awareness positively affects attitude, knowledge, awareness, skill, and interpersonal communicative skills ($r = 0.210^{**}-0.388^{**}$). Self-management positively affects attitude, knowledge, awareness, skill, and interpersonal communicative skills (r = 0.176 to

0.433). Knowledge, awareness, skill, and general interpersonal communicative skills enhance attitude stability ($r = 0.339^{**}$, 0.376^{**} , 0.364^{**} , and 0.433^{**}).

strongly corresponds with attitude. Safety knowledge, awareness, skill, and general interpersonal communicative skills (r = 0.134**- 0.312^{**}). It is unrelated to attitude (r = 0.060). Knowledge, awareness, skill, and general interpersonal communicative skills are positively correlated with self-confidence $(r = 0.241^{**})$, while attitude is not (r = 0.081). Overall, student social and emotional learning is positively correlated with attitude ($r = 0.191^{**}$), knowledge $(r = 0.384^{**})$, awareness $(r = 0.462^{**})$, skill $(r = 0.462^{**})$ and general interpersonal 0.425**). communicative skills ($r = 0.503^{**}$).

This study supports numerous individual studies and reviews on social and emotional learning. which improve self-perception, empathy. prosocial behavior, behavioral and emotional problems, and academic performance [41]. This shows that students with excellent social and emotional learning have good interpersonal communication skills. Schools should encourage social and emotional learning to boost students' academic and personal performance. Many studies have linked social and emotional learning to happiness and academic success, whereas failing to acquire these skills can lead to personal, social, and academic problems [42].

Social and		Interpersona	I Communicativ	ve Competence)
Emotional Learning	Attitudes	Knowledge	Awareness	Diligence	Overall
Self-awareness	.210**	.232**	.401**	.292**	.388**
	.000	.000	.000	.000	.000
Self-	.176**	.348**	.354**	.376**	.433**
Management	.000	.000	.000	.000	.000
Perseverance	.177**	.339**	.376**	.364**	.433**
	.000	.000	.000	.000	.000
Bounce-back	.060	.269**	.280**	.256**	.300**
	.201	.000	.000	.000	.000
Confidence	.081	.241**	.335**	.272**	.318**
	.084	.000	.000	.000	.000
Safety	.134**	.243**	.248**	.282**	.312**
-	.004	.000	.000	.000	.000
Overall	.191**	.384**	.462**	.425**	.503**
	.000	.000	.000	.000	.000

 Table 6. Significant relationship between social and emotional learning and interpersonal communicative competence of students

Intercultural	Interperson	al Communicat	ive Competend	e	
Communication Skill	Attitudes	Knowledge	Awareness	Diligence	Overall
Self-disclosure	.042	.291**	.211**	.187**	.257**
	.376	.000	.000	.000	.000
Empathy	.060	.292**	.303**	.328**	.339**
	.201	.000	.000	.000	.000
Social Relaxation	.050	.304**	.265**	.305**	.320**
	.283	.000	.000	.000	.000
Assertiveness	.037	.328**	.239**	.317**	.321**
	.429	.000	.000	.000	.000
Altercentrism	.102*	.281**	.180**	.267**	.289**
	.029	.000	.000	.000	.000
Interaction	.112*	.455**	.381**	.383**	.463**
Management	.017	.000	.000	.000	.000
Expressiveness	.080	.297**	.256**	.232**	.302**
-	.087	.000	.000	.000	.000
Supportiveness	.136**	.288**	.292**	.312**	.356**
	.004	.000	.000	.000	.000
Immediacy	.191**	.307**	.412**	.297**	.415**
	.000	.000	.000	.000	.000
Environmental Control	.115*	.462**	.367**	.417**	.474**
	.014	.000	.000	.000	.000
Overall	.148**	.518**	.460**	.476**	.557**
	.002	.000	.000	.000	.000

Table 7. Significant Relation Between Intercultural Communication Skill and Interpersonal Communicative Competence of Students

3.7 Significant Relationship Between Intercultural Communication and Interpersonal Communicative Competence of Students

This table illustrates the significant relationship between intercultural skills and interpersonal communication skills of students. Based on the results, there is a positive correlation between self-disclosure and knowledge ($r = 0.291^{**}$), awareness ($r = 0.211^{**}$), and skill ($r = 0.187^{**}$), as well as total interpersonal communicative skills ($r = 0.257^{**}$). However, it has no correlation with attitude (r = 0.042).

Similarly, significant correlation was а demonstrated between empathy and knowledge (r = 0.292**), awareness (r = 0.303**), skill (r = 0.328**), and total interpersonal communicative skills (r = 0.339**), with no correlation with attitude (r = 0.060). Calmness in social situations also showed a significant correlation with knowledge (r = 0.304^{**}), awareness (r = 0.265^{**}), skill (r = 0.305**), and general interpersonal communicative skills (r = 0.320**), but no correlation with attitude (r = 0.050). Moreover, the ability to defend oneself exhibited a significant correlation with knowledge (r = 0.328^{**}), awareness (r = 0.239^{**}), skill (r = 0.317^{**}), and general interpersonal communicative skills (r = 0.321^{**}), but not with attitude (r = 0.037).

Consideration of others showed a weak correlation with attitude (r = 0.102*), but a positive correlation with knowledge ($r = 0.281^{**}$), awareness ($r = 0.180^{**}$), skills ($r = 0.267^{**}$), and general interpersonal communicative skills (r = 0.289**). Relationship management also demonstrated a weak relationship with attitude (r = 0.112^*), but a positive relationship with knowledge ($r = 0.455^{**}$), awareness ($r = 0.381^{**}$), skill ($r = 0.383^{**}$), and general interpersonal communicative skills ($r = 0.463^{**}$). The ability to express emotions showed a positive correlation with knowledge (r = 0.297^{**}), awareness (r = 0.256^{**}), skill (r = 0.232^{**}), and general interpersonal communicative skills ($r = 0.302^{**}$). with no relationship with attitude (r = 0.080).

Additionally, intercultural communication also exhibited a positive correlation based on attitude support ($r = 0.136^{**}$), knowledge ($r = 0.288^{**}$), awareness ($r = 0.292^{**}$), skill ($r = 0.312^{**}$), and general interpersonal communicative skill ($r = 0.356^{**}$). The ability to be close to indicators of

interpersonal communicative skills such as attitude (r = 0.191**), knowledge (r = 0.307**), awareness (r = 0.412**), skills (r = 0.297**), and general interpersonal communicative skills (r = 0.415**). Finally, environmental management showed a positive relationship with knowledge (r $= 0.462^{**}$), skill (r = 0.367^{**}), awareness (r = 0.417**), and total interpersonal communicative skills ($= 0.474^{**}$). There is a weak correlation between environmental management and attitude (r = 0.115^*). Overall, intercultural communicative skills have a positive and significant relationship with attitude ($r = 0.148^{**}$), knowledge (r = 0.518^{**}), awareness (r = 0.460^{**}), skill (r = 0.476^{**}), and total interpersonal communicative skill (r = 0.557^{**}). The role of cultural competence in enhancing interpersonal and intercultural communication by discussing five main benefits. This includes improving communication skills, responding to language variety, ensuring clarity in the presentation of information, enhancing knowledge, strengthening dignity, and respect for other cultures. In addition to the essay, being a good intercultural communicator requires knowledge and performance that necessitate effectiveness, appropriateness, and empathy in communication. mentioned that It is also intercultural communication affects the communication process by influencing values. traditions, social and political relations. and the perception of those who receive and send the message [43].

3.8 Significant Influence of Academic Resiliency, Social and Emotional Learning, Intercultural Communication Skill on Interpersonal Communicative Competence of Students

This table presents the regression analysis examining the influence of academic stability, social and emotional learning, and intercultural skills on interpersonal communicative skills of students. Academic resilience scored (B) 0.048 and (β) 0.067. However, it obtained a t-value of 1.272 and a p-value of 0.204, indicating that the relationship between academic stability and interpersonal communicative skills is insignificant.

Meanwhile, social and emotional learning obtained (B) 0.177 and (β) 0.218. This was shown with a t-value of 3.832 and a p-value of 0.000, indicating a positive relationship between social and emotional learning and interpersonal

communicative skills. Additionally, intercultural skills obtained (B) 0.353 and (β) 0.385. Its t-value showed 7.820 and p-value 0.000, suggesting a positive relationship between the two variables. Overall, based on regression analysis, intercultural communicative skills and social and emotional learning are significant predictors of students' interpersonal skills.

When speaking of intercultural communication, it usually refers to situations in which the people involved in the interaction value their group identities. This could be their national origin, ethnicity, or other important aspects of the culture they belong to. But it's not just about individual identities; it also includes the deeper characteristics, history, values, customs, and communication methods associated with these larger cultural groups. Thus, intercultural communication is not only about personal differences; it is also about understanding and navigating complex contexts [44]. Initiating relationships. expressing oneself. sharing personal information, providing emotional support, and resolving conflicts are positively connected to cooperation, support, taking initiative, and mutual understanding in relationships. These skills were also strongly connected to the emotional intelligence of the studied. This suggests that these group interpersonal skills and emotional intelligence will help students thrive in society and succeed in their future professions [45]. Additionally, social and emotional learning is important for being effective in life and has a positive impact on emotional health as well as interpersonal relationships [46].

3.9 Regression Weights of the 3 Generated Models

In the first model, the relationship between interpersonal academic resilience and communicative skills shows a regression weight of 0.059**, indicating a positive relationship. Similarly, social and emotional learning exhibits a regression weight of 0.064**, also indicating a relationship with positive interpersonal skills. students' communicative However, intercultural communicative skills and interpersonal skills show no significant relationship based on the regression weight of 0.033NS.

In the second model, the regression weight between academic stability and interpersonal skills is shown at 0.053NS, indicating no

Table 8. Significant influence of academic resiliency, social and emotional learning, intercultural communication skill on interpersonal communicative competence of students

Interpersonal Communicative Competence							
(Variables)		В	В	Т	Sig.		
Constant		1.840		13.464	.000		
Academic Resiliency		.048	.067	1.272	.204		
Social and Emotional Learning		.177	.218	3.832	.000		
Intercultural Communication Skill		.353	.385	7.820	.000		
R	.593						
R ²	.352						
ΔR	.348						
F	81.855						
<u>P</u>	.000						

Table 9. Regression weights of the 3 Generated Models

	Exoge	Exogenous Variables to Endogenous Variable						
Model	Academic Resiliency	Social and Emotional Learning	I Intercultural Communicative Competence					
1	.059**	.064**	.033 ^{NS}					
2	.053 ^{NS}	.025 ^{NS}	.075 ^{NS}					
3	.033 ^{NS}	.075 ^{NS}	.131*					

Table 10. Goodness of fit measures of the three generated models

Model	P-value (>0.05)	CMIN / DF (0 <value<2)< th=""><th>GFI (>0.95)</th><th>CFI (>0.95)</th><th>NFI (>0.95)</th><th>TLI (>0.95)</th><th>RMSEA (<0.05)</th><th>P-close (>0.05)</th></value<2)<>	GFI (>0.95)	CFI (>0.95)	NFI (>0.95)	TLI (>0.95)	RMSEA (<0.05)	P-close (>0.05)
1	.000	5.151	.810	.737	.695	.710	.096	.000
2	.000	3.234	.861	.860	.810	.844	.070	.000
3	.103	1.263	.980	.991	.960	.986	.024	.997
			. –	1 1/5/		1 051	<u> </u>	

Legend: CMIN/DF – Chi Square/Degrees of Freedom; NFI – Normed Fit Index; GFI – Goodness of Fit Index; TLI -Tucker-Lewis Index; RMSEA – Root Mean Square of Error Approximation; CFI– Comparative Fit Index

significant relationship. Additionally, there is no relationship between social and emotional learning and interpersonal skills of students in this model, with a regression weight of 0.025NS. Intercultural communicative skills and interpersonal skills also show no significant relationship in this model, with a regression weight of 0.075NS.

In the third model, only intercultural communicative skills exhibit а positive relationship with interpersonal skills, with a regression weight of 0.131**. However, there is no significant relationship between the two exogenous variables, academic resilience, with a regression weight of 0.033NS, and social and emotional learning, with a regression weight of 0.075NS. with the endogenous variable interpersonal communicative skills of students.

This underscores that effective speakers must be able to control and manipulate their environment to achieve their personal goals. To do this effectively, they need to know their goals, gather information, be aware of how others respond, and choose the right communication strategy. In general, communication skills mean having personal ability in defining and achieving goals, and communicating effectively with others. Therefore, intercultural communication competence means the ability to effectively convey cultural meanings and identities in a specific communication context [47].

3.10 Summary of Goodness of Fit Measures of the Three Generated Models

The first model has a CMIN/DF ratio of 5.151, the second model has a CMIN/DF ratio of 3.234, and the third model has a CMIN/DF ratio of 1.263. Values between 0 and 2 can be said to indicate model fit. Only the third model achieves this.

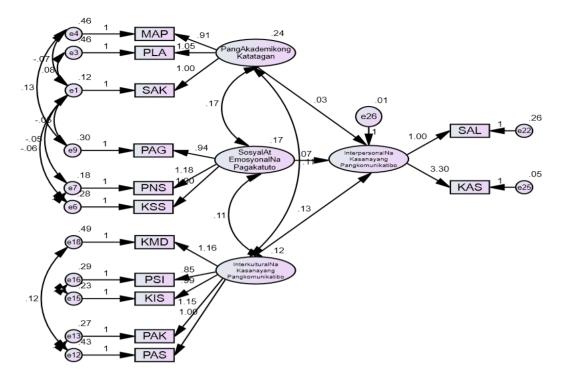


Fig. 2. Generated Model

Overall, the third model demonstrates appropriateness based on the general goodnessof-fit indices, including acceptable values. Specifically, for GFI, CFI, NFI, and TLI, only the third model achieves values greater than 0.95, indicating compatibility with all the mentioned models.

4. CONCLUSION

Students' academic resilience is strong showing frequent resilience. This shows that students can be resilient despite academic issues. Social and emotional learning markers in Region XII were high, showing that AB Filipino and BSED Filipino students typically exhibit these traits. Overall, students' intercultural communication skills were high, suggesting their strength in intercultural communication. The interpersonal communication skill was highly rated, indicating frequent demonstration by pupils. Academic resilience rated (B) 0.048 and (B) 0.067. Its tvalue is 1.272 and p-value is 0.204, showing no relationship. Social and emotional learning provided (B) 0.177 and (B) 0.218. Social and emotional learning and interpersonal communicative abilities were positively correlated with a t-value of 3.832 and a p-value of 0.000. Additionally, intercultural skills (B) 0.353 and (B) 0.385 were achieved. Its 7.820 t-value and 0.000 p-value indicate a positive relationship between the variables. Regression research shows that intercultural speaking skills and social and emotional development influence students' interpersonal abilities. General goodness-of-fit indices, including acceptable values, show that the third model is appropriate.

In conclusion, the socio-ecological model shows how environmental influences affect academic stability, social and emotional learning (SEL), interpersonal intercultural and and communication. Foundational personal attributes and skills include self-efficacy and empathy. Social support from family, friends, and teachers is vital. Organizational factors like school policies and culture determine the academic environment and affect interpersonal and intellectual communication. It also supports the sociocognitive theory, which links interactions and intellectual processes to human growth over life. Understanding how attitudes and beliefs affect learning challenges increases academic resilience. It shows how cognitive processes like understanding and learning are essential to interpersonal and intercultural communication.

Based on the results of this research, it is recommended to integrate social and emotional learning (SEL) into intercultural communication programs. Promoting academic resilience, providing targeted communication training, and enhancing experiences in diverse cultures are crucial. Establishing teaching programs and ongoing evaluation of interventions for improvement are also essential. These efforts can empower students with the necessary skills for success in academic, professional, and personal aspects of their lives.

In the context of intercultural communication, the researcher suggests that students further strengthen their intercultural communication skills to consider others in their communication and management activities within their social environment. This can further enhance their communication effectiveness with cultural Furthermore, the researcher competence. recommends intensifying programs for improving interpersonal communication, particularly in terms of knowledge acquisition, which has shown only moderate levels. Integration of these programs into classroom lessons is also necessary.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

CONSENT AND ETHICAL APPROVAL

The researcher followed ethical considerations in conducting the study, such as privacy, voluntary participation, risks, benefits, confidentiality, and conflict of interest. Additionally, the researcher secured informed consent forms from the participants and obtained an approved letter of permission to conduct the study in the locale. Certification was issued by the University of Mindanao Ethics Review Committee to the researcher for honest and valid flow of the study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Jalaludin, Mohd Amiruddin Bin Mohd, and Mohd Nor Bin Ihkasan. Interpersonal Communication Skills among the Master's Students in TVET. Developing Country Studies, Faculty of Technical and Vocational Education, Universiti Tun Hussein Onn Malaysia, 86400 Batu Pahat, Johor. 2014;4(16):110.

 Soundararajan, Gopalakrishnan, Anitha Ravikumar, and Stephen Aro-Gordon. Employers Perception on Graduate Skill Deficiency to Suit Productivity. Humanities & Social Sciences Reviews. 2020;8(3): 1415-1421.

Available:https://doi.org/10.18510/hssr.202 0.83142

 Prino, Laura E, Teresa Pasta, Fabio GM. Gastaldi, Claudio Longobardi. The Effect of Autism Spectrum Disorders, Down Syndrome, specific learning disorders and hyperactivity and attention deficits on the student-teacher relationship. Electronic Journal of Research in Educational Psychology. 2016:89-106. DOI:10.14204/eirep.38.15043.

 Antonucci, Toni C., et al. Social Relations across the Life Span: Scientific Advances, Emerging Issues, and Future Challenges. Annual Review of Developmental Psychology. 20191(1):313–336. DOI: 10.1146/annurev-devpsych-121318-085212

5. Frisby, Brandi N, et al. The Role of Classroom Relationships as Sources of Academic Resilience and Hope. Communication Quarterly. 2020;68(3): 289–305.

DOI: 10.1080/01463373.2020.1779099

- 6. Herrman, Helen, et al. What Is Resilience? Canadian Journal of Psychiatry. Revue Canadienne de Psychiatrie. 2011;56(5):258–265. DOI: 10.1177/070674371105600504
- Stokols, Daniel, et al. Enhancing the 7. Resilience of Human-Environment Systems: Social Ecological А Perspective. Ecology and Society: А Journal of Integrative Science for Resilience and Sustainability. 2013;18 (1).

DÓI: 10.5751/ES-05301-180107

- Brown, Ted, et al. Listening and Interpersonal Communication Skills as Predictors of Resilience in Occupational Therapy Students: A Cross-Sectional Study. The British Journal of Occupational Therapy. 2021;84(1):42–53. DOI: 10.1177/0308022620908503
- Sarwari, Dr Abdul Qahar, et al. Assessment of the Characteristics of Interpersonal Communication Competence among Postgraduate Students from

Different Cultures. Journal of Intercultural Communication. 2018;18(2):1–12, DOI: 10.36923/jicc.v18i2.762

- Mukherjee, Indrani. Enhancing Positive Emotions via Positive Interpersonal Communication: An Unexplored Avenue towards Well-Being of Mankind. Journal of Psychology & Clinical Psychiatry. 2017;7(4):62–65, DOI: 10.15406/jpcpy.2017.07.00448
- McAdams DP. Personal Needs and Personal Relationships." Handbook of Personal Relationships, Wiley. 1988:7–22.
- Seo, Kawoun, Myoungjin Kwon. Study on the Effects of Interpersonal-Communication Competence and Family Communication Patterns on Academic Resilience. Indian Journal of Science and Technology. 2016;9(40):1–7. DOI: 10.17485/jist/2016/v9i40/103263
- Lee, Seungyoon, et al. BAILEY C. BENEDICT.ljoc.org, Available:https://ijoc.org/index.php/ijoc/artic le/viewFile/18675/3774.2544 Accessed 2 Mar. 2023
- Cristóvão, Ana M, et al. Social and Emotional Learning and Academic Achievement in Portuguese Schools: A Bibliometric Study. Frontiers in Psychology. 2017;8, DOI: 10.3389/fpsyg.2017.01913
- Kim, Dongil, et al. The Quality and Effectiveness of Social-Emotional Learning (SEL) Intervention Studies in Korea: A Meta-Analysis. Plo One. 2022;17(6) :e0269996,

DOI: 10.1371/journal.pone.0269996 16. Park J, Lee HJ, and Kim Y. School-wide

- positive behavior support in six special schools of South Korea: Processes and Outcomes Across Years. International Journal of Developmental Disabilities. 2019;65(5):337-346.
- Lund, Crick et al. Social Determinants of Mental Disorders and the Sustainable Development Goals: A Systematic Review of Reviews. The Lancet. Psychiatry. 2018;5(4):357–369, DOI: 10.1016/s2215-0366(18)30060-9
- Bandura, Albert. "Social Cognitive Theory: An Agentic Perspective.Psychology: The Journal of the Hellenic Psychological Society. 2020;12(3):313. DOI: 10.12681/psy_hps.23964
- 19. Parsons, Van. Stratified Sampling; 2017. DOI:10.1002/9781118445112.stat05999.p ub2

- 20. Duisembekova, Zerde. Beliefs about Intercultural Communicative Competence: The Development and Validation of a New Instrument. International Journal of Instruction. 2021;14(2):103-116. Available:https://doi.org/10.29333/iji.2021.1 427a.
- 21. Dwiastuti, Ike, et al. The Impact of Academic Resilience on Academic Performance in College Students During the Covid-19 Pandemic. KnE Social Sciences. 2022;(7)1:1. DOI: 10.18502/kss.v7i1.10198
- Amzil, Amine. Academic Resilience and Its Relation to Academic Achievement for Moroccan University Students during the Covid19 Pandemic. International Education Studies, 2022;16(1):1, DOI: 10.5539/ies.v16n1p1
- Valentin, Michael Angelo, et al. Self-Efficacy and Academic Resilience Among Grade 12 Students in a Private School: A Correlational Study. Psych Educ. 2023;11(2):225-231. DOI: 10.5281/zenodo.8185748
- Fullerton, Dayna J., et al. An Integrative Process Model of Resilience in an Academic Context: Resilience Resources, Coping Strategies, and Positive Adaptation. PLOS ONE. 2021;16(2):e0246000. DOI: 10.1371/journal.pone.0246000.
- Berdida, Daniel Joseph E, Rizal Angelo N. Grande. Academic Stress, COVID-19 Anxiety, and Quality of Life among Nursing Students: The Mediating Role of Resilience.International Nursing Review. 2023;70(1):34–42, DOI: 10.1111/inr.12774
- Dowling K, Simpkin AJ, Barry MM. A Cluster Randomized-Controlled Trial of the MindOut Social and Emotional Learning Program for Disadvantaged Post-Primary School Students. Journal of Youth and Adolescence. 2019;48:1245–1263, DOI: 10.1007/s10964-019-00987-3
- 27. Jones, Stephanie M, et al. Promoting Social and Emotional Competencies in Elementary School." *The Future of Children. 2017;27(1):49–72.
- Van De Sande, Marion C, et al. Effects of an SEL Program in a Diverse Population of Low Achieving Secondary Education Students. Frontiers in Education. 2022;6:1-14,

DOI: 10.3389/feduc.2021.744388

- Thaintheerasombat, Supatarayan, and Chowwalit Chookhampaeng. The Development of a Self-Awareness Skill for High School Students with the Process of Social and Emotional Learning. Journal of Educational Issues. 2022;8(2):741-754. Available:http://files.eric.ed.gov/fulltext/ej1 362064.pdf.
- Miguel NP, Lag JC, Galindez AM. Assessment of the Development of Professional Skills in University Students: Sustainability and Serious Games. Sustainability. 2020;12:1014. DOI:10.3390/su12031014
- Valley W, Anderson M, Tichenor Blackstone N, Sterling, E, Betley E, Akabas S, et al. Towards an equity competency model for sustainable food systems education programs. Elem. Sci. Anth. 2020;8:33.

DOI: 10.1525/elementa.428

- Warrier U, John M, Warrier S. Leveraging emotional intelligence competencies for sustainable development of higher education institutions in the new normal. FIIB Bus. Rev. 2021;10:62–73. DOI: 10.1177/2319714521992032
- LaBelle, Brittany. Positive Outcomes of a Social-Emotional Learning Program to Promote Student Resiliency and Address Mental Health. Contemporary School Psychology. 2023;27:1–7. DOI:10.1007/s40688-019-00263-y.
- Chen Y, Pan Y. Intercultural Competence Cultivation in English Teaching. Journal of Shanxi University of Finance and Economics. 2023;45S2: 261– 263.
- Lu J. Exploration of the Cultivation Path of Students' Intercultural Communicative Competence in Higher Vocational English Education. Industry and Technology Forum. 2019;18(19):158–159.
- Ramaraju S. Psychological Perspectives on Interpersonal Communication. Journal of Arts, Science & Commerce. 2012;3(4): 66-73.
- Ndiung, Sabina, and Sebastianus Menggo. Problem-based learning analysis in strengthening college students' interpersonal communication skill. Journal of Education and Learning (EduLearn). 2024:18(4):1350-1361. ISSN: 2089-9823. DOI: 10.11591/edulearn.v18i4.21219

- Snow, D. "English Teaching, Intercultural Competence, and Critical Incident Exercises. Language and Intercultural Communication. 2015;15(2):285-299.
- Afzali Leila, Simin Hosseinian. The Mediating Role of Academic Competence in the Relationship between Perceived Teaching Style and Academic Resilience among Adolescents*. 2023:1-19, Available:https://doi.org/10.21203/rs.3.rs-3804112/v1
- Seo, Kawoun, and Myoungjin Kwon. Study on the Effects of Interpersonal Communication Competence and Family Communication Patterns on Academic Resilience. Indian Journal of Science and Technology. 2016;9(40):1-7 DOI: 10.17485/ijst/2016/v9i40/103263
- 41. Greenberg, Mark T. Evidence for Social and Emotional Learning in Schools. Learning Policy Institute. 2023:1-48 Available:http://files.eric.ed.gov/fulltext/ed6 30374.pdf.
- 42. Elias, Maurice J, et al. Promoting Social and Emotional Learning: Guidelines for Educators*. Association for Supervision and Curriculum Development. 1997:10.
- 43. Asante, Gideon. The Significance of Cultural Competence in Interpersonal and Intercultural Communication*. University of Cape Coast (International Studies), GRIN Verlag; 2019:1-12. Available:https://www.grin.com/document/

503301 Hajek C, Giles H. Intercultural

- Hajek C, Giles H. Intercultural Communication Competence: A Critique and Alternative Model. Handbook of Communicative and Social Skills, edited by B. Burleson and J. Greene., Mahwah, NJ, LEA. 2003:935-957
- 45. Klinkosz, Waldemar, et al. Interpersonal Competences of Students, Their Interpersonal Relations, and Emotional Intelligence. Current Issues in Personality Psychology. 2021;9(2):125–134. DOI:

https://doi.org/10.5114/cipp.2021.105733.

 Durlak J. Weissberg R. Social and Emotional Learning Programmes that Work. Better Evidence-Based Education, 2010;2:4-5, Available:http://casel.org/downloads/BETT ER_Evidence_based_Education_Social_E motional_Learning.pdf. Accessed 3 June 2010. 47. Chen, Guo-Ming, and William J. Starosta. Intercultural Communication Competence. The Global Intercultural Communication Reader, edited by Molefi Kete Asante, Yoshitaka Miike, and Jing Yin, Routledge; 2008.

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