ASEAN Journal of Management & Innovation
Vol. 8. No. 2, 57 - 71

DOI:
ajmi.stamford.edu
Received: July 2, 2021
Revised: August 30, 2021
Accepted: September 13, 2021

The Effects of Communication Attitude on Cross-National Communication Barriers with Encoding, Decoding, and Transmitting as Mediating Variables.

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Abstract
In this study, hypotheses on the effect of communication attitude on cross-national communication barriers based on the Sender-Message-Channel-Receiver (SMCR) model developed by Berlo (1960), are proposed and tested. Three indirect effects are compared in light of three mediating variables. In total, 516 employees of companies located in the Eastern Economic Corridor (EEC) in Thailand, an area where many foreign companies operate, participated in a questionnaire survey that was used as the data source. The results from the structural equation modelling (SEM) analysis show that communication attitude positively affected cross-national communication barriers. However, no direct relationship was observed between communication attitude and cross-national communication barriers. Communication attitude affects cross-national communication barriers through encoding and decoding. Encoding plays a positive and the most important role in mediating the indirect effects between communication attitude and cross-national communication barriers, whereas decoding plays a negative and limited role. Additionally, communication attitude does not affect cross-national communication barriers through transmitting. Communicators must appropriately adjust their attitude to improve the quality of cross-national communication and specifically pay attention to encoding and decoding.

Keywords: Cross-National Communication Barriers, Communication Attitude, Encoding, Decoding, Transmitting

1. Introduction
Cross-national communication is a type of human activity that takes place in a unique situation in that messages are exchanged between a producer and a receiver who belong to different countries and different cultures (Samovar et al., 2015). With the increase of globalisation in the last decades, cross-national communication is occurring in a growing number of activities that have become global, such as for example, international business, science, cross-national education, and international media (Martin & Nakayama, 2013). Effective cross-national communication, however, is often hindered by communication barriers (Barna, 1994), which remain a challenge as they break helpful links in international communication (Zhu, 2011), cause misunderstandings or language issues (Robinson & Giles, 1990), and create all sorts of problems from a procedural, semantic, physical, and psychosocial standpoints (Eisenberg, Goodall Jr, & Trethewey, 2013).

Simply put, cross-national communication barriers (CCBs) are by far the main impediment to communication among people from different cultures as they can drastically reduce effective communication. Most studies on cross-national communication focus on the barriers affecting communication (e.g. Bella & Mody, 2002; Barna, 1994). Researchers have identified a number of factors operating as barriers to cross-national communication. One such factor is the limitations due to the rules or norms of one's own culture (Jandt, 2017). Barna (1994) identified six barriers to cross-national communication: anxiety, assuming similarity instead of difference, ethnocentrism, stereotype and prejudice, nonverbal misinterpretation, and language. Filtering, emotions, information overload, defensiveness, language differences, and specific national cultural traits have also been identified by researchers as barriers (Robbins & Coulter, 2012; Yang (2005). As the ne of the most significant factors affecting cross-national communication is therefore the communicator's attitude (Lee & Choe, 2021). Cargile and Bradac (2001) found that attitude, especially the language attitude of the speaker (for example, using English as the communication language) affects the efficiency of interpersonal and intercultural communication and can lead to CCBs. According to Berlo's (1960) SMCR model, the communicator's attitude affects the processes of encoding, decoding, and transmitting. As determined by Hulbert (1994), all CCBs arise as part of this 3-step communication process.

This study focuses on communicator's attitude in relation to encoding, decoding, transmitting, and the communication barriers that arise from it. Previous studies on communication barriers mostly used a qualitative methodology to determine the factors affecting cross-national communication. For instance, Yang (2005) used a qualitative method to show that attitude and nonverbal communication are the main factors contributing to communication barriers. However, while a qualitative a method allows researchers to explore causative factors, it cannot be used to confirm relationships among factors, especially indirect effects. Thus, using a quantitative method called structural equation modelling (SEM), this study analyses these factors in a cross-national communication context; the Eastern Economic Corridor (EEC), an industrial area earmarked by the Thai government for the development of digital industries that has been attracting foreign firms (Wangkiat, 2018). Reflecting the growing business cooperation between Thailand and China, a large number of Chinese companies are relocating their factories to the EEC and are employing numerous Chinese citizens. This makes the EEC the perfect place for collecting data for this cross-national communication research since many of the people working there have experience in cross-national communication.

2. Literature Review

- *Cross-National Communication Barriers (CCBs)*

Cross-national communication barriers (CCBs) may be defined as the various factors that disturb or decrease the quality of cross-national communication (Robbins & Coulter, 2012). For instance, as reported by Buckman (2005), Chinese, unlike Americans, dislike video mails. Failure to use this mode of communication will therefore decrease the communication quality between Americans and Chinese. Due to increasing globalisation, cultural factors are playing a key role in cross-national communication (Jenifer & Raman, 2015). CCBs comes in a number of forms (Shin, 2013). The five most common barriers as identified by Robbins and Coulter (2012) include filtering, information overload, defensiveness, inefficiency, and misunderstanding. Filtering refers to the deliberate manipulation of information to make it appear more favourable to the receiver (Robbins & Coulter, 2012). For example, information is filtered when a person focuses only on the information that the manager wants to hear. The level of filtering is therefore determined by the amount of ignored information and the time of filtering.

If the amount of ignored information is high, the level of filtering is also high. More vertical levels in communication will increase the likelihood and degree of filtering (Robbins & Coulter, 2012). Another problem in cross-national communication is information overload as with the development of digital communication, the number of messages has increased exponentially. Because of the heavy bombardment of messages, one selectively chooses communication information (Robbins & Coulter, 2012). Email editing takes a considerable amount of time. It is estimated that each American devotes on average 107 minutes per day to e-mail editing (Shellenbarger, 2007). In addition to e-mails, phone calls, faxes, and video messages carry numerous messages. When recipients receive too many messages, they tend to ignore, pass over, forget, or selectively choose information (Robbins & Coulter, 2012). Defensiveness occurs to escape punishments or attacks when an individual perceives a threat (Gibb, 1960a). When people feel they are threatened, they usually attack by making sarcastic remarks, being overly judgemental, or questioning the other person's motives (Berlo, 1960). One takes outward action to avoid an attack or punishment in communication (Gibb, 1961). An increase in defensiveness is positively correlated to inefficiency in communication (Gibb, 1960b).

- Communication Attitude

Attitude is a psychological construct and a mental and emotional entity that is inherent in or characterizes a person (Perloff, 1993). Attitude not only determines the types of friends one has but also influences relationships between friends when communicating (Arasaratnam, Banerjee, & Dembek, 2010). In cross-national communication, predicting the attitude of cross-national communicators is especially useful (Presbitero & Attar, 2018). Because of diversity, cross-cultural communication may cause many conflicts (Kokarevich & Sizova, 2015). The types of attitudes found in cross-national communication include, among others, adequate explanations about one's own thoughts, communication willingness, and speakers' and listeners' openness, respect, or anger toward foreigners (Morinaga, Ohtsubo, Yamauchi, & Shimada, 2008). Directness, respect, empathy, and openness to communicate with foreigners are also considered essential elements of an attitude that can improve communication achievements (Austin & Anderson, 2010; Collier, 2015; Lane, Hays, Core, & Auerbach, 2013). Other essential elements include positive intention in cross-cultural communication (Ihtiyar & Ahmad, 2014; Ruben, 2015), and willingness to communicate with foreigners (Chiper, 2013; Raju, 2012). A positive attitude such as being tolerant, respectful, and polite is quite helpful in making communication successful (Hopson, Hart, & Bell, 2012). Confidence also plays a vital role in cross-national communication (Henderson et al., 2016).

Table 1 below summarizes the six key elements of communication attitude that affect the strength of cross-communication and the level of barriers to communication. They include: motivation (Collier, 2015), tolerance (Soter, 2016), respect and politeness (Hopson et al., 2012; Morinaga et al., 2008), openness or willingness (Lieberman & Gamst, 2015; Zakaria, 2017), peacefulness and friendliness (Henderson et al., 2016), and confidence (Nikolaeva, Kozlova, & Nurkhamitov, 2017). They represent the parameters with which to measure attitude. Communication attitudes can profoundly affect CCBs. Whenever a negative attitude is exhibited, communication barriers are likely to be high (Mak, Brown, & Wadey, 2014). According to the anxiety/uncertainty management (AUM) theory, negative attitudes such as anxiety and uncertainty can cause communicators, especially if they are strangers to each other, to experience significant problems communicating (Gudykunst, 2005). Differences in cultures may further contribute to decreasing the positive attitude one may have toward a sender/receiver and thus create CCBs (Robbins & Coulter, 2012). Hypothesis H1 can therefore be developed as follows:

H1: *Communication attitude (ATT) negatively affects CCBs.*

Table 1: Operationalized Definition of Communication Attitude

Variable	Abbr.	Conceptual definition	Operational definition	Measurements	Sources
Attitude	ATT	Attitude is a psychological construct, a mental and emotional entity that inheres in or characterizes a person.	Attitude is the manners toward a person (e.g., tolerance, respect, willingness, politeness, openness, peacefulness) or personal characteristics (e.g., motivation, sensation seeking, intention, confidence).	Motivation Tolerance Respect/ politeness Openness: willingness Peacefulness/ friendliness Confidence	(Collier, 2015), (Soter, 2016), (Hopson et al., 2012; Morinaga et al., 2008), (Lieberman & Gamst, 2015; Zakaria, 2017), (Henderson et al., 2016), (Nikolaeva et al., 2017)

- The Process of Communication

Berlo (1960) identified four key components in the process of communication that are part of the so-called SMCR model: the Source, the Message, the Channel, and the Receiver. As shown in Figure 1, the source, channel, and receiver respectively correspond to the process of (i) encoding, (ii) transmitting, and (iii) decoding messages.

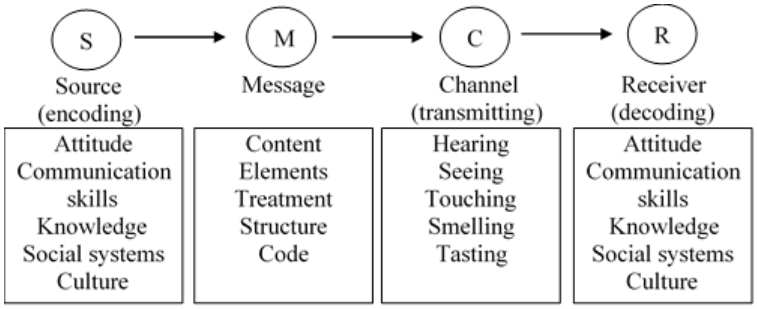

Figure 1: Berlo's (1960) SMCR Model

(i) Encoding – Encoding is the conversion of a message into symbols (Berlo, 1960). It can be verbal or nonverbal (Durham & Kellner, 2009). Verbal communication (VER) is a mediating variable that confers the capability of using symbols, lexis, articulation, and terminology to encode information (Ferguson & Terrion, 2014). Many scholars, such as for example, Kowner (2002) and Henderson, Barker, and Mak (2016) have provided questions or measurement suggestions to assess verbal encoding. In this study, the Cronbach's Alpha of verbal communication (VER) was 0.828, indicating good internal consistency using the 4 dimensions (symbol, lexis, articulation, and terminology) to measure verbal communication.

Nonverbal communication (NON) is a mediator variable that confers the capability of using voice, body language, and facial expressions to encode information (Kowner, 2002). More specifically, nonverbal communication transmits information using haptic communication, chronemic communication, gestures, body language, facial expressions, and eye contact (Giri, 2010; Kowner, 2002). Thus, it is a way of encoding messages in the form of non-linguistic representations. Durham and Kellner (2009) devised questions now widely used to measure the capability of nonverbal communication. In this study, the Cronbach's Alpha of nonverbal communication is 0.901, indicating good internal consistency using 3 dimensions (intonation, body language, and facial expressions) to measure nonverbal communication. Table 2

summarizes the assessment questions for verbal and nonverbal communication as proposed by Ferguson and Terrion (2014), Giri (2010), and Kowner (2002).

Table 1: Assessment Questions for Verbal and Nonverbal Communication

	When you communicate with foreigners, you will	Measurements
verbal	use writing or symbols	Symbol
	use agreement words to corroborate others' opinions use independent words to express your own opinion use humour or jokes use words to praise others and show respect	Lexis
	speak rationally and warmly have clear logic and grammar	Articulation
	do not use unfamiliar terminology	Terminology
Nonverbal	speak very quickly speak in a loud voice	Intonation
	let your legs shake or cross them sit while others are standing let your hands in your pocket, shake, or not move have no gesture to accompany words	Body language
	have no facial expression avoid eye contact	Facial expression

Sources: Ferguson and Terrion (2014), Giri (2010), Kowner, R. (2002).

(ii) Transmitting – Transmitting (TRA) is the process of sending encoded messages to receivers via some medium. The medium along which a message travels is a transmission and storage tool or a channel for complex, wide breadth, accurate data storage and for messages under limited time, space, and cost (Robbins & Coulter, 2012). Transmitting quality is based on the right choice of medium, which is a mediator variable in this study. Clampitt (2012) identified 5 dimensions to determine the strength of the right communication tools. They include: their complexity capacity (i.e., the capacity to transmit complex messages), breadth potential (i.e., the capacity to transmit any messages), accuracy (i.e., choosing the right tool), time-space constraint (i.e., one should not have to worry about time and distance limitations), and cost (in terms of money and energy). In this study, the Cronbach's Alpha of transmitting is 0.821.

(iii) Decoding – Decoding (DEC) consists in retranslating a sender's message (Robbins & Coulter, 2012). It refers to the communication process through which human beings interpret encoded messages into understandable information. In other words, the receiver must retranslate the sender's messages in order for them to be understandable (Dodd, 1995; Mc Quail, 1987, Schram, 1954). Decoding is a mediator variable, which means the receiving and decoding capabilities are based on seeing, hearing, touching, smelling, and testing. The five senses thus are the basic dimensions applied to measure the decoding capability of human beings to receive messages and general information (McQuail, 1987; Schram, 1954). One common assessment method is the eye movement test (Taylor, 1965). Another practical assessment method is self-report (Berlo, 1960). A self-report inventory is not only inexpensive and convenient, it also effectively reports the traits and tests of the examinee (Aiken, 1997). In daily life, message reception mostly depends on hearing and seeing (Robbins & Coulter, 2012). When hearing and seeing measure the capability of the receiver's decoding, the Cronbach's Alpha is 0.778. This means that hearing and seeing as measure dimensions also have good internal consistency.

3. Research Framework and Methodology

Based on the above discussion of the concepts relevant to this study, the following research framework was developed.

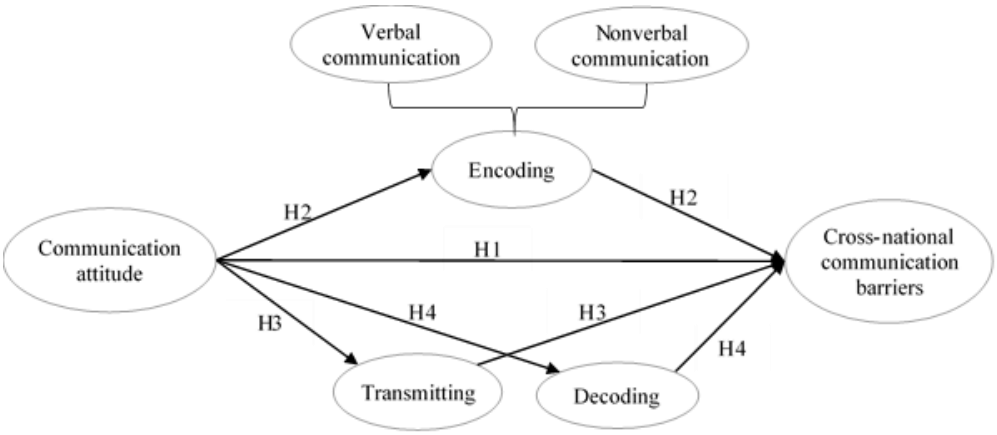

Figure 2: Research Framework (Created by the Authors for this Study)

As shown in Figure 2, communication attitude is the independent variable. It affects cross-national communication barriers (CCBs) – the dependent variable – in two ways: directly and indirectly through 3 mediation variables: encoding, decoding, and transmitting. Encoding includes two dimensions – two latent variables: verbal and nonverbal communication. Communication attitude affects interpersonal communication via the encoding, decoding, and transmitting processes (Berlo, 1960). Its impact on cross-national communication results in communication barriers in the 3 processes (encoding, decoding, and transmitting). The following 3 hypotheses can therefore be developed:

H2: *Communication Attitude (ATT) affects CCBs through the encoding (ENC) capability.*

H3: *Communication Attitude (ATT) affects CCBs through the transmitting (TRA) capability.*

H4: *Communication Attitude (ATT) affects CCBs through the decoding (DEC) capability.*

- Data Source

In this study, the respondents are Eastern Economic Corridor (EEC) employees. According to the summary of the Labour Force Survey in Thailand published in January 2017 by the National Statistical Office of Thailand, the EEC has more than 100,000 employees. Based on the Yamane's (1967) determination, the sample size used in this study was 400. With 10% of invalid questionnaire, the objective was to receive at least 440 questionnaires. To this end, 550 questionnaires were distributed and 516 duly returned as shown in Table 3. The software of SPSS version 24 and AMOS version 23 were used for the statistical analysis of the data.

Table 3: Sample Size in 3 EEC Provinces

NO.	Industrial Estate	Province	Approved projects	Sample size
1	Pinthong Industrial Estate	Chonburi	133	265
2	Amata City Industrial Estate			
3	WHA Eastern Seaboard Industrial Estate 2 (WHA ESIE 2)			
4	Pin Thong Industrial Estate 5			
5	WHA Chonburi Industrial Estate 2 (WHA CIE 2)			
6	WHA Eastern Seaboard Industrial Estate 1 (WHA ESIE 1)			
7	WHA Chonburi Industrial Estate 1 (WHA CIE 1)			
8	WHA Eastern Industrial Estate (Map Ta Phut)	Rayong	93	186
9	Eastern Seaboard Industrial Estate (ESIE)			
10	WHA Eastern Seaboard Industrial Estate 4 (WHA ESIE 4)			
11	WHA Rayong Industrial Land (WHA RIL)			
12	Industrial Estate GATEWAY CITY	Chachoengsao	33	65
13	Wellgrow Industrial Estate			

Source: EEC Investment Statistics in 2017, www.eeco.or.th/en/content/investment-statistics

A total of 320 individuals from Thailand (62%) and 196 individuals from China (38%) participated in this survey. 69.96 percent of the respondents were males, 27.33 percent females and 14 respondents chose 'other' as their gender (transgender). 71.7 percent of them (370) were 23 to 39 years old, indicating that a majority of the employees surveyed were young. Middle-aged people (50–59 years) constituted the second largest part of the study cohort (20.5%). Only one respondent was >60 years old. Nine were <22 years. The highest education level of 51.6 percent of the respondents was high school. 33.3 percent of them had a bachelor's degree. Three respondents had a master's degree, and one was a doctor. 74 respondents (14.3%) specified that they did not finish high school. 296 of the respondents (57.4%) were Buddhists, the largest religious group in this study cohort. 173 individuals mentioned 'other' as their religious identity, representing more than one-third (33.5%) of the respondents. One respondent was Jewish, 11, Muslims, and 35 Christians (6.8%). All the respondents were EEC employees with experience in cross-national communication.

4. Data Analysis and Results

- *Exploratory Factor Analysis*

The cumulative extraction sum of squared loadings for the 6 components was 62.49%. As determined by Meglen (1992), a value of cumulative variability < 0.3 is unacceptable and the cumulative extraction sum of squared loadings is better if it is >60%. The eigen values of the exploratory factor analysis (EFA) achieved the threshold, where 62.49% of the total variance was attributable to 6 factors. Therefore, a model with these 6 factors was considered adequate.

Table 4 presents the 6 factors after Varimax rotation. After suppressing the small coefficients that had an absolute value of <0.45, the items loaded on each of the 6 factors were clearly identified. Eight items (NO1–NO8) were loaded on factor 1 (nonverbal communication); 8 items (V1–V8) were loaded on factor 2 (verbal communication); 6 items (T1–T6) were loaded on factor 3 (communication attitude); 5 items (M1–M5) were loaded on factor 4 (medium, transmitting); 6 items (C1–C6) were loaded on factor 5 (CCB); and 2 items (R1, R2) were loaded on factor 6 (receiver, decoding). The clustering of the items in each factor and their wording offered the best clue for the significance of that factor.

Table 4: Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
NO1	*0.786*					
NO5	*0.770*					
NO3	*0.750*					
NO4	*0.748*					
NO2	*0.739*					
NO8	*0.719*					
NO7	*0.717*					
NO6	*0.625*					
V7		*0.728*				
V5		*0.706*				
V2		*0.685*				
V6		*0.661*				
V3		*0.642*				
V8		*0.593*				
V1		*0.575*				
V4		*0.534*				
T6			*0.815*			
T5			*0.792*			
T1			*0.746*			
T2			*0.684*			
T3			*0.678*			
T4			*0.673*			
M2				*0.799*		
M3				*0.747*		
M1				*0.742*		
M4				*0.705*		
M5				*0.485*		
C5					*0.772*	
C4					*0.735*	
C6					*0.710*	
C1					*0.672*	
C3					*0.633*	
C2					*0.509*	
R1						*0.846*
R2						*0.788*

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
Rotation converged in 7 iterations.

- *Normality Test*

Westfall and Henning (2013) determined that values of Skew and Kurtosis > 3 indicate that a variable is not normally distributed. As shown in Table 5 below, the values of all the variables of Skew and Kurtosis were <3, which indicated that all the variables were normally distributed. In addition, all the variables were acceptable to the method of maximum likelihood in the path analysis.

Table 5: Assessment of Normality

Items	*Min*	*Max*	*Skew*	*C.R.*	*Kurtosis*	*C.R.*	*Items*	*Min*	*Max*	*Skew*	*C.R.*	*Kurtosis*	*C.R.*
T6	*1*	*5*	*0.174*	*1.610*	*0.170*	*0.789*	*V8*	*1*	*5*	*0.347*	*3.213*	*-0.259*	*-1.203*
T5	*1*	*5*	*0.13*	*1.204*	*0.098*	*0.456*	*V7*	*1*	*5*	*0.225*	*2.086*	*0.035*	*0.163*
T4	*1*	*5*	*0.089*	*0.823*	*-0.466*	*-2.163*	*V6*	*1*	*5*	*0.132*	*1.221*	*-0.464*	*-2.151*
T3	*1*	*5*	*0.285*	*2.640*	*-0.520*	*-2.41*	*V5*	*1*	*5*	*0.131*	*1.218*	*-0.361*	*-1.674*
T2	*1*	*5*	*0.073*	*0.673*	*0.300*	*1.391*	*V4*	*1*	*5*	*0.374*	*3.464*	*-0.056*	*-0.259*
T1	*1*	*5*	*0.157*	*1.453*	*0.873*	*4.046*	*V3*	*1*	*5*	*0.243*	*2.256*	*-0.118*	*-0.547*
M5	*1*	*5*	*0.317*	*2.936*	*0.305*	*1.416*	*V2*	*1*	*5*	*0.305*	*2.831*	*0.242*	*1.121*
M4	*1*	*5*	*0.309*	*2.867*	*-0.125*	*-0.578*	*V1*	*1*	*5*	*0.141*	*1.304*	*0.244*	*1.132*
M3	*1*	*5*	*0.237*	*2.200*	*-0.536*	*-2.486*	*NO8*	*1*	*5*	*-0.325*	*-3.015*	*-0.281*	*-1.302*
M2	*1*	*5*	*0.367*	*3.405*	*-0.466*	*-2.159*	*NO7*	*1*	*5*	*-0.382*	*-3.545*	*-0.211*	*-0.978*
M1	*1*	*5*	*0.229*	*2.124*	*0.192*	*0.889*	*NO6*	*1*	*5*	*-0.376*	*-3.488*	*-0.595*	*-2.760*
C6	*1*	*5*	*0.299*	*2.769*	*0.221*	*1.024*	*NO5*	*1*	*5*	*-0.736*	*-6.829*	*-0.280*	*-1.299*
C5	*1*	*5*	*0.181*	*1.674*	*0.376*	*1.744*	*NO4*	*1*	*5*	*-0.510*	*-4.733*	*-0.551*	*-2.554*
C4	*1*	*5*	*0.329*	*3.050*	*0.180*	*0.836*	*NO3*	*1*	*5*	*-0.440*	*-4.080*	*-0.765*	*-3.548*
C3	*1*	*5*	*0.177*	*1.639*	*-0.072*	*-0.334*	*NO2*	*1*	*5*	*-0.005*	*-0.048*	*0.317*	*1.470*
C2	*1*	*5*	*0.029*	*0.268*	*0.117*	*0.542*	*NO1*	*1*	*5*	*-0.004*	*-0.039*	*0.338*	*1.566*
C1	*1*	*5*	*-0.234*	*-2.173*	*0.214*	*0.991*	*R2*	*1*	*5*	*0.530*	*4.916*	*-0.273*	*-1.264*
Multivariate					*386.178*	*86.185*	*R1*	*1*	*5*	*0.382*	*3.539*	*0.070*	*0.324*

- Confirmatory Factor Analysis

Two measurement models achieved the minimum requirements to run out the outputs. However, the original measurement model (see Appendix 1, left figure) had issues with the model fit. A CMIN/DF value of >3 was unacceptable and the values of some important indicators (e.g., TLI, CFI, and RMSEA) were unsatisfactory. In accordance with the modification indices (MI), the original measurement model was changed to the modified model (see Appendix 1, right figure). In the modified model, some items and their errors (e.g., NO6, NO8, V5, V6, C2, C6, M5) were deleted. In addition, some errors such as e1 and e2, e23 and e24, e31 and e32, e33, and e34 were correlated. After all these modifications, the modified measurement model was acceptable. Some important model fit indicators achieved the threshold, such as CMIN/DF < 3, TLI and CFI > 0.9, and RMSEA > 0.06. The AIC of the modified model was smaller than the original measurement model.

The validity and reliability of the six factors could then be tested according to the output data of the measurement models. As shown in Table 6, all the values of composite reliability (CR) were greater than 0.7 and all the values of average variance extracted (AVE) were greater than 0.45. In addition, all the factors' values of maximum shared variance (MSV) were smaller than those of AVE and all the factors' value of square root of AVE were greater than the inter-construct correlations. Thus, the 6 factors were suitable in terms of reliability, convergent validity, and discriminant validity.

Table 6: Validity and Reliability Test

	CR	AVE	MSV	ATT	NON	VER	CCB	TRA	REC
ATT	0.888	0.57	0.461	**0.755**					
NON	0.902	0.538	0.307	-0.14	**0.733**				
VER	0.874	0.468	0.424	0.572	-0.486	**0.684**			
CCB	0.831	0.452	0.307	0.338	-0.554	0.516	**0.673**		
TRA	0.873	0.585	0.461	0.679	-0.237	0.651	0.362	**0.765**	
REC	0.753	0.617	0.147	0.357	0.149	0.279	0.023	0.384	**0.786**
	Modified measurement model								
ATT	0.879	0.549	0.491	**0.741**					
NON	0.875	0.543	0.335	-0.137	**0.737**				
VER	0.827	0.447	0.335	0.532	-0.579	**0.668**			
CCB	0.789	0.484	0.324	0.336	-0.562	0.569	**0.695**		
TRA	0.875	0.638	0.491	0.701	-0.198	0.571	0.291	**0.799**	
REC	0.748	0.609	0.159	0.365	0.172	0.188	-0.032	0.399	**0.781**

- Path Analysis

The attitude model achieved the minimum requirements to run out the outputs in AMOS. The value of chi-square was 841.624 and the degree of freedom 311. As Figure 4 shows, the attitude model had secondary modifications based on the modified measurement model. It also refers to the indicator of the Modification Index (M.I.). The errors e15 and e16 were correlated. Item T5 and its error were deleted.

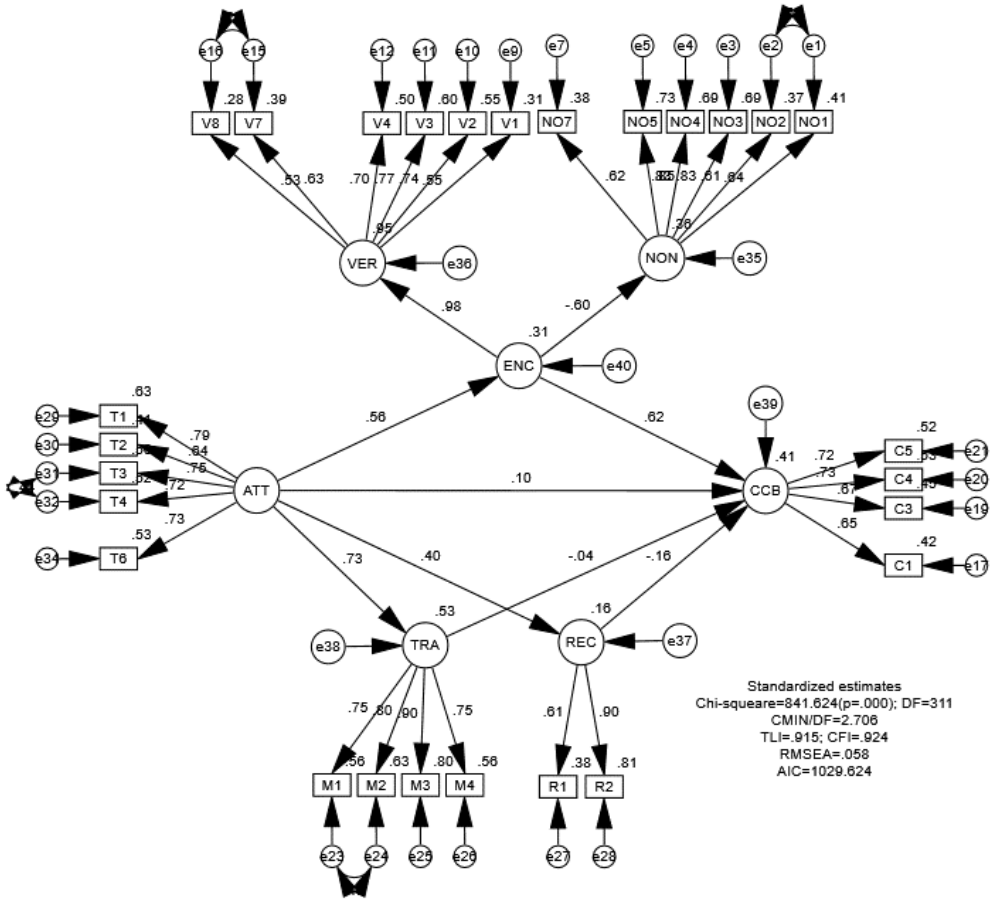

Figure 4: Path Analysis

As summarized in Table 7, the model of attitude for path analysis showed good performance in the model fit. The value of chi-square was 2.706, which is <3 and the values of TLI and CFI were greater than 0.9. The RMSEA was 0.058, which is <0.6. Overall, the model for path analysis as shown in Figure 4 had high credibility.

Table 7: Model Fit

Measure	Value	Threshold
Chi-square/df (CMIN/df)	2.706	<3 good; <5 sometimes permissible
P value for the model	0.000	>.05
TLI	0.915	>.95 great; >.90 traditional; >.80 sometimes permissible
CFI	0.924	>.95 great; >.90 traditional; >.80 sometimes permissible
AIC	1029.624	
RMSEA	0.058	<.05 good;.05-.10 moderate; >.10bad
PCLOSE	0.004	>0.5

As shown in Table 8, the direct effect of ATT on CCBs was not significant (P value = 0.296). Therefore, Hypothesis H1 was rejected. However, the effects of ATT on encoding and those of encoding on CCBs were significant (all P values < 0.05). Since they were positive, Hypothesis H2 was supported. Moreover, encoding had a positive full mediation effect on ATT and CCBs. The effect of ATT on medium was significant (P value < 0.05) but the effect of medium (MED) on CCBs was not significant (P value = 0.607). Thus, Hypothesis H3 was rejected. The effects of ATT) on recipient and that of recipient on CCBs were significant (P values < 0.05), which means that Hypothesis H4 was supported.

Table 8: Hypothesis Testing

	IDV--->MV--->DV	Hypo. sign	Estimate	Standardised Estimate	C.R.	P	Verification	Correction
H1	ATT ---> CCB	Negative (-)	0.086	0.104	1.045	0.296	Rejected	No direct
H2	ATT ---> ENC	Negative (-)	0.445	0.559	8.734	***	Supported	Full mediation
	ENC ---> CCB		0.641	0.616	5.942	***		
H3	ATT ---> TRA	Negative (-)	0. 827	0.731	13.130	***	Rejected	No mediation
	TRA ---> CCB		-0.029	-0.039	-0.514	0.607		
H4	ATT ---> REC	Negative (-)	0.392	0.395	5.345	***	Supported	Full mediation
	REC ---> CCB		-0.133	-0.160	-2.957	0.003		

Notes: *** refers to the value less than 0.001.

The results were confirmed using the Bootstrap method. As Table 9 shows, the P value of the effect of ATT on CCB was more than 0.05. No direct ATT effect on CCBs was noted. The P values of the paths from ATT) to CCBs through encoding or decoding were <0.01, indicating that these paths were significant. The other path, however, that going from ATT to CCBs through transmitting was not significant (P value = 0.595). Overall, the total effect of ATT on CCBs was significant (p value < 0.01), and the full mediation effects of the two mediation variables (encoding and decoding) were noted.

Table 9: Indirect Effect (Bootstrap$_{5000}$) Testing

Path	Estimate	Std. Estimate	P value	BC 95% Confidence Interval		Proportion
				Lower bounds (BC)	Up bounds (BC)	
Indirect						
ATT→ENC→CCB	0.285	0.344	***	0.207	0.482	96.36%
ATT→TRA→CCB	-0.024	-0.029	0.595	-0.148	0.074	-8.12%
ATT→REC→CCB	-0.052	-0.063	0.007	-0.128	-0.019	-17.65%
Direct						
ATT→CCB	0.086	0.104	0.375	-0.091	0.299	29.13%
Total						
ATT→CCB	0.295	0.357	***	0.234	0.468	100.00%

Notes: *** refers to the value less than 0.001.

5. Conclusion

Communication attitude affects CCBs. However, communication attitude has no direct effect on CCBs. It only indirectly affects CCBs through message sending and decoding. Encoding plays a positive role between communication attitude and CCBs (the standard estimate is 0.344), whereas decoding plays a negative role between communication barriers (the standard estimate is −0.063). Overall, the results suggest that communication attitude has a positive effect on CCBs (the standard estimate is 0.357). In cross-national communication, a positive communication attitude may not decrease but instead increase communication barriers. For instance, somebody may deliberately hide some information even if it distorts the original meaning. Thus, appropriately controlling communication attitude when communicating with foreigners is vital. Some communication attitudes, such as being over-motivated, over-intended, over-respected, over-tolerating, over-willing, and over-confident, are not beneficial to cross-national communication. In addition, when communicating with foreigners, people should specially pay attention to encoding and decoding as they can greatly influence the quality of cross-national communication. Obviously, many factors can increase cross-national communication barriers. Some may also alleviate them. While the model adopted in this study to examine CCBs, based on Berlo's (1960) SMCR model, has brought to light a number of them, some additional factors affecting CCBs may need to be further explored in future studies.

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Appendix 1: Measurement Models