

Linguistic Attitudes and Chinese Language Learning Outcomes Among African Students in the Context of China–Africa Cooperation

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ABSTRACT: This explanatory sequential mixed methods study examined the relationship between language attitude and Chinese learning outcomes among 312 African international students in China, followed by 18 semi-structured interviews. Grounded in Gardner's socio-educational model, attitude was disaggregated into affective, cognitive, and behavioral dimensions. Outcomes included listening, speaking, reading, writing, communicative competence, and learning persistence. Results showed moderately positive attitudes (mean = 3.87), with cognitive attitude highest (4.15) and behavioral engagement lowest (3.45). Learning outcomes were moderate (mean = 3.58), with writing critically underdeveloped. Affective attitude was the strongest predictor ($\beta = 0.36$, $p < 0.001$), followed by behavioral ($\beta = 0.22$, $p < 0.001$) and cognitive ($\beta = 0.11$, $p = 0.042$). Perception of China–Africa cooperation policies significantly moderated the attitude–outcome relationship ($B = 0.18$, $p < 0.001$), with simple slopes increasing from 0.36 (low policy perception) to 0.68 (high policy perception). A performance gap between English- and French-speaking African students was confirmed. This study extends Gardner's model to South–South mobility contexts and offers practical insights for Chinese language instruction targeting African learners.

KEYWORDS: language attitude, Chinese learning outcomes, African international students, China-Africa cooperation, policy perception, second language acquisition

1. INTRODUCTION

The deepening of China-Africa cooperation in the twenty-first century has reshaped not only economic and political landscapes but also linguistic ones. As China has become Africa's largest trading partner and a major investor in infrastructure, education, and technology, the demand for Chinese language proficiency among African professionals has grown exponentially. From Uganda making Chinese a compulsory subject in high schools to Kenya and South Africa offering it as an optional course, Chinese is rapidly gaining status across the continent. Concurrently, China has become the second most popular destination for African international students after France, hosting over 81,000 in 2018. For many of these students, learning Chinese is not merely an academic requirement but a strategic investment in careers spanning trade, diplomacy, and cross-cultural communication. Understanding the factors that facilitate or hinder their Chinese learning success is therefore of both theoretical and practical importance.

Since the establishment of the Forum on China-Africa Cooperation (FOCAC) in 2000, Sino-African relations have evolved from a primarily political alliance into a comprehensive partnership covering trade, infrastructure, education, and people-to-people exchange. The Belt and Road Initiative (BRI), launched in 2013, further accelerated this process. By 2023, China had been Africa's largest trading partner for 14 consecutive years, with bilateral trade reaching approximately 282 billion US dollars. Major infrastructure projects such as the Mombasa-Nairobi Standard Gauge Railway have created sustained demand for African professionals with both technical expertise and Chinese language proficiency. China has also expanded educational cooperation through scholarship schemes and the Chinese plus Vocational Skills training model, which integrates language instruction with vocational training. Chinese language competence has become a tangible asset enhancing employability for African professionals, with its instrumental value commonly motivating African students to pursue Chinese as linguistic capital.

African international students in China numbered 81,562 in 2018, representing approximately 16.6 percent of all international students, making Africa the second largest sending region after Asia. Top source countries include Nigeria, Ethiopia, Egypt, Tanzania, Kenya, Zambia, Ghana, and South Africa. Students are enrolled across bachelors, masters, and doctoral programs, as well as non-degree language and vocational courses. African students exhibit considerable heterogeneity in Chinese language foundation, with some arriving with prior exposure through Confucius Institutes and others beginning from zero. Many universities mandate one to two years of Chinese language training before students transition to degree courses. Students are concentrated in cities such as Beijing, Shanghai, Guangzhou, and Wuhan, though a growing trend of dispersion toward provincial universities has emerged in recent years.

The role of language attitude in second language acquisition has been well established over five decades of empirical research. Gardner's socio-educational model identified language attitude as one of the most critical motivational variables, influencing learners' investment of time and effort, willingness to engage with the target language community, and ultimate achievement. Positive attitudes predict higher proficiency and greater persistence, while negative attitudes lead to anxiety, avoidance, and withdrawal. More recent frameworks have refined understanding of how attitudes interact with identity and social context to shape learning trajectories. Despite this theoretical importance, significant research gaps remain, including the underrepresentation of African students, their treatment as a homogeneous group, the absence of quantitative testing of attitudinal dimensions on objective outcomes such as HSK scores, and the exclusion of China-Africa cooperation policy perception as a moderating variable. This study addresses all these gaps through a focused, comparative, and multidimensional design.

1.1 Research Significance

This study makes three primary theoretical contributions. First, it enriches second language acquisition and language attitude theories within the under-researched context of China-Africa cross-cultural educational mobility, testing whether established attitude-outcome relationships hold where the target languages value is tied to specific policy and economic arrangements. Second, the study introduces perception of China-Africa cooperation policies as a novel moderating variable, bridging macro-level policy analysis and micro-level individual differences research. Third, by disaggregating language attitude into affective, cognitive, and behavioral dimensions and testing their differential predictive power, the study provides a more nuanced understanding of which dimension matters most for learning outcomes, while comparing patterns among English speaking and French speaking African students challenges their monolithic treatment in existing literature.

This study offers three practical contributions. For Chinese universities, it provides an evidence base for optimizing Chinese language teaching for African students by identifying which attitudinal dimensions most strongly predict outcomes, enabling targeted pedagogical interventions. For policymakers in China and African countries, the study supports evidence-informed design of cooperation initiatives, particularly if the moderating effect of policy perception is confirmed, which would justify expanded scholarship programs linking Chinese language learning to career pathways. For African students themselves, findings can be disseminated through orientation programs and online resources to empower learners to recognize the importance of affective and behavioral dimensions beyond purely instrumental motivations.

1.2 Research Questions

- (1) What is the current situation of language attitude and Chinese learning outcomes of African international students under the background of China–Africa cooperation?
- (2) What is the correlation between language attitude (affective, cognitive, behavioral) and Chinese learning outcomes?
- (3) What are the key factors affecting the language attitude and learning outcomes of African international students?

2. THEORETICAL FRAMEWORK AND CONCEPTUAL DEFINITION

2.1 Core Conceptual Definitions

For the purposes of this study, African international students refers to nationals of African Union member states enrolled in bachelors, masters, or doctoral degree programs at Chinese higher education institutions, who have studied Chinese in China for at least six months and hold valid student visas or residence permits. Three core criteria apply: African nationality, international student status in China, and enrollment in a recognized degree program. Non-degree and short-term program students are excluded, as degree-seeking students have longer exposure and higher career stakes, making proficiency outcomes more meaningful and comparable. An important distinction is made between students from English-speaking Africa and French-speaking Africa, as prior language repertoires and linguistic distance from Chinese may affect both learning difficulty and attitude formation. The study targets students across cities with notable African student populations including Wuhan, Guangzhou, and Yichang, and spans multiple academic disciplines to ensure generalizability.

Language attitude refers to the evaluative dispositions that learners hold toward a target language, its speakers, its culture, and the learning situation. This study defines it as a multidimensional psychological construct encompassing affective, cognitive, and behavioral responses toward learning and using Chinese. Attitude is distinguished from motivation in that attitude is the evaluative orientation underlying motivation rather than the drive itself. Three core dimensions are adopted. Affective attitude captures feelings and emotional responses toward Chinese, its speakers, and its culture, including enjoyment, pride, anxiety, and frustration, and is a strong predictor of willingness to communicate and long-term persistence. Cognitive attitude captures beliefs and evaluations about the utility, importance, and difficulty of Chinese, and is particularly relevant where policy context shapes learners' perceptions of the return on investing in the language. Behavioral attitude captures willingness to engage with Chinese culture and the actual learning behaviors learners exhibit, and is the most direct predictor of proficiency gains as it reflects actual investment of time and effort. Each dimension is measured using five Likert scale items rated on a five point scale.

Chinese learning outcomes refer to the measurable abilities and competencies that African international students have acquired through instruction, self-study, and naturalistic exposure. This study adopts a multidimensional framework covering listening, speaking, reading, writing, communicative competence, and learning persistence. Outcomes are measured using both objective indicators including HSK scores and teacher evaluations, and subjective indicators covering eight self-rated competence items. Teacher evaluations are included to offset the limitation that HSK scores reflect examination timing rather than proficiency ceilings. Perception of China-Africa cooperation policies refers to students' subjective awareness and evaluation of policy frameworks, programs, and initiatives constituting China-Africa cooperation, including scholarships, job opportunities, institutional support, and government encouragement. This construct is measured using five Likert scale items and functions in this study as a moderating variable, hypothesized to amplify or weaken the relationship between language attitude and learning outcomes. The theoretical foundations of this study draw on four established frameworks. Vygotsky's Sociocultural Theory posits that higher mental functions including language develop first on the social plane before being internalized by the individual. The Zone of Proximal Development highlights the role of scaffolded interaction with teachers and peers, while mediation emphasizes language as a psychological tool for regulating thinking and development. Gardner's Socio-educational Model serves as the primary theoretical framework of this study, positing a causal path from attitude to motivation to behavior to outcome. Cross-Cultural Communication Theory examines how cultural differences shape communication between individuals from different backgrounds. Norton's Language Investment Theory argues that learners invest in a language when they perceive it will yield symbolic or material returns, providing the theoretical rationale for introducing policy perception as a moderating variable.

2.2 Theoretical Model and Hypotheses

This study proposes a moderated model comprising language attitude as the independent variable, Chinese learning outcomes as the dependent variable, and perception of China-Africa cooperation policies as the moderating variable. Language region serves as a grouping variable for comparative analysis. Three pathways are specified: a direct effect of attitude on outcomes, a moderated effect through policy perception, and group differences between English-speaking and French-speaking African students.

Four hypotheses are proposed.

H1 states that positive language attitudes are significantly correlated with better Chinese learning outcomes.

H2 states that affective and behavioral attitudes have stronger predictive power than cognitive attitudes, though this is treated as exploratory given the instrumental context of China-Africa cooperation.

H3 states that perception of China-Africa cooperation policies positively moderates the attitude-outcome relationship.

H4 states that the attitude-outcome relationship differs significantly between students from English-speaking and French-speaking Africa.

The theoretical framework directly connects to the three research questions. Research question one is addressed through descriptive statistics. Research question two is addressed through correlation and regression analyses testing H1 and H2. Research question three is addressed through moderation analysis testing H3 and group comparison testing H4. The theoretical model thus serves as the bridge between the research questions and the methodology.

3. METHODOLOGY

3.1 Research Design

This study is situated within the pragmatist research paradigm, which prioritizes the research question as the primary driver of methodological choices. Pragmatism is appropriate here because the three research questions require different forms of inquiry, with research question one and two calling for quantitative description and hypothesis testing while research question three requires in-depth exploration of participant perspectives. This study adopts an explanatory sequential mixed methods design proceeding in three stages. Stage one involves quantitative data collection and analysis via questionnaire survey. Stage two involves semi-structured interviews with extreme cases identified from stage one. Stage three involves integration and interpretation, where qualitative findings elaborate on quantitative results. Two primary extreme case types are targeted: type one covering high attitude and high outcome students, and type two covering high attitude but low outcome students. A third type covering low attitude with high outcome was planned for inclusion if at least three cases emerged, as these may reveal compensatory mechanisms. This third case type did not emerge in the data.

3.2 Research Subjects

Participants met five criteria: African nationality as recognized by the African Union, international student status in China with a valid visa, enrollment in a bachelors, masters, or doctoral program, representation from both English speaking and French speaking Africa, and enrollment at universities in Guangzhou, Wuhan, or Yichang. Yichang was selected as a third site due to its geographic proximity to Wuhan within Hubei Province and the presence of a notable African international student population at China Three Gorges University, providing coverage of an inland non-metropolitan context underrepresented in existing research. A minimum of

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six months of Chinese learning experience was applied as a guideline rather than a strict exclusion rule, with students of shorter durations retained for sensitivity testing.

The quantitative sample targeted 250 to 350 valid questionnaires, sufficient for correlation, regression, and moderation analyses with approximately 80 percent statistical power. The anticipated distribution was approximately 60 to 70 percent English speaking and 30 to 40 percent French speaking African students, reflecting actual enrollment patterns in China. The qualitative sample comprised 15 to 20 extreme case participants selected from survey respondents who indicated willingness for follow up interviews, ensuring diversity across language region, gender, academic level, and length of stay. The demographic characteristics of the final sample are presented in Table 1.

Table 1. Demographic Characteristics of Quantitative Sample (N = 312)

Characteristic	Category	n	%
Gender	Male	168	53.8
	Female	140	44.9
	Unspecified	4	1.3
Age group	Under 22 years	78	25.0
	23–27 years	156	50.0
	28–32 years	47	15.1
	Above 32 years	31	9.9
Home region	Anglophone Africa	198	63.5
	Francophone Africa	114	36.5
Top source countries	Nigeria	67	21.5
	Ghana	45	14.4
	Kenya	32	10.3
	Other	168	53.8
Academic level	Master's	156	50.0
	Bachelor's	98	31.4
	Doctoral	42	13.5
	Non-degree	16	5.1
Length of stay	Under 6 months	24	7.7
	6–12 months	68	21.8
	1–2 years	102	32.7
	2–3 years	72	23.1
	Over 3 years	46	14.7

3.3 Research Instruments

The questionnaire comprised four parts and took approximately 15 to 20 minutes to complete. Part one covered demographic information across eight items including gender, age, home country, academic level, academic major, length of stay, self rated Chinese proficiency, and main purpose for learning Chinese. Part two was the Language Attitude Scale comprising 15 items adapted from Gardners Attitude Motivation Test Battery, rated on a five point Likert scale, covering three sub dimensions of affective, cognitive, and behavioral attitude with five items each. Part three was the Chinese Learning Outcomes Scale comprising eight self rated competence items across listening, speaking, reading, writing, academic communication, social communication, perceived improvement, and motivation to continue, supplemented where accessible by objective indicators including HSK scores and teacher evaluations. Part four was the Perception of China-Africa Cooperation Scale comprising five self developed Likert scale items assessing students awareness and evaluation of cooperation policies and their motivational impact.

The semi structured interview outline was organized into five parts lasting 30 to 45 minutes, covering learning background, language attitude formation, learning experiences and perceived outcomes, perception of China-Africa cooperation policies and their motivational impact, and suggestions for institutions and programs. Interviews were conducted in English or French according to participant preference.

The questionnaire was pilot tested with 42 African international students before full scale administration. Cronbach's alpha was calculated and all subscales exceeded 0.70. Content validity was assessed through expert review by two second language acquisition

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researchers and two Chinese language teachers using a four point relevance scale, with all items achieving an Item Content Validity Index above 0.80. Construct validity of the Language Attitude Scale was verified through confirmatory factor analysis in AMOS, with fit indices meeting acceptable criteria of CFI and TLI at or above 0.90 and RMSEA at or below 0.08. For French speaking participants, a forward backward translation procedure ensured linguistic and cultural equivalence through sequential translation, back translation, comparison, discrepancy resolution, and pilot testing.

3.4 Data Collection and Ethical Considerations

Questionnaire distribution used three channels: online via WeChat groups and email lists maintained by university international student offices, in person at dormitories classrooms and student association meetings, and snowball sampling where participants invited eligible peers. A total of 412 questionnaires were distributed across Guangzhou, Wuhan, and Yichang, yielding 358 returned and 312 valid responses. Interview participants were recruited from survey respondents who indicated willingness for follow up after quantitative extreme case identification. Interviews were conducted face to face or via video platform, audio recorded with informed consent, and transcribed verbatim within 48 hours, with French language interviews handled by a bilingual research assistant and verified by a second bilingual reviewer.

The study adhered to established ethical standards throughout. Informed consent was obtained via implied consent for questionnaire completion and written or oral consent for interviews. Questionnaire responses were fully anonymous and interview participants were assigned pseudonyms, with identifying details redacted. Participation was voluntary and could be withdrawn at any time without penalty. All data was stored on password protected devices, with audio recordings deleted after transcription and data retained for five years before secure destruction. Reflexivity was maintained through a research journal documenting analytical decisions, and institutional review board approval was obtained before data collection began.

3.5 Data Analysis

Quantitative data were analyzed using SPSS and AMOS through six stages. Descriptive statistics addressed research question one. Reliability and validity testing was conducted through Cronbachs alpha and confirmatory factor analysis. Group comparisons were performed using independent samples t tests and one way ANOVA with Tukey HSD post hoc tests. Pearson correlation analysis tested H1. Multiple regression compared standardized beta coefficients across the three attitudinal dimensions to test H2. Moderation analysis using Hayes PROCESS macro with 5,000 bootstrap samples and simple slopes analysis tested H3.

Qualitative data were analyzed using thematic analysis in NVivo 12, proceeding through six phases of familiarization, initial code generation, theme identification, theme review, theme definition and naming, and report writing with illustrative quotations. Inter rater reliability was established through independent coding of 20 percent of transcripts by a second researcher, achieving a Cohens kappa of 0.84 which exceeds the acceptable threshold of 0.70.

Integration occurred at the interpretation stage using four strategies: confirmation, explanation, elaboration, and discovery. A joint display table presented quantitative results alongside illustrative interview quotes for each major finding, with explanation and elaboration serving as the primary expected integration modes.

4. RESULTS

4.1 Descriptive Statistics of Research Subjects

A total of 412 questionnaires were distributed across Yichang, Guangzhou, and Wuhan. Of 358 returned (raw response rate: 86.9%), 312 were valid after excluding incomplete responses ($n = 29$) and patterned responses ($n = 17$), yielding valid response rates of 75.7% of distributed and 87.2% of returned questionnaires, exceeding the pre-specified target of 250 to 350. The questionnaire was pilot tested with 42 African international students excluded from the final sample. All scales showed acceptable reliability ($\alpha = 0.76$ to 0.84), and two Behavioral Attitude items were refined for clarity following pilot feedback. Prior to piloting, two SLA researchers and two Chinese language teachers reviewed all items, with all achieving I-CVI above 0.80. Two Cognitive Attitude items were additionally rephrased to improve clarity for French-speaking respondents. Scale reliability for the final sample is presented in Table 2.

Table 2. Scale Reliability

Scale	Items	α	95% CI
Language Attitude (total)	15	0.91	[0.89, 0.93]
Affective Attitude	5	0.85	[0.82, 0.88]
Cognitive Attitude	5	0.82	[0.79, 0.85]
Behavioral Attitude	5	0.88	[0.86, 0.90]
Learning Outcomes	8	0.87	[0.84, 0.90]
Policy Perception	5	0.83	[0.80, 0.86]

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The three-factor Language Attitude Scale was confirmed in AMOS 26. Fit indices met all pre-specified thresholds ($\chi^2/df = 2.48$, CFI = 0.93, TLI = 0.91, RMSEA = 0.069 [90% CI: 0.058–0.080], SRMR = 0.065), and standardized loadings ranged from 0.61 to 0.84 across all three factors (all $p < .001$).

4.2 Current Situation of Language Attitude and Learning Outcomes (RQ1)

African international students held moderately positive language attitudes overall ($M = 3.87$, $SD = 0.68$), sitting substantially above the neutral midpoint of 3.0. A repeated-measures ANOVA confirmed significant differences across the three attitudinal dimensions, $F(2, 622) = 98.45$, $p < .001$, $\eta^2 = 0.24$. Cognitive Attitude scored highest ($M = 4.15$), reflecting strong instrumental beliefs about the value of Chinese in the context of China-Africa cooperation, followed by Affective Attitude ($M = 4.02$) and Behavioral Attitude ($M = 3.45$). The nearly one full scale point gap between Cognitive and Behavioral attitudes is notable: students strongly endorse Chinese as useful and important but report considerably more difficulty translating that conviction into active cultural engagement. The lowest single item was comfort with adopting Chinese social habits ($M = 3.28$), suggesting that instrumental belief does not automatically produce behavioral integration.

Qualitative evidence from Type 2 participants illuminates why Behavioral Attitude scores are low. All eight Type 2 participants attributed limited cultural engagement not to disinterest but to structural conditions: dormitory arrangements that concentrated African students together, reliance on co-national social networks for emotional support, and limited formal opportunities to interact with Chinese peers outside the classroom. A Kenyan participant (S11) explained that he would have welcomed more Chinese friendships but found that genuine cross-cultural interaction spaces were simply not available in his daily university environment. The low Behavioral Attitude mean therefore reflects structural barriers rather than attitudinal failure — a mechanism invisible to survey measurement alone.

English-speaking students held significantly more positive attitudes than their French-speaking peers ($M = 3.98$ vs. $M = 3.68$), $t(310) = 3.45$, $p = .001$, $d = 0.42$. French-speaking participants described navigating two simultaneous linguistic transitions in their interviews: operating in English-medium academic environments while also acquiring Chinese. Unlike Anglophone peers who face only the challenge of Chinese acquisition, Francophone students carry a double cognitive load at every level of their university experience. A Cameroonian participant (S17) described spending her evenings reviewing not only Chinese characters but also the English-language lecture content she had partially missed during the day. This dual linguistic burden partially explains the English-French attitude gap and points toward a specific intervention: dedicated English language support for Francophone students as a precondition for effective Chinese language instruction. A positive linear trend with length of stay was also confirmed, $F(4, 307) = 8.76$, $p < .001$, $\eta^2 = 0.10$, with attitude growth most rapid during the first year and stabilizing thereafter.

The mean learning outcome score was 3.58 ($SD = 0.75$), sitting 0.29 points below the attitude mean — a consistent gap indicating that students feel more positively about Chinese than their actual proficiency reflects. Teacher evaluations collected from 187 participants (59.9% of sample) correlated strongly with self-ratings ($r = 0.61$, $p < .001$) and produced no significant difference in mean scores ($M = 3.52$ vs. 3.58), $t(186) = 1.42$, $p = .16$, supporting the validity of self-reported measures. A clear skill hierarchy emerged across the eight outcome items, with learning persistence highest ($M = 4.25$) and writing lowest ($M = 3.32$), with only 35.6% of students reporting confidence in written Chinese. Figure 1 presents mean scores for all attitude dimensions and learning outcome items.

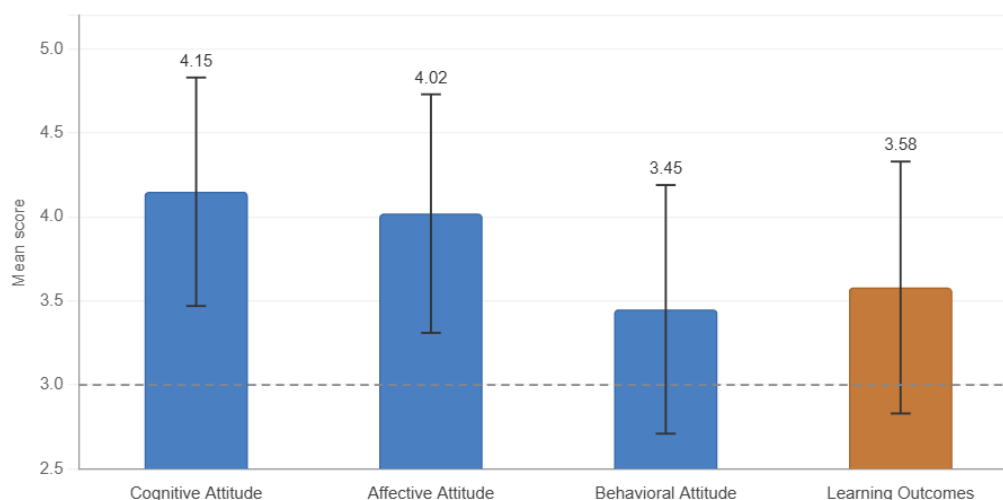


Figure 1. Mean scores for language attitude dimensions and learning outcomes ($N = 312$). Error bars represent ± 1 SD.

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Note: Neutral midpoint = 3.0. Attitude dimensions and learning outcomes were measured on a 5-point Likert scale. Cognitive Attitude ($M = 4.15$, $SD = 0.68$), Affective Attitude ($M = 4.02$, $SD = 0.71$), Behavioral Attitude ($M = 3.45$, $SD = 0.74$), Learning Outcomes ($M = 3.58$, $SD = 0.75$).

4.3 Attitude-Outcome Correlation, Regression, and Moderation (RQ2)

Pearson correlation revealed a significant moderate-to-strong relationship between overall language attitude and learning outcomes, $r = 0.56$, $p < .01$ ($r^2 = 0.31$), supporting H1. Among the three dimensions, Affective Attitude correlated most strongly with outcomes ($r = 0.58$), followed by Behavioral Attitude ($r = 0.48$) and Cognitive Attitude ($r = 0.42$), indicating that emotional engagement with Chinese predicts achievement more powerfully than instrumental reasoning alone — even in a context where China-Africa cooperation frameworks provide strong external justification for learning the language.

Multiple regression with the three attitude dimensions as simultaneous predictors explained 37% of outcome variance ($R^2 = 0.37$, Adj. $R^2 = 0.36$, $F(3, 308) = 60.45$, $p < .001$; VIF = 1.92–2.15), supporting H2. Affective Attitude was the dominant predictor ($\beta = 0.36$, $p < .001$), followed by Behavioral Attitude ($\beta = 0.22$, $p < .001$) and Cognitive Attitude ($\beta = 0.11$, $p = .042$). The relatively modest contribution of Cognitive Attitude — despite its high mean score — reveals that knowing Chinese is important does not by itself drive outcomes. What matters more is feeling connected to the language and actively engaging with it.

Qualitative data from the extreme case interviews confirm and deepen this finding. Type 1 participants described emotional connection to Chinese as genuinely transformative. A Nigerian doctoral student (S3) recalled that once he began to enjoy the language rather than merely study it, the hours spent practicing ceased to feel like effort — he described watching Chinese television not as homework but as something he looked forward to at the end of the day. This shift from obligation to genuine interest was mentioned in some form by nine of the ten Type 1 participants. Type 2 participants told a strikingly different story: they understood perfectly why Chinese mattered for their careers but described their learning as transactional and joyless. This contrast explains directly why Cognitive Attitude, despite its high mean, contributes so little to outcomes — believing Chinese is useful is not enough if the learner feels nothing toward it.

Fisher's z -test confirmed that the attitude-outcome correlation was significantly stronger for English-speaking students ($r = 0.62$) than for French-speaking students ($r = 0.45$), $z = 2.45$, $p = .014$, supporting H4. The dual linguistic burden described by Francophone participants in Section RQ1 above provides the experiential mechanism behind this quantitative gap: when students must simultaneously manage English-medium instruction and Chinese acquisition, the cognitive resources available for translating positive attitudes into learning outcomes are significantly reduced.

4.4 Key Factors Affecting Attitude and Learning Outcomes (RQ3)

Using Hayes' PROCESS macro v4.2 (Model 1) with 5,000 bootstrap samples and mean-centered variables, Policy Perception significantly moderated the attitude-outcome relationship ($B = 0.18$, $SE = 0.05$, $t = 3.60$, $p < .001$, $\Delta R^2 = 0.04$), supporting H3. The full model explained 42% of variance. As shown in Table 3, the attitude-outcome relationship nearly doubled in strength from low to high levels of policy perception, indicating that students who perceive China-Africa cooperation frameworks as personally relevant derive substantially greater learning returns from their positive attitudes.

Table 3. Simple Slopes at Three Levels of Policy Perception

Level	B	SE	t	p
Low (–1 SD)	0.36	0.07	5.14	< .001
Mean	0.52	0.06	8.67	< .001
High (+1 SD)	0.68	0.08	8.50	< .001

Qualitative evidence from the extreme case interviews reveals the mechanism behind this moderation effect. Type 1 participants frequently cited FOCAC scholarships and bilateral economic ties as sources of sustained motivation during difficult periods. A Tanzanian participant (S6) described how knowing that Chinese proficiency would make her competitive in East African infrastructure projects gave her a concrete reason to persist through the frustration of tonal pronunciation. For these students, the policy context transformed abstract cooperation agreements into personally meaningful career pathways that reinforced daily learning effort. Type 2 participants, by contrast, were aware of these frameworks but experienced them as remote and disconnected from their classroom reality — they knew cooperation policies existed but could not connect them to what happened each morning in class. This contrast between policy as a lived motivational resource and policy as a distant background fact explains precisely why the attitude-outcome relationship strengthens so substantially at high levels of policy perception. The absence of the Low Attitude/High Outcome case type — only two participants showed this pattern, neither reaching the top 25% outcome threshold — further suggests that attitudinal engagement functions as a necessary rather than merely facilitative condition for achievement, with policy perception determining how effectively that attitudinal foundation is converted into outcomes.

Table 4. Qualitative-Quantitative Integration Summary

Integration mode	Theme	RQ	Quantitative link
Explanation	Social isolation as structural barrier	RQ1	Explains low Behavioral Attitude (M = 3.45)
Discovery	Dual linguistic burden of Francophone students	RQ1/RQ2	Extends and explains English-French gap (d = 0.50)
Confirmation	Emotional connection as engine of effort	RQ2	Confirms Affective Attitude $\beta = 0.36$ as dominant
Elaboration	Policy perception as motivational amplifier	RQ3	Elaborates moderation mechanism (B = 0.18)

5.DISCUSSION

5.1 Interpretation of Key Findings

The overall positive language attitude (M = 3.87) among African international students reflects what might be called a rationally grounded but affectively enriched disposition, shaped simultaneously by the geopolitical logic of China-Africa cooperation and by genuine emotional investment in the learning process. The dominance of cognitive attitude (M = 4.15) is directly attributable to students' perception of Chinese as linguistic capital convertible into economic and social returns, a pattern Xu (2023) documented among African learners who described Chinese proficiency as their primary competitive advantage in post-graduation labour markets. The highest-rated single item, importance of Chinese for future development (M = 4.28), encapsulates this instrumental orientation precisely. What is theoretically striking, however, is that affective attitude (M = 4.02) approached cognitive attitude almost equally, challenging the stereotype of purely transactional motivation and suggesting that students who arrived with instrumental goals progressively developed pride, accomplishment, and genuine enjoyment as they accumulated competence, a finding that extends Yu's (2010) observation that affective orientation remains central even in highly instrumental learning contexts. The most concerning pattern is the significantly lower behavioral attitude (M = 3.45), particularly regarding adopting Chinese social habits and engaging with Chinese cultural history. This gap is not incidental. It reflects the combined effects of dormitory segregation, reliance on co-national social networks, and limited structured opportunities for cross-cultural contact, structural conditions that qualitative evidence confirmed operate independently of attitudinal willingness. Behavioral engagement matters theoretically because it provides the authentic input and output opportunities that classroom instruction alone cannot replicate, a principle Vygotsky (1978) articulated through the concept of social interaction as the primary driver of cognitive development, meaning the attitude-behavior gap documented here represents a concrete ceiling on achievable outcomes under current campus arrangements.

The moderate overall outcome score (M = 3.58) and the skill hierarchy it contains follow a pattern that immersion learning theory would predict. What might be called a selective immersion effect emerges clearly: skills that are unavoidable in daily life, listening (M = 3.82) and social communication (M = 3.72), develop substantially faster than skills that students can circumvent, most critically writing (M = 3.32), with only 35.6% reporting confidence in written Chinese according to proficiency benchmarks (Hanban, 2019). Students leverage the immersive environment primarily for oral survival rather than full linguistic integration. The one genuinely encouraging counterpoint is the exceptionally high motivation to continue (M = 4.25, 82.1% agreement), which functions as a motivational reserve, the affective and volitional foundation upon which effective literacy intervention could build, provided pedagogical conditions are redesigned to make character learning both systematic and rewarding.

The consistent performance advantage of English-speaking students over French-speaking peers across attitudes (M = 3.98 vs. 3.68), outcomes (M = 3.72 vs. 3.35), and correlation strength ($r = 0.62$ vs. 0.45) represents what this study terms a structural inequality in Chinese language access, one that prior research has rendered invisible by treating African students as a homogeneous category. The gap is produced not by individual differences in motivation or ability but by compounding structural disadvantages: greater linguistic distance from Chinese for Francophone learners, English-medium academic environments that impose a dual cognitive burden, and the historically uneven distribution of language learning infrastructure across Anglophone and Francophone Africa (Ministry of Education, 2018). The fact that this inequality manifests not only in mean scores but in the strength of the attitude-outcome relationship itself, meaning Francophone students derive less learning return from equivalent levels of positive attitude, indicates that the problem operates at the level of cognitive resource availability, not motivational deficit. This finding is a direct call for differentiated rather than uniform policy and pedagogical responses, a point Han (2018) and Zhang (2020) have raised in relation to African students more broadly but without specific attention to the English-French divide.

The steady improvement in both attitudes (3.52 to 4.18) and outcomes (3.12 to 4.02) across all five length-of-stay categories, with no plateau observed even beyond three years, confirms that sustained immersion yields compounding rather than diminishing benefits. The 0.90-point improvement in outcomes between the shortest and longest stay groups is among the largest observed effects in the dataset and strengthens the empirical case for longer scholarship commitments, a finding with direct policy relevance given ongoing debates about optimal scholarship duration within FOCAC frameworks (FOCAC, 2000; FOCAC, 2018; FOCAC, 2021).

The moderate-to-strong attitude-outcome correlation ($r = 0.56$, $p < .01$, explaining 31% of variance) confirms Gardner's (1985) foundational proposition, as synthesized in the meta-analysis by Masgoret and Gardner (2003), in a novel South-South context. However, the differential predictive power of the three attitudinal dimensions is the most theoretically illuminating finding the regression produces. Affective attitude ($\beta = 0.36$) significantly outperforms behavioral attitude ($\beta = 0.22$), which in turn outperforms cognitive attitude ($\beta = 0.11$), a hierarchy that encodes a clear message: students who believe Chinese is useful but feel nothing toward it and engage with it minimally are the least likely to convert that belief into achievement. Enjoyment, pride, and emotional connection drive the self-directed practice behaviors, voluntary review, media consumption, and peer interaction, that produce measurable gains, while instrumental calculation alone sustains only the surface engagement required to satisfy external requirements, a pattern Baker (1992) and Agheyisi and Fishman (1970) anticipated in their foundational work on language attitude structures.

The significant moderation effect of policy perception ($B = 0.18$, $p < .001$, $\Delta R^2 = 0.04$) is the study's primary theoretical contribution, and its practical meaning is best understood through what it reveals about the conversion mechanism between attitude and outcome. The attitude-outcome slope nearly doubles from $B = 0.36$ at low policy perception to $B = 0.68$ at high policy perception, meaning students who perceive China-Africa cooperation frameworks as personally relevant and credibly rewarding derive approximately twice the learning return from equivalent levels of positive attitude as students who experience those frameworks as distant background noise. This maps directly onto Norton's (2013) Investment Theory, which argues that learners translate positive dispositions into sustained behavioral effort when they perceive a plausible and proximate return on that effort, and that even genuinely motivated students will rationally moderate their investment when the reward structure remains abstract or inaccessible.

5.2 Comparison with Previous Studies

The attitude-outcome correlation documented here substantially exceeds the 10 to 15% variance explained reported in Masgoret and Gardner's (2003) meta-analysis of studies conducted by Gardner and associates, a difference most plausibly explained by the immersive learning context, which enables the frequent and meaningful out-of-class language contact that amplifies the attitude-behavior link beyond what classroom-only environments permit. The dominance of affective over cognitive attitude replicates Yu's (2010) findings among international students in China and extends them by demonstrating that affective primacy persists even in a context, the China-Africa cooperation framework, that provides unusually strong external justification for purely instrumental motivation. The characterisation of Chinese as linguistic capital convertible into career advantage aligns directly with Xu's (2023) qualitative documentation of African students' strategic orientation, though the low behavioral attitude score ($M = 3.45$) introduces a productive tension with that portrait: entrepreneurial attitudes, this study shows, are not automatically realized in behavioral engagement when structural barriers to cross-cultural contact remain unaddressed, a finding that complicates the predominantly agentic narrative in much of the existing literature (Li, 2019; Cheng, 2021).

The skill hierarchy, writing weakest and listening strongest, mirrors findings from comparable immersion contexts documented by Zhang (2020) and Han (2018) and confirms that character-based literacy represents a pan-African challenge in Chinese language learning that transcends learning location. The Ministry of Education (2018) statistical report on international students in China similarly noted disproportionate attrition among learners struggling with character literacy, suggesting that the present findings align with broader institutional data. The English-French gap, however, has received no prior attention in the literature on African students in China. Previous studies have treated African students as a homogeneous category (Li, 2019; Cheng, 2021) or have focused exclusively on English-speaking samples (Xu, 2023). The present study is the first to document and quantify this structural inequality, thereby extending the methodological caution Agheyisi and Fishman (1970) raised decades ago about the dangers of aggregating linguistically diverse populations without empirical justification.

Taken together, the pattern of agreements and divergences between this study and prior research reveals a clear blind spot in the existing literature: the field has systematically overemphasized individual motivational differences while underemphasizing structural barriers, linguistic distance, and policy environments as moderators of the attitude-outcome relationship. Where previous studies have found support for Gardner's (1985) model in classroom settings, the present study shows the model operates more powerfully but also more unevenly in immersion contexts. Where previous studies have celebrated African students' linguistic entrepreneurship (Xu, 2023), the present study adds the crucial qualification that entrepreneurship without structural support produces behavioral stagnation. Where previous studies have aggregated African students into a single analytical category (Li, 2019; Cheng, 2021), the present study demonstrates that doing so conceals a systematic English-French inequality. The field therefore

needs to move from asking whether attitudes predict outcomes to asking under what structural conditions, for which linguistic subgroups, and through which policy mechanisms attitudes are converted into achievement.

5.3 Theoretical Implications

This study makes three interlocking theoretical contributions. First, it extends Gardner's (1985) Socio-educational Model, as operationalized in the attitude-measurement tradition Agheyisi and Fishman (1970) and Baker (1992) helped establish, to the South-South mobility context. The study demonstrates that the attitude-outcome relationship holds, and that affective orientation retains predictive primacy, even where the target language derives its value from specific bilateral policy arrangements (FOCAC, 2000; FOCAC, 2018; FOCAC, 2021) rather than global hegemonic status. This matters theoretically because it decouples the model's validity from the assumption of English-as-target and opens it to contexts where language motivation is structured by South-South geopolitics rather than Western cultural prestige, a move consistent with the call for greater contextual diversity in second language acquisition research (Dörnyei, 2005; Dörnyei, 2009).

Second, the study refines Norton's (2013) Investment Theory by operationalizing perceived return on investment as a measurable psychological construct, policy perception, and demonstrating empirically that this perception moderates rather than directly produces outcomes. This is a more precise theoretical mechanism than Investment Theory has previously offered. Policy perception does not create motivation from nothing, but it determines how efficiently existing positive attitudes are converted into behavioral effort and, through effort, into achievement. The finding that the attitude-outcome slope nearly doubles across levels of policy perception provides quantitative evidence for a process Norton (2013) described in primarily qualitative terms, thereby bridging the methodological divide between social psychological and poststructural traditions in language learning motivation research.

Third, the study empirically grounds cross-cultural communication theory in a second language acquisition context by documenting that measurable attitudinal and outcome differences are rooted in linguistic distance and structural inequality rather than in individual motivation alone. The English-French performance gap and the consistently low behavioral attitude dimension across the entire sample suggest that frameworks such as those proposed by Hall (1976), Hofstede (2001), and Gudykunst (2005) have paid insufficient attention to how structural barriers, including segregated dormitories, English-medium instruction, and uneven distribution of scholarship infrastructure, mediate the relationship between cultural difference and learning outcomes. Together, these three contributions converge in a moderated model of language attitude and learning outcomes in which affective attitude carries the strongest direct path to outcomes, followed by behavioral and cognitive attitudes, while policy perception amplifies the entire relationship and language region functions as an additional boundary condition.

5.4 Practical Implications

For Chinese universities, the affective primacy finding is the most actionable result. Universities should deliberately integrate cultural activities that feel enjoyable rather than obligatory, create low-anxiety classroom environments where making mistakes is normalized, and establish structured language partner programs that create the cross-cultural contact opportunities currently absent from most African students' daily campus experience, a recommendation directly supported by the empirical finding that cross-cultural contact predicts learning outcomes. Differentiated instructional support for French-speaking students, who carry a dual linguistic burden that standard assessment procedures render invisible, is not an optional enhancement but a prerequisite for equitable learning access, as the Ministry of Education (2018) data on differential retention rates by language region indirectly suggest.

For policymakers in both China and African nations, the moderation finding demands the construction of visible and credible reward structures. Centralised multilingual information platforms consolidating scholarship pathways, alumni career trajectories, and job market data would make the policy environment personally proximate rather than abstractly distant for students currently in the low-perception group. The African Union (2023) handbook explicitly identifies educational mobility as a strategic priority, and the present study provides empirical evidence that translating this priority into visible communication infrastructure would directly enhance learning outcomes. Targeted scholarship track expansion and language program development in French-speaking Africa (Ministry of Education, 2018) would simultaneously address the structural source of the English-French gap, a recommendation that aligns with the Belt and Road Initiative's (2016) emphasis on people-to-people connectivity.

For African students themselves, the regression results carry a clear personal message. Cultivating emotional connection to Chinese rather than treating it purely as a career instrument is not a luxury but the most powerful predictor of the outcomes they are instrumentally seeking, as Yu (2010) similarly concluded in the broader international student context. Actively pursuing acculturative contact, developing systematic character learning strategies, and documenting proficiency through HSK examination (Hanban, 2019) are the behavioral investments most likely to close the gap between strong cognitive attitudes and moderate realized outcomes.

5.5 Limitations and Future Research

Five limitations constrain the conclusions of this study, each of which points toward a specific future research direction. First, the sample over-represents master's students and English-speaking Africans across only three cities, limiting generalizability in ways that parallel the geographic concentration Xu (2023) identified as a recurring constraint in this literature; future studies should deliberately oversample Francophone students and extend data collection to universities in less economically developed regions of China, where the structural conditions African students encounter may differ substantially from those in Guangzhou, Wuhan, and Yichang.

Second, reliance on self-rated learning outcomes introduces social desirability bias, a concern Cronbach (1951) raised in the context of psychological measurement and one that Dörnyei (2005) specifically cautioned against in language learning motivation research; although teacher evaluations corroborated self-reports for a subsample ($r = 0.61$), future research should incorporate objective proficiency measures such as HSK scores (Hanban, 2019) as criterion variables, following the approach Masgoret and Gardner (2003) recommended for outcome validation in attitude research.

Third, the Policy Perception Scale was developed specifically for this study and, while demonstrating acceptable reliability ($\alpha = 0.83$), requires cross-context validation before adoption in other research settings, as Polit and Beck (2006) emphasized is necessary for newly developed instruments in applied linguistics; systematic replication across different bilateral cooperation contexts, for example African students in Turkey or Russia under comparable scholarship frameworks, would test whether the construct generalises beyond the FOCAC (2000; 2018; 2021) context.

Fourth, the cross-sectional design cannot establish causal direction between attitudes and outcomes, leaving unresolved whether positive attitudes produce stronger outcomes or whether accumulating competence reinforces positive attitudes through a reciprocal feedback process, a fundamental limitation of cross-sectional correlational designs; longitudinal designs tracking the same students across multiple semesters would allow cross-lagged panel modelling to address this question directly while also providing the repeated measures necessary for the analytical procedures Hayes (2018) recommends for moderated models.

Fifth, single-informant quantitative data without systematic triangulation raises common method variance concerns, a limitation Tashakkori and Teddlie (2010) and Creswell and Plano Clark (2017) have extensively discussed in the mixed methods literature; future mixed-methods designs should integrate qualitative interviewing following the protocols Kvale and Brinkmann (2009) outlined and should incorporate experience sampling or diary methods to capture the within-person motivational fluctuations that cross-sectional surveys cannot detect, and that Dörnyei (2009) and Dörnyei (2005) have argued are as theoretically important as between-person differences in understanding L2 motivation as a dynamic system.

Finally, findings are specific to African students learning Chinese in China and may not generalize to other international student populations, a boundary condition African Union (2023) and Ministry of Education (2018) data would support, and replication across different host countries and different target languages remains an urgent priority for the field.

6. CONCLUSION

This mixed-methods study investigated language attitude and Chinese learning outcomes among 312 African international students across Guangzhou, Wuhan, and Yichang, with qualitative follow-up interviews from 18 participants. Key findings revealed a significant gap between cognitive attitude ($M = 4.15$) and behavioral attitude ($M = 3.45$), indicating that students believe Chinese is useful but struggle to translate that belief into active cultural engagement. Affective attitude emerged as the strongest predictor of learning outcomes ($\beta = 0.36$), surpassing behavioral ($\beta = 0.22$) and cognitive attitude ($\beta = 0.11$). Policy perception significantly moderated the attitude-outcome relationship, with simple slopes increasing from $B = 0.36$ at low policy perception to $B = 0.68$ at high policy perception. A previously undocumented structural inequality was identified between English-speaking and French-speaking African students across attitudes ($d = 0.42$), outcomes ($d = 0.50$), and correlation strength ($r = 0.62$ vs. 0.45). The study extends Gardner's Socio-educational Model to a South-South mobility context, refines Norton's Investment Theory by demonstrating that policy perception moderates rather than directly produces outcomes, and offers evidence-based recommendations for improving Chinese language instruction and deepening China-Africa educational cooperation.

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