



Ling Zhang

 <https://orcid.org/0009-0009-8836-2308>

Department of English
School of Humanities and Law
North China University of Technology,
Beijing, China
173030012@qq.com

Yuxin Wang

 <https://orcid.org/0009-0001-8830-8637>

Department of English
School of International Studies
University of International Business
and Economics, Beijing, China
514080745@qq.com

Linguistic distance, overseas Chinese education, and China's exports of cultural products

Accepted by Editor Ewa W. Ziemba | Received: March 3, 2025 | Revised: August 26, 2025; October 17, 2025 | Accepted: December 4, 2025 | Published: January 28, 2026.

© 2026 Author(s). This article is licensed under the Creative Commons Attribution-NonCommercial 4.0 license (<https://creativecommons.org/licenses/by-nc/4.0/>)

Abstract

Aim/purpose – Linguistic distance, as a core element of cultural distance, significantly affects bilateral trade flows. Mitigating its adverse impact has become a central concern for both policymakers and scholars. This study examines how linguistic distance influences China's exports of cultural products and investigates whether overseas Chinese-language education moderates this relationship.

Design/methodology/approach – This paper first examines the impact of linguistic distance on trade in Chinese cultural products using global panel data regression. It then analyzes how overseas Chinese education mitigates the obstructive effect of linguistic distance on trade through a moderation analysis.

Findings – This study reveals that although linguistic distance hinders exports, overseas Chinese-language education can effectively mitigate the obstructive effect on trade in cultural products. The heterogeneity analysis further shows that this mitigating effect is more pronounced in non-adjacent countries, Belt and Road countries, and those within the Confucian cultural circle. Finally, the non-core trade in cultural products is more strongly affected by linguistic distance.

Research implications/limitations – This study not only provides empirical evidence that may help optimize overseas Chinese education and communicate Chinese cultural narratives more effectively, but also offers insights that could contribute to enhancing competitiveness in the trade of cultural products. However, the data are limited to China's cultural trade, and the conclusions should be understood within this context. Moreover, the complexity of linguistic factors deserves further study.

Cite as: Zhang, L., & Wang, Y. (2026). Linguistic distance, overseas Chinese education, and China's exports of cultural products. *Journal of Economics and Management*, 48, 17-34. <https://doi.org/10.22367/jem.2026.48.02>

Originality/value/contribution – This study offers new evidence of how linguistic distance affects China’s exports of cultural products. It further examines the moderating effect of overseas Chinese education and its heterogeneous effects. The findings contribute to our understanding of both the constraints and proactive roles of language factors in the field of cultural exports.

Keywords: linguistic distance; overseas Chinese education; core culture; Belt and Road.
JEL classification: I2, Z1.

1. Introduction

Cultural differences represent significant trade barriers between transitional economies and their trading partners, and linguistic distance, as part of cultural distance, has a profound effect on bilateral trade (Mostafiz et al., 2024). A growing body of literature examines the effect of linguistic commonality and distance on bilateral trade (Ginsburgh et al., 2014; Melitz & Toubal, 2014; Su et al., 2023). While recent evidence highlights the cognitive benefits of bilingualism (Bialystok & Craik, 2022), the majority of studies suggest that language barriers hinder economic or trade development (Chiswick & Miller, 2005; Su et al., 2023; Mostafiz et al., 2024).

The cultural industry in China has played a positive role in promoting economic development and expanding the country’s international influence (Chen et al., 2025). Research examining the relationship between language and export trade has primarily focused on dimensions such as linguistic distance or language dissemination in China (Junting & Jiying, 2017; Ling, 2022; Weiguo & Tao, 2018). However, relatively few studies have explored how linguistic factors affect the export of Chinese cultural products. Among the limited literature, Qiyue and Pu (2017) investigated the effects of cultural distance on foreign trade in general, providing a valuable foundation but not specifically addressing linguistic distance.

Moreover, previous studies have tended to analyze these factors in isolation, overlooking the interactive and mediating relationships among them. Consequently, empirical guidance on how to alleviate the adverse effects of linguistic distance and facilitate the global expansion of Chinese cultural exports remains insufficient. To bridge these gaps and clarify the causal relationships among the relevant factors, this paper examines the impact of linguistic distance on trade in cultural products, investigates whether and how overseas Chinese education can mitigate the obstructive effects of linguistic distance, and explores how this moderating effect may vary across different contexts. The findings aim to offer both theoretical insights and practical policy implications that enhance China’s capacity to export cultural products and communicate its cultural narratives effectively.

The innovative contributions of this paper are as follows. First, it discusses the impact of linguistic distance on the exports of cultural products and examines how overseas Chinese education can mitigate the hindering effects of linguistic distance. Building on previous research, this paper further clarifies the relationships among linguistic distance, overseas Chinese education, and cultural exports. It proposes ideas to help mitigate the adverse effects of linguistic distance. Second, this study enriches our understanding of contextual heterogeneity by investigating the mechanisms underlying different empirical analyses. Specifically, it explores how the moderating effect of overseas Chinese education varies across contexts, for example, depending on whether a country borders China or participates in the Belt and Road Initiative. Accordingly, this research provides a reference for developing a comprehensive understanding of the relationships among overseas Chinese education, linguistic distance, and cultural product exports, offering novel insights to promote the growth of cultural trade.

The remainder of this paper is organized as follows. Section 2 explains the theoretical foundations and proposes the research hypotheses. Section 3 describes the empirical framework, the research model, data, and variables. Section 4 presents empirical results. Sections 5 and 6 discuss the contributions, policy implications, and limitations.

2. Theoretical background

2.1. Linguistic distance and trade in cultural products

The diversity of languages poses challenges for trading nations in accurately comprehending each other's trade legislation and guidelines (Korneliusson & Blasius, 2008). While the linguistic distance between two languages is small, communication and business barriers are largely eliminated; however, greater linguistic differences increase the costs of communication and, consequently, the difficulty of conducting business (Melitz & Toubal, 2014). Trade costs incurred due to communication difficulties between trading partners increase the cost of cross-border trade and reduce trade flows (Fink et al., 2005). Therefore, linguistic distance directly affects trade flows between countries (Su et al., 2023).

From the perspective of supply and demand, language influences international trade in cultural products by shaping transaction costs and people's cognitive preferences. The lack of clarity and vagueness in information on trade rules and regulations leads to unpredictability, typically resulting in trade disagreements (Ozkok et al., 2022). High levels of linguistic distance imply a greater

probability of cultural ambiguity and translation errors, leading to increased language friction and communication mistakes, as well as higher transaction costs that can damage trade agreements. In other words, a greater linguistic difference between the home and target countries raises communication and business difficulties (Ojala, 2015). Countries that export cultural products also have export preferences: they often prefer to sell to countries with similar cultures and languages because such markets are more likely to generate value identification and consensus, thereby lowering market thresholds (Mostafiz et al., 2024).

However, consumers typically make decisions based on their own value judgments, customs, and behavioral preferences. Linguistic distance between two countries acts as an indicator of cultural affinity, suggesting the presence or absence of shared historical, cultural, and civilizational facets (Ginsburgh & Weber, 2014). Thus, consumers in importing countries with low linguistic distance to the exporting country are more likely to share similar preferences, which in turn, boosts their consumption of cultural products. Based on this analysis, the following research hypothesis is proposed:

H1: Linguistic distance is negatively associated with trade in cultural products, suggesting that greater linguistic distance hinders China's cultural export performance.

2.2. Linguistic distance, overseas Chinese education, and trade in cultural products

The strategic promotion of language education abroad has a long history, with numerous examples evident worldwide. For instance, English has been disseminated for more than 400 years and has become the most widely used lingua franca worldwide (Hui, 2019). Similar to China's Confucius Institutes, Germany's Goethe-Institut and France's Alliance Française are state-sponsored institutions designed to promote their respective languages and cultures, thereby enhancing their countries' international influence. In this paper, "overseas language education" refers specifically to programs such as the Confucius Institute. These Institutes are designed to promote Chinese language, culture, and traditions abroad, not only to strengthen China's soft power but also to support its economic objectives (Chen et al., 2025). By teaching language and culture, they serve as a vital channel for cross-cultural communication, which plays a significant role in facilitating trade between countries that lack a common native language (Ling, 2022; Weiguo & Tao, 2018).

International linguistic and cultural exchanges can enhance mutual understanding and cultural affinity between countries, thereby mitigating the hindering effects of linguistic distance (Mengjun, 2016). In this process, language education serves as a key medium. It not only enables importing countries to better understand the cultural backgrounds of exporting countries, but also directly reduces transaction costs (Korneliussen & Blasius, 2008). Furthermore, language dissemination is a process that involves understanding, recognizing, and assimilating the culture of the exporting country, which directly or indirectly facilitates the transmission of ideas, value orientations, and emotional preferences (Junting & Jiying, 2017; Weiguo & Tao, 2018). Therefore, overseas language education, as a whole, can subtly enhance the awareness and understanding of the exporting country's culture and products in importing countries (Ling, 2022).

Meanwhile, such education stimulates interest in the home country's cultural products, thereby increasing their demand for cultural consumption (Lien et al., 2012). As a long-term process, it continuously strengthens preferences for cultural products from the home country and reinforces consumer inertia, further sustaining purchase willingness (Yonggui & Yichuan, 2021). Based on this analysis, the following hypothesis is proposed:

H2: Overseas Chinese education effectively mitigates the hindering effect of linguistic distance on trade in cultural products.

3. Research methods and procedure

3.1. Sample selection and data sources

This study focuses on countries with close cultural trade ties to China. The sample comprises 66 countries, including Belt and Road Initiative participants and China's top 10 cultural trade partners. Using panel data from 2008 to 2020, we obtained a final dataset of 739 observations after removing entries with missing values. Primary trade data were sourced from the Base pour l'Analyse du Commerce International (BACI). The International Trade Database is provided by the Centre d'Études Prospectives et d'Informations Internationales (CEPII). Data on the Confucius Institute came from the official Confucius Institute Development Report. Additional variables were compiled from the Heritage Foundation's Index of Economic Freedom, the Bureau van Dijk (BvD) database, the CEPII database, the World Bank's World Governance Indicators (WGI) database, the World Bank website, the World Atlas of Language Structures (WALS) website, the Central Intelligence Agency (CIA), and Wikipedia. All data were manually collected and organized.

The variables were constructed as follows: (1) *Culture_Trade* (China's annual number of exports of cultural products to other countries) was sourced from BACI International Trade Database by CEPII; (2) *Language_Distance* (the distance between Chinese and the languages used in other countries) was calculated using linguistic features from World Atlas of Language Structures (WALS); (3) *Language_Dissemination* (overseas Chinese education) was measured using data from the Confucius Institute Development Report, which is available on the website of the Confucius Institute Headquarters; (4) GDP (per capita gross domestic product) came from the BvD database; (5) *Total_Trade* (total trade volume) was derived from the World Bank website; (6) The variables *Neighbor* (adjacent countries), *Common_Religion* (common religion), and *Geographic_Distance* (geographic distance), which were specified on the basis of data drawn from the CEPII database; (7) *Political_Distance* (distance in terms of political systems) were obtained from the World Bank WGI database; (8) *Common_Language* was defined with data from the CIA World Factbook and Wikipedia; and (9) *Trade_Freedom* (trade freedom) was taken from the Heritage Foundations Index of Economic Freedom.

3.2. Empirical models

To investigate the effect of linguistic distance on trade in cultural products, the following empirical model is constructed:

$$Culture_{Trade} = \beta_0 + \beta_1 Language_{Distance} + \beta_2 X + \mu + \lambda + \varepsilon \quad (1)$$

Model (1) uses trade in cultural products (*Culture_Trade*) as the dependent variable and linguistic distance (*Language_Distance*) as the independent variable, with higher values indicating higher levels of linguistic distance between two countries. To ensure the reliability of the results, we control for factors *X*, including total trade (*Total_Trade*), the trade country per capita GDP (GDP), common religion (*Common_Religion*), geographic distance (*Geographic_Distance*), common language (*Common_Language*), and trade freedom (*Trade_Freedom*). This analysis centers on the significance of the regression coefficient for linguistic distance (*Language_Distance*). In addition, $\beta_0 \sim \beta_2$ are variable coefficients, μ is the individual or national fixed effect, λ is the year fixed effect, and ε is the residual term.

To examine whether overseas Chinese education mitigates the hindering effect of linguistic distance on trade in cultural products, the following empirical model is constructed:

$$\begin{aligned}
Culture_{Trade} = & \beta_0 + \beta_1 Language_{Distance} + \\
& + \beta_2 Language_{Dissemination} + \beta_3 Language_{Distance} \times \\
& \times Language_{Dissemination} + \beta_2 X + \mu + \lambda + \varepsilon
\end{aligned} \tag{2}$$

In Model (2), the dependent variable is trade in cultural products (Culture_Trade), with independent variables including linguistic distance (Language_Distance), overseas Chinese education (Language_Dissemination), and the interaction term between these two factors (Language_Distance $\times$ Language_Dissemination).

To further examine whether the inhibitory effect of linguistic distance on cultural trade varies across different contexts, the sample is divided into two groups based on the mean values of the following variables: adjacency between countries (Neighbor), level of development (Develop), membership in the Belt and Road Initiative (Belt_Road), and inclusion in the Confucian cultural circle (Confucianists). Separate regressions are then conducted using Models (1) and (2) for each subgroup.

3.3. Dependent variable

To measure the trade in cultural products, a dependent variable of this study, we adopt the definition established in the UNESCO 2009 Framework for cultural statistics, following the approach of Junting and Jiying (2017). The trade data are sourced from the United Nations Commodity Trade Database, using the HS2007 coding system. Building on this framework, our operational definition includes 85 product types, categorized into six major groups with 13 subcategories. These products encompass cultural and natural heritage, performing arts and celebratory events, visual arts and crafts, books and press, audiovisual and interactive media, and design and creative services.

3.4. Independent variable

In line with previous studies (Chiswick & Miller, 2005; Ling, 2022), this study employs the WALS index to measure the independent variable, linguistic distance. Drawing on statistical data for language populations from the CIA World Factbook, we compare the features of the primary language spoken in each country with those of Chinese. For each linguistic feature, a score of 0 is assigned if the feature is the same between the language pair, and one if it is different. The overall linguistic distance is calculated as the weighted sum of these scores.

To gauge the level of overseas Chinese education (Language_Dissemination), another independent variable, this study uses the number of Confucius Institutes in a host country as a proxy, following the methodology of Jijun et al. (2019). The data are sourced from the Confucius Institute Development Report, available on the website of the Office of Chinese Language Council International, covering the period from 2006 to 2018. Missing data for any given year were supplemented with figures from the preceding year, thereby generating a panel of annual counts of Confucius Institutes for each country.

3.5. Control variables

In line with the extant literature, we introduce the following variables as controls: total trade (Total_Trade), GDP per capita (GDP), common religion (Common_Religion), political distance (Political_Distance), geographic distance (Geographic_Distance), common language (Common_Language), and trade freedom (Trade_Freedom). Table 1 provides a complete description of these variables and their original sources.

Table 1. Variable description

Variable	Description	Source
Culture_Trade	Based on the UNESCO 2009 Framework for Cultural Statistics, 85 product types under the HS07 code were defined as cultural trade products for export value calculation	www.cepii.fr/CEPII/en/bdd_modele/bdd_modele_item.asp?id=37
Language_Distance	The linguistic distance was derived by systematically comparing 153 features of each sample language against Mandarin Chinese in the WALS database	wals.info/languoid
Language_Dissemination	The number of Confucius Institutes in the sample country	https://ci.cn/en/qqwl
Total_Trade	Total imports and exports of goods and services/Gross Domestic Product	databank.worldbank.org/
GDP	Per capita GDP	countrydata.bvdep.com
Common_Religion	Common religion is coded as one if Buddhism constitutes the largest religious group in the country, and zero otherwise	www.cepii.fr/CEPII/en
Political_Distance	Based on the six dimensions of the World Bank's Global Governance Indicators (WGI)	databank.worldbank.org/
Geographic_Distance	Constructed based on the great circle formula, with Beijing serving as the benchmark to compute the distances to the capitals of all partner countries	www.cepii.fr/CEPII/en
Common_Language	Common language variable is constructed by designating a value of one for sample countries that have Chinese as an official language, and a value of zero to those that do not	databank.worldbank.org/
Trade_Freedom	The trade freedom variable is measured using the Trade Freedom Index released by the Heritage Foundation	www.heritage.org/

4. Research findings

4.1. Descriptive statistics and correlation analysis

Table 2 presents the descriptive statistics for each variable. The natural logarithm of cultural products exports (Culture_Trade) ranges from 11.48 to 23.31, indicating substantial variation in the total volume of cultural trade between China and other countries. The mean value of linguistic distance (Language_Distance) is 0.742, with a range from 0.392 to 0.974, reflecting considerable diversity in linguistic distance across the sample. As for overseas Chinese education (Language_Dissemination), the number of Confucius Institutes ranges from 0 to 110, with the minimum indicating the absence of Confucius Institutes in some sample countries and the maximum indicating a strong presence in others. More importantly, these descriptive results reveal pronounced disparity in China's efforts to promote overseas Chinese language education and cultural dissemination abroad, which may considerably affect consumers' ability to understand and learn Chinese across different countries.

Table 2. Descriptive statistics

Variables	Mean	S.D.	MIN	MAX
Culture_Trade	17.260	2.200	11.480	23.310
Language_Distance	0.742	0.176	0.392	0.974
Language_Dissemination	3.992	11.75	0	110
Total_Trade	0.940	0.530	0.002	4.373
GDP	1.421	1.632	0.039	8.508
Common_Religion	0.156	0.363	0	1
Political_Distance	2.483	1.094	0.687	5.497
Geographic_Distance	8.617	0.496	6.862	9.815
Common_Language	0.016	0.124	0	1
Trade_Freedom	0.765	0.121	0	0.950

4.2. The impacts of linguistic distance and overseas Chinese education on trade in cultural products

4.2.1. Analysis of the impact of linguistic distance on trade in cultural products

To examine the effect of linguistic distance on trade in cultural products, we specify Empirical Model (1) with cultural product export (Culture_Trade) as the dependent variable. Regression results are reported in Table 3. Column (1) presents the baseline estimate without control variables, while column (2) incorpo-

rates controls for total trade (Total_Trade), GDP per capita (GDP), common religion (Common_Religion), geographic distance (Geographic_Distance), common language (Common_Language), and trade freedom (Trade_Freedom). The coefficient on linguistic distance (Language_Distance) is -3.648 in column (1) and -2.7611 in column (2), both statistically significant at the 1% level. The consistent negative relationship indicates that greater linguistic distance significantly reduces China's exports of cultural products.

Table 3. The impacts of linguistic distance and overseas Chinese education on trade in cultural products (n = 739)

Variables	Culture_Trade	
	(1) Coefficient(S.E)	(2) Coefficient(S.E)
Constant	22.1717 (58.83)***	16.4338 (7.19)***
Language_Distance	-3.6480 (-8.00)***	-2.7611 (-5.82)***
Political_Distance		-0.1888 (-1.04)
Total_Trade		0.2507 (4.28)***
GDP		-0.3274 (-1.35)
Common_Religion		0.0128 (0.14)
Geographic_Distance		0.8679 (2.95)***
Common_Language		0.7471 (1.07)
Trade_Freedom		-1.9500 (-3.98)***
N	739	739
Adj. R ²	0.458	0.529

Note: ***P < 0.01, **P < 0.05, *P < 0.1.

While existing literature has emphasized institutions and cultural factors in shaping trade flows, the role of language as a medium of communication deserves closer attention. Larger linguistic distance reflects lower language similarity, which can hinder mutual understanding in international transactions. In the context of cultural products, which are deeply embedded in specific linguistic and symbolic systems, firms and consumers tend to favor trade with linguistically similar partners. By contrast, when language barriers are high, companies must commit additional human and material resources to accurately interpret content and intentions, thereby raising trade costs and discouraging transactions in cultural products.

4.2.2. Analysis of the impacts of overseas Chinese education on linguistic distance and trade in cultural products

Table 4 reports the regression results examining the influence of overseas Chinese education on linguistic distance and cultural trade. The dependent variable is cultural product trade (Culture_Trade), and the key independent variables are linguistic distance (Language_Distance), overseas Chinese education (Language_Dissemination), and the interaction term (Language_Distance $\times$ Language_Dissemination). Column (1) reports estimates without control variables, while column (2) adds a set of controls, including total trade (Total_Trade), trading partners' GDP per capita (GDP), common religion (Common_Religion), political system distance (Political_Distance), geographic distance (Geographic_Distance), common language (Common_Language), and trade freedom (Trade_Freedom). The coefficient of Language_Distance is -5.779 in column (1) and -5.6184 in column (2), both significant at the 1% level, confirming that greater linguistic distance significantly inhibits cultural products exports. More importantly, the interaction term between linguistic distance and overseas Chinese education is 0.984 in column (1) and 1.3061 in column (2), also significant at the 1% level in both specifications. This indicates that overseas Chinese education mitigates the trade-impeding effect of linguistic distance. By establishing Confucius Institutes abroad, China enhances foreigners' familiarity with the Chinese language, which helps lower linguistic barriers and thereby boosts exports of cultural products.

Table 4. Empirical results of the impacts of overseas Chinese education on linguistic distance and trade in cultural products

Variables	Culture_Trade	
	(1) Coefficient(S.E)	(2) Coefficient(S.E)
Constant	20.9759*** (74.35)	27.2337*** (20.36)
Language_Distance	-5.7790^{***} (-15.52)	-5.6184^{***} (-14.57)
Language_Dissemination	0.4014^{***} (7.36)	0.5751^{***} (10.57)
Language_Distance $\times$ Language_Dissemination	0.9840^{***} (8.60)	1.3061^{***} (11.42)
Total_Trade		-0.6339^{***} (-4.41)
GDP		0.5092^{***} (10.66)
Common_Religion		0.3568^* (1.74)
Political_Distance		-0.1311^* (-1.89)
Geographic_Distance		-0.4936^{***} (-3.38)
Common_Language		1.6317^{***} (2.71)
Trade_Freedom		-2.6941^{***} (-5.69)
N	832	739
Adj. R ²	0.417	0.546

Note: ***P < 0.01, **P < 0.05, *P < 0.1.

4.2.3. Heterogeneity test

4.2.3.1. Adjacent countries

Based on geographical location, the sample countries are categorized into two groups: those adjacent to China and those non-adjacent. The regression coefficient of the interaction term $\text{Language_Distance} \times \text{Language_Dissemination}$ is statistically insignificant for the group of adjacent countries. In contrast, for non-adjacent countries, the coefficient is 1.4072 and significant at conventional levels, suggesting that overseas Chinese education more effectively mitigates the inhibiting effect of linguistic distance on cultural products in countries farther from China. One plausible explanation is that non-adjacent countries generally have fewer political and economic exchanges with China, resulting in relatively lower public familiarity with the Chinese language. In such a context, effective overseas Chinese education can play a more substantial role in reducing language-related barriers, thereby facilitating greater trade in cultural products.

4.2.3.2. Belt and Road

The sample countries are divided into two groups, namely Belt countries and Road countries, with separate regressions performed for each group. The coefficient of the interaction term $\text{Language_Distance} \times \text{Language_Dissemination}$ is 2.1782 and significant at the 1% level for the Belt country group, while it is 2.9922 and also statistically significant for the Road country group. The larger magnitude of the interaction coefficient in the Road group suggests that overseas Chinese education plays a more substantial role in mitigating the inhibiting effect of linguistic distance on cultural trade among Road countries. One possible explanation for this pattern is that many Belt and Road countries are coastal and have historically maintained more frequent cultural and economic exchanges with China. In contrast, Road countries, which are often constrained by geographical isolation and greater linguistic and cultural differences, may exhibit a stronger “latecomer advantage” in cultural trade. As a result, the introduction of structured Chinese language education in these contexts produces a more pronounced mitigating effect on trade.

4.2.3.3. Confucian cultural circle

The sample countries are classified into two categories: countries within the Confucian cultural circle and those outside it, with separate regressions run for each category. For the Confucian Cultural circle group, the coefficient of the

interaction term $\text{Language_Distance} \times \text{Language_Dissemination}$ is 1.8451 and significant at the 1% level. In contrast, the coefficient for the non-Confucian group is 1.475, also significant at the 1% level. The larger coefficient of the Confucian cultural circle sample implies that overseas Chinese education more effectively mitigates the inhibiting effect of linguistic distance on cultural product trade in these countries. A likely explanation lies in the cultural affinity and historical receptivity to the Chinese language within Confucian-influenced societies, particularly those in Southeast Asia. In such contexts, the Chinese language is more readily adopted and effectively disseminated, thereby amplifying the positive impact of formal language education on bilateral cultural trade.

4.3. Robustness test

To address potential endogeneity concerns arising from bidirectional causality and to verify the robustness of our findings, we employ a two-way fixed-effects model that includes year and country fixed effects. The results show that the statistical significance of the key variables remains largely unchanged, supporting the robustness of our conclusions.

Furthermore, we conduct additional robustness checks by substituting the measure of linguistic distance with an indicator of language ease of use. The regression results remain consistent under this alternative specification. Similarly, after excluding samples from the 2008 global financial crisis and those unrelated to the Belt and Road Initiative, our core findings remain robust, further affirming the reliability of the study's inferences.

4.4. Further analysis

What are the effects of linguistic and overseas Chinese education on core cultural products, and how do these effects compare with their impacts on non-core cultural products? To address these questions, this study draws on the methodology of Qiyue and Pu (2017) and Xiaomu and Jiashan (2007), identifying 24 products under HS codes 37, 49, and 97 from the HS 2007 customs classification as the representative of core cultural product exports.

5. Discussion

This study sought to investigate the complex relationship among linguistic distance, overseas Chinese education, and cultural product trade. The empirical findings provide clear and consistent support for all proposed hypotheses. H1

posited that linguistic distance is negatively associated with trade in cultural products. Our results strongly confirm this proposition, demonstrating that greater linguistic distance significantly hinders China's cultural export performance. This finding aligns with the established literature on transaction costs in international trade, which identifies language barriers as a significant driver of trade costs (Chiswick & Miller, 2005). It extends this general principle into the specific domain of cultural products, where symbolic meaning and contextual understanding are paramount.

H2 proposed that overseas Chinese education mitigates the hindering effect of linguistic distance. The significantly positive coefficient of the interaction term ($\text{Language_Distance} \times \text{Language_Dissemination}$) across model specifications confirms this hypothesis. This result introduces a crucial nuance to the existing understanding. It suggests that language-related trade barriers are not static but can be actively reduced through targeted cultural dissemination policies. This finding complements the work of Jijun et al. (2019), who highlighted the soft power role of Confucius Institutes by providing empirical evidence of their concrete economic function in facilitating trade.

Furthermore, our heterogeneity analysis reveals that this mitigating effect is not uniform but is more pronounced in non-adjacent countries, Belt and Road countries, and nations within the Confucian cultural circle. This pattern suggests that overseas Chinese education is most effective in contexts where pre-existing familiarity is low but cultural affinity provides a receptive foundation. This insight refines our understanding of how and where language dissemination policies work best, offering strategic guidance for resource allocation.

Finally, the additional analysis on product type indicates that the effects are even stronger for non-core cultural products. This finding suggests that linguistic proximity might be more critical for goods with lower intrinsic cultural specificity, potentially because their consumption relies more heavily on functional understanding than on deep cultural appreciation.

In conclusion, this research contributes to the literature by not only validating the direct inhibitory role of linguistic distance but also by identifying overseas Chinese education as a viable channel to overcome this barrier. It moves beyond establishing a correlation to revealing a causal mechanism and its contingent conditions, thereby providing a more comprehensive framework for understanding the linguistic determinants of cultural trade.

6. Conclusions

This study contributes to the literature by providing robust empirical evidence on the causal relationship between linguistic distance and China's cultural product exports. More importantly, it highlights the mitigating role of overseas Chinese education in alleviating linguistic barriers, thereby optimizing trade outcomes. These findings offer strategic insights for gaining competitive advantages in the global cultural trade arena. They also provide valuable implications for governmental cultural exchange initiatives and the export strategies of cultural enterprises. Specifically, policymakers and firms are encouraged to develop innovative approaches to promote Chinese culture abroad and identify more targeted markets for cultural exports. Furthermore, efforts should be strengthened to integrate language dissemination with cultural promotion, thereby effectively enhancing the performance of cultural product export.

This study acknowledges several limitations to consider when interpreting the results. First, the empirical analysis relies exclusively on China's cultural trade data, which constrains the generalizability of the findings to other national contexts. Second, the measurement of key variables, such as linguistic distance and overseas Chinese education, may benefit from further refinement. Future research could explore the calibration of these metrics and incorporate a broader set of influencing factors, such as the use of machine learning to overcome language barriers. Additionally, overseas Chinese education is subject to geopolitical tensions and other external pressures, which were not fully accounted for in the current model. Whether alternative methodologies or additional variables would yield more robust findings remains an open question and requires deeper investigation in future studies.

Funding

This paper was part of the project of Research on Foreign Language Education in the Context of the Belt and Road Initiative, supported by the 2023 Higher Education Research Project of the China Association of Higher Education (Grant No. 23WYJ0302)

Conflict of interest

The authors declare that there is no conflict of interest.

Authors contributions

Ling Zhang – 85% (research concept and design, collection and/or assembly of data, data analysis and interpretation, writing the article, critical revision of the article, final approval of the article).

Yuxin Wang – 15% (research concept and design, collection and/or assembly of data, data analysis and interpretation).

Ethical statement

This study did not involve human participants and did not require ethical approval.

Data availability statement

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

References

- Bialystok, E., & Craik, F. I. M. (2022). How does bilingualism modify cognitive function? Attention to the mechanism. *Psychonomic Bulletin & Review*, 29(4), 1246-1269. <https://doi.org/10.3758/s13423-022-02057-5>
- Fink, C., Mattoo, A., & Neagu, I. C. (2005). Assessing the impact of communication costs on international trade. *Journal of International Economics*, 67(2), 428-445. <https://doi.org/10.1016/j.jinteco.2004.09.006>
- Ginsburgh, V. A., & Weber, S. (2014). Culture, linguistic diversity, and economics. In K. J. Arrow & M. D. Intriligator (Eds.), *Handbook of the economics of art and culture* (Vol. 2, pp. 507-543). Elsevier. <https://doi.org/10.1016/B978-0-444-53776-8.00019-2>
- Hui, W. (2019). Yǔyán chuánbō de lǐlùn tànsuǒ [The theoretical exploration of language communication]. *Applied Linguistics*, 2, 20-29. <https://doi.org/10.16499/j.cnki.1003-5397.2019.02.003>
- Jijun, K., Mengke, Z., Jing, L. (2019). Kǒngzǐ xuéyuàn duì zhōngguó chūkǒu mào yì de cùjìn xiàoyìng – jīyú “yīdài yīlù” yánxiàn guójiā de shízhèng fēnxī [The promoting effect of Confucius Institutes on China’s export trade: An empirical analysis based on the countries along “The Belt and Road”]. *Journal of Chongqing University (Social Science Edition)*, 25(5), 1-17. <https://doi.org/10.11835/j.issn.1008-5831.jg.2019.03.001>

- Chen, R., Jin, W., & Yang, T. (2025). Soft power in trade: Quantifying the impact of Confucius institutes on China's exports. *International Studies of Economics*, 1-16. <https://doi.org/10.1002/ise3.70008>
- Chiswick, B. R., & Miller, P. W. (2005). Linguistic distance: A quantitative measure of the distance between English and other languages. *Journal of Multilingual and Multicultural Development*, 26(1), 1-11. <https://doi.org/10.1080/14790710508668395>
- Junting, L., & Jiying, T. (2017). Wǒguó wénhuà chǎnpǐn chūkǒu màoyì tèzhēng jí zēngzhǎng yīnsù shízhèng yánjiū – jīyú duōguó CMS móxíng de yīnsù [An empirical study on characteristics and influencing factors on the growth of China's cultural products export: Based on revised multi-market CMS model]. *International Economics and Trade Research*, 33(11), 32-48. <https://doi.org/10.13687/j.cnki.gjjmts.2017.11.003>
- Korneliussen, T., & Blasius, J. (2008). The effects of cultural distance, free trade agreements, and protectionism on perceived export barriers. *Journal of Global Marketing*, 21(3), 217-230. <https://doi.org/10.1080/08911760802152074>
- Lien, D., Oh, C. H., & Selmier, W. T. (2012). Confucius institute effects on China's trade and FDI: Isn't it delightful when folks afar study *Hanyu*? *International Review of Economics & Finance*, 21(1), 147-155. <https://doi.org/10.1016/j.iref.2011.05.010>
- Ling, Z. (2022). Duōwéi yǐnyán yīnsù duì wǒguó guójì wénhuà màoyì yǐngxiǎng de yánjiū [The influence of Multi-dimensional linguistic factors on China's international cultural trade]. University of International Business and Economics. <https://doi.org/10.27015/d.cnki.gdwju.2022.000656>
- Melitz, J., & Toubal, F. (2014). Native language, spoken language, translation and trade. *Journal of International Economics*, 93(2), 351-363. <https://doi.org/10.1016/j.jinteco.2014.04.004>
- Mengjun, X. (2016). Wénhuà néng fǒu yǐnzhi chūkǒu: "Yīdài yīlù" de jīngyàn shùjù [Can culture lead to exports: Empirical data on One Belt, One Road]. *International Trade*, 1, 3-13. <https://doi.org/10.13510/j.cnki.jit.2016.01.001>
- Mostafiz, F., Akter, M., & Rahman, M. (2024). Cultural distance and bilateral trade: A transitional economy perspective. *Business Strategy & Development*, 7(2), e393. <https://doi.org/10.1002/bsd2.393>
- Ojala, A. (2015). Geographic, cultural, and psychic distance to foreign markets in the context of small and new ventures. *International Business Review*, 24(5), 825-835. <https://doi.org/10.1016/j.ibusrev.2015.02.007>
- Ozok, Z., Malloy, B., & Rowe, A. (2022). The impact of linguistic distance from English on economic growth: A cross-country analysis. *International Journal of Economics and Financial Issues*, 12(2), 1-15. <https://doi.org/10.32479/ijefi.12725>
- Qiyue, Z., & Pu, G. (2017). Wénhuà jùlì duì zhōngguó héxīn wénhuà chǎnpǐn chūkǒu jízhōngdù de yǐngxiǎng yánjiū – yǐ "yīdài yīlù" yánxiàn guójiā wéi lì [Influence of cultural distance on the export concentration index of Chinese core cultural products: Evidence from countries along the Belt and Road]. *International Business*

- (*Journal of University of International Business and Economics*), 5, 31-41. <https://doi.org/10.13509/j.cnki.ib.2017.05.003>
- Su, L., Jung, H., & Yang, M. (2023). Does a *Lingua Franca* matter in bilateral international trade? *International Studies of Economics*, 18(1), 80-96. <https://doi.org/10.1002/ise3.23>
- Weiguo, Z., & Tao, S. (2018). Tōngyòngyǔ de màoyì xiàoyìng: Jīyú zhōngguó yǔ OECD guójiā màoyì shùjù de shízhèng yánjiū [The trade effect of English as a lingua franca: An empirical study based on trade flows between China and OECD countries]. *World Economy Studies*, 4, 88-96+136-137. <https://doi.org/10.13516/j.cnki.wes.2018.04.008>
- Xiaomu, L., & Jiashan, L. (2007). Guójì wénhuà màoyì: Guānyú gàiniàn de zōngshù hé biànxī [International cultural products trade: A review and analysis of concepts]. *Intertrade*, 2, 41-44. <https://doi.org/10.14114/j.cnki.itrade.2007.02.008>
- Yonggui, W., & Yichuan, Z. (2021). Kuàguó wénhuà chuánbò duì zhōngguó chūkǒu màoyì de yǐngxiǎng yánjiū – jīyú yǒuhǎo chéngshì de yánjiū shìjiǎo [The influence of transnational cultural communication on China's export trade: Research perspective based on twin cities]. *South China Journal of Economics*, 11, 97-121. <https://doi.org/10.19592/j.cnki.scje.390125>