Review Article

A Review of Chinese as a Second Language Journal Publication Trends: The Case of Universiti Teknologi MARA

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ABSTRACT

This study reviews the publication trends on Chinese as a second language, which indicates the current situation, research gaps, and potential directions for future research. This review examines Chinese as a second language journal publications produced by lecturers and researchers at Universiti Teknologi MARA (UiTM) since the publications are scattered without systematic organisation, making it difficult to determine which direction the research is headed and to foresee the topics of interest that will encourage future growth. This review conducted a systematic review of 75 journal articles published from 2013 to 2023, focusing on publication status and trends, co-authorship, and content scope. As a result, this study discovered a publication gap between general-UiTM-recognised journals and international-recognised journals. It proposed to broaden the expertise collaboration to international networking. This study also identifies population gaps, which urged conducting research at a wider range. In terms of content scope, research gaps were found in theoretical, conceptual, model, and tool-building research, as well as in-depth investigation of Chinese language, culture, and social studies. The incorporation of technology in future research is prospective due to the current rise in digital awareness. Moreover, learners' behaviour in learning Chinese as a second language should be further investigated due to dispersive research. This systematic review contributes to the continuous development of researching and instructing Chinese as a second language in UiTM. It serves as a guide for other Malaysian higher education institutions with a similar research interest.

Keywords: Chinese, second language, systematic review, trends

INTRODUCTION

Chinese language learning has experienced a worldwide boom due to China's ongoing and extensive support of international Chinese language education since 2004. Before the outbreak of the Covid-19 epidemic, statistics presented at the 2019 International Conference on Chinese Language Education indicated that China had established 550 Confucius Institutions and 1,172 Confucius Classrooms in 162 countries or regions to promote the Mandarin/Chinese language and culture (as cited in Hu, 2019). It is projected that the number will rise in the upcoming years. Indeed, for tertiary students in higher education institutions worldwide, spending time in China to learn Mandarin/Chinese is becoming gradually mainstream (Wei & Chen, 2021). Meanwhile, teaching Chinese as a second language is quite common worldwide.

In Malaysia, many public and private universities offer Chinese courses to non-native Chinese speakers. According to Hoe and Tan (2007), teaching Chinese courses in Malaysia began in the 1960s. These Chinese courses are often included as part of the requirement for graduation. Hence, the Chinese courses offered at these public universities are designed to be as elementary as possible, emphasising Pinyin (the standard system of Romanised spelling for transliterating Chinese) and simplified Chinese characters (Lee & Jaganathan, 2020). There are 20 national universities in Malaysia, each offering Chinese courses. Records show that the earliest university to offer Chinese as a second language classes was the University of Malaya (UM), where Chinese classes opened in 1963 and were taught by lecturers from the Department of Chinese Studies (Fan, 2011). Universiti Teknologi MARA (UiTM), formerly Institut Teknologi MARA (ITM), is Malaysia's largest of the 20 national universities. Following UM, UiTM began offering Chinese language courses to its students in 1968. 15,000 to 16,000 Malay and indigenous students learn Chinese at UiTM every semester. In December 2020, the number of students learning Chinese reached 19,568 (Gan et al., 2021). Since UiTM has such a strong background and is a pioneer in this field, investigating UiTM's second language teaching can probably reflect the landscape of second language teaching in Malaysia.

With regard to active teaching and learning of Chinese as a second language, much research has been conducted by UiTM lecturers and researchers, which allows contributions to developing or improving knowledge in the field of Chinese as a second language education. However, the studies are scattered without systematic organisation, making it difficult to determine which direction the research on Chinese as a second language is headed and to foresee the topics of interest among lecturers and researchers that will encourage the future growth of Chinese as a second language instruction in the UiTM context. Reviews are often conducted in second-language studies to investigate current and emerging trends. A recent comprehensive review of the development of Chinese as second

language research was conducted by J. Chan et al. (2022), giving a map of articles published on Chinese as a second language in more than 24 countries over the last three decades and addressing what ought to be regarded as a significant gap in the literature. Conversely, from a narrower perspective, it is equally critical to understand the extent to which the publication trend of a specific educational institution corresponds with the global demands of the field of study at present. The lack of reviewing the publications causes publication redundancy in the UiTM context. The redundancy of publications wastes resources and hardly addresses the gaps in the literature to meet the field's current needs.

Furthermore, there has not been a comprehensive study on systematic reviewing and synthesising Chinese as a second language research published by the lecturers and researchers in UiTM, in which the publication trend on Chinese as a second language at this specific educational institution is not adequately known. Similarly, no studies at Malaysian universities and institutions have yet been conducted to comprehensively investigate the publication trends of second languages, including Chinese, English, and Malay as a second language. This circumstance hardly keeps track of the effective growth of second-language publications to meet the field's demands on a national or worldwide scale. This study's initiative is anticipated to extend to other regional universities and institutions in Malaysia to further enhance the expansion of valuable publications

in second languages beyond the realm of Chinese as a second language.

From a broader view, however, some studies have investigated publication trends on subjects other than second language. For instance, Budisantoso and Mungkasi (2020) analysed the publication trends in technology, public policy, and economics between Indonesia and Malaysia. Furthermore, in the Malaysian context, Sarjidan and Kasim (2023) investigated academic publication trends in a wide subject area among Malaysian research universities. Consequently, these studies suggested the enhancement of research productivity in particular fields to assist the research development of national universities and institutions. These studies served as inspiration for the present investigation. Hence, this systematic review will contribute to the continuous development of researching and instructing Chinese as a second language at UiTM, and it will also serve as a guide for other Malaysian higher education institutions with a similar area of research interest.

This systematic review exclusively includes reviews of journal publications due to the rigorous peer-review process that most journal papers are subjected to. Discussions in journal papers typically meet greater standards of quality, validity, and reliability compared to other types of publication. This study aims to examine the journal papers produced by lecturers and researchers at UiTM who have been researching Chinese as a second language. Subsequently, this study identified the

research trends on Chinese as a second language, which indicated the current situation, research gaps, and potential future directions for Chinese as second language research, supporting ongoing advancement in higher education research. The systematic review was undertaken to address the following questions:

1. What are the status and trends in Chinese as a second language research from 2013 to the end of 2023 in terms of journal publication year and publication venue?

2. What are the patterns of multiple-author and single-author journal publications in Chinese as a second language research?

3. What are the trends of Chinese as a second language journal publications in terms of content scope?

The Context of Teaching Chinese as a Second Language

With the advancement of technology and education, the demand for learning a second language keeps increasing today. A recent study (Li & Gong, 2022) emphasised the importance of today's agencies in assisting second language learners in utilising a variety of linguistic and cultural resources to create identities and forge social connections. Second-language learners' socialisation and the creation of social networks are largely dependent on their acquisition and application of language (Mas-Alcolea & Torres-Purroy, 2022). According to Zanne et al. (2022), learning a new language allows people to easily interact with others, especially on the international scene. Some learners acquire a second language intending to study overseas (Mori & Gobel, 2020). Recently, Liu (2023) initiated the development of a second language acquisition theory for international students to enhance second language development globally. On the other hand, regardless of international or local students, mastering a second language will enable individuals to learn more about the history and culture of other ethnic groups, potentially breaking down biases and leading to better understanding among tribes, races, and countries (Tar, 2011). Point et al. (2021) further noted that a second language is learned for personal enrichment or to fulfil job requirements. According to Zanne et al. (2022), a second language equips graduate students to become competitive global knowledge workers after they enter the job market.

As a multicultural and multi-racial country like many progressive countries, Malaysia has always emphasised second language or foreign language learning. Children start learning other languages besides their mother tongue, even in preschool. For instance, Malay is Malaysia's official language, and English is taught as a second language in all schools and public universities (Ismail et al., 2018). Other languages such as Arabic, Chinese, Spanish, French, German, Japanese, and Korean are also taught to undergraduates in Malaysian public universities as non-core elective courses. These languages are also

taught in Malaysian private universities and institutions.

China's rapid economic growth has motivated many individuals interested in conducting business with China and exploring economic opportunities there to learn Chinese (Sae-thung & Boonsuk, 2022). Tan et al. (2016) reported that Malaysia has maintained a diplomatic and economic relationship with China since 1976. Sae-thung and Boonsuk (2022) further noted that the United Nations World Tourism Organization (UNWTO) and the United Nations (UN) officially recognise Chinese as one of the languages for international communication.

Regarding teaching materials for Chinese as a second language, most public universities use textbooks written by their lecturers with localised contents and distinctive international characteristics. For instance, from 1978 until today, UiTM has used textbooks and workbooks authored by UiTM Chinese lecturers with localised content and references to the Chinese Proficiency Test (HSK) contents. The textbook consists of simplified Chinese characters, Pinyin, English, and Malay. The courses are conveyed in Romanised Chinese. At UiTM, Malaysia's largest university in enrolment, Chinese is undoubtedly the most popular second language. The Chinese courses focus on four learning skills: listening, speaking, reading, and writing. The main objective is to equip students with basic communication skills. The teaching methodology places a strong emphasis on the oral-communications approach. Throughout the courses, students

are exposed to a variety of instructional methods, including lectures, blended learning, discussions, and engaging language activities like role-plays and language games. Various teaching aids, such as exercise books, flashcards, computers, and audio-visual materials, are integrated into the curriculum to enhance the learning experience.

UiTM offers language courses tailored to different faculties. In alignment with the Ministry of Higher Education (MOHE) learning outcomes and the unique learning objectives of UiTM's various faculties, the Chinese Unit has developed a set of generic program outcomes (PO) for its Chinese courses. These program outcomes are as follows:

PO4: Demonstrate interpersonal skills and social responsibilities.

PO5: Demonstrate effective communication skills and the ability to assume alternate roles as both a leader and a member within diverse teams.

Furthermore, these POs are in parallel with the Course Learning Outcomes (CLO) established for Chinese, per the Malaysian Qualifications Framework (MQF) 2017 statement. The CLO for Chinese encompasses C3B—Interpersonal Skills and C3C—Communication Skills. In essence, this implies that the learning outcomes of the Chinese course place a significant emphasis on enhancing students' interpersonal skills and communication abilities. This approach aligns with MOHE standards and the specific needs of UiTM's diverse faculties, ensuring that Chinese language learners develop vital skills

for effective communication and social responsibility within various contexts.

METHOD

This paper reviews the trends in Chinese as a second language journal publication in UiTM over the past ten years. The review follows the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA 2020) guidelines (Page et al., 2021). This study closely adhered to PRISMA 2020 guidelines due to its standardised peer-accepted technique that helps with quality control during the revision process. The PRISMA 2020 flow diagram (Figure 1) illustrates the stages of this systematic review, from the initial number of identified references to the publications that were eventually excluded and included.

Data Sources and Search Strategies

PRISMa is a database management system of UiTM designed to provide up-to-date information on publication. The PRISMa database was predominantly employed in this study for electronic search, along with earlier publications compiled on compact
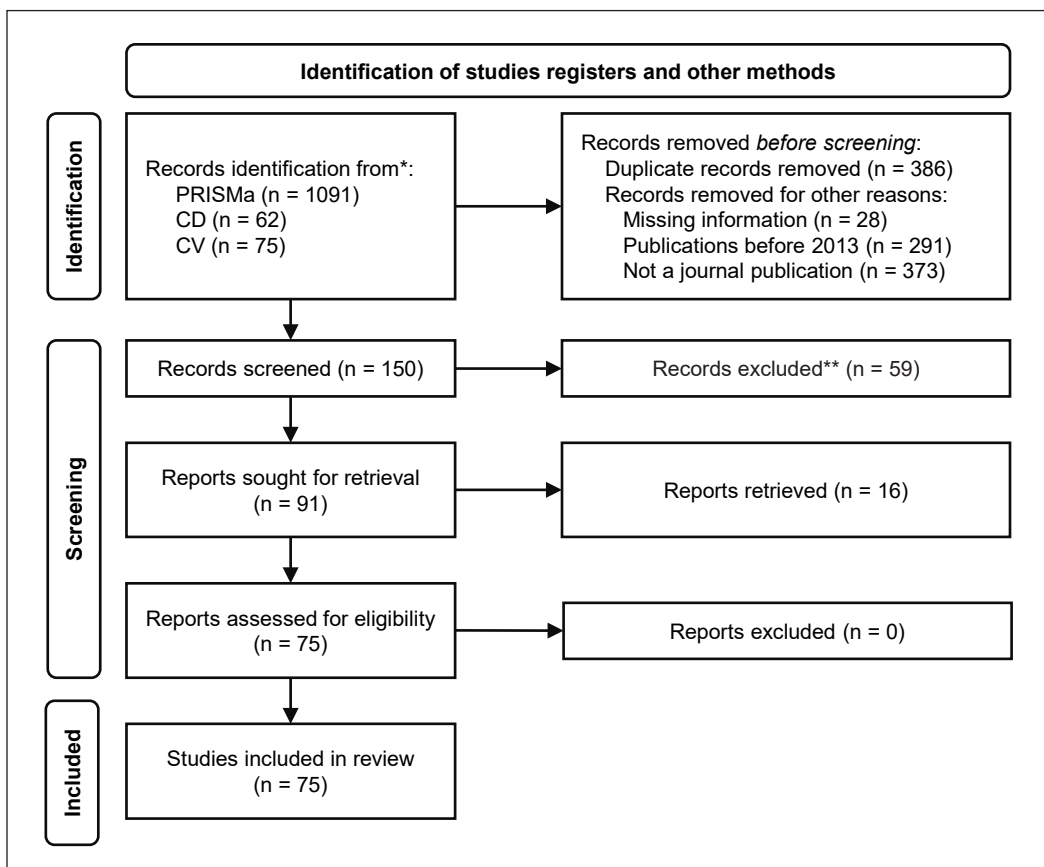

Figure 1. PRISMA 2020 flowchart
Source: Authors' work

discs (CD) and lecturer's curriculum vitae (CV), which the information was missing from the PRISMa database due to technical issues. Keyword searches consisted of the following terms, which we included "OR" within each group of key terms and "AND" between those groups: "second language" OR "foreign language" AND "Chinese" OR "Mandarin". These keywords were selected according to the research scope.

Criteria for Screening

To investigate the Chinese as a second language journal publication trends in UiTM over the past ten years, we considered studies published from 2013 to 2023 in peer-reviewed scholarly journals. The inclusion and exclusion criteria employed in the PRISMA 2020 screening procedure are displayed in Table 1.

Study Selection and Screening

The PRISMA 2020 flowchart states that there should be two rounds of screening: one for titles, keywords and abstracts and the other for the full-text screening. A Microsoft Excel electronic data extraction table was used to organise data in both rounds. There were 1228 publications identified initially. Then, 386 duplicate publications were removed, while another 692 were removed due to missing information, publications outside of the time frame, and non-journal publications. The publications were numerically coded as "1" if included or "0" if excluded, in accordance with the inclusion and exclusion criteria. The first round of screening revealed that 91 publications fit the requirements for inclusion, but 16 publications could not be retrieved since the full text could not be located. Seventy-five publications were eventually included in this review after the full-text screening.

Data Extraction and Data Analysis

The research questions that this study attempted to answer served as the basis for data extraction. Table 2 presents a detailed description of the coding scheme utilised in this study to address the research questions.

Table 1
Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Publication timeframe	2013–2023 (ten years)	Before 2013 and after 2023
Type of publication	Scholarly journals' original papers	Dissertations, conference proceedings, book/book chapters, reviews, articles in newspapers and magazines, notes, editorials, reports, newsletters, and monographs.
Language	Publications in English, Malay, and Chinese language	Articles published in languages other than English, Malay, and Chinese
Research focus	Articles that focus only on Chinese as a second language teaching and learning	Articles that focus on another field of teaching and learning

Source: Authors' work

Table 2
The coding scheme

Code	Justification of code	Research question (RQ)
Year of publication	Year of publication between 2013-2023	RQ1: What are the status and trends in Chinese as second language research from 2013 to the end of 2023 in terms of journal publication year and publication venue?
Journal name	Journal name	
Indexing	Indexed by internationally recognised databases (Pranckutė, 2021): Web of Science (WoS) and Scopus Indexed by UiTM-recognised databases: Excellence in Research for Australia (ERA), Malaysian Citation Index (MyCite) Indexed by other recognised databases Non-indexed	
Number of authors	Number of collaborating authors in a publication	RQ2: What are the patterns of multiple-author and single-author journal publications in Chinese as a second language research?
Authors	Affiliations of corresponding author and co-author(s)	
Content scope	The scope of research is founded on the subject matter of teaching Chinese as a second language.	RQ3: What are the trends of Chinese as a second language journal publications in terms of content scope?
Educational level	The participants' educational level	

Source: Authors' work

Three iterative coding cycles were performed through the review, coding, discussion, and clarification process to achieve high coding reliability. Three authors independently coded 10% of the available articles each, resulting in an inter-rater reliability of 92.6%. Thematic analysis was carried out to identify patterns and themes, leading to the reporting of research trends on Chinese as a second language. It indicated the current situation, research gaps, and potential future directions for research in Chinese as a second language.

Co-author Contribution

Author 1 carried out statistical analysis and interpretation of the results. Authors 2 and 3 did the data entry and strategised on the structure of the review. After finding the relevant publications, three authors independently reviewed the titles, keywords, and abstracts. Then, each author conducted an eligibility evaluation separately by carefully screening the remaining publications' full text. Conflicts were resolved until complete agreement was attained among authors. The authors affirmed that there is no conflict of interest in this article.

RESULTS

The Publication Status and Trends in Chinese as a Second Language Research

Figure 2 shows the number of Chinese as a second language journal publications from 2013 to 2023. The number of publications increased on average, demonstrating increased scientific research in Chinese as
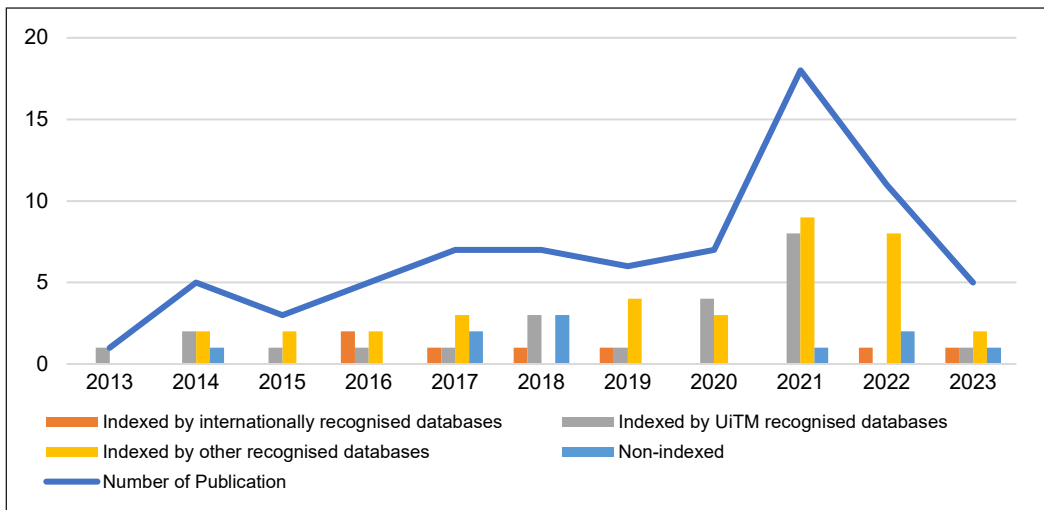
Figure 2. The distribution of Chinese as a second language publications over the years (2013-2023)
Source: Authors' work

a Second Language. Interestingly, there was a significant rise from 2020 to 2021. After 2021, the number of publications returned to the average level. It might be the result of the COVID-19 epidemic, which compelled most educational institutions worldwide to adopt online, open, and distance learning to satisfy learners' needs at that critical moment (Harun et al., 2021; Mathew & Chung, 2021; Othman et al., 2022; Salleh et al., 2020). The circumstance has encouraged educators' initiatives to attempt online learning, including teaching Chinese as a second language. Consequently, the amount and frequency of publications inevitably arose in that period, especially concerning incorporating technology into teaching Chinese as a second language.

On the aspect of publication indexing (Figure 2), researchers and lecturers at UiTM who specialise in teaching Chinese as a second language prefer to publish their work in general indexed publications (47%)

rather than journals that are recognised internationally or by UiTM. However, there has been a rise in publishing in UiTM-recognised journals throughout the years, which may be related to a shift in UiTM's Key Performance Indicator (KPI) policy, which reached a total percentage of 31. There is a significant gap between general-UiTM-recognised journal publications and international-recognised journal publications. The number of publications in non-indexed journals remained low (13%); however, the number of publications in the international-recognised journal was the lowest (9%). Publications in international-recognised journals only began in 2016 and tended to expand, which is encouraging.

Pattern of Multiple-author and Single-author Publications

Since collaboration among educators or instructors could lead to positive professional growth (Pischetola et al.,

2023), this study sought to determine the prevalence of joint authorship and its pattern in UiTM Chinese as a second language publication. The investigation shed light on how lecturers or researchers network with professionals and universities. Figure 3 demonstrates that joint authorship was quite prevalent among 75 publications in Chinese as a second language, with two to six authors appearing in 89% of the publications, whereas 11% appeared with no collaboration. The number of publications employing joint authorship is increasing each year; the number of publications with two, three, and four authors was the highest by the end of the period, indicating an increase in professional collaboration in Chinese as a Second Language research.

In addition, joint authors may come from the same institution or different institutions and regions. Each year, the largest number of publications was by co-authors from UiTM (68%). They were lecturers and researchers from various UiTM branches around Malaysia, demonstrating the multi-internal collaborative network. External networking among professionals is still lacking. However, we may still anticipate ongoing expansion in external collaboration due to the current progression of working with other education institutions in Malaysia over the years such as primary schools, University of Malaya (UM), Universiti Putra Malaysia (UPM), Universiti Sains Malaysia (USM), Universiti Malaysia Kelantan (UMK), Universiti Malaysia Sarawak (UNIMAS), and the Universiti Kuala Lumpur Malaysian Institute of Aviation Technology (UniKL MIAT), although there were considerably less author collaborations outside of UiTM. There is no international networking as if China and Taiwan are the countries that connect with the research area the most; this demonstrates a national-
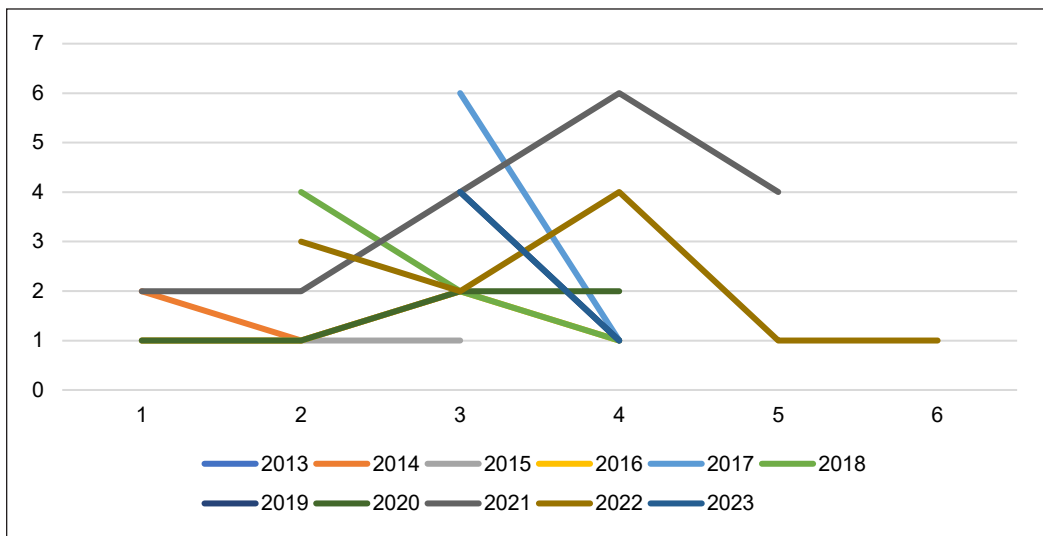

Figure 3. Number of publications with single or joint authorship
Note: 1=single author; 2=two authors; 3=three authors; 4=four authors; 5=five authors; 6=six authors
Source: Authors' work

international networking gap that could impede the continued progress of the field.

The Trends of Content Scope

The essential learning content for Chinese as a second language is braced by listening, speaking, reading, writing, and communicative skills. In relation to this, the publications included in this study made a variety of points highlighting the particular skills, for example, emphasising a specific skill (e.g., listening—Tan et al., 2019; speaking—Goh et al., 2014; reading—Kumaran et al., 2021; writing—Ch'ng et al., 2018; communication—Low, 2021), discuss about multiple skills (e.g., listening & speaking—Lew et al., 2022; reading & writing—Ting & Lam, 2021), and comprehensively investigate all the fundamental skills (e.g., Goh et al., 2014; Teh et al., 2018). On the other hand, the fundamental skills were enhanced by other related learning skills, such as thinking skills (Toh & Chu, 2015), problem-solving, creativity and collaborative skills (Y. S. Chan et al., 2021), and practical and experiential learning skill (Rahmat et al., 2020). Even though some studies did not explicitly mention the skills they were focusing on, recent studies have successfully provided a solid foundation for the skill development of teaching Chinese as a second language.

Based on the focus skills, the publications proposed various content scopes worth studying. Figure 4 shows that most publications (32%) focused on using conventional teaching methods, whilst 20% of publications investigated learners' learning behaviours while learning Chinese as a second language. Studies that investigated the application of digital learning tools in teaching Chinese as a second language also gained high attention among the publications (12%), followed by the application of technology-enhanced instructional methods (7%), the use of learning tools (7%), linguistic studies (7%), and developing online learning tools (5%). Low attention was being put to studies such as needs analysis (4%), learning model application (3%), developing instructional concepts (1%), assessment (1%), and Chinese culture curriculum (1%).

The current publication tended toward empirical research rather than theoretical, conceptual, model, and tool-building studies. The absence of this research hindered innovative efforts in teaching and learning, particularly needs analysis, a crucial phase in design that provides validity and relevance for all subsequent design activities (Johns, 1991). By considering the context of Chinese as a second language, the related publications were geared more towards the instructional field than an in-depth investigation of the Chinese language, culture, and social studies. Nevertheless, since 2018, the Chinese language, culture, and social studies fields have received increased attention (Table 3), which may have filled the gaps left by previous studies.

Addressing what was being said earlier, model and tool development in a technology context still lags. According to Table 3, although digital and technology-based studies received less attention in
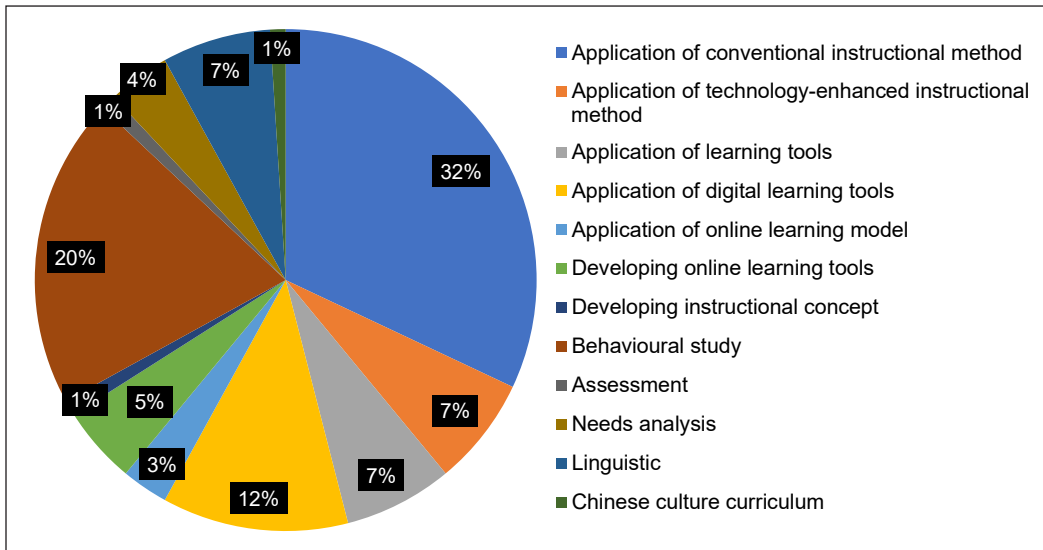
Figure 4. Content scope in publications
Source: Authors' work

Table 3
Distribution of content scope over the years (2013–2023)

Content scope	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Application of the conventional instructional method		3	1	5	3	1		2	5	3	1
Behavioural study				4	2			3	4	2	
*Application of digital learning tools						1	2		5	1	
*Application of technology-enhanced instructional method						1		1		2	1
Application of learning tools				1				1	1	2	
Linguistic						2	1		1		1
*Developing online learning tools	1						1		1		1
Needs analysis		1	1								1
*Application of online learning model		1	1								
Developing instructional concept								1			
Assessment										1	
Chinese culture curriculum									1		

Note: * = Content scope relates to technology integration
Source: Authors' work

publications as compared to conventional learning studies, they began to emerge. They typically increased over the years, related to studies on developing online learning models and tools. In precise, publications concerning the incorporation of technology into teaching Chinese as a second language kept rising during and after the pandemic

(2020 onwards), consistent with the findings in Figure 2; moreover, digital awareness has been displayed distinctly through publications since 2018.

Many behavioural studies in the findings were scattered across the years without consensus, with a diversity of pre-, during-, and post-pandemic contexts. Part of the research carried out by different lecturers or researchers on similar target groups had a close correspondence and is yet to be compiled and compared. The situation demonstrates the need for more research on how learners' behaviours change over time when learning Chinese as a second language in a similar research context.

Overall, 69 out of 75 publications focused on higher education, whereas only 6 out of 75 publications were devoted to primary education in Malaysia which the corresponding author was mostly Heng, B. C. (Heng, 2021; Heng, Cheong, & Taib, 2017a; Heng, Cheong, & Taib, 2017b; Heng, Taib, & Cheong, 2017; Heng et al., 2022; Teoh et al., 2022). No studies on teaching Chinese as a second language in secondary and early childhood settings, demonstrate a gap in the publications. However, the scarcity of studies examining educational levels other than higher education must consider the current state of the Malaysian school system, as the scant availability of Chinese Vernacular pre-, primary, and secondary schools in Malaysia might impact the findings. Still, the results indicate that lecturers and researchers tend to be scientifically induced to investigate and explore the teaching of Chinese as a

second language in uncommon educational contexts. It indicates opportunities for expanding the relevant research area.

The majority of the target groups (84%) for publications on higher education were UiTM students, or it was not made clear where the target audiences from; three publications examined higher education students outside of UiTM, including those from UNIMAS (Lam et al., 2020; Lam et al., 2023) and international students (Zhou et al., 2022); two publications included a significant target group from various Malaysian higher education institutions, including Universiti Teknologi MARA (UiTM), Universiti Sains Malaysia (USM), University of Malaya (UM), Universiti Putra Malaysia (UPM), and The National University of Malaysia (UKM; Low, 2014, 2015); and one publication investigated lecturers rather than students (Teh et al., 2014). In short, there is a lack of studies on learner groups from a wider range of institutions (national and international), which could help to improve the validity and reliability of the research area; there is also a lack of involvement of stakeholders other than learners in the related field of study.

DISCUSSION

Universiti Teknologi MARA (UiTM) lecturers and researchers are proactively investigating Chinese as second language instruction in higher education learners, examining the impact and efficacy of language approaches, and proposing enhancement for current teaching and learning demands. The research initiatives

ensure ongoing improvement, eventually facilitating scientific and professional advancement. Based on the crucial findings identified in this study, there is a significant difference between publications in general-UiTM-recognised journals and those in international-recognised journals. Publications of Chinese second language research in Chinese journals are common because of their scope and linguistic suitability. From a global perspective, Ma et al. (2017) indicated that the leading Chinese journals are now more receptive. Apart from UiTM, the publication efforts of Chinese language researchers worldwide have been made to meet the rapidly expanding global demand for Chinese language research. It should be noted that a journal's indexation is viewed as a reflection of its quality (Choudhury, 2020). Nonetheless, Chinese journals' Impact Factors are generally low (Wang et al., 2018). It is among the uncontrollable factors contributing to the low attainment of international-recognised journals. This situation impacts UiTM and all relevant institutions and universities worldwide.

However, in the UiTM context, the number of publications in internationally recognised journals has grown since 2016. This situation demonstrates an initial rise in awareness among lecturers and researchers from that specific year due to the shift in UiTM's Key Performance Indicator (KPI) policy (Universiti Teknologi MARA, 2017). Even though the initiatives appeared to be enforced by the university's requirements, this study's finding argues that the number

of publications is anticipated to grow over time as publications in internationally recognised journals enhance one's visibility and reputation in a particular field, which in turn creates new opportunities for professional development and attract potential collaborators who could aid in expanding the field. An extensive academic publication review of Malaysian research universities conducted by Sarjidan and Kasim (2023) highlighted that publishing in high-impact journals is crucial for all Malaysian universities. Even though UiTM was not one of the universities they investigated, the finding of this present study confirmed that the gradual rise of UiTM Chinese second language high-impact publications led to an inevitable contribution to the national research ecosystem of Malaysia. The findings can be generalised to indicate a topic area the national research community should emphasise.

This study discovered a positive correlation between collaboration, support and enforcement, and publication productivity. The finding refutes Ynalveza and Shrum's (2011) study, which stated that productivity and collaboration are not directly correlated. Regarding expertise collaboration, the finding presented a favourable networking pattern between UiTM lecturers and researchers, Malaysian institutions, and schools, in accordance with the decrease in single-author publications. This instance pertained once more to the correlation between collaboration and publication productivity. Ylikoski and Kivelä (2017) indicated that collaboration

among national partners enhances the quality and quantity of publications produced by regional universities since it benefits from comparable research experiences and contexts. It is therefore anticipated that the national collaboration between lecturers and researchers at UiTM and other Malaysian institutes and schools will grow continually in the years to come, as well as enhance the field of research that benefits the entire Malaysian education system. However, international networking could be further enhanced, especially collaborating with countries that provide similar professions in the topic area. Corresponding with the current issue that most Malaysian universities and institutions face, Sarjidan and Kasim (2023) stated that factors contributing to international networking should be government support for research funding and university incentives to enhance the quality of knowledge sharing that benefits the Malaysian research community.

Regarding research content scope, more research should be done on theoretical, conceptual, model, and tool-building studies to ensure the contributions of new ideas and fundamental insights to the field's ongoing progress. According to the most recent comprehensive review conducted by J. Chan et al. (2022), supposedly, orthographic, linguistic, and cultural traits are distinctive Chinese features that usually attract research attention. However, in the UiTM context, given the abundance of instructional research, the study of Chinese linguistic, cultural, and social studies, which appears to be growing at the moment, has

to be increased to enrich the research area. This situation necessitates investigating the educational background and expertise of the Chinese lecturers and researchers recruited in UiTM. For instance, if the professional development and expertise of Chinese lecturers or researchers are inclined toward Chinese educational instruction instead of linguistics, the growth of linguistic research areas may be retarded. Regarding this matter, the finding underlined the significant concern on the research interest and professional development direction of lecturers and researchers in a particular research field or educational institution. Every lecturer and researcher should consider the publications' relevancy to their area of expertise, as this could impact the publication quality or status of the university or institution (Zeevi & Mokryn, 2023).

Technology integration is another area of research that is essential in today's educational system. For instance, speech technology can be used to improve pronunciation, multimedia can help learners acquire Chinese characters, electronic writing can help identify learner errors, and so on (Da & Zheng, 2018). It is proven that integrating technology into the teaching and learning of Chinese as a second language can enhance input and learning opportunities, promote individualised learning, foster learner interaction and collaboration, improve the acquisition process, and allow for greater understanding of the language (Ding, 2022; Zhang, 2020). The finding of this present study is aligned with the comprehensive review conducted by J.

Chan et al. (2022), proving the potential growth of UiTM's research on Chinese as a second language research that keeps in line with the significant interest in teaching with technology in today's global Chinese as a second language research. We could anticipate these studies' ongoing development or evolvement in the context of Chinese as a second language that contributes to contemporary national or even worldwide education.

Behaviour has been a dominant topic in the wider second language learning research (J. Chan et al., 2022). Similarly, UiTM lecturers and researchers have offered much thought to this issue. However, with the UiTM's dispersed investigation on learners' behaviour in learning Chinese as a second language, future studies can conduct a bibliometric analysis to look into higher education learners' (target group with shared criteria) behaviour change and contribute worthwhile to find other actions. Furthermore, studies on learners were given preference over other participant groups in recent studies. It is recommended that future research employ data triangulation to enhance the validity and reliability of data by incorporating a broader range of data sources from learner groups as well as instructors and stakeholders.

CONCLUSION

There is a possible increase in scientific research in Chinese as a second language over time when looking at publications by year. As a result of rapid change and the development of modern demand in today's world, the increase in publications and the research focus are closely tied to context or environmental changes. There is a gap between general-UiTM-recognised journal publications and international-recognised journal publications the change in UiTM's Key Performance Indicator (KPI) policy; there is an increase in publishing in journals recognised by UiTM; the publication in the international-recognised journal is a relatively new trend. Also, this study anticipates increased professional collaboration in Chinese as second language research in terms of internal or external networking. Yet international networking is still lacking, suggesting the need for government support for research funding and university incentives to Malaysian universities and institutions.

Based on the review of the prior research, the publications have effectively offered a solid foundation for developing listening, speaking, reading, writing, and communicative skills in teaching Chinese as a second language. Nonetheless, this study identified the content scope gaps. It was believed that the Chinese as a second language research could be more comprehensive by enriching the theoretical, conceptual, model, and tool-building research as well as in-depth investigation of Chinese language, culture, and social studies concerning the research interest and professional development direction, which other universities and institutions ought to take into consideration as well. Meanwhile, due to the rise of digital awareness corresponding to national and

global educational demands, the scope of future research content can be enriched by incorporating technology. Investigating the change in learners' behaviour in learning Chinese as a second language over the years should also be considered.

This study suggests implications for Chinese lecturers' second language instructional practices and researchers' potential research directions in Chinese as a second language. Through this study, lecturers understood the current focus of Chinese second language teaching and learning content. Lecturers would thus have ideas for what content should receive more emphasis (e.g., culture) and what approaches should be developed further (e.g., the use of technology). On the other hand, lecturers and researchers would be aware of the value of a resultful Key Performance Indicator (KPI) policy in the university that supports the growth of international collaboration and publications in the professional field. However, this study revealed that one issue to be taken into account for Key Performance Indicator (KPI) policy modulation is the low impact factor of the majority of Chinese journals, which is a threat to obtaining the desired goal.

This study's greatest limitation was that it only included publications produced by lecturers and researchers at UiTM due to the scope of the study. National university research collaborators of UiTM, such as Universiti of Malaya (UM), Universiti Putra Malaysia (UPM), Universiti Sains Malaysia (USM), The National University of Malaysia (UKM), Universiti Malaysia Kelantan (UMK), Universiti Malaysia Sarawak (UNIMAS), and the Universiti Kuala Lumpur Malaysian Institute of Aviation Technology's (UniKL MIAT) publication databases could also provide worthful information to enrich the research area. It indicates the need to study higher education learners further at a wider range of national or international institutions and expand the study of Chinese as a second language instruction at different educational levels. The range of research samples should be enhanced in future research by expanding the scope from a single university to a variety of universities or institutions in comparable contexts to encourage more in-depth integrated comparative analysis.

The study of a second language deserves substantial research space. This study benefits not only UiTM but also those who are interested in or concerned about a related area of research. Other universities and institutions could obtain a reference for the research area, which would aid in broadening the limited analysis of publications within the current research ecosystem. This study inspires larger-scale research other than Chinese as a second language, including but not limited to studying other languages or other research areas.

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