EISSN: 2707-0425

East African Journal of Science, Technology and Innovation, Vol. 4 (Special Issue 2): August 2023

A Systematic Literature Review of Factors to Improve Tanzania's Cross-Border E-Commerce Performance: Lessons from China

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Abstract

The study aimed at identifying factors which Tanzania can consider to improve its Cross-border e-commerce performance by reflecting on China's experience. A systematic literature review methodology was applied, whereby 30 papers that have focused on analyzing influential factors of China's Cross-border e-commerce from 2010 to 2023 were assessed. The results revealed that: Trade logistics and infrastructures, Government policies and support, Use of big data, Inter-Industry collaboration, Gross Domestic Product, Product diversification and low commodity prices are the factors which support China's growth of Cross-border e-commerce.

Keywords: *Cross-border e-commerce, Factors for improving Cross-border e-commerce, Cross-border e-commerce performance, China, Tanzania*

Received: 27/06/23
Accepted: 06/07/23
Published: 14/09/23

Cite as: *Sassi, (2023)* A Systematic literature review of factors to improve Tanzania's cross-border e-Commerce performance: Lessons from China. *East African Journal of Science, Technology and Innovation 4(special issue 2).*

Introduction

Technological improvement has led to the increase of e-commerce activities. E-commerce provides businesses with an easy way to enter new markets within the country and internationally. Likewise, it has proved to be an alternative business model during uncertainties such as Covid 19 pandemic. Between 2019 and 2020, there was a three per centper cent increase in the retail share of e-commerce globally, which mostly was due to the circumstances arose from the pandemic such as restriction of movements (UNCTAD, 2021). Tanzania is among the 10 best e-commerce performers in sub-Saharan Africa. However, globally, it ranks way lower compared to China; Tanzania's leading trading partner which ranks 55th while Tanzania ranks 110th (UNCTAD, 2020a). Trade between Tanzania and China has continued to grow with Tanzania as a net importer as reported by Tanzania for 25 years from 1995 to 2020. Tanzania has generally experienced a trade deficit, with its imports higher than exports; by the year 2020 Tanzania's trade balance was -632 US $ mill. Conversely, China, Tanzania leading trade partner, has been experiencing a trade surplus, with its exports higher than imports, China's trade balance was 366,145 US $ mill by year 2020 (World Integrated Trade Solution [WITS], 2023). Cross Border E-commerce (CBE) has been indicated to play a significant role in China's trade growth (Wang *et al.*, 2017; Wang *et al.*, 2022; Yin, and Choi, 2021). UNCTAD (2021) indicated China as a leading country in cross border B2C e-commerce merchandise sales 2019 estimates globally.

Within Africa in general, participation in e-commerce and particularly CBE is low. The B2C index indicated Mauritius as a leading country in e-commerce for Africa and it ranks 69th globally. The top 10 leading countries in the B2C index are from Europe and Asia, China included (UNCTAD, 2020a). Africa as a region contributes only 0.3 per cent of global CBE (Wang, 2022). Likewise, literature regarding CBE in Africa is scant which creates a lack of appropriate references for policy formulation and practices regarding CBE improvements. Several Systematic Literature Review (SLR) studies and Bibliometric Analyses which involve the examination of multiple studies have included zero literature on CBE that has based, focused or highlighted issues in Africa (Buldeo *et al.*, 2023; Ding, Huo, and Campos, 2017; Zeng *et al.*, 2017). Li and Bode (2020) conducted a study identified as an SLR which looked at CBE between Africa and China, the study involved 55 documents, most of which are not scientific studies or peer-reviewed documents. Other studies on CBE focused or shed light on Africa, include: Brusick (2018); Han, Ma, Addo, Liao, and Fang, (2023); Makoza, 2023; Nuruzzaman, and Weber, (2021). The studies show CBE literature in Africa is fragmented as each one of them assessed a different aspect concerning CBE, an indication that the number of CBE literature engrossed in Africa is still low. Nevertheless, when the word "Cross border e-commerce" was searched on Scopus database, 632 studies conducted between 2014 and 2023, comprised of journal articles, conference papers and conference reviews were revealed and none of them was based on any of the African countries. This study assessed factors that support China's CBE and use China's remarkable CBE growth path as a lesson to Tanzania CBE enhancement. Tanzania has the potential to improve its e-commerce activities, specifically cross-border e-commerce and help improve the country's balance of trade. In 2009 Tanzania deployed the National ICT Broadband Backbone that was connected to two submarine cables; Southern and Eastern Africa Communication Network (SEACOM) in 2009 and the Eastern Africa Submarine Cable System (EASSy) in 2010 and linked Tanzania to the rest of the world (The United Republic of Tanzania [URT], 2016). Nevertheless, Tanzania is among the top performers in Africa in the Global Cyber Security Index, it comes second after Mauritius and ranks 37th globally (International Telecommunication Union [ITU], 2020). Multiple international payment systems are available in the country, including, Mastercard, Visa, Paypal and mobile money (UNCTAD, 2020b). Despite the potentiality, like many other African countries, Tanzania's participation in CBE as an exporter is negligible., In order for Tanzania to increase its participation in cross border e-commerce it is important to understand which factors can lead to performance improvements. Among other, learning from the best performers can provide valuable insights on how to go about. The objective of the study is to identify factors that facilitate China's CBE and use findings to cast light on how Tanzania can support its CBE performance. In achieving the intended objective, the study aimed at answering two research questions: 1. What are the factors that facilitate China's CBE? 2. With respect to factors that facilitate China's CBE, how can Tanzania improve its CBE performance?

The key contributions of this study are: One, the study provides direction on what can be done to support CBE in Tanzania and Africa in general. Two, the study offers a foundation for future researchers who can use the identified factors to guide the formulation of research questions or hypotheses in their studies.

Materials and Methods

The study involved a Systematic Literature Review (SLR) whereby the Preferred Reporting Item for Systematic Review and Meta-Analysis (PRISMA) was applied. In accordance with the PRISMA statement 2009, Moher *et al.*, (2009): The research title has identified the study as a systematic literature review; an abstract which shows the aim of the study, key objective, the methodology used and key findings has been included; the introduction part included objective and research questions to be answered by the study; the study contains a methodology section which has indicated the database used, the inclusion and exclusion criteria, quality assessment and analysis; the section for results and for discussion of findings has been included. In that regard, the important aspects of the

PRISMA statement 2009 have been considered. The PRISMA statement has been applied by previous SLR studies including, Derindağ (2022) and Melesse *et al.,* (2020).

Database selection

The involved articles for the study were retrieved from scopus database. Scopus was a preferred database as it has extensive coverage which provides access to studies in multiple disciplines including social science as well as a wide range of journals and conference proceedings and therefore gives researchers comprehensive access to relevant literature. Scopus include features that track the citation of a particular publication which is among the assessed aspects in the SLR descriptive analysis. Scopus indexes journal and conference proceedings by considering some specific facets such as editorial and publication quality which supports the credibility of the study. Nevertheless, scopus allows the direct export of document information to an Excel sheet and permits the researcher to perform further screening and analysis. Several SLR studies have used scopus as their main database for literature search, including Derindağ (2022); Giuffrida *et al.,* (2017) and Melesse *et al.,* (2020).

Inclusion and exclusion criteria

The criteria for inclusion involved the study location and scope; in which only studies that were conducted in China and were focused at a national level and not targeting individual respondents were included. Language; whereby only studies that have used English language were included. Stage of publication; only final publication and article in press were included and method; whereby whether the study has followed some assessment criteria or it is a mare report thus the study has applied a research method that can justify the presented findings.

Quality assessment

Apart from adhering to the identified inclusion and exclusion criteria, the quality assessment also involved double check the list of articles deemed eligible and omitting duplicates.

Data Analysis

The analysis involved descriptive as well as qualitative analysis. descriptive analysis involved the assessment of the number of publications on yearly basis, the number of citations for each study involved, the number of journal articles and conference proceedings and the number of published final articles and articles in press. Qualitative analysis involved content analysis to identify key findings in the study involved and synthetization of findings to determine key themes.

Analysis and Findings

Identifying and selecting studies for Analysis

The researcher's intention was to include studies dated from 2010 to 2023. Keywords used in the search for relevant studies from scopus database were; factors influencing, cross-border e-commerce, China, cross-border e-commerce facilitation, Cross border e-commerce and development model. In the first search, the keywords entered were "factors influencing" AND "cross-border e-commerce", 40 results were shown, when limited to China, 31 results remained. In the second search, Facilitation AND "cross-border e-commerce" were entered, and 10 results appeared, when limited to China 7 results remained. In the third search, "Development model" and "Cross border e-commerce", 13 results appeared, when limited to China, 10 remain. In the fourth search, China AND "cross-border e-commerce" 274 results appeared, when limited to China, 223 results remain. The PRISMA 2009 diagram was used to depict the search process, the exclusion and the inclusion of literature for the review (Moher *et al.*, 2009). Figure 1 is showing the search and selection process.

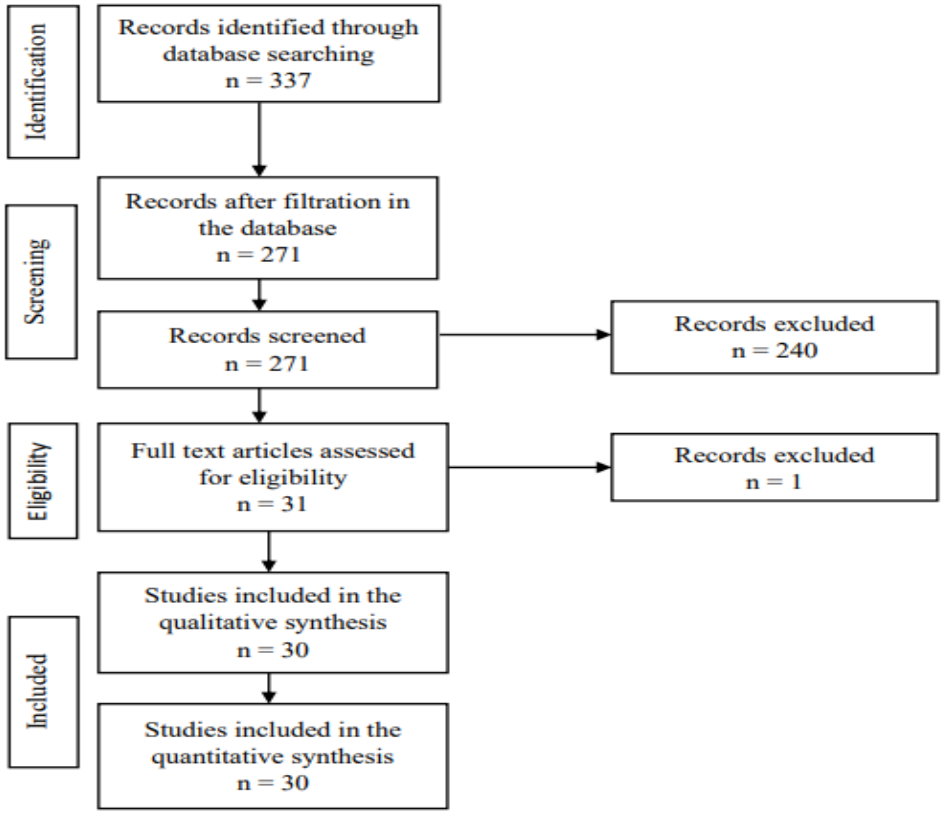

Figure1. Identification and Selection Process of Articles - PRISMA 2009 Diagram

Year Based Publications

The year-based publications assessment revealed that most of the articles were published in the year 2021. Among the 30 studies which were found suitable for analysis, 11 of them were conducted in 2021, seven in 2022, four studies were conducted in 2020, three studies were conducted in 2019, four studies were conducted in 2018 and one study was conducted in 2017 as presented in Figure 2.

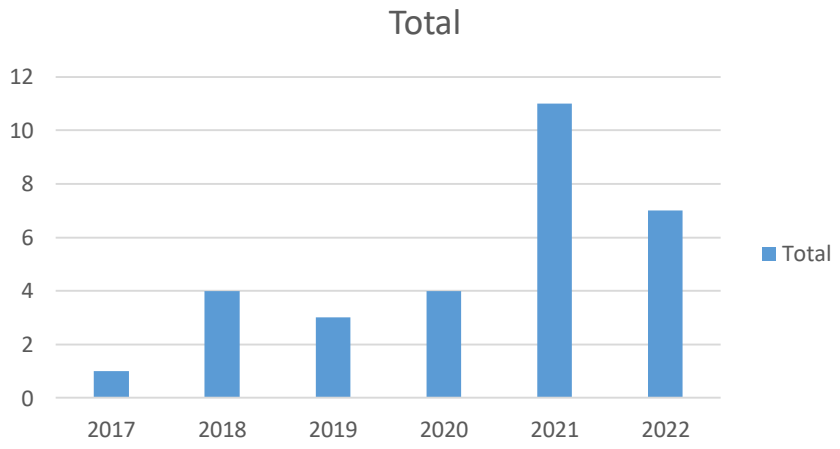

Figure 2. Year Based Publications

Count of Number of Citations

Among the studies involved, 20 of them had been cited at least once while 10 of them had zero citation. The number of citations ranged from 1 to 23. The involved studies and the number of citations for each study are shown in Appendix I.

Count of Document Types

The study involved 17 journal articles and 13 conference papers as indicated in Figure 3.

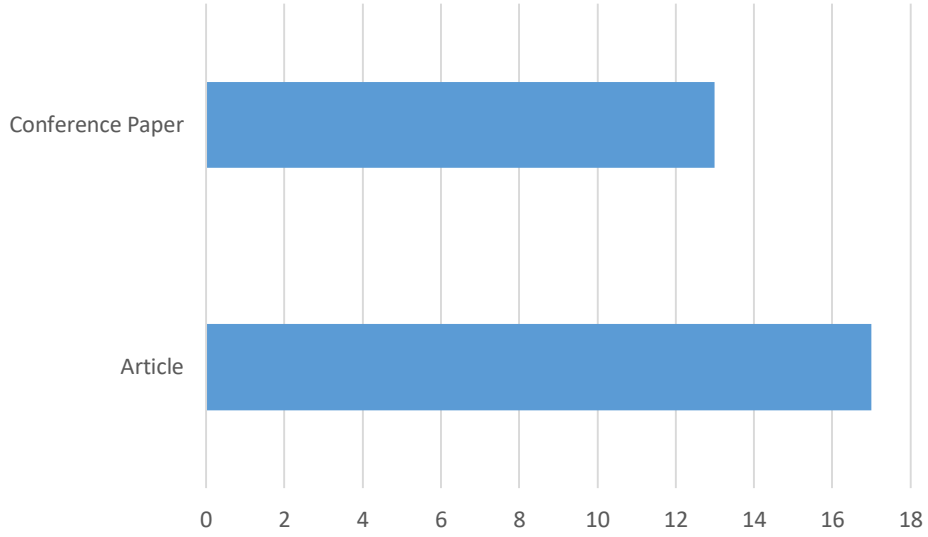

Figure 3. Count of Document Type

Count of Publication Stage

Among the articles involved in the study 29 of them were published final articles and one was an article in press. This helped in increasing the study's credibility by making sure that the articles involved are those which have gone through the review process. Figure 4 presents the publication stage of the involved articles.

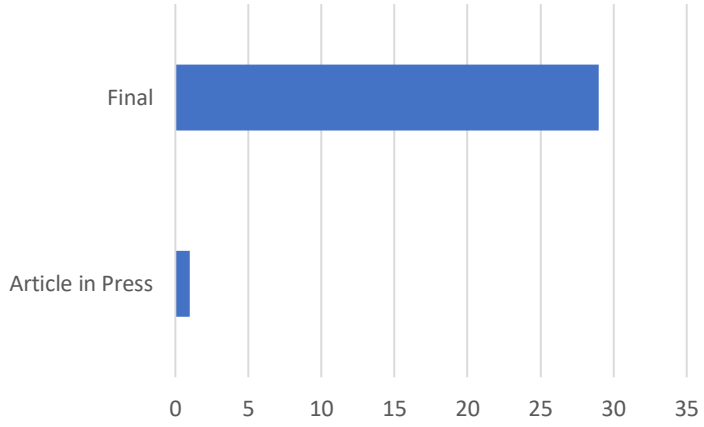

Figure 4. *Count of Publication Stage*

Content Analysis and Synthetization

Following the procedures suggested by Ibrahim (2012), the involved studies were analyzed and key themes were identified. The process involved, familiarization with studies by thoroughly going through them and their presented findings, initial codes were generated

from the findings assessment then key themes were identified and revised through multiple reading of the documents. Key themes were tabulated and presented as they appeared in the involved studies. Key themes as they appeared in the studies are shown in Appendix II.

Discussion

It was the intention of the researcher to assess studies from ten years back to present, however, after the screening of the obtained studies from scopus database, the oldest study remaining was conducted in 2017. The assessment of the studies based on the year of publications reveals that most of the studies were conducted in recent years that is 2021 and 2022. This shows that CBE has mostly attracted the researchers' attention in recent years. The publication citation count revealed that the majority of the included studies have been cited at least once which added credibility to the involved studies. There were also 10 studies with zero citation this can be attributed by the unpopularity of the CBE field among researchers. Giuffrida *et al.*, (2017) involved the assessment of studies from 2002 to 2016 in relation to CBE and found that over 50% of the involved studies were conducted from 2013 going forward. The recent rising interest in CBE among researchers can be owed to the continual popularity of Information Communication Technology and most recently to the uncertain situations like Covid 19 pandemic where the world witnessed the necessity of e-commerce (UNCTAD, 2021).

This study involved the assessment of journal articles and conference papers as well, some previous researchers have omitted conference papers in their analysis on the basis of improving the quality of their studies (Khan, and Qureshi, 2020). However, some of the most recent, valuable and insightful contributions are presented in conference papers (Giuffrida *et al.*, 2017). Likewise, the studies involved have been retrieved from Scopus which is one of the credible databases (Harzing, and Alakangas, 2016). Nevertheless, the articles and papers involved were strictly final publications and articles in press only, thus, they have gone through peer review and editorial process.

Findings show that over 50% of the assessed articles have indicated trade logistics and infrastructures to be among factors that have accelerated the growth of China CBE. This includes strategic setting up of overseas warehouses, like what has been done by companies like Alibaba and Jing-dong, which has led to the reduction of costs and improvement of efficiency in serving oversea markets. Effectiveness of clearance of goods at the custom by applying methods like electronic custom clearance which speeds up the clearance process. Likewise, in 2013 China launched what is known as a "Belt and Road Initiative" the project aimed at connecting China with the world through its two components; "Silk Road Economic Belt" which is involved with the construction of railways, roads and other land-based infrastructures and "21st Century Maritime Silk Road" which deals with the development and improvements of ports and other marine based infrastructures. Furthermore, China has invested in emerging technologies such as 5G, Blockchain and Artificial Intelligence which positively supports CBE activities (Bao *et al.,* 2020; Ding *et al.,* 2020; Guan, 2021; Guan, Zhou, Zhang, Guo and Xie, 2021; Liang, Gu *et al.*, 2021; Jiuru, 2018; Liu and Zhou, 2022; Sun and Watanabe, 2018; Wenying, 2019; Li, 2020; Zhao, 2020; Gu *et al.*, 2020; Li *et al.*,2021; Wang *et al.*, 2022; Wei and Wang, 2021; Yang, 2021; Zeng and Wang, 2021; Zhao, He, and Wutao, 2022). Previous studies have supported the importance of effective and efficient logistics and trade infrastructures on trade performance (Giuffrida, 2017; Song and Lee, 2022). China had been indicated to have Poor logistics and trade infrastructures in the past which hindered its CBE performance (Jiang and Prater, 2022, Shuyan and Lisi, 2013). The current study shows that over the years there have been significant improvements in China's trade infrastructures and logistics which has played an important role in improving its CBE performance. The improvement of logistics and trade infrastructure needs to be continuous to deal with the everchanging business environment and allow taking advantage of the latest technological improvements (Alekseenko, 2022; Li *et al.,* 2021; Wenying, 2019).

Government policies and support was the second most indicated factor among the reviewed

studies. The assessment showed that China's government is providing good support to the growth of CBE. This includes the designation of comprehensive pilot areas for CBE which enjoys preferential policies and procedures to facilitate business operations. The areas are in different parts of China, such as the Shanghai free trade zone, Hangzhou comprehensive pilot zone, Tianjin comprehensive pilot zone, Dalian comprehensive pilot zone and Liaoning free trade zone (Alekseenko, 2022; Bai *et al.,* 2018; Chen, 2022; Wang *et al.*, 2022). Government policies including legal supervision and treatment of legal disputes have as well been pointed to have an important role in the growth of China CBE. Policies that are related to customs clearance and internet connectivity have also been indicated to have a positive influence on CBE development. Other government initiatives like building of bilateral ties and promotion of CBE knowledge among firms are as well among the facilitating factors (Li, 2022; Li, Song *et al*., 2021; Sun *et al.,* 2017). Nevertheless, the "Dual Circulation" policy which aims at building the domestic economy while remaining open to the world that was proposed in 2020, has been predicted to have generous effect on China's CBE, based on some of its incorporated strategies, which includes, offering of subsidies, tax incentives and increase infrastructure investments (Chen *et al.,* 2022; Qiu *et al*., 2022). Related studies that have been conducted elsewhere such as Gessner and Snodgrass (2015), which focused on USA and Canada had also shown that government policies and support are essential in the performance of CBE. In the case of Tanzania among other, lack of proper support from the government including the inexistence of policies for governing e-commerce hinders the country's CBE performance (UNCTAD, 2020b). To increase participation in CBE activities, African governments including Tanzania need to provide practical support and improve the business environment like resolving issues regarding taxation and lack of awareness of governing rules which have been indicated to be among the top five blocking factors (Banga, *et al*., 2021).

The use of big data in business management is another factor that has been implicated to support China's CBE. Application of big data analytics has allowed a better understanding of customer behaviour and led to the creation of more personalized services which in turn increase customer experience and loyalty. On the other hand, it supports the reduction of firm's costs that could have occurred due to the need of conducting multiple market surveys or the loss of customers due to poor marketing and so forth. Increased customer experience and loyalty also lead to increase consumption and demand which translates to more sales and revenue, hence more profit for the firm (Liu, & Wang 2018). Big data has been used in inventory management, demand forecasting, real-time tracking of shipments and other activities which enhance the logistic supply chain (Guan, 2021; Wang and Cai, 2021). Past studies have shown that big data analytics support CBE (Guo, 2022; Zheng *et al.,* 2020). Zheng *et al.,* (2020) have urged e-commerce companies to invest in big data analytics as it leads to the optimization of logistics operations. However, Ogbuke *et al.,* (2022) have cautioned on ethical issues regarding the use of big data since in most cases the use of big data does not involve the consent of the third party. Though the article has not provided a clear recommendation of how to deal with ethical issues in the case of big data, it is a general rule to take note of ethical issues when the collection and analysis of data is involved (Creswell and Creswell, 2018).

Inter-industry collaboration has as well been indicated to support China CBE. The collaboration culture among players in the supply chain facilitates the easy and timely flow of goods and services. It also supports the speed of recovery of the supply chain in case of disruptions (Jiuru, 2018; Liu *et al*., 2021; Wei and Wang, 2021). The result is in line with previous studies which have indicated Inter-industry collaboration as a facilitating factor in CBE performance. Achieving a common goal in CBE is facilitated by good collaboration among the enterprises involved. It is an important tool in supply chain risk management (Chen *et al.,* 2022; Giuffrida *et al.,* 2021). Lack of collaboration among partners in the supply chain that include poor sharing of information makes the supply chain vulnerable to multiple challenges (Zhang *et al.*, 2023).

Gross Domestic Product (GDP) is another factor behind the growth of China's CBE. Strong GDP reflects on the purchasing power of the people, trade negotiations as well as driving of exports since it supports economies of scale and product diversification among other (Ding *et al.*, 2020; He and Wang, 2019; Wang *et al.*, 2022). The results are concurrent with Yin and Choi (2021), who showed an increase in GDP led to an increase in CBE. Higher GDP supports CBE's favourable ecosystem. Top performers in e-commerce activities are mostly those with robust GDP (UNCTAD 2020a).

Product diversification and low commodity prices have also been indicated to support China's CBE. The presence of numerous industries in China that are backed up by its strong economy allows the diversification of products which supports CBE. It also provides China with trade competitiveness by providing goods that other countries may not have an absolute advantage in producing. Likewise, China's commodities have been found to be relatively cheaper which is attributed to economies of scale, thanks to its strong manufacturing economy and supportive government policies like the provision of subsidies and tax incentives (li, 2020; Ma & Liang, 2021). Past studies have also indicated the contribution of product diversification and low commodity prices to the growth of CBE (Liu, 2020; Dastidar, and Banerjee, 2020). Product diversification supports catering for uniqueness of different markets and expands the country's market. Lack of product diversification limits a country's ability to explore new markets opportunities. Offering of low-priced products comes from the ability to produce at lower costs (Liu, 2020). High production costs have been indicated to be among the key factors that hinder the growth of the manufacturing sector in most African countries including Tanzania (Kirori, and Lufano, 2022; Mutingi *et al.*, 2017). In that regard, the Tanzania government need to keep investing in solutions which can help in lowering production costs. At the same time look at how trade policies can be reviewed to reduce the influx of imports which are substitute for goods that can be locally produced and therefore support the growth of local industries and boost export diversification.

Conclusion

The study has assessed factors that influence CBE in China with the intention of casting light on how Tanzania can improve its CBE performance by learning from China's experience. Findings have revealed that China has well invested and it is continuing to invest in trade logistic competence and trade infrastructures in general. Reflecting on the LPI that is published by the World Bank, it can show that, Tanzania's performance in trade logistics and infrastructure is lagging behind compare to China. According to the latest LPI Tanzania's mean rank is 67 while China's mean rank is 27 (Jaramillo *et al.*, 2018). Tanzania should increase its investment in trade logistics and trade infrastructures which can include investment in the latest technologies such as big data analytics, blockchain technologies, artificial intelligence and 5G. Tanzania should as well continue to improve its domestic and international transportation systems.

Government policies and support have been pointed out as among the important boosters of China's CBE. Compare to Tanzania this can be mirrored in the ease of doing business data that are published by the World Bank. According to the latest data, China ranks 31 while Tanzania ranks 141. Among the measured indicators for ease of doing business is the easiness of trading across borders in which China ranks 56 while Tanzania ranks 182 (World Bank Group, 2023). Tanzania can learn from China's strategies such as the establishment of comprehensive pilot areas for CBE which will receive special attention and preference. Developing policies and laws that can govern the operation of CBE, such as creating the environment for ease resolving of disputes when they occur.

Encouraging intra-industry collaboration is another important lesson that Tanzania can learn from China's experience. Players in the supply chain need to collaborate for the smooth operation of the business. The application of advanced technologies can also be used to support the collaborative management of the supply chain.

Tanzania should continue to create a good environment that will support the growth of GDP in general. Higher GDP supports economies of

scale in production and product diversification which can allow Tanzania to exploit various international markets and improve its competitiveness in terms of price and other relevant variables.

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List of Appendix

Appendix I

Number of Citation for Each Study.

Authors	Year	Cited by
Alekseenko A.P.	2022	0
Bai D., Liu P.	2018	0
Bao J., Geng X., Yu P.	2021	0
Chen N.	2022	2
Chen T., Qiu Y., Wang B., Yang J.	2022	23
Ding H.-C., Wang G., Zhong Z., Xu Q., Wu Q., Zhong Y., Zhan Y., Li M.	2020	1
Gu Y., Tan J., Zeng Q.	2020	1
Guan S.	2021	9
Guan X., Zhou H., Zhang L., Guo X., Xie S.	2021	0
He Y., Wang J.	2019	11
Jiuru Z.	2018	2
Li B.	2020	4
Li Y.-M., Song H., Wang Y., Zameer H.	2021	0
Liang Y., Guo L., Li J., Zhang S., Fei X.	2021	3
Liu H., Wang X.	2018	4
Liu X., Dou Z., Yang W.	2021	22
Liu X.L., Zhou Z.D.	2022	0
Ma S., Liang Q.	2021	6
Qiu Y., Chen T., Cai J., Yang J.	2022	0
Su W., Wang Y., Qian L., Zeng S., Baležentis T., Streimikiene D.	2019	18
Sun G., Qiao F., Li Y.	2017	2
Sun T., Watanabe W.C.	2018	3
Wang H.-D., Zheng C.-F., Xiao X.	2022	3
Wang X., Cai B.	2021	3
Wei L., Wang B.	2021	2
Wenying C.	2019	2
Yang J.	2021	0
Zeng X., Wang W.	2021	0
Zhao Y.	2020	6
Zhao Y., He Y., Wutao Z.	2022	0

Appendix II

Key Themes Presented

Authors	Year	Trade Logistics and Infrastructure	Government Policies and Support	Use of Big data	Inter-Industry Collaboration	GDP	Product Diversification and prices

Sun G., Qiao F., Li Y.	2017		*				
Jiuru Z.	2018		*		*		
Bai D., Liu P.	2018	*	*				
Liu H., Wang X.	2018		*	*			
Sun T., Watanabe W.C.	2018	*					
He Y., Wang J.	2019					*	
Wenying C.	2019	*					
Su W., Wang Y., Qian L., Zeng S., Baležentis T., Streimikiene D.	2019		*				
Li B.	2020	*					*
Zhao Y.	2020	*	*				
Gu Y., Tan J., Zeng Q.	2020	*					
Ding H.-C., Wang G., Zhong Z., Xu Q., Wu Q., Zhong Y., Zhan Y., Li M.	2020	*				*	
Wang X., Cai B.	2021		*	*			
Ma S., Liang Q.	2021						*
Li Y.-M., Song H., Wang Y., Zameer H.	2021	*					
Guan X., Zhou H., Zhang L., Guo X., Xie S.	2021	*					
Liu X., Dou Z., Yang W.	2021				*		

Wei L., Wang B.	2021				*		
Bao J., Geng X., Yu P.	2021	*					
Zeng X., Wang W.	2021	*					
Guan S.	2021	*	*	*			
Yang J.	2021	*					
Liang Y., Guo L., Li J., Zhang S., Fei X.	2021	*	*				
Wang H.-D., Zheng C.-F., Xiao X.	2022	*				*	
Chen T., Qiu Y., Wang B., Yang J.	2022		*				
Chen N.	2022		*				
Alekseenko A.P.	2022		*				
Zhao Y., He Y., Wutao Z.	2022	*					
Liu X.L., Zhou Z.D.	2022	*					
Qiu Y., Chen T., Cai J., Yang J.	2022		*				