Smart Port Construction on the China-Vietnam Border and Smooth Cross-Border Trade: The Case of Dongxing

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As the construction of e-commerce platforms and communication tools based on the internet has gradually matured, online transactions and smart customs clearance have emerged as new trends in cross-border trade and port construction. This paper takes the Dongxing Port in Guangxi Province, China, as an example, and analyzes the intelligentization of trade clearance, transactions, settlement and some other aspects including cross-border exchange, recognizing smart port construction as a new development model. It conforms to the current characteristics and the actual needs of borderland residents. On the one hand, it can improve the construction of the border exchange network, stimulate the economic expansion and elasticity of the port regions and promote smooth cross-border trade. On the other, it serves as a powerful means of encouraging the interconnection and mutual benefit of the Belt and Road Initiative (BRI) member states.

Keywords: smart port, smooth cross-border trade, intelligentization, interconnection

BACKGROUND

In the wake of the intelligence era, the proposal of "smart city" as a new concept and model promotes the intelligentization of urban planning, construction, management, and services. Meanwhile, it is also known as a new generation of information technology combining various applications, such as the Internet of Things (IoT), cloud computing, big data, and the geospatial information system (NDRC 2014). Therefore, as Internet Plus, mobile, and connectivity have brought dramatic transformations in many aspects, including changing urban and rural structures, blurred boundaries between individuals and groups, changes in interpersonal relationships and switching vision regarding privacy and transparency, it is essential to bring down the traditional interdisciplinary barriers and approach the transformation of anthropological studies in the perspective of digital anthropology (Zhou 2019).

In recent years, technologies such as the Internet, big data, risk prevention and control, and customs linkage have been increasingly applied in port construction with the further progress in the Belt and Road

Initiative (BRI). As emphasized in Chinese President Xi Jinping's speech at the National Cybersecurity and Informatization Work Conference, it is vital to actively embrace the historic opportunity of the Belt and Road Initiative, so as to strengthen the cooperation between BRI members, especially for developing countries, in different aspects, such as internet infrastructure, digital economy and cybersecurity, for the ultimate goal of building a digital silk road of the 21st Century (Xinhua 2018). Indeed, constructing an information platform for ports based on the Internet of Things is known to accelerate trade clearance and logistics, thus serving as a driving force for the economic development and prosperity of port cities (Bai 2017). Meanwhile, as smart ports are gradually constructed, launching new products and coming up with new solutions are believed to intelligentize port and customs development (Xiang 2018). Therefore, port intelligentization has not only improved the efficiency of personnel and product exchange at the customs, but also enhanced the smooth cross-border trade through the application of information technologies, demonstrating its growing importance as time goes on. This paper aims to focus on the impact of smart port construction on cross-border trade and local lifestyle through a case study of the Dongxing Port in Guangxi Province, China, which has parted ways with the traditional trade and communication models to meet the development demands of the new era.

Although no concrete definition has been offered for a smart port, this paper regards it as an application of multiple information technologies, such as big data, internet and cloud computing, in customs declaration and clearance, trade, finance and logistics to enhance the informatization and efficiency at the port. Therefore, it plays a fundamental role in cross-border trade, especially when it comes to promoting unimpeded trade. Unimpeded trade, as one of the "five focuses" of the BRI development, is to achieve mutual benefit and success through eliminating trade barriers, reducing trade and investment costs, and improving and accelerating regional economic circulation (Xinhua 2013). On the one hand, smooth trade and logistics are indispensable driving forces in promoting global economic development, aligning with the fundamental, long-term and shared interests of countries worldwide (Wu 2018). On the other, the key to unimpeded trade lies in establishing a trade facilitation mechanism through four aspects: a unified code of conduct, an interconnection mechanism, a multilateral financial cooperation system, and a facilitation system (Zhao 2018). Besides, the mutual opening-up of BRI members, the construction of trade systems and rules, and the development of integrated trade agreements are believed to enhance impeded trade (Li, 2019). Finally, a thorough literature review of BRI's unimpeded trade in different perspectives reveals that the trend of future studies in this respect lies in BRI's economic benefits. Since the concepts of the Belt and Road Initiative are yet new and unimpeded trade still in its early stage, existing studies mainly focus on their prospects rather than their actual effect on regional economy (Zhang 2019).

This paper chooses the Dongxing Port for a case study due to the following considerations. Firstly, it is the only borderland port in China connecting to the ASEAN countries by sea and land, showcasing its unique geographical value. Meanwhile, the port sees its advantage in transaction quantity, volume and personnel, making it a representative large port on the China-Vietnam border. More importantly, Dongxing is known as one of the earliest ports to implement customs informatization. In the port construction process, technologies, including big data, information network construction, and information sharing, have gradually transformed the clearance system from simple information points to an intelligent network, laying a solid foundation for smart port construction. This study adopts research methods such as observation and interviews, covering the periods of August 2019, December 2019, and January 2020 and locations including the Dongxing Guomen Scenic Area, Dongxing Border Trade Area, Dongxing Entry-Exit Frontier Defence Inspection Area, and the Móng Cái Port of Vietnam. The interviewees include personnel for transportation, declaration, and other aspects at the Border Trade Area, cross-border freight drivers, owners of Vietnamese speciality stores, and customs officers.

CUSTOMS CLEARANCE INTEGRATION AND SMOOTH TRANSPORTATION OF CROSS-BORDER TRADE

As a new development model of the Dongxing Port, customs clearance integration aligns with the current characteristics and actual needs of borderland residents from both China and Vietnam. Meanwhile,

it is known to have various advantages in promoting barrier-free clearance and seamless logistics docking, establishing a low-cost, predictable and efficient customs environment, and improving regional economic competitiveness (People's Government of Guangxi Zhuang Autonomous Region 2014). In particular, customs policies matter greatly to the vital interests of borderland residents because related adjustment can directly affect various aspects of their lives, including entry and exit, transaction, and interaction. Therefore, through a thorough analysis from the perspectives of policy and regulation, information technology, comprehensive port-area coordination, and customs clearance integration, this paper hopes to prove that, instead of dwelling on a single-route and isolated development pattern, the rapidly changing customs and trading environment welcomes port development prospects emphasizing linkage while catering more to the demands of borderland residents, making globalization, interconnection and linkage the crucial characteristics of smart port construction.

From Complication to Simplification: Emergence of Customs Clearance Integration

Policy implementation has contributed to the integration of customs clearance. Indeed, the Dongxing Port is known for its long history in customs clearance. The *Chefoo Convention of 1876* between Qing China and Great Britain opened Yichang, Wuhu, Wenzhou and Beihai as new ports for foreign trade. Under the jurisdiction of Beihai, Dongxing was chosen as the location of a borderland port (Li, 2016: 255). Since being listed as a first-class national port in 1958, Dongxing Port has undergone considerable ups and downs because of the changing China-Vietnam relations, even to the extent of temporarily suspending customs clearance. However, with China's deepening cooperation with Vietnam and the ASEAN countries, customs policies thereof have generally promoted port construction despite the adjustments in different periods. Nowadays, the policies implemented here have greatly improved clearance efficiency, such as efficient entry and exist for personnel with valid entry-exit permits and freight vehicles with eligible documents from both countries. At the same time, the various concise and efficient clearance methods have provided services of better quality for borderland residents from both China and Vietnam, which are praised for their time-saving and simplified procedures.

As the saying goes, good tools are a prerequisite to the success of a job. The same applies to the continuous improvement of infrastructure, which has provided favorable guarantees for convenient, efficient and large-scale cross-border trade at the Dongxing Port. In recent years, China and Vietnam have joined hands in the Dongxing-Móng Cái border gate project for economic cooperation zones and borderland inspection facilities, which includes the construction of the Guomen Scenic Zone, standardized factories, and the Luofu West Road. Meanwhile, two bridges over the Beilun River were officially put into use in 2019. With freight trucks going on No. 2 Bridge and locals and tourists passing through No. 1 Bridge, the Dongxing Port has finally terminated the chaotic mixed entrance and exit of personnel and vehicles. Besides, a crucial condition for smart port construction lies in a fully equipped border trade area, which is compatible with large-scale data analysis while bearing a large transaction volume. Working with operators such as China Unicom has improved the hardware facilities in the Dongxing Border Trade Area, including the addition of several newly laid optical cables, ensuring smooth data transmission and storage, to greatly promote future technical development. From the entrance area to the other side of the bridges, a series of facilities in the inspection and clearance areas have contributed to a holistic and well-planned borderland port with excellent infrastructure, making it fully prepared for personnel and product exchange, especially when it comes to large-scale cross-border trade.

Closer cooperation and parallel operation of departments inevitably constitute driving forces for a more straightforward and efficient customs clearance process. So far, the Dongxing Port has implemented a one-step service covering inspection, clearance and transportation departments. With customs and the inspection station situated in the same hall, there is no need for borderland residents to apply for documents in different venues scattered all over the place. Meanwhile, the one-step process also takes pride in its concise and time-saving review procedures, improving the efficiency of relevant departments while significantly enhancing inspection accuracy. Take the customs clearance of a freight truck as an example. Since the drive-through service combining border inspection, customs clearance and transportation management is completed in one site, it is easier for different departments to work with one another, achieving a high inspection rate

with impressive accuracy. Therefore, the parallel operation of various departments ensures the high efficiency and reliability of the customs clearance process.

The "All-in-One" Transportation Network for Cross-border Trade

As a crucial linkage of cross-border trade, transportation closely determines whether the cargo can reach its destination on time. While achieving the goal of saving time and costs, reliable transportation can also increase the benefits for locals when trading across the border. Generally, personnel, vehicles, and cargo are known as the three critical components of cross-border trade, which should be considered inseparably when constructing the transportation network. In the 1990s, freight business already existed at the Dongxing Port, which shouldered international freight service (Li 2016: 317). However, as the number of international freight companies increases, the world has seen the transformation of the freight business entering a new stage. Unlike the traditional single-route and isolated pattern, customs clearance for cross-border trade nowadays has achieved interconnections between different aspects, such as inspection, customs, transportation, freight companies and freight drivers, realizing closer cross-department information and cross-linkage exchanges. Consequently, the construction and development of a smart transportation network has significantly paved the way for smooth cross-border trade.

Freight companies take full charge of their drivers. In fact, most freight drivers at the Dongxing Port are affiliated with several large freight companies, with the Vietnamese drivers managed by companies from their home country. Apart from allocating routes, vehicles and tasks, these companies are also obligated to provide training on traffic rules and other perspectives, allowing drivers from both China and Vietnam to quickly get used to driving in both countries while significantly avoiding road accidents. Meanwhile, such a responsibility system also ensures that related departments can easily locate a driver via his company if an issue is raised, making "untraceable personnel-in-charge" a rare case. Strict management and training systems have significantly enhanced freight personnel organization and discipline, which helps promote the scale and order of cross-border trade.

Apart from the enhanced transportation and freight service, intelligent customs service also accelerates the process for freight trucks to cross the bridge connecting China and Vietnam. Our investigation conducted in this study reveals that information technology adopted by border registration and inspection has significantly improved customs clearance efficiency. As introduced by the informant HHX:

> The local transportation department has established an information system to register each freight vehicle, including the name of the owner, model and color. In this way, a driver only needs to fill in his personal information when applying for a new pass because all other information already exists in the system. While the physical registration form is only for the convenience of statistics, the information is solely reviewed and approved online, following which a driving permit will be issued by the transportation department, to be collected by the freight driver. In this way, drivers are not only able to go through the checkpoints by swiping their permits, but can also accelerate the inspection process by showing their permits to the Vietnamese customs staff. Ideally, not a single truck will miss out on the inspection at the border. Even if the Chinese customs have waved through a truck with a missing seal or document, the Vietnamese staff will soon find the problem and then send the vehicle back for re-inspection. All in all, the inspection rate at the No. 2 Bridge has even reached 99%. [1]

In this way, it can be seen that implementing automated checkpoints for vehicles has significantly improved the efficiency of the traffic flow at the customs, thus effectively reducing the queuing time. In addition to fulfilling the inspection duty, the Dongxing Port also holds quarterly discussions with its Vietnamese counterpart to exchange information on freight truck clearance. The timely and comprehensive exchange has ensured a high-quality freight vehicle inspection service at the port, which guarantees time-saving and smooth transportation for cross-border trade, satisfying the borderland residents from both China and Vietnam.

In addition, the intelligent clearance process contributes to a more straightforward freight service. Initially, the declaration can be completed on a touch screen at the customs declaration hall of the Dongxing Border Trade Area. After selecting the goods at the declaration interface, the applicant can submit the form and wait for the result. Since the self-service declaration normally takes no more than one minute, there is no longer any need to queue up at the counters. Nevertheless, a few counters for human-assisted declaration are still available, making things convenient for those unfamiliar with the self-service process. Therefore, residents and customs staff from both sides are satisfied with the current information process, believing that it has improved efficiency and achieved a win-win situation for both countries.

It is a relatively simple process for imported goods to enter China through the Dongxing Port. If a cargo arrives by ship, it is first taken to customs for inspection by Vietnamese workers before being transported by local Chinese drivers to the designated location at the Dongxing Border Trade Area. On the other hand, goods transported by road first enter the inspection area through No. 2 Bridge in large freight trucks. After the cargo is inspected and approved, it is then transported to its destination in batches by smaller trucks. The freight service at the Dongxing Border Trade Area sees the emergence of many intelligent applications, one being known as the "one-finger process." Since the information of local trade participants is all recorded in the system, Vietnamese merchants can simply distribute the arriving goods through a mutual aid group in the system. A trader can then come to the merchant's store, where he swipes his ID cards and has his fingerprint checked on the machine in less than 20 seconds. As the fingerprint is processed and recognized, the trader's information is then passed on to the customs to initiate the declaration process. Meanwhile, a small freight truck and driver will be matched with the trader whose fingerprint is scanned. With the transparency of contact information between the driver and trader, and thanks to the intelligent system, it is easy for the driver to reach the trader-in-charge when the batch of goods is being transported and inspected in the Border Trade Area. The rapid cargo distribution and declaration have significantly improved the customs clearance efficiency, being time-saving for borderland traders. As admitted by the informant YXX,

> Since we are locals in Dongxing, we come here almost every day. This is a simple process, only requiring us to swipe our ID and putting our finger on the scanner. As you can see, although there are many of us, it does not take long to wait because less than a minute is needed for each person if everything goes right. We are so happy with such smart innovations, which are much more convenient than conventional methods. Since there is no need to sign or go through any physical document or slip, this is even more useful for the local illiterate elderly traders. [2]

Besides, to ensure the efficiency and safety of the over 3,000 freight vehicles within the Dongxing Border Trade Area, special license plates starting with the Chinese character "互" are issued according to the national standard in China to differentiate freight trucks from other vehicles, making it convenient to go through the inspection area. With the regular weighing and strict inspections of the trucks with the special plates, the reliability of the vehicle information is largely ensured. Meanwhile, the special plates also feature chips containing relevant registration information. In this way, when a freight truck goes through the checkpoint, it can be easily detected by the scanner, showing the specific information, including the plate number, weight of transported goods, and approval to go, on a small screen over the left side of the checkpoint. If everything is checked and approved, the poles will automatically lift to release the truck. However, if a suspicious item appears on the screen, such as "no license plate information", there might be a problem with either the transported goods or the vehicle, demonstrating the necessity for the truck to return for re-inspection. During the inspection process, the owner's information should be consistent with the vehicle's license plate, which significantly facilitates the management of customs, inspection, and other departments. The success of this procedure is noticeable as can be seen in the statement of the informant HXX:

> When merchants want us to ship the goods, they will call us to go and pick them up. Every driver has a permit containing our personal and vehicle information, allowing us to drive through the second inspection checkpoint by either having the license plates automatically scanned or our permits swiped. With the matched driver and vehicle information, the rest of the process will be completed quickly because experienced drivers like me only slow down the vehicle when approaching the scanning area. If no problem is found, the pole will immediately lift for us to drive through. However, some older drivers tend to prefer swiping their permits, believing that it is a more promising process. Nevertheless, going through the inspection checkpoint by swiping the permit is also a quick process, being definitely more convenient than before. As long as the cargo and vehicle are in good condition, there is even no need to stop the vehicle for inspection. The only thing is to remember to keep the permit with you in case you are stuck in the Border Trade Area. [3]

Therefore, standardized personnel-goods-vehicle regulation and informatized customs clearance and inspection methods have contributed to a gradually completed freight network. Firstly, as a crucial part of cross-border trade, effective transportation can greatly reduce costs while saving time so as to accelerate the transaction process, providing more favorable conditions for unimpeded trade. Secondly, advanced information technology has equipped every trading step with data support, providing a reliable basis for smooth cross-border trade establishment. Finally, improving the transportation process by finding and solving problems can fully prepare for smooth cross-border trade. In this way, it can be seen that smart port construction facilitates multiple aspects, such as customs clearance, transportation, and information exchange, progressively forming a comprehensive and complete structure.

CLOUD-BASED BORDER TRADE AREA AND SMOOTH CROSS-BORDER TRADE

Internet Plus has dramatically changed interpersonal and cross-ethnic communication, stimulating a special transformation in different industries (Zhou 2019). As an important symbol of the information era, the Internet has seen its progressively elevating role in smart port construction and cross-border trade. Meanwhile, with the maturing construction of Internet-based e-commerce platforms and communication tools, online transactions become more convenient and cost-saving, emerging as a new trend for cross-border trade gradually welcomed by more people. The advantage of the Internet lies in its ability to transcend spatial limitations, realizing quick cross-regional trade online, which diversifies the trading methods and platforms for borderland residents. Besides, transparent transaction information allows local traders to know the transaction situation of the day through the big data platform of the Border Trade Area. In this way, a better understanding of the current situation can help local traders to make reasonable plans for subsequent transactions.

Information Exchange: Big Data Platform for Cross-Border Trade
The implementation of the big data platform at the Dongxing Port has significantly improved information exchange at the Border Trade Area, as the informant LXX introduces:

> The big data project integrates a "three-in-one" system, which involves the inspection department in a joint cross-border trade management. Since the transactions here are all real-time, one can see the daily trading volume and quantity on the screen. Meanwhile, with the trends and distribution clearly shown in curves and pie charts, it is easy for local traders to get to know the current business environment. Besides, on the right-hand side of the display is the surveillance footage for management and regulation purposes. Currently, the Border Trade Area is thoroughly covered by 300 to 400 surveillance cameras. Whether for staff or residents, this information exchange platform remains popular. [4]

In this way, establishing the big data platform demonstrates a humanistic management of cross-border trade at the Dongxing Port. Apart from displaying the general real-time and monthly transaction volume,

quantity, and types, the platform also shows the details of a specific transaction, being even transparent to the extent of the trader's name. Back in the earlier years, trading information was mostly obtained from traditional sources, such as mouth-to-mouth or written materials, which not only presented a lack of timeliness and accuracy but also discouraged local traders' awareness and channels to search for more trading information. Thankfully, the emerging information era has brought in mobile phones, computers and big data platforms, providing multiple channels for information exchange at the border. On the one hand, the big data platform offers timely cross-border trade information to local traders through official media. On the other hand, it allows the staff of the Border Trade Area to improve the platform based on the real-time situation and feedback from local traders and enterprises. During the investigation periods of this study, a small crowd of traders and staff could often be seen near the screens displaying the big data platform, and special occasions, such as when over 9,000 transactions were accomplished for the day, often attracted happy exchanges and remarks among the viewers. Most people appeared to show enthusiasm towards such an innovation. Sometimes, when a viewer saw his name on the display, he even proudly pointed it to others around him.

In addition to the publicly available big data platform mentioned above, relevant departments in the Border Trade Area have also developed an app to monitor the transaction progress and data within the Border Trade Area at any time in a closed network. In this way, management staff can log in and access related information in the system even when they are away from Dongxing, such as in Nanning. This system transcends geographical limitations, allowing the management level to promptly identify potential risks and problems, and providing a strong support for developing cross-border trade.

Therefore, informatization and intelligentization have provided significant data support for cross-border trade. Generally, smart ports play an essential role in many aspects, one of which lies in local traders' significantly growing awareness of pursuing rational transactions through obtaining trading information. In this way, the traditional means of information exchange, which are relatively close-cycled, can no longer meet traders' needs for real-time and accurate transaction information to reasonably plan for subsequent transactions with fewer risks but high returns. Local traders are important participants of cross-border trade, and their changing understanding can directly or indirectly affect cross-border trade. After all, the changing transaction types and quantity for import and export can impact the structure and scale of cross-border trade, affecting the unimpeded trade in turn.

Interconnection: Diversified Trading Platforms for Cross-Border Trade

Currently, the trading platforms at the Dongxing Port are divided into two categories: e-commerce and individual sales. In particular, The 89bay.com is a well-known e-commerce platform for cross-border trade between China and Vietnam. According to QYS:

> The 89bay.com platform originally aims to make cross-border trade more convenient for local traders. For example, if I want to order something from Vietnam but do not know who have the product, I used to have to go back and forth between China and Vietnam several times for one transaction, which is really inconvenient. However, with the platform now, you can first check the product's availability before ordering it. By placing the order and filling in the address on the online platform, sellers and buyers no longer need to meet each other in person, but arrange the documents and payments through the settlement center without any worries about currency exchange. At the same time, the transaction data on this trading platform is also uploaded to regulatory authorities, providing them with more information. In fact, the 89bay.com takes pride in its connectivity, which integrates information from all sources and significantly accelerates information exchange. However, one issue lies in the dominant role of the Chinese side in operating this platform: after all, the e-commercial cooperation between China and Vietnam remains in the early stage, with plenty of room for improvement. [5]

With the 89bay.com platform connecting governments, state-owned enterprises, cross-border markets, Vietnamese businesses, and borderland residents, who serve in their respective fields and jointly promote

this e-commerce platform, the smooth establishment of international settlement has ensured a more convenient capital flow and rapid transactions for developing cross-border e-commerce. In addition to these local platforms, many merchants also choose to set up their online stores on larger platforms such as taobao.com. Since Dongxing is a production place of many goods, local Taobao store owners enjoy various advantages, such as lower prices and good quality of the products, thus adding to their competitiveness in the market. Meanwhile, as many online customers not only repeat their orders after the initial one, but also introduce the store to other potential customers, sales can be significantly increased. Furthermore, some merchants also mentioned WeChat as a popular means of business. As introduced by LXX:

> Although I am the owner of a physical store at the port, most of my profits still come from my WeChat Moments. When tourists come and buy things in the store, I often persuade them to add me as their WeChat friend. While they can see my posts of available Vietnamese products on my WeChat Moments, I can receive their orders via WeChat messages and send them the products with courier services. Since the products are more reliable and are sold cheaper at the port than elsewhere, there are a few returning customers. Usually, I can send around 15 items per day. However, holidays such as the Chinese New Year allow us to dispatch around 30 or 40 items a day. I believe that the transactions on WeChat remain profitable with a very high repurchase rate. So most of my goods are sold this way. [6]

The various barriers in traditional cross-border trade, including geographical location, national policies, and technological power, would cause situations such as close-cycled and imbalanced trade information exchange from time to time, leading to failed receipt of prepaid goods, failed payment for received goods, and making the behavior of evading payment relatively common phenomena. Meanwhile, the differences in relevant laws and regulations between China and Vietnam and the insufficient information exchange have made it impossible to resolve these issues, seriously damaging the interests of both buyers and sellers and affecting the long-term prosperity and development of cross-border trade. Thankfully, emerging e-commerce platforms have solved such issues to a large extent. At the same time, the thriving third-party platforms ensure the rights of both buyers and sellers when it comes to funds and transactions. While social and commercial apps, such as WeChat and taobao.com, provide more platforms for cross-border trade with broader coverage, more diverse customer groups, and more stable sales, connecting shop owners and customers from both China and Vietnam to form a vital part of cross-border trade, the diversified platforms have produced more transaction channels for increasing profits. Furthermore, the expanded trading channels also provide a better chance of smooth cross-border trade, avoiding risks and bringing down barriers to guarantee the smooth progress of transactions.

By checking store information, interviewing customer service, verifying shipping addresses, and applying other similar methods, we can see that Vietnamese speciality products such as birds' nests and dried fruits are mostly dispatched to different parts of China from the Dongxing Port, where their physical shops are generally located. With the changes in local transaction platforms and methods, the diversified trading platforms not only provide safer and more reliable transaction channels for cross-border trade, but also enlarge the trading scope with its effect and the cross-border trade unlimited by geographical locations. Therefore, whether it is funds, goods, or even interpersonal relationships, the Internet can expand the aspects from the Dongxing Port to other part areas.

Mutual Benefits: Humanistic Trading Models for Cross-Border Trade

Our investigation has discovered two interesting phenomena in cross-border trade: "personnel carrying goods across" and "goods provided by multiple suppliers". In particular, the former refers to the phenomenon that local Chinese and Vietnamese residents with travel permits personally carry a certain number of items through customs clearance from sellers to buyers. Meanwhile, as merchants engaged in small commodity wholesale, speciality sales and other trading activities in the port areas gradually develop their relationships with relatively fixed suppliers based on their contacts or demands, an enormous trade network is eventually formed with complex and intricate relationships. As stated by the informant HXX:

> Our store cooperates with different suppliers for different products. For some well-known Vietnamese specialities, there is usually a general agent in China from whom we buy the goods. However, if there is no agent in China for certain products, we go to a middle person who brings the goods directly from Vietnam. Since we have known these suppliers for quite some time, if any problem surfaces, we can directly contact someone who can come and help us in person. These suppliers were first introduced by our acquaintances. Then, after working with them for a while and becoming familiar with them, we also extend our helping hand to one another. Therefore, whether we pay first or they dispatch the goods first, trust remains between us. [7]

This shows that since the suppliers of many stores are mainly introduced by the acquaintances of shop owners, they usually keep a friendly relationship. Due to the low production volume and unstable supply of some products, one supplier may not be able to meet the demand of a shop. Therefore, there are usually multiple suppliers from both China and Vietnam to ensure a sufficient supply for one product. Some Vietnamese suppliers can considerably communicate with the shop owners in Chinese and maintain a friendly relationship with them, even to the extent of sharing a joke. This study observes excellent long-term cooperation between Chinese shop owners and Vietnamese suppliers. Some Vietnamese merchants even help contact middle persons to bring the goods through, resulting in close and frequent transactions between the two parties. Besides, it is also observed that some Chinese shop owners sometimes leave room for small Vietnamese vendors to set up stalls in their shops free of charge. In return, those benefited individuals also keep an eye on the store. All in all, long-term communication has established harmony between people on both sides of the border, which has had a subtle but positive impact on the development of China-Vietnam cross-border trade.

Therefore, with modern technologies such as WeChat and the Internet and the rapid development of the logistics industry, cross-border trade has gradually ventured into a broader market. Meanwhile, as the interactions at the border are becoming more frequent, mutual benefits during the trading process have made things more harmonious between Chinese and Vietnamese residents at the border. As the foundation of smooth cross-border trade, harmony in the interpersonal relationship at the borderland is believed to determine the future sustainability of unimpeded trade. In this way, it is crucial to maintain friendly and stable relationships in cross-border trade, which is usually an issue easy to overlook in unimpeded trade, and has also been a long-term concern in smart port construction.

PAPERLESS FINANCE AND SMOOTH FUNDS FOR CROSS-BORDER TRADE

The importance of funds and currency is increasingly recognized, especially during cross-border trade, where currency settlement is the final step towards successful transactions for both parties. Meanwhile, given that more funds are involved in transactions nowadays with the rapid development of cross-border trade at the Dongxing Port, a special phenomenon known as "street vendor bank" has emerged in response to the increasingly vital issues in the port areas, such as how to settle accounts quickly and accurately. Due to the different reference standards for CNY-VND and VND-CNY exchanges, the profits of these street vendor banks come from the price difference in currency exchange. Although these special banks are popular among borderland residents who directly exchange currency and complete transactions there for convenience, undeniable drawbacks remain for these services, such as the small settlement amounts, lack of standardization, and lack of security. Nevertheless, the gradual promotion of the BRI has widened the coverage of participating port areas and deepened their involvement. With the advantage of being a borderland port, the Dongxing City is also vigorously constructing a "financial road" towards the BRI to pave the way for unimpeded trade.

Paperless Settlement for Cross-Border Trade

In July 2013, the head office of the People's Bank of China approved the trial project of personal Renminbi settlement for cross-border trade, allowing individuals from both China and abroad to access this service with valid IDs. Then, the 26th July 2014 witnessed the official unveiling of the ASEAN Currency

Business Center of the Agricultural Bank of China (Dongxing Experimental Zone) as the only banking institute to specifically promote the experimental zones for comprehensive financial reform along the border in Yunnan and Guangxi Provinces. Through detailed exploration, this center duplicates the Dongxing model with "group pricing" (once a week) and "rotating pricing" (originally from the four major banks in China), realizing a direct exchange between the Renminbi and Vietnamese dong through a quote (People's Government of Fangchenggang City, 2017).

A related investigation conducted at the Móng Cái Port has discovered the existence of a large-scale market for street vendor banks involving hundreds of people in the currency exchange business, with some even being scattered in the streets and alleys near the port. By communicating with the business organizers, it was found that those street vendor banks can conduct both CNY-VND and VND-CNY exchanges, with a minimum limit of 100 CNY for the CNY-VND exchange. Admittedly, these street vendor banks in Móng Cái are the first stop for many Chinese tourists before they move on to the shops. The popularization of these street vendor banks is possibly due to the limited payment methods and banking services in the city. Since most small shops here do not support online payment, cash payment remains the main paying way for the general public. In addition, only five banks, including two self-service machines, are observed in the small alleys near the Móng Cái Port, which is far fewer than those closely distributed in Dongxing, with roughly ten observed during the investigation.

A gap exists in the development of information finance between China and Vietnam, meaning there is still a long way to go in smart port construction. At the same time, there is also a situation of information inequality and insufficient interconnection between the two countries, indicating that further effort should be made to strengthen existing policy implementation to match cross-border financial policies with the rapidly developing cross-border trade. As a lubricant and booster for improving unimpeded trade, finance should be more active in enhancing BRI trade cooperation (Hu 2019). In particular, the development of cross-border finance can promote unimpeded trade financially by simplifying trading procedures, improving payment and settlement efficiency, reducing trading costs, accelerating capital flow and improving regional economic development.

Diversified Payment Methods

With the development of information technology, major payment methods have undergone gradual diversifications from cash payment to card and QR code payments, making it more convenient to pay. Indeed, the popularity of QR code payment in recent years has made this method increasingly used in cross-border transactions. For instance, many Vietnamese business people working in China are no strangers to new payment methods, such as WeChat Pay. Meanwhile, nearly all in-store customers use WeChat Pay and Alipay to check out. In addition to the free flow of both Renminbi and Vietnamese dong at the Dongxing Port, the diversified payment methods provide multiple means and options for the transaction process, which not only ensure the quick completion of a transaction, but also improve the financial security.

Every shop at the Dongxing Port observed in this study has Alipay and WeChat QR codes available for receiving money from customers. More than half of the customers would opt to use QR code payment, especially the younger generation, nearly all of whom would choose this method. Even if the QR code is not presented at the counter, customers will subconsciously ask for it, showing their habitual preference for online transactions. From selecting the product to buy to completing the payment, it only takes a few minutes, significantly improving the efficiency of transactions while stimulating the consumption flow.

From the earlier processes of order placement, transportation and transit to the later steps of sales, settlement and payment, information technologies, including big data and the Internet, are involved in every step during cross-border trade. Meanwhile, the transformation from the traditional mode has evidently demonstrated the effect of intelligentization on cross-border trade. Indeed, the unimpeded trade is the result of the joint effort of each link. Thanks to the progressive informatization, the actual joint effect is greater than simply putting all the links together, thus paving the way for unimpeded trade.

CONCLUSION: THE SIGNIFICANCE OF THIS STUDY

Due to the economic expansion and elasticity, unimpeded trade has become a topic of increasing concern, demonstrating its importance in the Belt and Road initiative and its contribution to related development. Meanwhile, the investigation and analysis of the port areas have also confirmed the conducive role of smart port construction in sharing China's successful experience from reform and development, which has strengthened China's exchanges with its neighboring countries while promoting integrated development at the China-Vietnam border.

As the successive rise and implementations of "informatization", "Internet plus", "intelligentization", and "blockchain" have further proved the occurrence of constant social change, it is necessary to approach innovations with brand new visions and perspectives. According to the successful example of intelligent construction and smooth cross-border trade at the Dongxing Port, anthropological studies should keep up with the times rather than dwelling on the traditions (Zhou 2019). Meanwhile, the academic attitude of anthropologists should always be approaching things from a developmental and diverse perspective and keeping a sharp eye on new phenomena and issues.

Admittedly, the research topics of anthropological studies on the port areas have pointed to considerable evolvement over the years. For example, by exploring the path of port urbanization at the China-Vietnam border, Qin has summarized three port urbanization models: port-city integration, port-production-urban integration, and port villages, which focus on settlement studies (Qin 2017). Then, following the study approaching anthropology at the port from the perspective of cross-border ethnic corridors (Deng *et al.* 2018), a growing number of studies have set eyes on the intelligentization of port construction, such as the exploration in establishing a "smart port" WeChat, taking advantage of the social platform based on public cloud computing (Cheng 2019). At the same time, research methods in anthropological studies have had significant changes in the Internet era. On the one hand, various aspects of fieldwork, such as location selection, approaches, ethnographical presentation and observation, have been much influenced by the new situation. On the other, the authenticity of online data and the contextual issues in online ethnography should be considered (Zhou 2019).

As a gradually deepening and innovative process, smart port-related studies, as discussed in this paper, remain one of the heated topics. It is believed that strengthening the research on smart ports plays an extremely vital role in developing anthropological studies on borderland regions and deepening the port modernization, which will consequently promote the Belt and Road Initiative and contribute wisdom to constructing a community with shared humanity for the future. As President Xi Jinping remarked during his meeting with the President of Brazil, "We are happy to share our development experience and achievements for the common goal of prosperity with Brazil" (China Daily 2019). From unimpeded trade to people to people communication, from economy to culture, from China to other BRI members, the future no longer lies in isolated and individual efforts, but in the joining hands of different countries. Smart port construction can strengthen the friendly and harmonious exchanges between countries, which is not only a development trend in the context of globalization, but is also in line with the current demands.

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ENDNOTES

1. Interviewee: HHX, female; date: 8th August 2019; venue: the International Road Transport Management Office of the Dongxing Port.
2. Interviewee: YXX, female; date: 3rd January 2020; venue: a Vietnamese speciality store at the Dongxing Border Trade Area.
3. Interviewee: HXX, male; date: 4th January 2020; venue: the inspection area of the Dongxing Border Trade Area.
4. Interviewee: LXX, male; date: 11th August 2019; venue: Dongxing Border Trade Area.
5. Interviewee: QYS, male; date: 12th August 2019; venue: Dongxing Border Trade Area.
6. Interviewee: LXX, female; date: 30th December 2019; venue: a Vietnamese specialty store at the Dongxing Port.
7. Interviewee: HXX, female; date: 31st December 2019; venue: Wanzhong International Wholesale Market of the Dongxing Port.

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