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The Speed of Currency Exchange in Sino-Moroccan Trade: Growth Potential of Non-Dollar Transactions.

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Abstract:

This study examines the efficiency of currency exchange in Sino–Moroccan trade, with particular attention to transaction speed, institutional structure, and the potential of non-dollar settlement mechanisms. Using a mixed-methods approach, the research combines survey data from 201 respondents with semi-structured interviews conducted with two Moroccan commercial banks engaged in cross-border transactions with China. To quantify financial efficiency, the analysis applies Fisher's velocity of money framework to transaction timelines, while Keynes's liquidity preference theory is used to interpret behavioral and institutional constraints.

The findings reveal significant disparities in transaction speed depending on institutional presence and settlement channels. Banks with direct representation in China complete transactions substantially faster than those relying on correspondent banking networks, resulting in markedly higher monetary velocity. Survey results further indicate strong public readiness for digital payments and moderate trust in non-dollar trade, alongside persistent concerns regarding cost, security, and regulatory clarity. Overall, the study demonstrates that transaction speed functions as a critical growth factor in bilateral trade and that trust and financial infrastructure are decisive in enabling efficient currency exchange. The results offer practical insights for policymakers and financial institutions seeking to enhance Sino–Moroccan financial cooperation and support diversified trade settlement.

Keywords: Sino–Moroccan trade; currency exchange efficiency; transaction speed; non-dollar settlement; RMB internationalization; velocity of money; digital payments

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1. Introduction

1.1 Global Shift in the International Financial System

For more than seven decades, the international financial system has been dominated by the United States dollar (USD). Since the establishment of the Bretton Woods system in 1944, the dollar has served as the primary medium for international trade settlement, foreign exchange reserves, and global financial transactions **(Eichengreen, 2011; Ocampo, 2019; Prasad, 2014).** Even after the collapse of the gold standard in the early 1970s, the USD retained its central role due to the size of the U.S. economy, deep and liquid financial markets, and strong institutional credibility **(Eichengreen, 2011; Prasad, 2014).** Today, the majority of global trade invoicing, commodity pricing, and cross-border payments continue to rely on the dollar, reinforcing its position as the world's leading reserve currency **(Eichengreen, 2011; IMF, 2023; Prasad, 2014).**

However, the stability of this dollar-centric system has increasingly been questioned. The rise of emerging economies, particularly China, has significantly altered the global distribution of production, trade, and capital flows **(Ocampo, 2019).** China has become one of the world's largest trading nations and a key driver of global economic growth, prompting sustained efforts to internationalize its currency, the renminbi (RMB) **(Subacchi, 2020; Yu, 2014).** Over the past two decades, China has gradually expanded the use of the RMB in trade settlement, bilateral currency swap agreements, and offshore financial markets **(Subacchi, 2020; Yu, 2014).** According to international payment data, the RMB has risen steadily in global usage and is now among the most actively used currencies in international payments **(SWIFT, 2024).**

Geopolitical developments have further accelerated this transformation. The increasing use of financial sanctions, trade restrictions, and monetary tightening by major economies has exposed the vulnerabilities associated with excessive dependence on a single dominant currency **(Ocampo, 2019).** Events such as the exclusion of certain countries from the SWIFT payment system have highlighted the strategic risks embedded in the existing financial architecture **(BBC News, 2022).** As a result, many countries are exploring alternative payment systems and settlement currencies to enhance financial sovereignty and reduce exposure to external shocks **(Ocampo, 2019; Prasad, 2014).**

Technological innovation has also played a critical role in reshaping global finance. Advances in digital banking, fintech platforms, blockchain technology, and central bank digital currencies (CBDCs) have reduced barriers to cross-border transactions and challenged traditional intermediary-based payment systems **(Gomber et al., 2017; Reuters, 2024b).** China's Cross-Border Interbank Payment System (CIPS) represents a significant step toward enabling faster and more autonomous international RMB settlement **(Chen & Cheung, 2019).** These developments suggest that the future international financial system may become more multipolar, digital, and regionally integrated **(Gomber et al., 2017; Ocampo, 2019; Reuters, 2024b).**

Within this evolving global context, examining alternative currency arrangements and transaction mechanisms has become increasingly important. Understanding how non-dollar payment systems affect transaction speed, cost, and trust is essential for countries seeking to strengthen bilateral trade relations **(Ocampo, 2019; World Bank, 2023).** This study situates Sino–Moroccan trade within this broader transformation, focusing on how currency choice and financial infrastructure influence the efficiency of cross-border economic exchange.

1.2 Sino-Moroccan Economic Relations

Economic relations between Morocco and China have expanded significantly over the past two decades, evolving from traditional diplomatic engagement into a multifaceted partnership encompassing trade, investment, and development cooperation. Although diplomatic relations were established in 1958, bilateral ties intensified notably after Morocco's accession to the Belt and Road Initiative (BRI) in 2016 **(Ministry of Foreign Affairs, Kingdom of Morocco, 2016)**. This marked a strategic turning point, reinforcing cooperation in infrastructure, logistics, technology, and industrial development. The signing of the Joint Implementation Plan for the BRI in 2022 further institutionalized this partnership and positioned Morocco as a key Chinese partner in North Africa **(Africanews, 2022)**.

Bilateral trade between the two countries has grown rapidly in both volume and diversity. China has become one of Morocco's largest trading partners and ranks among the country's top suppliers of manufactured goods **(Morocco World News, 2023)**. In 2024, China's exports to Morocco reached approximately USD 7.74 billion, while Moroccan exports to China—particularly phosphate-based products, seafood, and agricultural goods—also expanded steadily **(Trading Economics, 2024)**. This growth has been supported by major joint investment projects, most notably the Mohammed VI Tangier Tech City, which aims to establish Morocco as a regional industrial and technological hub linking Africa and Europe **(TelQuel, 2023)**. In addition, Chinese investments have increasingly targeted high-value sectors such as renewable energy, automotive manufacturing, and electric vehicle battery production. A prominent example is Gotion High-Tech's USD 1.3 billion electric vehicle battery gigafactory project announced in 2024 in Kenitra, Morocco **(Reuters, 2024a)**.
Morocco's strategic geographic position and financial stability further enhance its role in Sino–Moroccan cooperation. Located at the crossroads of Africa and Europe and supported by extensive trade agreements with the European Union and the United States, Morocco offers Chinese firms a gateway to multiple international markets. Its relatively advanced financial sector, centred around Casablanca Finance City, strengthens its attractiveness as a regional financial hub **(Casablanca Finance City Authority, 2024)**. The opening of a representative office by the Bank of China in Casablanca in 2016 symbolized growing financial engagement between the two countries **(Bank of China, 2016)**. Nevertheless, despite strong trade growth and rising investment flows, financial cooperation remains limited in operational terms. Cross-border payments continue to rely heavily on the U.S. dollar and intermediary banking systems, resulting in slow transaction speeds and higher costs. This gap between expanding economic ties and underdeveloped financial infrastructure forms the central motivation for this study.

1.3 Research Gap and Objectives

Despite the rapid expansion of trade and investment between Morocco and China, existing academic literature has paid limited attention to the operational efficiency of financial transactions supporting this relationship. Most studies on Sino-African or Sino-Moroccan cooperation focus on trade volumes, infrastructure investment, or the geopolitical implications of the Belt and Road Initiative **(Sanfilippo, 2021; Cheru, 2020)**. While research on global currency dominance and the internationalization of the renminbi has grown substantially **(Eichengreen, 2011; Subacchi, 2020; Yu, 2014)**, few studies examine how currency choice and payment systems affect transaction speed, cost, and trust at the bilateral level, particularly in the context of Morocco–China trade.

Moreover, research on non-dollar trade arrangements has largely concentrated on major economies or energy exporters, such as Russia and Saudi Arabia, where local-currency settlements have expanded rapidly following bilateral agreements **(Reuters, 2023; BBC News, 2022).** In contrast, there is a clear lack of empirical evidence on how similar mechanisms could function in medium-sized, open economies such as Morocco, especially those positioned as regional financial hubs linking Africa, Europe, and Asia. Existing studies also tend to rely heavily on macroeconomic indicators, offering limited insight into institutional practices, banking constraints, and public perceptions that directly influence cross-border financial efficiency **(World Bank, 2023; African Development Bank, 2022).**

To address these gaps, this study examines the speed and efficiency of currency exchange in Sino-Moroccan trade by combining quantitative survey data with qualitative evidence from commercial banks. Drawing on Fisher's theory of the velocity of money **(Fisher, 1911)** and Keynes's liquidity preference framework **(Keynes, 1936)**, the research evaluates how transaction speed, institutional trust, and technological infrastructure interact in shaping cross-border payment outcomes. The specific objectives of this study are threefold:

(1) to assess public and institutional attitudes toward non-dollar transactions between Morocco and China;

(2) to measure differences in transaction speed across banking structures and payment channels; and

(3) to identify policy and institutional mechanisms that could enhance financial cooperation through direct RMB–MAD transactions.

By focusing on transaction efficiency rather than trade volume alone, this study contributes to the literature on international finance and de-dollarization while offering practical insights for policymakers and financial institutions seeking to strengthen Sino-Moroccan economic integration.

Research Question

How do settlement channels and institutional banking structures affect transaction speed, trust, and the feasibility of non-dollar settlement in Morocco–China trade?

Research Objectives

Building on the identified research gaps, this study pursues the following objectives:

To assess public and institutional attitudes toward non-dollar transactions between Morocco and China;

To measure differences in transaction speed across banking structures and payment channels involved in Sino-Moroccan trade;

To examine how transaction speed influences perceptions of trade and investment opportunities;

To identify policy and institutional mechanisms that could enhance financial cooperation through direct RMB–MAD transactions.

Research Hypotheses

To guide the empirical analysis, the study tests the following hypotheses:

- **Hypothèse H1**: Banks with direct institutional presence in China achieve significantly faster transaction settlement than banks relying on correspondent banking networks.
- **Hypothèse H2**: Faster transaction settlement is positively associated with higher perceived business and investment opportunities between Morocco and China.
- **Hypothèse H3**: Higher levels of trust in non-dollar currencies (RMB/MAD) increase willingness to use non-dollar settlement mechanisms.

- **Hypothèse H4**: Perceptions of high international transfer costs increase support for non-dollar trade arrangements.
- **Hypothèse H5**: Greater comfort with digital payment tools is positively associated with openness to alternative currency settlement systems.

2. Literature Review

This literature review situates the study of currency exchange speed in Sino–Moroccan trade within broader debates on the evolving international monetary system and cross-border payment efficiency. It first examines how U.S. dollar dominance emerged and why scholars increasingly discuss a gradual shift toward a more multipolar currency order **(Eichengreen, 2011; Prasad, 2014; Ocampo, 2019)**. It then reviews research on the internationalization of the Chinese renminbi (RMB), including institutional mechanisms such as currency swap arrangements and alternative payment infrastructures designed to reduce reliance on dollar-based channels **(Subacchi, 2020; Chen & Cheung, 2019)**. Finally, the review connects these global dynamics to developing and African contexts, where transaction costs, intermediary dependence, and financial infrastructure gaps continue to constrain trade and investment flows **(World Bank, 2023; African Development Bank, 2022)**. By synthesizing these strands, the review highlights a key gap: limited empirical work on how currency choice and payment architecture affect transaction speed, cost, and trust in bilateral trade relationships such as Morocco–China.

Critical synthesis and gaps.

Although existing scholarship provides strong explanations of dollar dominance and the gradual emergence of a more multipolar currency system **(Eichengreen, 2011; Prasad, 2014; Ocampo, 2019)**, much of this work remains macro-oriented, emphasizing reserve composition, currency status, or aggregate invoicing patterns rather than the operational mechanics of cross-border settlement **(Subacchi, 2020).** Similarly, the literature on RMB internationalization highlights institutional innovations and alternative infrastructures, yet empirical evidence is often concentrated on large economies or strategic partners where incentives for rapid transition are unusually strong **(Subacchi, 2020; Chen & Cheung, 2019; Reuters, 2023)**. In African and developing-country contexts, studies consistently document high transfer costs and infrastructure gaps, but they rarely connect these constraints to corridor-specific banking structures, settlement channels, and the role of trust in currency choice **(World Bank, 2023; African Development Bank, 2022)**. As a result, there is limited empirical work that jointly examines transaction speed, institutional routing, and behavioral trust as interacting determinants of non-dollar feasibility in a bilateral setting such as Morocco–China.

2.1 Dollar Dominance and Multipolar Finance

The international monetary system has been shaped by the post–World War II Bretton Woods framework, which established the U.S. dollar as the central currency for global trade, reserves, and financial stability (Eichengreen, 2011; Ocampo, 2019)**.** Although formal gold convertibility ended in 1971, the dollar maintained its dominant position due to the depth of U.S. financial markets, the credibility of American institutions, and network effects that reinforced its use in trade invoicing and international settlement (Eichengreen, 2011; Prasad, 2014). This central role, however, has also created structural dependence for many countries. Scholars describe this situation as a "dollar trap," in which states rely on a currency they do not control, making them vulnerable to U.S. monetary policy decisions, exchange-rate volatility, and the international transmission of financial shocks (Prasad, 2014)**.** In this context, dollar dominance can function as both a stabilizing anchor and a source of asymmetric power and constraint, especially for emerging and developing economies seeking greater monetary autonomy (Ocampo, 2019)**.**

At the same time, several authors argue that the system is gradually moving toward a more multipolar currency order. Shifts in global production and trade—especially the rise of China and other emerging economies—have increased incentives to diversify away from exclusive dollar reliance, both for risk management and strategic financial independence (Ocampo, 2019; Subacchi, 2020). Rather than a sudden replacement of the dollar, the literature suggests a slow rebalancing in which multiple currencies, notably the euro and the RMB, gain regional or sectoral importance alongside the USD (Eichengreen, 2011; Ocampo, 2019). This transition is further encouraged by geopolitical tensions and the growing use of financial sanctions, which have strengthened the motivation for alternative settlement mechanisms and diversified reserve strategies (Ocampo, 2019). Overall, the literature frames current developments as a controlled evolution from a dollar-centric system toward a more diversified monetary landscape, setting the stage for examining bilateral cases such as Morocco–China, where payment efficiency, currency choice, and institutional trust become increasingly relevant.

These debates imply that currency dominance is reinforced not only by macroeconomic size but also by settlement infrastructure and institutional trust—both of which are central to evaluating payment efficiency in Morocco–China trade.

2.2 RMB Internationalization and Alternative Payment Systems

A growing body of literature links the internationalization of the renminbi (RMB) to China's broader strategy of reducing dependence on the U.S. dollar in trade settlement and cross-border finance **(Subacchi, 2020; Yu, 2014)**. Rather than attempting to replace the dollar globally, China has pursued a gradual, infrastructure-based approach by expanding RMB use through trade invoicing, bilateral swap lines, offshore RMB markets, and payment-network development that makes RMB settlement operationally easier for banks and firms **(Subacchi, 2020; Yu, 2014)**. Recent international payment statistics also indicate that the RMB has increased its global share and is now among the more frequently used currencies for cross-border transactions **(SWIFT, 2024)**. A central institutional innovation in this process is the Cross-Border Interbank Payment System (CIPS), which was launched to support direct clearing and settlement of RMB payments and to reduce reliance on traditional correspondent-banking chains that often route through dollar-based channels **(Chen & Cheung, 2019)**. By shortening settlement routes and enabling RMB-denominated transactions, CIPS is widely discussed as a key tool supporting RMB internationalization and improving the speed and efficiency of cross-border payments **(Chen & Cheung, 2019)**.

In parallel, digital currency innovation has emerged as an additional pathway for payment modernization. China's digital yuan (e-CNY) has been framed in the literature as part of a broader push toward digital finance, with the potential to enable more efficient payment execution and programmability in domestic and cross-border contexts, although most applications remain at pilot or limited implementation stages (Reuters, 2024b). While the extent of the e-CNY's international role is still evolving, academic and policy discussions increasingly treat digital currency and new payment rails as complements to RMB settlement expansion, particularly in scenarios where speed, transparency, and reduced intermediary dependence are priorities (Reuters, 2024b). Together, these developments suggest that RMB internationalization is as much an infrastructure and technology project as it is a macroeconomic one, with practical implications for transaction costs and settlement time.

Case evidence from China's major trading parners further illustrates how alternative settlement mechanisms can expand rapidly under specific conditions. Following the 2022 geopolitical shock and restrictions on access to the SWIFT network, Russia accelerated the shift toward local-currency settlements with China, strengthening the practical relevance of RMB-based trade mechanisms (BBC News, 2022). Similarly, research and reporting on China–Saudi economic ties highlight growing experimentation with RMB settlement in energy and large-

value trade, supported by financial agreements that reduce dependence on third currencies (Reuters, 2023). These cases are frequently cited to show that when bilateral incentives are strong—whether driven by sanctions risk, strategic diversification, or trade scale—non-dollar settlement can become more feasible and attractive. For Morocco–China relations, the lesson is not that models can be copied mechanically, but that institutional connectivity, including payment systems, banking links, and policy coordination, is a decisive factor in enabling faster and more direct cross-border transactions.

Taken together, this literature suggests that payment architecture and institutional connectivity are key mechanisms through which RMB settlement can translate into faster transaction outcomes.

2.3 Africa, Trade Finance, and Digital Payments

The literature on African trade finance consistently highlights that cross-border payments remain slower and more expensive than domestic transfers, largely due to structural financial infrastructure gaps. Many transactions still depend on correspondent banking relationships routed through offshore financial centers, increasing fees, settlement time, and exposure to exchange-rate spreads—particularly when trade is invoiced in third currencies such as the U.S. dollar or the euro **(World Bank, 2023)**. Regional financial integration remains uneven, and limited interoperability across banking systems constrains the efficiency of trade finance for firms, especially small and medium-sized enterprises. These challenges are widely recognized as barriers to deeper intra-African trade and broader global integration, reinforcing calls for improved payment connectivity, stronger regulatory coordination, and the modernization of cross-border settlement systems **(African Development Bank, 2022)**. In this context, digital finance—through mobile banking, fintech platforms, and new payment infrastructure—has been framed as a major opportunity to reduce frictions, improve transparency, and widen access to international trade transactions, provided that regulatory safeguards and institutional trust are strengthened **(World Bank, 2023; African Development Bank, 2022)**.

In this regional context, Morocco represents an informative case because it combines relatively advanced banking capacity and an ambition to function as a financial gateway, for example through Casablanca Finance City, with continued dependence on international correspondent networks for many cross-border settlements **(Casablanca Finance City Authority, 2024; World Bank, 2023)**. This creates a practical policy tension: Morocco's hub positioning and trade openness are structurally compatible with deeper financial integration, but the realized benefits depend on whether transaction time and costs can be reduced in key trade corridors **(World Bank, 2023; African Development Bank, 2022)**. Therefore, examining Morocco–China settlement efficiency helps connect African trade finance constraints to the specific institutional and infrastructural conditions that determine whether alternative settlement mechanisms are viable.

Within Africa, Morocco is frequently presented as a comparatively well-positioned financial gateway due to its macroeconomic stability, advanced banking sector, and strategic location linking Europe and Africa. Casablanca Finance City (CFC) has been developed as a regional hub that attracts multinational firms and financial institutions, supporting Morocco's ambition to serve as a platform for investment and trade flows across Africa **(Casablanca Finance City Authority, 2024)**. This positioning is reinforced by Morocco's extensive network of trade agreements and its growing role in logistics and industrial value chains. However, the literature also suggests that hub potential depends not only on financial depth but also on practical transaction efficiency—particularly the ability to move money quickly and at low cost across

currency zones **(World Bank, 2023)**. From this perspective, Morocco's expanding trade relationship with China raises an important operational question: whether existing banking channels and payment routes are sufficient to support deeper economic integration, or whether new mechanisms—such as more direct RMB–MAD settlement and digitally enabled trade finance—are needed to reduce delays and intermediary dependence.

Linking the literature to the empirical strategy. The reviewed literature implies that cross-border settlement outcomes are shaped by both operational structures, including payment systems, intermediary dependence, and institutional presence, and behavioral factors, such as trust, risk perceptions, and currency preference **(Chen & Cheung, 2019; World Bank, 2023; African Development Bank, 2022)**. To capture these two dimensions, this study adopts a mixed-method approach. First, drawing on Fisher's velocity logic, transaction settlement time is treated as a measurable indicator of financial efficiency, allowing comparison across banking structures and settlement routes **(Fisher, 1911)**. Second, consistent with Keynes's liquidity preference perspective, survey measures of trust, perceived cost, and willingness to use RMB/MAD are used to reflect how uncertainty and confidence shape currency choice and the adoption of alternatives to USD-based channels **(Keynes, 1936)**. Bank interviews complement the survey by providing institutional explanations of delays, such as correspondent routing and verification and compliance procedures, enabling the study to connect corridor-level practices to the theoretical mechanisms discussed in the literature **(World Bank, 2023; African Development Bank, 2022)**.

This supports a corridor-level focus on Morocco–China transactions, where institutional arrangements and payment channels can be directly linked to observed costs, delays, and adoption barriers.

3. Theoretical Framework

This study is grounded in classical and Keynesian monetary theory to explain how transaction speed and institutional behaviour influence the efficiency of cross-border financial exchange. To capture the mechanical dimension of money circulation, the analysis draws on Irving Fisher's theory of the velocity of money, which links transaction speed to economic efficiency and trade activity **(Fisher, 1911)**. At the same time, the framework incorporates John Maynard Keynes's liquidity preference theory to account for the behavioural and institutional factors—such as trust, risk perception, and expectations—that shape currency choice and payment decisions **(Keynes, 1936)**. By combining these two perspectives, the theoretical framework provides a balanced foundation for analysing both the technical and human dimensions of currency exchange in Sino–Moroccan trade.

3.1 Fisher's Velocity of Money: Transaction Speed as Economic Efficiency

Irving Fisher's theory of the velocity of money provides a useful analytical foundation for examining the efficiency of cross-border financial transactions. In The Purchasing Power of Money (1911), Fisher conceptualized velocity as the frequency with which a unit of currency circulates within an economy, captured by the equation **MV = PT**, where **M** represents the money supply, **V** the velocity of circulation, P the price level, and T the volume of transactions **(Fisher, 1911)**. Within this framework, a higher velocity reflects more active economic exchange, as money moves rapidly between agents to facilitate trade and production. Conversely, slow circulation signals frictions in the financial system that constrain economic activity.

Applied to international trade finance, Fisher's concept of velocity can be interpreted as a measure of transaction speed and operational efficiency. When cross-border payments are processed quickly, money completes more transaction cycles within a given period, effectively increasing its velocity and supporting higher trade volumes. Delays caused by intermediary banks, multiple currency conversions, or compliance bottlenecks reduce velocity by extending

settlement time, thereby raising transaction costs and limiting liquidity. From this perspective, payment systems and currency arrangements that shorten settlement cycles—such as direct currency exchange mechanisms or streamlined clearing infrastructures—can be viewed as efficiency-enhancing tools that improve the functional performance of money in international trade.

In the context of Sino–Moroccan economic relations, Fisher's velocity framework allows transaction time to be treated as an economic variable rather than a purely technical issue. Differences in settlement duration across banking structures or payment routes can be translated into differences in monetary efficiency, offering a quantitative lens through which the benefits of faster, non-dollar transactions can be assessed. By focusing on how quickly money circulates between Morocco and China, this study uses Fisher's theory to link financial infrastructure directly to trade performance and economic integration.

3.2 Keynes' Liquidity Preference: Trust, Risk, and Currency Choice

John Maynard Keynes's liquidity preference theory provides a complementary perspective to Fisher's mechanical view of money by emphasizing the role of trust, risk, and expectations in monetary behavior. In The General Theory of Employment, Interest and Money (1936), Keynes argued that economic agents choose to hold money based on three motives: transactions, precaution, and speculation **(Keynes, 1936)**. While the transaction motive relates to routine payments, the precautionary and speculative motives are closely linked to uncertainty, confidence in financial institutions, and expectations about future economic conditions. When uncertainty is high, agents tend to hold more liquid and familiar assets, thereby slowing the circulation of money.

In the context of international trade, liquidity preference helps explain why firms and banks often favor well-established currencies such as the U.S. dollar, even when alternative currencies may be technically viable or cost-efficient. The dollar's dominance is not only a result of infrastructure but also of trust accumulated over time. Businesses may perceive non-dollar transactions as riskier due to concerns about exchange-rate volatility, regulatory uncertainty, or limited institutional experience. As a result, currency choice reflects not only cost and speed considerations but also confidence in the stability and acceptance of the settlement currency **(Prasad, 2014)**.

Applied to Sino–Moroccan trade, Keynes's framework highlights why the adoption of RMB–MAD transactions may face behavioral and institutional resistance despite potential efficiency gains. Even if payment systems such as CIPS or digital platforms reduce settlement time, banks and traders may hesitate to adopt them without sufficient trust, information, and policy clarity. Liquidity preference therefore explains the persistence of slower, dollar-based transaction routes as a rational response to perceived risk. By integrating Keynes's insights, this study accounts for the human and institutional factors that condition how quickly money circulates, complementing Fisher's velocity-based interpretation of transaction efficiency and providing a more complete explanation of cross-border financial behaviour.

3.3 Conceptual Model: Interaction of Speed, Trust, and Technology

Building on Fisher's velocity of money and Keynes's liquidity preference theory, this study adopts a conceptual model in which transaction speed, institutional trust, and financial technology interact to shape the efficiency of cross-border currency exchange. In this model, transaction speed represents the technical and operational dimension of financial exchange, reflecting how quickly payments are settled through banking systems. Faster settlement increases the effective velocity of money and supports higher trade activity, while delays reduce liquidity and raise transaction costs. However, speed alone is not sufficient to ensure efficient financial exchange.

Institutional trust functions as a mediating factor that influences whether economic agents are willing to adopt faster or alternative transaction mechanisms. Trust is shaped by perceptions of currency stability, regulatory clarity, and the reliability of financial institutions. Even when technological systems enable rapid settlement, firms and banks may continue to rely on slower, dollar-based routes if they perceive non-dollar transactions as risky or insufficiently supported. In this sense, trust determines whether available technological capacity is actually utilized in practice, consistent with Keynes's emphasis on confidence and risk perception in monetary behavior.

Financial technology acts as the enabling infrastructure that connects speed and trust. Payment systems such as CIPS, digital banking platforms, and emerging digital currencies have the potential to reduce intermediary dependence, shorten settlement cycles, and lower transaction costs. When supported by clear regulation and institutional coordination, technology can enhance both transaction speed and confidence in alternative currencies. Conversely, weak interoperability, limited awareness, or regulatory uncertainty can undermine trust and prevent technology from delivering its efficiency gains. The interaction of these three elements—speed, trust, and technology—forms the analytical foundation of this study, guiding the empirical assessment of how currency exchange mechanisms influence the effectiveness of Sino–Moroccan trade

4. Methodology

4.1 Research Design

This study adopts a mixed-methods research design to examine the efficiency of currency exchange and financial cooperation between Morocco and China. A mixed-methods approach was chosen to capture both the measurable dimensions of transaction speed and currency use, as well as the institutional and behavioral factors that influence financial decision-making. By combining quantitative and qualitative evidence, the research provides a more comprehensive understanding of how operational efficiency, trust, and institutional structure interact in cross-border financial transactions.

The quantitative component is based on a structured online survey designed to assess public attitudes toward international payments, currency preferences, transaction costs, and digital payment systems. The survey enables statistical analysis of perceptions and behavioral tendencies related to non-dollar trade and financial innovation.

The qualitative component consists of semi-structured interviews with Moroccan commercial banks engaged in international financial transfers. These interviews provide institutional-level insights into transaction processes, settlement delays, technological constraints, and regulatory challenges. By comparing banks with different levels of international exposure—particularly the presence or absence of a representative office in China—the qualitative analysis complements the survey results and helps explain observed differences in transaction speed and efficiency. This integration of methods ensures the triangulation of findings and enhances the robustness of the conclusions drawn from the study.

4.2 Data Collection

Data for this study were collected using multiple sources to support the mixed-methods research design and to ensure methodological triangulation. The data collection process combined primary quantitative data, primary qualitative data, and secondary financial and economic sources, allowing the research to capture both empirical patterns and institutional practices related to currency exchange between Morocco and China.

The quantitative data were obtained through an online survey administered via Tencent Survey, a widely used digital platform in China. The survey was distributed over a three-week period and generated 201 responses, of which 198 valid responses were retained for analysis. The questionnaire consisted of 24 structured items covering demographic characteristics, currency

usage, experience with international financial transactions, trust in banking systems, and attitudes toward digital payments and non-dollar trade. Most attitudinal questions employed a five-point Likert scale (1 = strongly disagree to 5 = strongly agree), enabling statistical comparison and reliability testing. The survey link was disseminated through social media platforms, including WeChat, WhatsApp, LinkedIn, and Facebook, to reach respondents in both Morocco and China.

While participation was open, the final sample was dominated by young and educated respondents, particularly students. This composition reflects the online distribution strategy and is especially relevant for the study's focus on digital payment readiness, awareness of alternative settlement systems, and attitudes toward non-dollar transactions. At the same time, because the sample is non-probabilistic and over-represents students and younger respondents, the results may not fully represent the broader population of firms, traders, or older banking clients engaged in Morocco–China trade. Accordingly, the survey findings are interpreted primarily as evidence on perceptions, willingness, and perceived barriers rather than as population-wide measures of actual transaction behavior.

Qualitative data were collected through semi-structured interviews with two Moroccan commercial banks involved in international financial transfers. The banks were purposefully selected to capture institutional variation: one bank maintains a representative office in China, while the other operates exclusively within Morocco. This selection enabled comparative analysis of how institutional presence affects transaction speed, settlement procedures, and system access. To ensure confidentiality, the banks are anonymized. Each interview lasted between 40 and 60 minutes and followed an open-ended format, allowing participants to discuss transaction timelines, payment systems (such as SWIFT), transfer costs, and the feasibility of direct RMB–MAD settlements.

To reinforce qualitative credibility, the analysis incorporates short, anonymized quotations from interview participants. The two Moroccan commercial banks are referred to as Bank A (with a representative office in China) and Bank B (without a physical presence in China). This anonymization ensures confidentiality while allowing institutional differences to be clearly illustrated.

Interview quotations are used selectively to support key findings related to transaction speed, intermediary dependence, compliance procedures, and awareness of alternative settlement mechanisms. For example, a representative from Bank A emphasized the role of institutional presence in reducing settlement delays:

"*Having a representative office in China allows us to communicate directly with counterpart banks, which significantly reduces verification time and avoids unnecessary intermediaries"* (Bank A representative).

In contrast, Bank B highlighted the constraints associated with correspondent banking:

"Most of our international transfers still go through multiple correspondent banks, which increases both the cost and the processing time" (Bank B representative).

Regarding alternative payment systems, awareness and readiness also differed:

"*We are aware of CIPS, but its practical use is still limited because our clients are more familiar with SWIFT and USD-based transactions" (Bank B representative).*

These quotations strengthen the qualitative analysis by grounding institutional observations in first-hand professional experience while preserving anonymity.In addition to primary data, the study draws on secondary sources, including financial statistics and reports from central banks, international financial institutions, and publicly available economic databases. These sources were used to contextualize the survey and interview findings and to support the broader analysis of currency exchange systems and trade finance dynamics. Together, these data collection

methods provide a robust empirical foundation for evaluating the efficiency, constraints, and potential of non-dollar transactions in Sino–Moroccan trade

4.3 Data Analysis

The data analysis process combined quantitative statistical techniques, qualitative thematic comparison, and operational calculations to evaluate the efficiency of currency exchange between Morocco and China.

Quantitative analysis was conducted using SPSS software. The analysis began with descriptive statistics, including frequencies, percentages, means, and standard deviations, to summarize respondents' demographic characteristics, transaction experience, currency usage, and attitudes toward non-dollar trade and digital payment systems. Reliability of the survey instrument was assessed using Cronbach's Alpha, which confirmed strong internal consistency among the selected scale items. To examine construct validity, Principal Component Analysis (PCA) with Varimax rotation was applied to identify underlying dimensions related to trust, perceived cost, transaction efficiency, and openness to alternative currencies.

Qualitative interview data were analyzed using a comparative thematic approach. Interview transcripts were reviewed manually and coded according to recurring themes, including settlement routing (direct vs. correspondent banking), intermediary dependence, compliance and verification procedures, technology readiness, and perceptions of alternative settlement mechanisms. The comparison between Bank A and Bank B enabled identification of institutional factors influencing transaction speed and operational efficiency.

Transaction speed and monetary velocity estimation were calculated using Microsoft Excel based on settlement time data obtained from bank interviews. Transaction duration (T), measured in days from initiation to completion of a transfer, was converted into an operational proxy for monetary velocity using the formula:

$$V = \frac{365}{T}$$

where V represents the estimated number of transaction cycles per year. This calculation does not aim to estimate macroeconomic velocity in the full Fisher identity but provides a transparent and comparable indicator of relative settlement efficiency across institutional configurations.

By integrating SPSS-based statistical analysis, thematic qualitative comparison, and Excel-based transaction speed calculations, the study offers a coherent and methodologically transparent assessment of currency exchange efficiency in Sino-Moroccan trade.

5. Results

5.1 Survey Results

The survey results provide an overview of public attitudes toward currency use, transaction efficiency, and digital finance in the context of Morocco–China economic relations. Rather than presenting individual figures, the findings are grouped into four thematic dimensions: currency preferences, trust in non-dollar trade, perceptions of cost and speed, and digital readiness.

Currency preferences.

The results indicate a strong tendency for respondents to use familiar or locally dominant currencies in international transactions. Chinese respondents primarily reported using the Chinese yuan (RMB), while Moroccan respondents showed greater reliance on the Moroccan dirham (MAD), followed by the euro and the U.S. dollar. Despite the continued importance of the USD, a substantial share of respondents expressed openness to using the RMB or MAD

directly for cross-border payments. This suggests that currency choice is increasingly shaped by practical considerations and regional trade relationships rather than exclusive dependence on a single global currency.

Trust in non-dollar trade.

Respondents demonstrated a moderately positive level of trust in non-dollar settlement mechanisms. While the U.S. dollar remains perceived as a stable reference currency, attitudes toward RMB–MAD transactions were generally favorable. Most respondents either agreed or remained neutral regarding the reliability of non-dollar trade, indicating cautious acceptance rather than strong resistance. Support for greater financial independence from the dollar-based system was also evident, reflecting growing interest in diversified currency use when supported by institutional safeguards and transparent policies.

Perceptions of cost and transaction speed.

A dominant theme across responses was dissatisfaction with the cost and speed of international transfers. A majority of respondents agreed that cross-border payments are expensive and time-consuming, and that faster currency exchange would increase business opportunities between Morocco and China. These perceptions highlight transaction efficiency as a critical constraint on trade and reinforce the importance of improving settlement mechanisms. The findings suggest that reducing intermediary dependence and shortening settlement cycles could significantly enhance trade participation and investment interest.

Digital readiness.

Survey results reveal a high level of comfort with digital financial tools. Most respondents reported being comfortable using mobile banking applications and digital wallets for international transfers, indicating strong readiness for technology-driven payment solutions. However, awareness of advanced systems such as China's Cross-Border Interbank Payment System (CIPS) or the digital yuan (e-CNY) remained moderate, suggesting that adoption may be limited by information gaps rather than resistance to technology. Overall, the survey results indicate a favorable environment for digital and non-dollar payment systems, provided that trust, education, and institutional support are strengthened.

Section 1: Quantitative Results from the Survey

The first part of the findings is based on survey data collected from 201 participants, of whom 198 responses were valid and retained for analysis. The survey was administered through Tencent Survey and analyzed using SPSS software. The purpose of this section is to present respondents' views on currency use, digital finance, and financial cooperation between Morocco and China. The data also help identify perceptions of non-dollar trade, digital payment systems, and trust in banking institutions.

The survey aims to capture public opinions regarding currency usage and trade cooperation between Morocco and China, with particular attention to alternatives to the U.S. dollar. The graphs presented in the following sections are derived from the analysis of the collected survey data. The respondents who participated in the survey contributed their time and perspectives, providing valuable insights into how different stakeholders perceive financial operations related to currency use and trade partnerships in Sino–Moroccan relations.

1. Demographic information:

Title: What is your Country of residence ?

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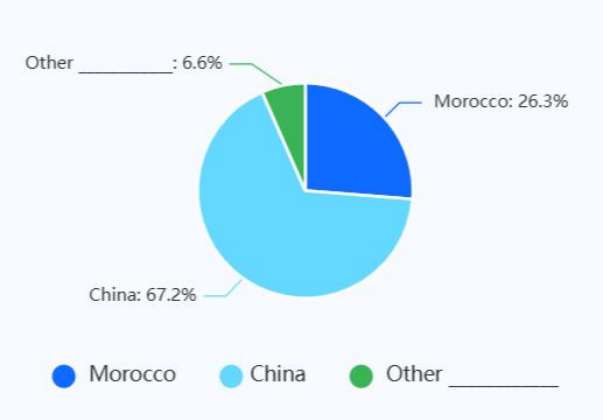


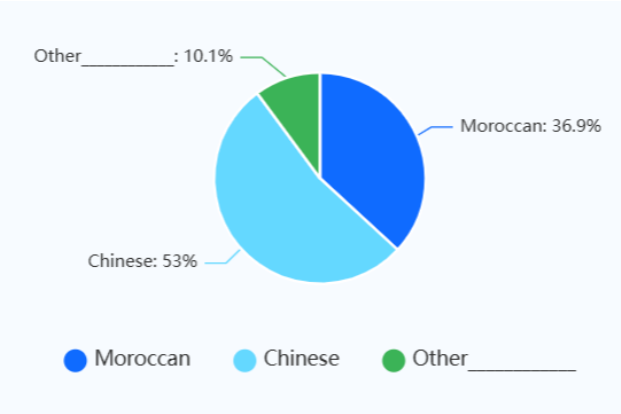
Figure 1 Country of residence

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 1: Country of Residence) The survey results show that the majority of respondents were residing in China. Specifically, 67.2% of participants (133 out of 198 valid respondents) reported living in China, while 26.3% (52 respondents) were residing in Morocco. The remaining 6.6% (13 respondents) were based in other countries.
This distribution reflects the international scope of the survey and provides perspectives from respondents directly exposed to the financial and economic environments of both China and Morocco. The participation of respondents from different countries enhances the diversity of viewpoints and contributes to a broader understanding of how stakeholders perceive financial operations, currency use, and trade partnerships in Sino–Moroccan relations.

Title: What is your Nationality?

Figure 2 Nationality of the participant



Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 2: Nationality of the Participants)
The results indicate that the majority of survey participants were Chinese nationals. Specifically, 53% of respondents (105 out of 198 valid participants) identified as Chinese, while 36.9% (73 respondents) were Moroccan nationals. The remaining 10.1% (20 respondents) represented other nationalities.
This distribution shows that most participants were either Chinese or Moroccan, which is consistent with the focus of the study on Sino–Moroccan trade relations. The presence of

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respondents from other nationalities further contributes to the diversity of perspectives and supports a broader understanding of stakeholder views on financial operations, currency use, and trade partnerships between Morocco and China.

Title: What is your age group ?

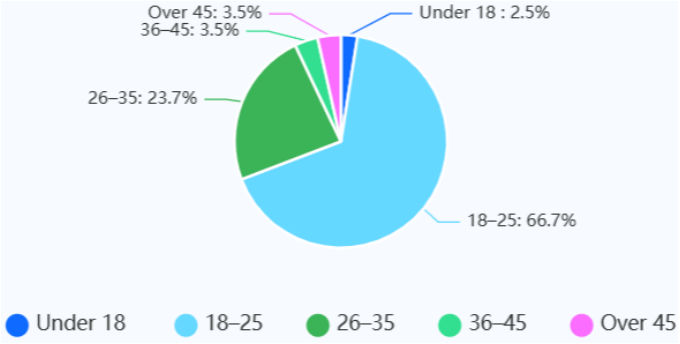


Figure 3Age group of the participant

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 3: Age Group of the Participants)

The survey results show that the 18–25 age group accounted for 67.0% of respondents (132 participants), representing a substantially higher proportion than all other age groups combined. This indicates that younger individuals were the most represented in the sample.

The 26–35 age group constituted the second-largest category, accounting for 23.7% of respondents. Together, these results suggest that the survey sample is largely composed of young adults, which is consistent with the online distribution method and the study's focus on digital finance and emerging payment technologies.

Title: What is your occupation?

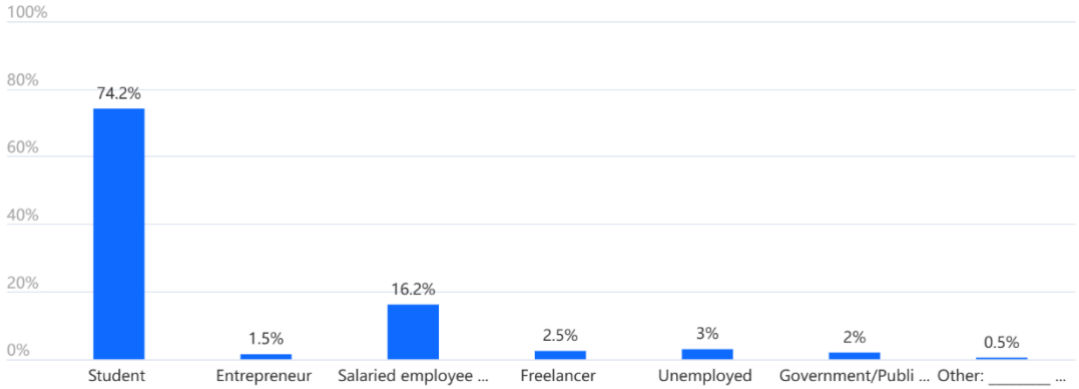


Figure 4occupation

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 4: Occupation of the Participants)

The results indicate that students constitute the largest occupational group in the survey sample, accounting for 74.2% of respondents. Salaried employees represent the second-largest group at 16.2%. Other occupational categories are represented in much smaller proportions, including freelancers (2.5%), government or public sector workers (2%), unemployed respondents (3%), and entrepreneurs (1.5%). A very small share of participants (0.5%) reported other occupations without specifying their professional activity.

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This distribution indicates that the survey sample is heavily dominated by students, while working professionals constitute a relatively small proportion of respondents. Although this limits representativeness across occupational categories, the sample remains informative for understanding perceptions of digital finance, currency use, and non-dollar trade among younger and digitally engaged individuals.

Title: What is your education level ?



Figure 5Education level

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 5: Education Level of the Participants)
The results indicate that participants holding a Bachelor's degree constituted the largest group in the survey, representing 62.6% of respondents. The second-largest group comprised individuals with a Master's degree, accounting for 25.3%. A smaller proportion of respondents reported having a high school education or below, which represented 7.6% of the sample. Only 2.5% of participants held a Doctorate, while 2% selected "Other" as their highest level of education.
Overall, these findings show that the majority of respondents have attained higher education, with relatively few participants from lower educational backgrounds. This educational profile is consistent with the online distribution method and supports the study's focus on perceptions of digital finance and alternative currency use among educated and digitally literate populations.

2. International financial Behavior

Title: Have you participated in any international financial transaction (sending/receiving money)?

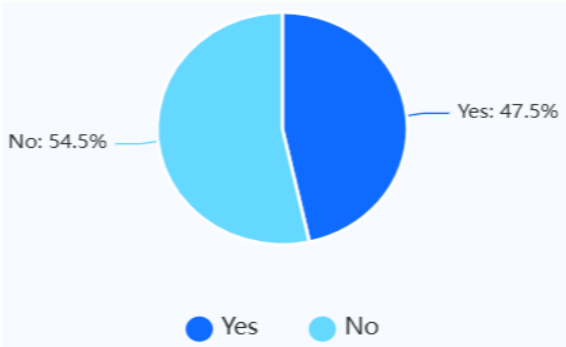


Figure 6 the one who participated in any international financial transaction (sending/receiving money)

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Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 6: Participation in International Financial Transactions)
The results indicate that 54.5% of respondents reported that they had not participated in international financial transactions involving the sending or receiving of money, while 47.5% indicated that they had such experience. Although the share of respondents without prior experience is slightly higher, nearly half of the participants have engaged in international financial transactions.
This finding suggests that a substantial proportion of the sample has direct exposure to cross-border payment processes, making their perceptions of transaction costs, speed, and currency use particularly relevant for the analysis of international financial operations in Sino–Moroccan trade.

Title: If yes, what currency did you use?

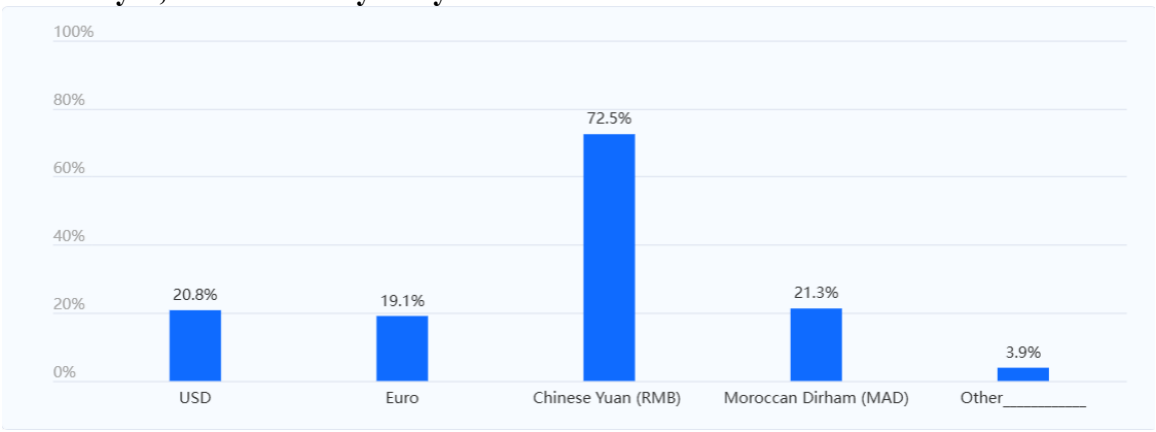


Figure 7 Currency used by the participants

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 7: Currency Used by the Participants)
The results show that the Chinese yuan (RMB) is the most commonly used currency among respondents, accounting for 72.5% of the responses. This high proportion may be explained by the fact that a large share of participants are Chinese or reside in China. The Moroccan dirham follows as the second most used currency at 21.3%.
The U.S. dollar ranks next, representing 20.8% of responses, followed closely by the euro at 19.1%. A small proportion of respondents (3.9%) reported using other currencies. Overall, the findings indicate that the Chinese yuan is by far the dominant currency among participants, while other international currencies such as the Moroccan dirham, U.S. dollar, and euro are used to a lesser extent.

Title: How often do you make international payments or receive funds from abroad?

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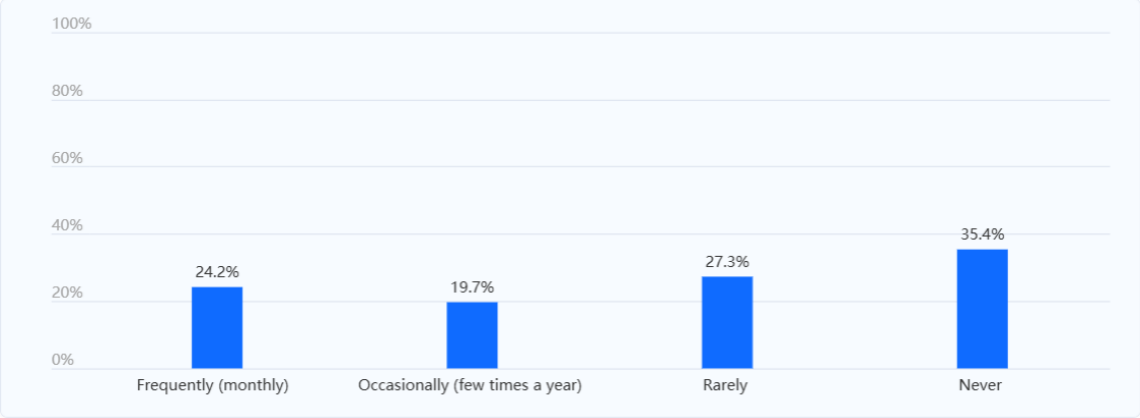


Figure 8 International payments or receive funds from abroad for the participant

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 8: Frequency of International Payments or Receiving Funds from Abroad)

The results indicate that the highest proportion of participants selected "Never," representing 35.4% of the responses. This suggests that more than one-third of respondents do not engage in international payments or receive funds from abroad. The second-largest group selected "Rarely," accounting for 27.3% of participants, indicating occasional but infrequent involvement in such transactions.

In addition, 24.2% of respondents reported engaging in international payments "Frequently (monthly)," demonstrating that approximately one-quarter of participants are regularly involved in cross-border financial transactions. Finally, 19.7% selected "Occasionally (a few times a year)," reflecting limited but existing participation.

Overall, the findings show that non-participation is more prevalent, with the combined "Never" and "Rarely" categories accounting for over 60% of responses. Nevertheless, approximately 44% of participants engage in international payment activities to some degree, although only a minority do so on a frequent basis.

3. Likert scale (1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree)

Title : I trust the US Dollar more than other currencies for trade and investment

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

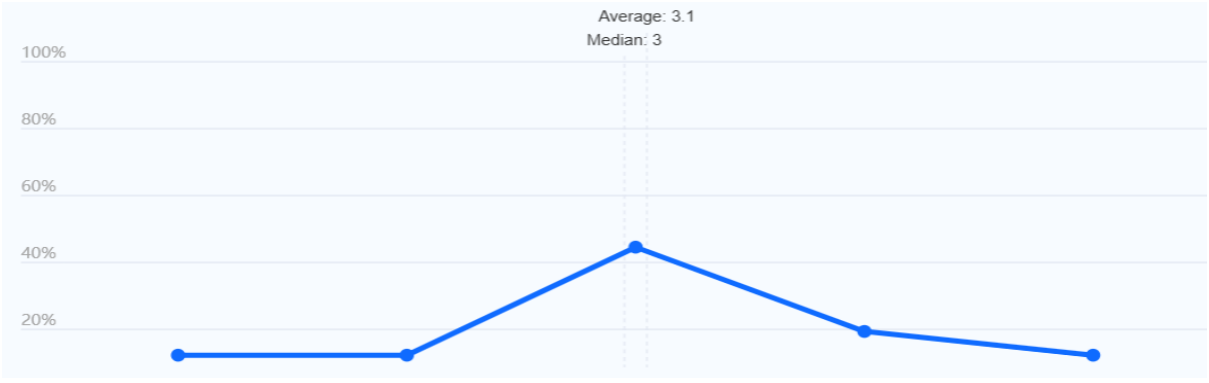


Figure 9 Trust on relaying on the US Dollar more than other currencies for trade and investment

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Interpretation (Figure 9: Trust in Relying on the U.S. Dollar for Trade and Investment)
The results indicate that participants' attitudes toward relying on the U.S. dollar (USD) for trade and investment are largely neutral. Fewer than 10% of respondents selected options 1 or 2, indicating that only a small group strongly disagreed with relying on the USD. The highest proportion of participants selected option 3, reflecting a neutral position in which respondents neither strongly trust nor strongly distrust the U.S. dollar.
The next most frequent responses were options 4 and 5, suggesting that a segment of participants continues to express confidence in using the USD for trade and investment purposes. The mean score of 3.1 and a median value of 3 further confirm this overall neutral-to-slightly-positive perception.
Overall, these results imply that while the U.S. dollar is still viewed as a reliable currency by many participants, confidence is not absolute. The findings reflect a balanced but cautious level of trust in relying on the USD for international trade and investment.

Title: I would consider using Chinese Yuan (RMB) or Moroccan Dirham (MAD) for cross-border payments.

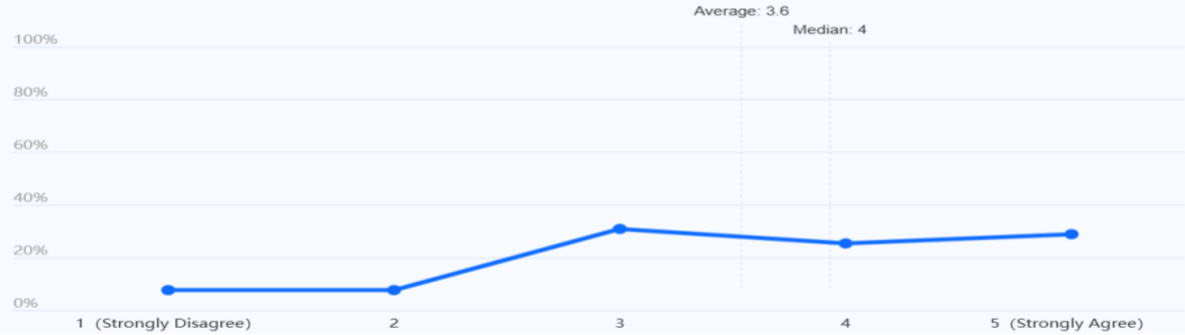


Figure 10 Participant who consider using Chinese Yuan (RMB) or Moroccan Dirham (MAD) for cross-border payments.

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 10: Willingness to Use RMB or MAD for Cross-Border Payments)
The results indicate a generally positive attitude among participants toward using the Chinese yuan (RMB) or the Moroccan dirham (MAD) directly for cross-border transactions. Fewer than 10% of respondents selected options 1 or 2 on the scale, indicating limited disagreement with the use of these currencies.
The largest share of participants selected option 3, reflecting a neutral position and suggesting that respondents are generally open to the idea and do not perceive major obstacles. The next most frequent responses were options 4 and 5, indicating agreement or strong agreement with using RMB or MAD for international payments. The mean score of 3.6 and a median value of 4 further indicate a relatively high level of confidence in using these currencies.
The prevalence of neutral responses may suggest that some participants lack sufficient information or practical experience with RMB- or MAD-based settlement. Overall, the findings reflect a positive but cautious attitude toward the use of RMB and MAD for cross-border payments.

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Title : Non-dollar trade (using currencies like RMB or MAD) can benefit the Moroccan and Chinese economy.

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

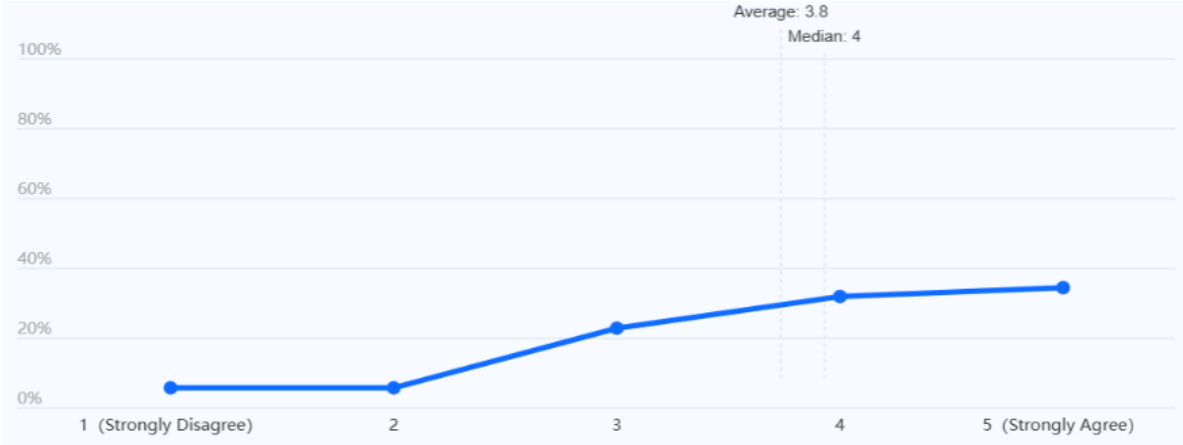


Figure 11 Non-dollar trade (using currencies like RMB or MAD) can benefit the Moroccan and Chinese economy

Interpretation (Figure 11: Perceived Economic Benefits of Non-Dollar Trade)

The results show that a large proportion of participants agree that non-dollar trade, using currencies such as the RMB or MAD, can benefit both the Moroccan and Chinese economies. The distribution of responses shifts from left to right on the scale, with options 4 and 5 representing the highest frequencies, indicating agreement and strong agreement.

The mean score of 3.8 and a median value of 4 suggest that participants generally perceive local-currency trade as economically beneficial. These findings indicate a willingness among respondents to support the use of local currencies and reflect the belief that non-dollar settlement can strengthen cross-border economic relations between Morocco and China by reducing reliance on the U.S. dollar.

Title: I believe international transfers are too expensive

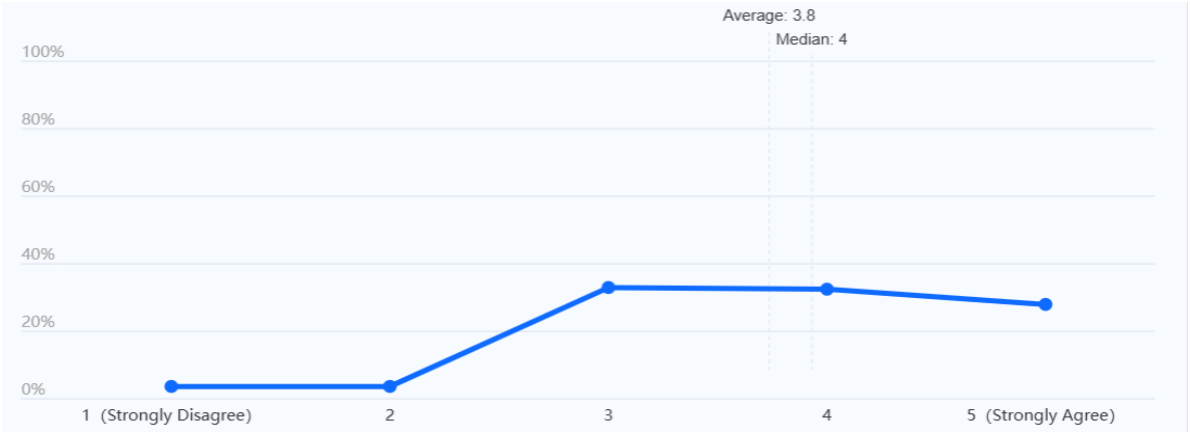


Figure 12 participant who believes that international transfers are too expensive

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 12: Perception of International Transfer Costs)

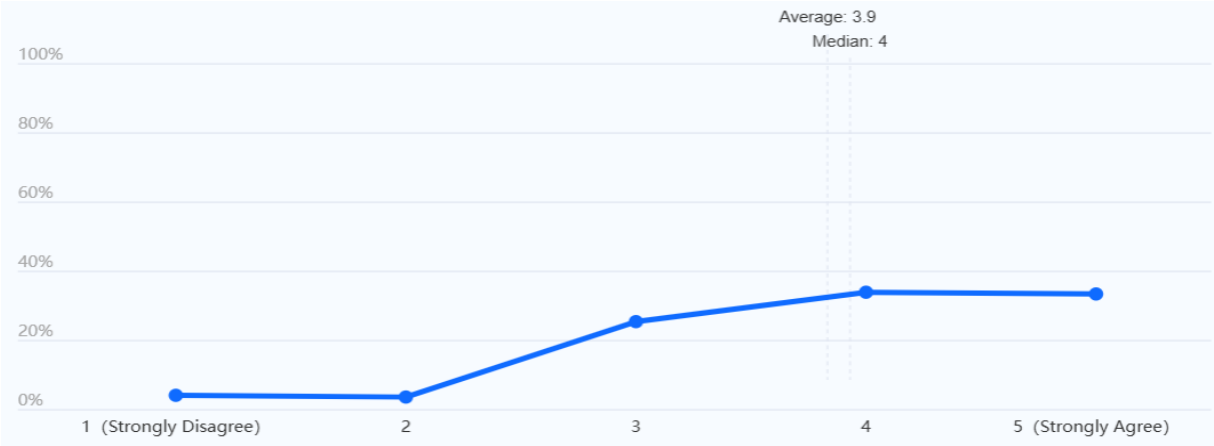
The results indicate that most participants believe international transfers are too expensive. Responses are concentrated between scale values 2 and 5, with a clear shift toward the higher

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end of the scale, indicating agreement with the statement. Only a small number of participants expressed disagreement, while the majority selected ratings of 3, 4, or 5.

The mean score of 3.8 and a median value of 4 suggest that overall sentiment leans toward agreement that international transactions involve high costs. Although some respondents hold neutral views, a significant proportion perceive international transfer fees as expensive. This finding highlights widespread concern about transfer costs and suggests potential interest in more cost-effective cross-border payment alternatives.

Title: I am comfortable using digital payment tools or mobile wallets for international transfers



Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Figure 13 participant who are comfortable to use digital payment tools or mobile wallets

Interpretation (Figure 13: Comfort with Digital Payment Tools and Mobile Wallets)

The results indicate that participants generally feel comfortable using digital payment tools or mobile wallets for international transfers. The mean score of 3.9 and a median value of 4 reflect an overall positive attitude toward digital payment solutions.

Very few respondents selected options 1 or 2, indicating limited disagreement, while the majority chose ratings of 4 or 5, demonstrating agreement or strong agreement. This response pattern reflects growing familiarity with and trust in digital financial solutions, suggesting that participants are increasingly confident in using technology-based platforms for cross-border payments.

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Title: I think faster currency exchange will increase business opportunities between Morocco and China.

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

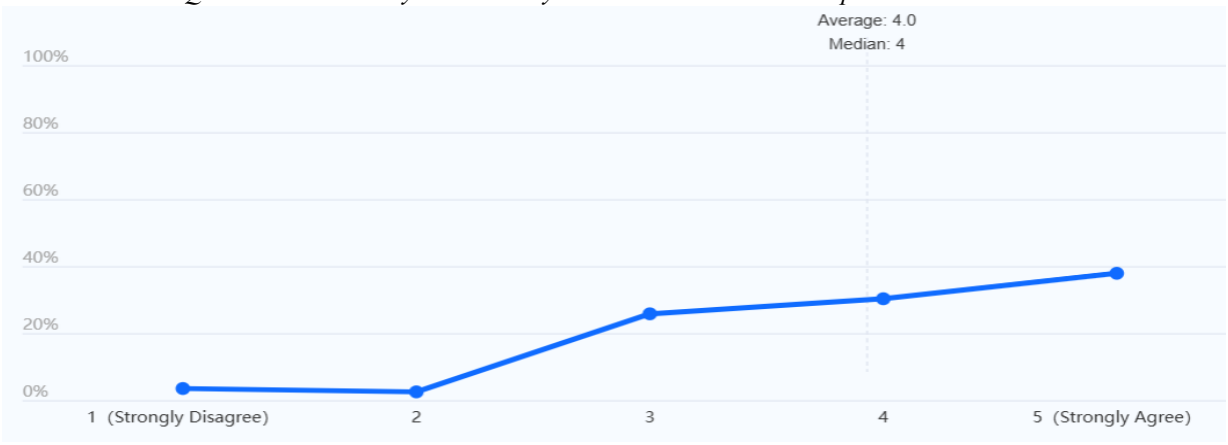


Figure 14 Perceived Impact of Faster Currency Exchange on Business Opportunities

Interpretation (Figure 14: Perceived Impact of Faster Currency Exchange on Business Opportunities)

The results show strong agreement among participants with the statement that faster currency exchange would increase business opportunities between Morocco and China. With a mean score of 4.0 and a median value of 4, respondents generally support this view.

Very few participants selected options 1 or 2, indicating limited disagreement, while the majority rated the statement 4 or 5. This response pattern reflects a clear belief in the positive economic impact of efficient currency exchange systems. Overall, the findings indicate that participants recognize transaction speed and efficiency as key enablers of stronger cross-border trade and economic collaboration between the two countries.

Title : I am aware of new systems like CIPS (China's International Payment System) or e-CNY.

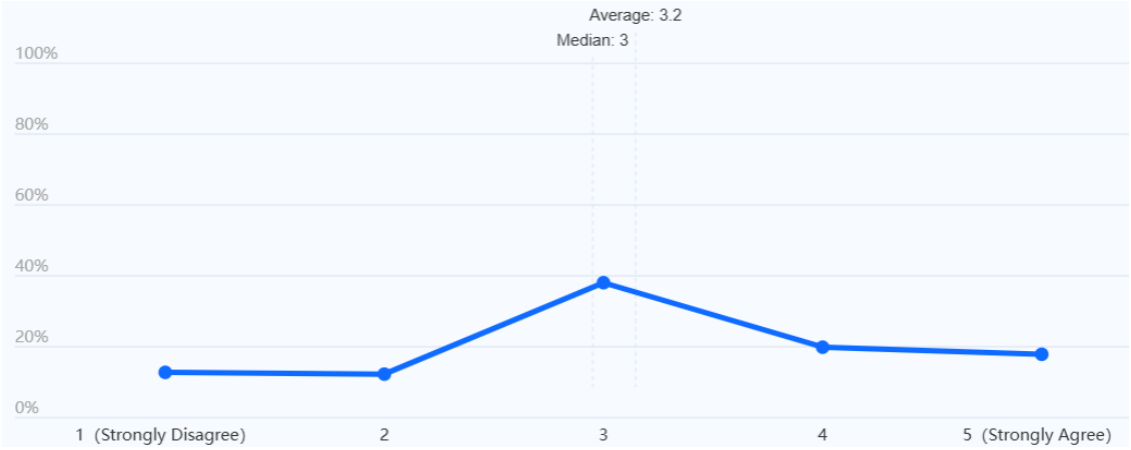


Figure 15 Awareness of new systems like CIPS (China's International Payment System) or e-CNY.

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

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Interpretation (Figure 15: Awareness of CIPS and e-CNY)

The results reveal a moderate level of awareness among participants regarding new payment systems such as the Cross-Border Interbank Payment System (CIPS) and the digital yuan (e-CNY). The mean score of 3.2 and a median value of 3 indicate a generally neutral level of awareness.

The largest proportion of respondents selected option 3, reflecting neutrality, while smaller groups expressed agreement or disagreement. This distribution suggests that although some participants are familiar with these digital financial innovations, a substantial number have limited knowledge or direct exposure. Overall, the findings highlight the need for increased awareness and education regarding emerging international payment technologies such as CIPS and the e-CNY.

Title: I prefer financial independence from the US Dollar system

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations



Figure 16 I prefer financial independence from the US Dollar system

Interpretation (Figure 16: Preference for Financial Independence from the U.S. Dollar System)

The results indicate a moderate preference among participants for financial independence from the U.S. dollar–based system. With a mean score of 3.8 and a median value of 4, respondents generally lean toward agreement with this statement.

The largest share of participants selected options 3 or 4, while approximately one-third chose option 5 (strongly agree). Very few respondents selected options 1 or 2, indicating limited disagreement. This pattern suggests that a substantial proportion of participants support diversifying away from reliance on the U.S. dollar, potentially reflecting interest in greater monetary autonomy and alternative international financial frameworks.

Title: I trust Chinese and Moroccan banks to handle international transactions efficiently.

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Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

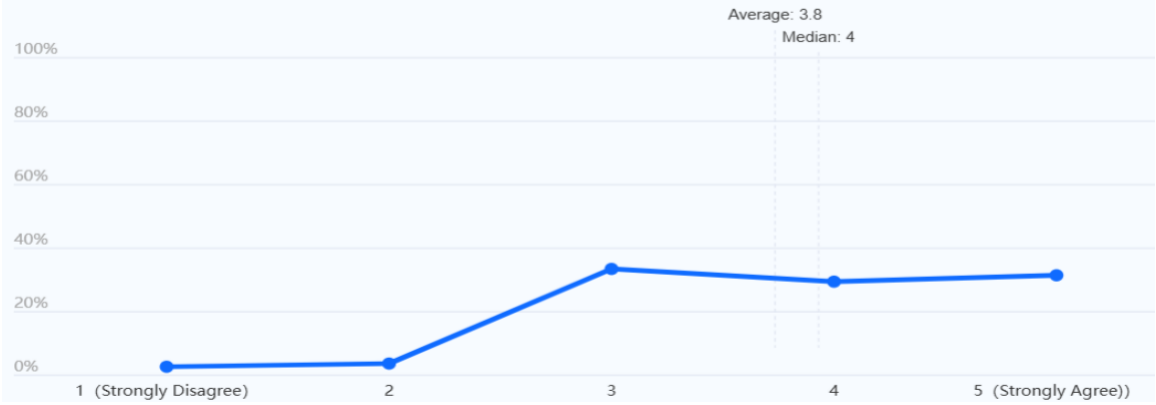


Figure 17 I trust Chinese and Moroccan banks to handle international transactions efficiently

Interpretation (Figure 17: Trust in Chinese and Moroccan Banks for International Transactions)

The results suggest a generally positive level of trust among participants in Chinese and Moroccan banks to handle international transactions efficiently. The mean score of 3.8 and a median value of 4 indicate that respondents tend to agree with this statement.

The largest proportion of participants selected options 3 or 4, with nearly one-third choosing option 5 (strongly agree), while very few respondents expressed disagreement. This response pattern reflects a moderate to high level of confidence in the banking systems of both countries, suggesting that participants perceive them as capable of managing cross-border financial operations in a reliable and effective manner

Title: I would be interested in investing in a China–Morocco business project

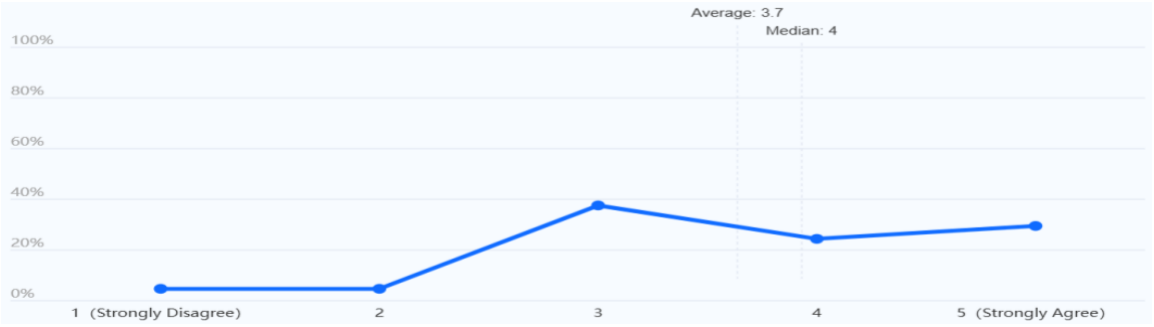


Figure 18 I would be interested in investing in a China–Morocco business project

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 18: Interest in Investing in a China–Morocco Business Project)

The survey results indicate a generally positive attitude toward investing in a China–Morocco business project. With a mean score of 3.7 and a median value of 4, respondents overall tend to lean toward agreement.

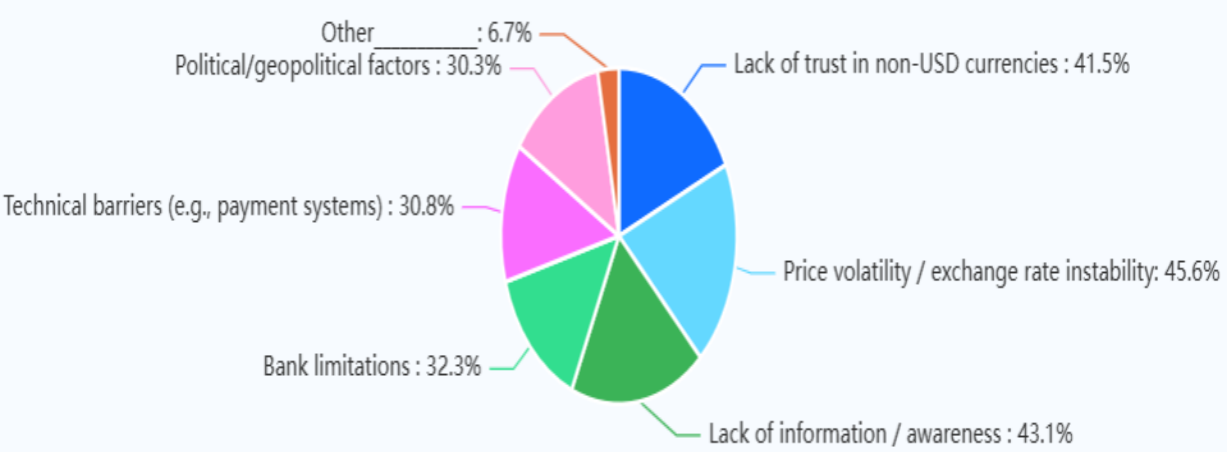
The largest share of participants selected option 3 (neutral), while a substantial number chose options 4 or 5, indicating agreement or strong agreement. Very few respondents expressed disagreement. This distribution suggests a moderate to strong level of interest in cross-border investment opportunities between China and Morocco. The findings reflect optimism regarding

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potential collaboration and economic growth, although some participants may remain cautious or seek additional information before committing to such investments.

4. Opinion & Stakeholder Insight

Title: In your opinion, what are the biggest challenges of switching from USD to RMB or MAD in trade?



Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Figure 19 The biggest challenges of switching from USD to RMB or MAD in trade

Interpretation (Figure 19: Key Challenges in Switching from USD to RMB or MAD in Trade)

The survey results indicate that the main challenges associated with switching from the U.S. dollar to the RMB or MAD in trade are concerns related to price volatility and exchange-rate instability, reported by 45.4% of respondents. This is followed closely by a lack of information or awareness (42.9%) and a lack of trust in non-USD currencies (41.8%).

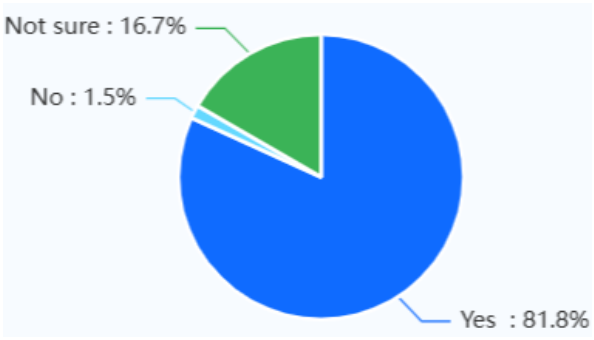
Additional barriers include banking system limitations, such as imperfect banking infrastructure, identified by 32.1% of participants, and technical constraints, including payment system incompatibility, reported by 30.6%. Political and geopolitical factors were also cited by 30.1% of respondents as contributing to hesitation in adopting alternative currencies. Only a small proportion of participants (6.6%) indicated other reasons.

Overall, these findings highlight that financial stability, information availability, and institutional readiness are critical areas that need to be strengthened to support smoother currency diversification and greater adoption of non-dollar settlement mechanisms in trade.

Title: Do you believe that faster and cheaper currency exchanges will encourage economic partnerships between Morocco and China?

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Figure 20 believe that faster and cheaper currency exchanges will encourage economic partnerships between Morocco and China



Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

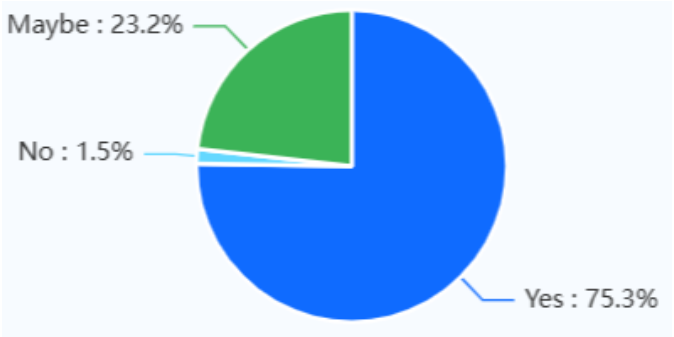
Interpretation (Figure 20: Impact of Faster and Cheaper Currency Exchange on Economic Partnerships)

The survey results show strong agreement that faster and cheaper currency exchange would encourage economic partnerships between Morocco and China. A large majority of respondents, 81.9%, answered "Yes," indicating strong confidence in the positive economic impact of improved exchange efficiency. Only 1.5% of participants disagreed, while 16.6% reported being unsure.

These findings clearly suggest that most respondents view enhanced currency exchange systems as a key factor in strengthening trade relations and investment opportunities between the two countries. Faster and more affordable transactions are widely perceived as beneficial for promoting cross-border collaboration and deeper economic integration between Morocco and China.

Title: Would you support government policies that encourage non-dollar trade between Morocco and China?

Figure 21 supporting government policies that encourage non-dollar trade between Morocco and China



Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 21: Support for Government Policies Encouraging Non-Dollar Trade)

The survey results demonstrate strong support for government policies that encourage non-dollar trade between Morocco and China. A substantial 74.9% of respondents answered "Yes,"

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indicating a clear willingness to support initiatives promoting trade in alternative currencies such as the RMB or MAD. Meanwhile, 23.6% of participants responded "Maybe," suggesting conditional support depending on specific circumstances, while only 1.5% expressed opposition.

Overall, these findings reflect a positive sentiment toward de-dollarization efforts and an openness to policies aimed at fostering stronger bilateral trade and financial cooperation between Morocco and China, provided that such measures ensure stability and mutual economic benefit.

Title: What tools or systems do you think could make international trade easier?

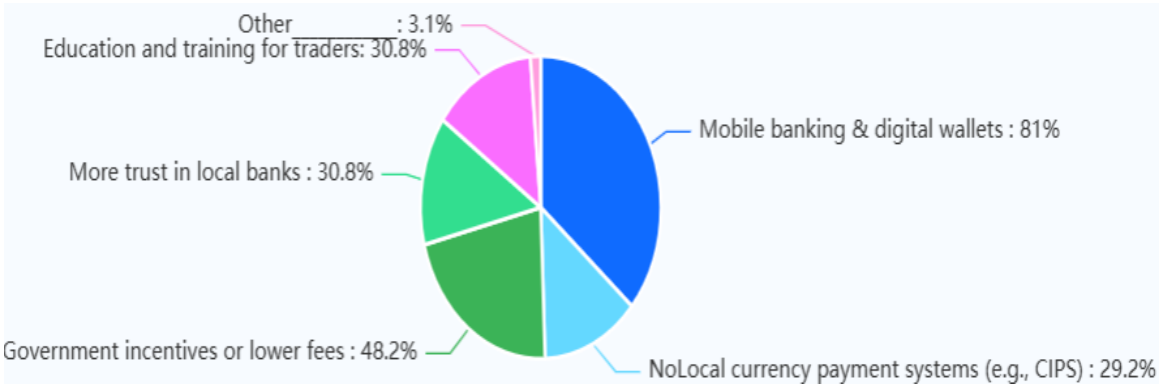


Figure 22 Tools or systems thinking could make international trade easier for the participant

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 22: Tools and Systems That Could Facilitate International Trade)

The survey results indicate that respondents view mobile banking applications and digital wallets as the most effective tools for facilitating international trade, with 81% of participants selecting this option. This strong preference highlights the importance of technology-driven financial solutions in improving accessibility and transaction speed.

Government incentives or lower transaction fees were identified as another important factor by 48.2% of respondents, suggesting that policy support and cost reduction play a significant role in promoting cross-border trade. In addition, building greater trust in local banks (30.8%) and providing education and training for traders (30.8%) were also considered valuable measures for strengthening confidence and capacity in international commerce.

Non-local currency payment systems, such as CIPS, were recognized as beneficial by 29.2% of participants, although they were viewed as secondary to digital innovation and institutional improvements. Overall, these findings indicate a clear consensus that digital financial innovation, supportive government policies, and stronger local banking infrastructure are essential for simplifying and expanding international trade between Morocco and China.

Title: Which of the following do you think could make Morocco–China trade transactions faster and cheaper?

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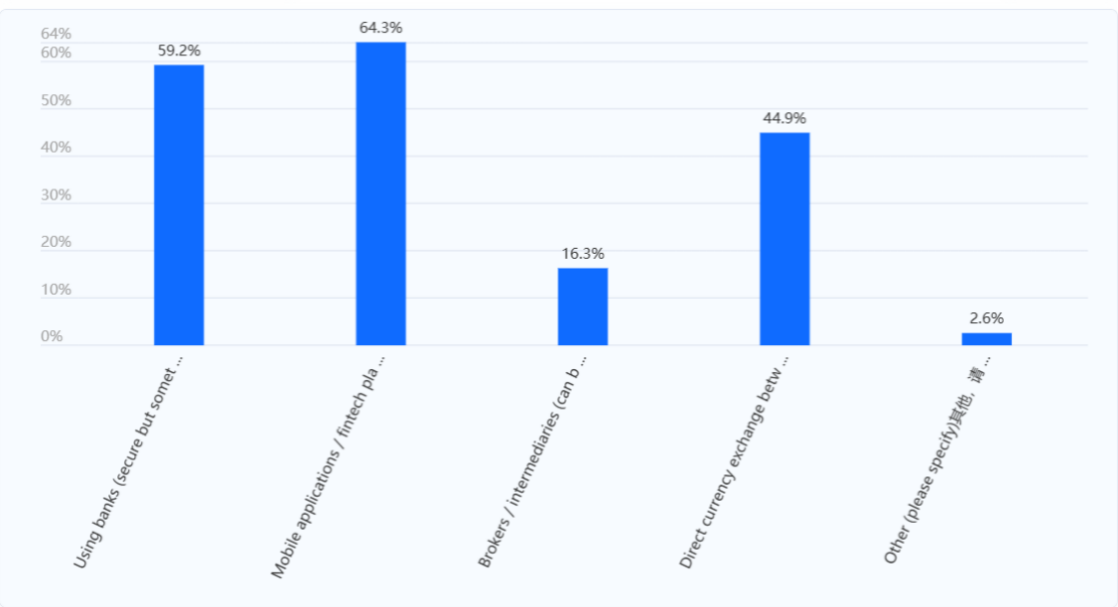


Figure 23 what the participant think could make Morocco–China trade transactions faster and cheaper

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 23: Factors That Could Make Morocco–China Trade Transactions Faster and Cheaper)

The survey results indicate that respondents consider mobile applications and fintech platforms to be the most effective tools for making Morocco–China trade transactions faster and cheaper, with 64.3% selecting this option. This reflects strong confidence in digital financial innovation as a means to simplify cross-border payments and reduce transaction costs.

Traditional banks were identified as the second most preferred option by 59.2% of respondents, reflecting their perceived security and reliability, although participants also acknowledged that traditional banking channels can sometimes be slow and costly. Direct currency exchange between the RMB and MAD was also viewed favorably by 44.9% of respondents, indicating interest in reducing dependence on intermediary currencies such as the U.S. dollar.

In contrast, brokers or intermediaries received limited support, with only 16.3% of participants selecting this option, likely due to concerns related to safety and transparency. A very small proportion of respondents (2.6%) selected other alternatives.

Overall, these findings suggest a clear preference for modern, technology-driven solutions that combine the speed and accessibility of fintech platforms with the trust and stability of established banking systems, alongside direct bilateral currency exchange mechanisms to streamline Morocco–China trade transactions.

5. Willingness to follow up

1. Approximately 30%: of users are willing to provide their name and Gmail address so that researchers can contact them for follow-up and information collection. These users are typically positive about the research and want to participate.
2. Unwilling to provide personal information (approximately 40%): These users are unwilling to provide personal information primarily due to privacy concerns. They have high expectations for data security and privacy protection, and worry about the misuse of their personal information.
3. Conditional Provision (approximately 20%): Users indicated they were willing to provide personal information under certain conditions, such as ensuring the security and confidentiality of the information, or

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only providing it if the research results are publicly available and transparent. These users have certain requirements regarding how the information is processed.

4. No clear stance (approximately 10%): Users did not express a clear opinion on whether to provide personal information, possibly due to a lack of clarity regarding the issue or a lack of interest in the research. The feedback from these users is rather vague and requires further communication and explanation

Title: Nationality and what they use like currency

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Sub-questions	USD	Euro	Chinese Yuan (RMB)	Moroccan Dirham (MAD)	Other_____
Moroccan	18 (48.6%)	29 (85.3%)	19 (14.7%)	36 (94.7%)	3 (42.9%)
Chinese	6 (16.2%)	1 (2.9%)	95 (73.6%)	0 (0.0%)	2 (28.6%)
Other_____	13 (35.1%)	4 (11.8%)	15 (11.6%)	2 (5.3%)	2 (28.6%)

Figure 24 Nationality and what they use like currency

Interpretation (Figure 24: Nationality and Currency Used)

The results show clear differences in currency usage based on nationality. Moroccan participants primarily use the Moroccan Dirham, with 36 respondents selecting this currency. The euro follows as the second most used currency among Moroccans, with 29 participants, while 18 respondents reported using the U.S. dollar. This indicates that, after their national currency, Moroccan participants rely more on the euro than on the U.S. dollar for transactions. In contrast, Chinese participants overwhelmingly reported using the Chinese Yuan, with 95 respondents selecting it, while only 6 participants indicated using the U.S. dollar. This suggests that Chinese respondents rely predominantly on their national currency for financial transactions, with limited dependence on foreign currencies.

Overall, the findings highlight a strong preference for domestic currencies among both Moroccan and Chinese participants, with secondary reliance on international currencies shaped by regional and trade linkages.

Title: the one who make international transactions the currencies they are using

Sub-questions	USD	Euro	Chinese Yuan (RMB)	Moroccan Dirham (MAD)	Other_____
Yes	34 (91.9%)	32 (94.1%)	56 (43.4%)	32 (84.2%)	4 (57.1%)

Figure 25 the one who make international transactions the currencies they are using

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 25: Currencies Used in International Transactions)

The results show that the Chinese Yuan (RMB) is the most frequently used currency for international transactions, with 56 participants reporting its use. This confirms the dominant role of the RMB among respondents engaged in cross-border payments.

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The U.S. dollar follows as the second most used currency, with 34 participants. The Moroccan Dirham and the euro are used by 33 and 32 participants, respectively, indicating that these three currencies are used at very similar levels in international transactions.
Overall, while the Chinese Yuan remains the most commonly used currency, the close usage levels of the U.S. dollar, Moroccan Dirham, and euro suggest a diversified pattern of currency use in international transactions rather than exclusive reliance on a single currency.

Title: Education level with the biggest challenges of the transaction

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Sub-questions	Price volatility / exchange rate instability	Lack of information / awareness	Bank limitations
High School or below	6 (6.7%)	5 (6.0%)	5 (7.9%)
Bachelor's Degree	59 (66.3%)	60 (71.4%)	32 (50.8%)
Master's Degree	21 (23.6%)	16 (19.0%)	21 (33.3%)
Doctorate	1 (1.1%)	2 (2.4%)	3 (4.8%)
Other _____	2 (2.2%)	1 (1.2%)	2 (3.2%)

Figure 26 Education level with the biggest challenges of the transaction

Interpretation (Figure 26: Education Level and Major Transaction Challenges)
The results indicate that a lack of information and awareness is a major challenge in international transactions, even among well-educated participants. Among respondents holding a Bachelor's degree, 60 participants reported lack of information or awareness as a key obstacle. This challenge was also identified by 16 participants with a Master's degree and 2 participants with a Doctorate, suggesting that higher educational attainment does not necessarily translate into better understanding of foreign transaction costs, procedures, or settlement time.
The second most frequently cited challenges across education levels are price volatility and bank limitations, indicating concerns related to exchange-rate instability and institutional constraints. These findings suggest that informational gaps, alongside financial and banking-related issues, remain significant barriers to efficient cross-border transactions, regardless of participants' education level.

Title : Chinese and Moroccan supporting the direct transactions

Sub-questions	Yes	No	Maybe
Moroccan	51 (34.2%)	2 (66.7%)	20 (43.5%)
Chinese	81 (54.4%)	1 (33.3%)	23 (50.0%)
Other_____	17 (11.4%)	0 (0.0%)	3 (6.5%)

Figure 27 Chinese and Moroccan supporting the direct transactions

Source: Tencent Questionnaire Survey on Currency Use and Trade Partnerships in Sino-Moroccan Relations

Interpretation (Figure 27: Support for Direct Transactions Without Using the U.S. Dollar)
The results show strong support among both Chinese and Moroccan participants for conducting direct transactions without using the U.S. dollar. Specifically, 81 Chinese and 51 Moroccan

respondents indicated that they encourage direct transactions using alternative currencies. Participants from other nationalities also showed support, with 17 respondents expressing agreement.

A smaller group expressed hesitation toward this approach, including 23 Chinese and 20 Moroccan participants, suggesting conditional support or uncertainty rather than outright opposition. Very limited resistance was observed, with only 2 Moroccan and 1 Chinese participant indicating disagreement with direct, non-dollar transactions.

Overall, the findings indicate that the majority of respondents across both nationalities support direct settlement mechanisms without reliance on the U.S. dollar, highlighting broad acceptance of alternative currency arrangements in Sino–Moroccan trade.

5.2 Reliability Analysis

The reliability of the survey instrument was assessed using Cronbach's Alpha to evaluate internal consistency among the measurement items. All collected responses were suitable for analysis, with 198 valid cases and no exclusions, as shown in Table 1. This confirms the adequacy and completeness of the dataset for reliability testing.

Table 1. Case Processing Summary

Cases	N	%
Valid	198	100.0
Excluded	0	0.0
Total	198	100.0

Source: Author's calculation (SPSS)

Note: Listwise deletion based on all variables.

The overall reliability of the scale is reported in Table 2**.** The Cronbach's Alpha coefficient of 0.853 exceeds the recommended threshold of 0.70, indicating high internal consistency among the eight items used in the analysis.

Table 2. Reliability Statistics

Measure	Value
Cronbach's Alpha	**0.853**
Number of Items	8

Source: Author's calculation (SPSS)

Descriptive statistics for individual items are presented in Table 3. Mean scores ranged from 3.07 to 3.96, with standard deviations close to one, indicating a balanced distribution of responses and sufficient variability without extreme dispersion.

Table 3. Item Statistics

Item	Mean	Std. Deviation	N
Q9	3.07	1.133	198
Q10	3.60	1.195	198
Q11	3.84	1.128	198
Q12	3.77	1.010	198
Q13	3.89	1.041	198
Q14	3.96	1.029	198
Q17	3.83	0.996	198
Q18	3.69	1.081	198

Source: Author's calculation (SPSS)

To further examine reliability, item–total statistics were analyzed and are reported in Table 4**.** Corrected item–total correlations ranged from 0.286 to 0.716, with most items exceeding the recommended minimum value of 0.30**,** indicating satisfactory item contribution. Although item Q9 recorded the lowest correlation (0.286), its removal did not significantly improve overall reliability ($\alpha = 0.871$), and therefore it was retained to preserve conceptual coverage.

Table 4. Item–Total Statistics

Item	Corrected Item–Total Correlation	Cronbach's Alpha if Item Deleted
Q9	0.286	0.871
Q10	0.539	0.842
Q11	0.684	0.823
Q12	0.579	0.837
Q13	0.693	0.823
Q14	0.716	0.821
Q17	0.687	0.825
Q18	0.615	0.832

Source: Author's calculation (SPSS)

Finally, Table 5 presents the overall scale statistics, further supporting internal coherence across the instrument.

Table 5. Scale Statistics

Mean	Variance	Std. Deviation	Number of Items
29.66	36.651	6.054	8

Source: Author's calculation (SPSS)

Summary

Overall, the results reported in Tables 1–5 confirm that the survey instrument demonstrates strong reliability. The Cronbach's Alpha value of 0.853 indicates very good internal consistency, while item-level diagnostics show that all items contribute meaningfully to the scale. These findings confirm that the survey responses are statistically reliable and suitable for further empirical analysis.

5.3 Validity Analysis

Construct validity of the survey instrument was assessed using Principal Component Analysis (PCA**)** with Varimax rotation. PCA was selected to evaluate whether the observed variables adequately represent the underlying latent constructs related to currency trust, transaction efficiency, and attitudes toward non-dollar trade.

Table 6. Communalities

Item	Initial	Extraction
Q9	1.000	0.771
Q10	1.000	0.673
Q11	1.000	0.669
Q12	1.000	0.545
Q13	1.000	0.670
Q14	1.000	0.674
Q17	1.000	0.670
Q18	1.000	0.529

Source: Author's calculation (SPSS)

Extraction Method: Principal Component Analysis

The communalities ranged from 0.529 to 0.771**,** all exceeding the recommended minimum threshold of 0.50, indicating that each item shares sufficient variance with the extracted components. This confirms that all items are suitable for inclusion in the factor structure and demonstrates acceptable construct validity.

Table 7. Total Variance Explained

Component	Eigenvalue	% of Variance	Cumulative %
1	4.103	51.286	51.286

Component	Eigenvalue	% of Variance	Cumulative %
2	1.099	13.737	65.022
3	0.731	9.143	74.165
4	0.657	8.212	82.377
5	0.489	6.110	88.487
6	0.371	4.632	93.119
7	0.292	3.654	96.774
8	0.258	3.226	100.000

Source: Author's calculation (SPSS)

Extraction Method: Principal Component Analysis

According to the Kaiser criterion, two components with eigenvalues greater than one were retained. These two components together explain 65.022% of the total variance, exceeding the commonly accepted minimum of 50% for social science research. After rotation, Component 1 explains 42.485% of the variance and Component 2 explains 22.538%**,** indicating a strong and interpretable factor structure.

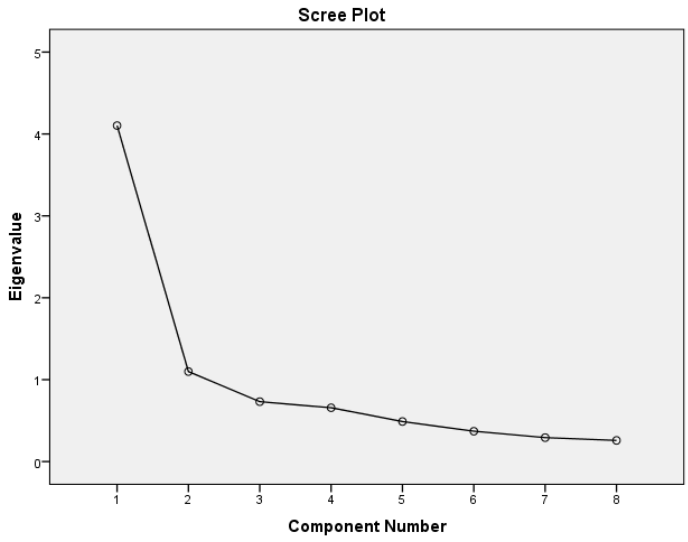


Figure 28 Scree Plot of Eigenvalues

Source: Author's calculation (SPSS)

The scree plot shows a clear inflection after the second component, further supporting the retention of a two-factor solution.

The scree plot shows a clear inflection after the second component, further supporting the retention of a two-factor solution.

Table 8. Component Matrix (Unrotated)

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Item	Component 1	Component 2
Q9	0.373	0.795
Q10	0.667	−0.478
Q11	0.787	−0.224
Q12	0.675	0.297
Q13	0.789	0.218
Q14	0.819	0.061
Q17	0.794	−0.201
Q18	0.722	−0.090

Source: Author's calculation (SPSS)

Table 9. Rotated Component Matrix (Varimax Rotation)

Item	Component 1	Component 2
Q9	−0.058	0.876
Q10	0.815	−0.095
Q11	0.797	0.185
Q12	0.447	0.587
Q13	0.585	0.573
Q14	0.687	0.450
Q17	0.792	0.208
Q18	0.675	0.270

Source: Author's calculation (SPSS)
Rotation Method: Varimax with Kaiser Normalization
Rotation converged in 3 iterations.
The rotated component matrix reveals a clear two-factor structure. Seven items (Q10, Q11, Q12, Q13, Q14, Q17, and Q18) load strongly on Component 1, while item Q9 loads primarily on Component 2. All factor loadings exceed 0.40, indicating strong associations between items and their respective latent constructs.

Table 10. Component Transformation Matrix

Component	1	2
1	0.875	0.484
2	−0.484	0.875

Source: Author's calculation (SPSS)

The diagonal values of **0.875** confirm that the Varimax rotation improved factor clarity while maintaining orthogonality between components.

Summary of Validity Results

Overall, the PCA results confirm that the survey instrument demonstrates strong construct validity. All items exhibit adequate communalities, the extracted components explain a substantial proportion of total variance, and the rotated factor structure is theoretically coherent and statistically robust. These findings indicate that the questionnaire effectively captures two distinct underlying dimensions, supporting its suitability for analyzing perceptions of currency exchange efficiency and non-dollar trade in the context of Sino-Moroccan economic relations.

5.4 Qualitative Results from the Interviews

The qualitative interviews with two Moroccan commercial banks reveal that institutional structure is a decisive factor in determining the speed and efficiency of financial transactions between Morocco and China. The most significant difference between the two institutions lies in their international presence. Bank A, which maintains a representative office in China, benefits from direct coordination with Chinese financial institutions, fewer intermediaries, and faster verification processes. As a result, Bank A completes cross-border transfers within 1–3 working days. In contrast, Bank B, which operates exclusively within Morocco, relies on correspondent banking networks and intermediary currencies, leading to significantly longer settlement times of **7**–15 working days.

Despite differences in performance, both banks identified similar institutional constraints. Regulatory misalignment between Moroccan and Chinese financial authorities, heavy reliance on the SWIFT system, and the absence of a direct RMB–MAD settlement mechanism were cited as major sources of delay and cost. Notably, both institutions reported limited familiarity with alternative payment infrastructures, such as CIPS, highlighting a gap in digital and institutional readiness for non-dollar transactions. These constraints explain the continued dependence on U.S.-dollar-based routes despite growing interest in faster and more autonomous financial systems.

The interviews also highlight the role of technology and trust. While both banks acknowledged that digital banking tools and fintech platforms could enhance transaction speed and transparency, they emphasized that adoption depends on cybersecurity assurance, regulatory clarity, and client education. These findings align closely with the survey results, which showed strong public support for digital payments alongside concerns about safety and reliability.

To quantify efficiency differences, Fisher's velocity of money framework was applied to transaction timelines. The results indicate that Bank A's estimated monetary velocity ($V \approx 200.5$) is approximately six times higher than that of Bank B ($V \approx 34.8$**)**. This substantial gap demonstrates how direct institutional presence and reduced intermediary dependence can dramatically increase the speed of money circulation. In line with Fisher's theory, higher velocity reflects greater liquidity and trade efficiency, while Keynes's liquidity preference framework helps explain why risk aversion and uncertainty continue to slow adoption of alternative systems. Overall, the qualitative findings confirm that institutional presence,

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technological integration, and trust are central to improving transaction efficiency in Sino-Moroccan trade.

5.5 Velocity of Money Analysis

To quantify differences in transaction efficiency between the two interviewed institutions, this study applies Fisher's velocity of money framework to cross-border transaction timelines. Transaction speed is operationalized as the number of settlement cycles completed per year, calculated using the simplified expression (V = 365 / T), where (T) represents the number of days required to complete one transaction cycle. This approach allows settlement duration to be interpreted as an economic efficiency indicator rather than a purely technical measure.

Bank A vs. Bank B

The results reveal a substantial disparity in transaction velocity between the two banks. Bank A, which maintains a representative office in China, completes Morocco–China transactions within 1–3 working days. Applying the velocity formula yields values ranging from V = 121.7 (T = 3 days) to V = 365 (T = 1 day), with an estimated average velocity of V ≈ 200.5 cycles per year. This high velocity reflects strong operational efficiency, reduced intermediary dependence, and effective institutional coordination.

Title: Velocity of Money by Bank (Annualized)

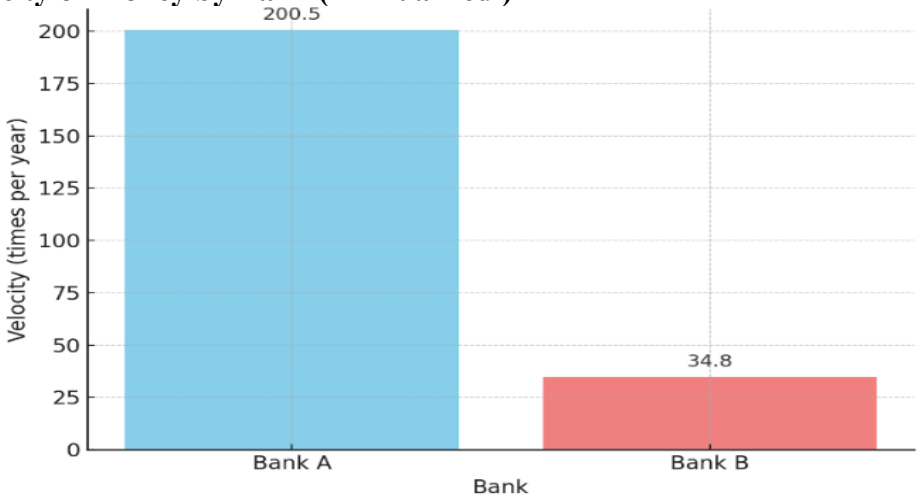


Figure 29 Bank A and B comparison velocity of money

Source: Author's calculation (Excel)

In contrast, Bank B, which operates without an international branch in China, reports settlement times between **7** and 15 working days. Corresponding velocity estimates range from V ≈ 52.1 (T = 7 days) to V ≈ 24.3 (T = 15 days), with an average of V ≈ 34.8 cycles per year. The significantly lower velocity reflects delays caused by correspondent banking chains, intermediary currency conversion, and regulatory verification procedures.

Quantified Efficiency Gap

Comparing the two institutions reveals an efficiency gap of over 500% in estimated transaction velocity. Bank A's money circulates approximately six times faster than Bank B's, demonstrating the economic impact of direct institutional presence and streamlined settlement mechanisms. According to Fisher's theory, higher velocity supports greater liquidity and trade activity by allowing capital to move more rapidly through the financial system. At the same time, Keynes's liquidity preference theory helps explain why slower, dollar-based routes persist, as risk aversion and institutional uncertainty discourage rapid adoption of alternative settlement systems.

Overall, the velocity analysis confirms that transaction speed is a critical determinant of financial efficiency in Sino-Moroccan trade. The findings suggest that expanding direct institutional representation, reducing intermediary dependence, and strengthening trust in non-dollar systems could significantly enhance cross-border transaction performance and support deeper economic integration between Morocco and China.

6. Discussion

6.1 Interpretation of Findings

The findings of this study indicate that transaction speed is a critical growth factor in Sino-Moroccan trade. Both the survey and interview results consistently show that slow settlement times and high transaction costs are perceived as major barriers to cross-border economic activity. The velocity analysis demonstrates that faster settlement significantly increases the effective circulation of capital, improving liquidity and reducing exposure to exchange-rate risk. These results suggest that financial efficiency is not merely a technical issue but a central determinant of trade performance and investment potential.

At the institutional level, trust and physical presence emerge as decisive factors shaping transaction efficiency. Banks with direct representation in the partner country benefit from reduced intermediary reliance, faster compliance verification, and improved communication with counterpart institutions. The contrast between Bank A and Bank B illustrates how institutional proximity enhances confidence in transaction execution and encourages the use of faster settlement channels. Conversely, limited trust in alternative payment systems and regulatory uncertainty reinforce reliance on slower, dollar-based routes, even when more efficient technical solutions exist.

6.2 Empirical Relationships and Hypothesis Discussion

To operationalize the proposed hypotheses, the analysis examines associations between specific Likert-scale survey items capturing perceptions of transaction efficiency, trust, cost, digital readiness, and economic opportunity. The selected variables are drawn directly from the survey instrument and reflect the core theoretical mechanisms discussed earlier. Given the ordinal nature of the data, relationships between variables are assessed using Spearman's rank correlation.

Specifically, **H2** is examined by correlating respondents' agreement with the statement that faster currency exchange increases business opportunities between Morocco and China (Q14; mean ≈ 3.96) with their interest in investing in a China–Morocco business project (Q18; mean ≈ 3.69). This relationship captures the link between perceived transaction efficiency and investment expectations.

To test **H3**, trust in Chinese and Moroccan banks to handle international transactions efficiently (Q17; mean ≈ 3.83) is correlated with respondents' willingness to use RMB or MAD directly for cross-border payments (Q10; mean ≈ 3.60), reflecting the role of institutional confidence in currency choice.

H4 is evaluated by correlating perceptions that international transfers are too expensive (Q12; mean ≈ 3.77) with agreement that non-dollar trade can benefit the Moroccan and Chinese economies (Q11; mean ≈ 3.84). This relationship captures whether dissatisfaction with current cost structures is associated with support for alternative settlement arrangements.

Finally, **H5** is tested by correlating comfort with digital payment tools or mobile wallets for international transfers (Q13; mean ≈ 3.89) with willingness to use RMB or MAD directly (Q10). This pairing reflects the extent to which digital readiness supports openness to non-traditional currency settlement mechanisms.

6.3 Comparison with Existing Studies

The study's findings align closely with evidence from China–Russia financial cooperation. Following restrictions on Russia's access to the SWIFT system, bilateral trade increasingly

shifted toward local-currency settlement, resulting in faster transactions and reduced dependency on intermediary currencies. Empirical studies show that these changes contributed to sustained trade growth despite external shocks, highlighting the importance of direct settlement mechanisms and institutional coordination.

Similar dynamics are observed in China–Saudi Arabia relations, where bilateral agreements and currency swap arrangements facilitated RMB-based trade, particularly in energy transactions. The literature emphasizes that these developments were driven not only by geopolitical considerations but also by the economic benefits of lower transaction costs and faster settlement. These cases demonstrate that when policy alignment and institutional infrastructure support alternative currency use, non-dollar trade can expand rapidly and sustainably.

For Morocco**,** the relevance of these cases lies in the transferable institutional lessons rather than direct replication. Morocco differs in economic scale and structure, but its strategic location and financial stability position it as a potential regional hub linking Africa, Europe, and Asia. The findings suggest that adopting targeted financial agreements, expanding institutional presence, and improving awareness of alternative payment systems could enable Morocco to benefit from similar efficiency gains while maintaining monetary independence.

Beyond high-profile cases such as China–Russia and China–Saudi Arabia, the broader literature on Sino-African economic relations highlights persistent constraints related to transaction costs, intermediary dependence, and underdeveloped payment infrastructure. Studies on African trade finance consistently report that cross-border payments remain expensive and slow, largely due to reliance on correspondent banking networks and third-currency settlement, particularly the U.S. dollar (World Bank, 2023; African Development Bank, 2022). While analyses of China–Africa cooperation often emphasize trade volumes, infrastructure investment, and development outcomes (Sanfilippo, 2021; Cheru, 2020), comparatively little attention has been paid to the operational mechanics of settlement speed, banking structures, and trust in currency choice. In this context, the present study contributes a corridor-level perspective by showing how transaction speed, institutional presence, and confidence in financial systems jointly shape the feasibility of non-dollar settlement in a medium-sized African economy such as Morocco. This focus complements existing Sino-African literature by linking macro-level cooperation narratives to the micro-level financial processes that ultimately enable or constrain effective trade integration.

6.4 Theoretical Implications

From a theoretical perspective, the results provide strong empirical support for Fisher's velocity of money theory. The substantial difference in estimated monetary velocity between the two banks demonstrates how transaction speed directly affects the efficiency of capital circulation. Faster settlement enables money to complete more transaction cycles, supporting higher trade volume and economic activity. In this sense, velocity serves as a practical indicator of financial system performance in international trade contexts.

At the same time, the findings confirm the relevance of Keynes's liquidity preference theory in explaining currency choice and institutional behavior. Despite the availability of faster technical solutions, banks and firms often prefer familiar settlement routes due to concerns about risk, regulatory clarity, and institutional trust. Confidence, expectations, and perceived stability therefore condition whether efficiency-enhancing systems are adopted in practice. Together, Fisher's and Keynes's frameworks explain both the measurable gains from faster transactions and the behavioral factors that shape their adoption, offering a comprehensive lens for understanding cross-border financial efficiency in Sino-Moroccan trade.

In addition, the observed relationships between transaction speed, trust, cost perceptions, and openness to non-dollar settlement provide micro-level empirical grounding for these classical

theories. The positive association between faster settlement and perceived business and investment opportunities reinforces Fisher's argument that circulation speed enhances economic efficiency, even when applied at a corridor-level rather than a macroeconomic scale. At the same time, correlations between institutional trust, digital readiness, and willingness to use RMB or MAD reflect Keynesian liquidity preference behavior, whereby agents balance efficiency gains against perceived risk and uncertainty. By integrating survey-based perception measures with bank-level operational evidence, this study extends Fisher's and Keynes's frameworks into the practical domain of cross-border payment systems, demonstrating how monetary theory can be operationalized to explain real-world settlement choices in emerging bilateral trade relationships such as Morocco–China.

7. Policy Implications

The findings of this study suggest that improving the speed and efficiency of cross-border financial transactions between Morocco and China requires coordinated action across central banks, commercial banks, and government authorities. Policy measures should focus on reducing intermediary dependence, strengthening institutional trust, and modernizing payment infrastructure to support non-dollar trade mechanisms.

7.1 Central Banks

Central banks play a pivotal role in facilitating non-dollar financial cooperation. One key policy instrument is the establishment or expansion of bilateral currency swap agreements between the People's Bank of China and Bank Al-Maghrib. Such agreements would provide liquidity support for RMB–MAD transactions, reduce reliance on third currencies, and enhance confidence in direct settlement mechanisms. Swap arrangements have proven effective in other bilateral contexts by stabilizing exchange flows and lowering transaction costs.

In addition, greater integration between Morocco's banking system and China's Cross-Border Interbank Payment System (CIPS) could significantly improve transaction speed and transparency. Central bank-level coordination is essential to support technical interoperability, regulatory alignment, and risk management frameworks. Facilitating access to CIPS would allow Moroccan banks to process RMB transactions more directly, reducing settlement delays associated with SWIFT-based correspondent banking chains.

Concrete implementation measures at the central-bank level could include the introduction of pilot RMB–MAD settlement corridors, limited initially to selected banks and transaction categories, to test settlement speed, liquidity management, and compliance procedures under controlled risk conditions. Clear operational guidelines on reporting, liquidity provisioning, and risk supervision would further reduce uncertainty and strengthen institutional confidence in non-dollar settlement mechanisms.

7.2 Commercial Banks

Commercial banks are central to translating policy frameworks into operational efficiency. Investment in digital banking platforms and cross-border payment technologies can shorten settlement cycles, enhance traceability, and lower transaction costs. Banks should also explore partnerships with fintech providers and participate in pilot programs related to digital currencies or alternative payment infrastructures to prepare for future financial innovation.

Equally important is training and transparency. The study highlights significant knowledge gaps regarding systems such as CIPS and emerging digital settlement tools. Targeted training programs for banking professionals, combined with clearer communication to clients about costs, timelines, and currency options, would improve trust and encourage adoption of faster, non-dollar transaction channels.

To operationalize these goals, banks could implement standardized disclosure of transaction timelines and fee structures for different settlement routes (USD-based versus RMB/MAD-

based). Such transparency would directly address cost and speed perceptions identified in the survey and help align client expectations with institutional capabilities.

7.3 Governments

Governments can support financial integration by creating incentives for non-dollar trade and cross-border financial innovation. These may include tax incentives for firms using local-currency settlement, support for pilot projects involving digital trade finance, or preferential treatment for banks investing in cross-border infrastructure. Such measures can accelerate experimentation and reduce the initial costs associated with adopting new payment systems.

Furthermore, regulatory coordination between Moroccan and Chinese authorities is essential to streamline compliance procedures and reduce administrative delays. Harmonizing reporting standards, know-your-customer (KYC) requirements, and transaction monitoring protocols would enhance predictability and reduce uncertainty for financial institutions.

From a strategic perspective, governments could also establish bilateral technical working groups involving regulators, central banks, and commercial banks to continuously address operational bottlenecks, documentation requirements, and compliance timelines. By fostering a stable and coordinated regulatory environment, governments can create the institutional trust necessary for faster, more efficient financial flows in Sino-Moroccan trade.

From a broader strategic perspective, these policy recommendations align with Morocco's ambition to strengthen its position as a regional financial and trade hub linking Africa, Europe, and Asia. Enhancing cross-border settlement speed and reducing dependency on intermediary currencies directly support this objective by improving the competitiveness and reliability of Morocco's financial infrastructure. The survey evidence showing strong public support for faster, cheaper transactions and non-dollar trade, combined with bank-level evidence of settlement delays linked to correspondent routing, indicates that operational efficiency is a binding constraint rather than a marginal concern. By prioritizing payment system modernization, regulatory clarity, and targeted non-dollar settlement pilots, Moroccan authorities can translate trade openness and financial depth into practical transaction efficiency, thereby reinforcing Morocco's attractiveness for Sino-African trade, investment flows, and regional financial intermediation.

Conclusion

This study examined the efficiency of currency exchange in Sino-Moroccan trade with a particular focus on transaction speed, institutional structure, and the potential of non-dollar settlement mechanisms. By combining survey evidence, bank-level interviews, and a velocity-of-money analysis, the research demonstrates that transaction speed is a critical determinant of financial efficiency and trade performance. The findings show that reliance on intermediary-based, dollar-denominated payment systems significantly slows settlement processes, while direct institutional presence and streamlined payment routes substantially improve liquidity and reduce transaction costs.

The study contributes to the existing literature by shifting attention from trade volumes and geopolitical narratives to the operational dimension of international finance, particularly transaction speed. By applying Fisher's velocity of money framework to cross-border banking practices and integrating Keynes's liquidity preference theory, the research offers a novel analytical approach that captures both technical efficiency and behavioral constraints. This dual-theoretical perspective provides empirical support for the view that faster settlement mechanisms can enhance economic exchange, while trust and institutional confidence remain essential for their adoption.

From a strategic perspective, the findings highlight the importance of financial infrastructure in strengthening Sino-Moroccan economic relations. For Morocco, improving non-dollar

transaction capabilities supports its ambition to act as a regional financial hub linking Africa, Europe, and Asia. For China, deeper financial cooperation with Morocco aligns with broader objectives of RMB internationalization and diversified trade settlement. Together, these outcomes suggest that enhanced payment efficiency can reinforce bilateral trade, investment flows, and long-term economic integration.

Original Scientific Contribution

Beyond summarizing key findings, this study makes an original scientific contribution by advancing a corridor-level analysis of cross-border settlement efficiency in Sino–Moroccan trade. Unlike much of the existing literature that emphasizes trade volumes or geopolitical dimensions, this research integrates bank-level operational evidence with survey-based perceptions to explain how transaction speed, institutional structure, and trust jointly shape currency choice. Methodologically, the application of Fisher's velocity of money as an operational proxy for settlement efficiency, combined with Keynes's liquidity preference framework to capture behavioral constraints, provides a novel analytical approach for studying non-dollar trade feasibility in medium-sized open economies such as Morocco.

Concrete Practical Implications

The findings translate into several concrete policy and operational implications. First, central banks could strengthen bilateral monetary cooperation by exploring phased and targeted mechanisms—such as pilot RMB–MAD settlement corridors or structured liquidity support arrangements—to reduce reliance on intermediary currencies. Second, financial authorities and commercial banks should prioritize digital payment infrastructure and interoperability, including clearer disclosure of settlement timelines and fee structures, to directly address cost and speed concerns identified in the survey. Third, targeted training and awareness initiatives for banks and traders are essential to reduce information gaps surrounding alternative payment systems and non-dollar settlement options, thereby improving trust and adoption.

Future Research Directions

Future research can extend this study in several directions. One important avenue is to examine the potential role of central bank digital currencies (CBDCs)—particularly the e-CNY—in reducing settlement time, increasing transparency, and lowering transaction costs in Sino–Moroccan trade once cross-border pilots expand. Further studies could also incorporate a larger sample of financial institutions, including Chinese banks operating in Africa, to improve generalizability. Additionally, applying advanced econometric techniques could help quantify the joint effects of trust, digital readiness, and cost perceptions on non-dollar settlement adoption. Finally, future work could situate Morocco–China financial cooperation within the broader African Continental Free Trade Area (AfCFTA) framework to assess regional spillover effects.

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