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Determinants of Remittance Costs in South Asia: Evidence from India's Outward Corridors

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ABSTRACT

India is the largest recipient of remittances in the world, yet the cost of sending remittances remains a persistent challenge. SDG 10.c goals restricting the cost to 3 percent requires an investigation of the factors that keep costs elevated. This study analyzes the factors affecting the cost of sending remittances across South Asian corridors. It compares the cost of sending USD 200 and USD 500 through banks and Money Transfer Operators across four countries over a six-year period. Pooled OLS is employed to analyze the cost determinants and its robustness has been checked by Driscoll-Kraay and Prais-Winsten regression analysis. The major determinants of cost were GDP per capita, population and financial inclusion for bank transfers while speed was the major factor for USD 200 transfer by MTOs. Despite a limited sample size, the findings extend the theoretical understanding of remittance pricing and offer actionable insights for policies aimed at lowering transaction costs and meeting SDG 10.c targets.

Keywords: word; Sustainable Development Goals 10.c, South Asian corridors , Money Transfer Operators, financial inclusion

1. Introduction

Remittances represent household income from foreign economies arising mainly from the temporary or permanent movement of people to those economies. According to IMF (2009), remittances include cash and noncash items that flow through formal channels, such as via electronic wire, or through informal channels, such as money or goods carried across borders. They largely consist of funds and noncash items sent or given by individuals who have migrated to a new economy and become residents there, and the net compensation of border, seasonal, or other short-term workers who are employed in an economy in which they are not resident (IMF, 2009). International Organization for Migration defines migrant remittances as monetary transfers that a migrant makes to the country of origin.

Remittances have an extremely relevant impact on home-country economies, e.g., in alleviating poverty and contributing to development. Remittances can indeed raise consumption and/or investment and play a crucial role in income smoothing, hence acting as an automatic stabilizer. However, they may also amplify the business cycle and thus destabilize economic activity (Fagiolo, 2023)[1]. Four of the most relevant changes in the remittance industry over the past five years include a decline in transaction costs among remittance intermediaries; an increase in competition among formally licensed businesses, including the consolidation of firms which in turn reduces levels of informality; a growing interest on the part of banking institutions in the United States and Latin America in providing financial services, including remittances, to immigrants; and tightened government regulations (Orozco, 2006)[2].

Building on the global perspective, the Indian case is particularly constructive. The steady flows of remittances from Indian migrants have reduced India's reliance on external aid and provided sustainable support to the balance of payments (BOP) as high trade deficits are to a large extent financed by remittances, thus strengthening the argument of countercyclical role of such inflows in BOP (Singh, 2009)[3]. An important dimension of remittance inflows to India, which has not received adequate academic attention, is the role of cost and efficiency in influencing the overall behaviour of remittances. A reduction in the cost of remittance transfer through the formal channels and the deepening of the payment infrastructure have considerably reduced the incentives for informal transfers and would have played an important role in explaining the shift in remittance inflows without detracting from the critical role of the real factors at work (Singh, 2009).

The global average cost of sending USD 200 is 6.9% of the remittance. SDG 10 C aims to reduce the cost to less than 3% and to eliminate remittance corridors with cost higher than 5% by 2030 (Ruhmann, 2020)[4]. The belief

is that transaction costs may be especially burdensome for the poor, who lack collateral and/or credit history. Hence, decreasing these costs will help to reduce the gap between the haves and the have-nots. Further, through the dynamics of 'trickle-down economics', implementing policies that make remittances affordable has the potential to impact not only the families directly involved in the transfer but also the well-being of entire communities (Kratou, 2023)[5].

This paper contributes to the literature by examining the factors influencing the cost of sending remittances in key South Asian corridors from India. The focus on formal channels bridges the gap in existing literature in the remittance-development nexus and offers policy-relevant insights for achieving the SDG cost-reduction targets.

2. Objectives

The paper has been written with the following objectives

- To find out the impact of GDP per capita, digital literacy, population of recipient country and speed of sending remittances on the cost of sending remittances.
- To make a comparison of sending US$200 and US$500 through banks and MTOs.
- To suggest policy implications for reducing the cost of sending remittances.

3. Scope and Methodology

The data collected from secondary sources like World Bank- Remittance Prices Worldwide, Global Findex Database2025 and World Bank – World Development Indicators (WDI) statistically interpreted to bring out the inferences. The paper deduces the factors affecting the cost of sending remittances from India to the corridors like Bangladesh, Nepal, Srilanka and Pakistan. Since the study was based on remittances prices in South Asian countries and the World Bank data had just 4 corridors from India so the number of countries remain limited. The panel data analysis has been done for the period between 2019 to 2024.

Due to small number of groups (N=4, Years=6, observations= 24) the panel FE/RE models were not suitable as the property of large N does not hold (Cameron & Miller, 2015[6] stated the issue of large numbers of clusters, explaining why standard errors can be overstated). RE was unstable with sigma_u ≈ 0. The use of instrumental variables was not possible as with small samples its results are not reliable.

Pooled OLS with clustering was preferred because it reduces the risk of false significance. It ensures that the effects of GDP per capita, population, financial inclusion are not due to within-country correlations. To further check the robustness, Heteroscedasticity-consistent HC3 standard errors was used which showed consistent results across all the parameters. I do acknowledge that HC3 does not correct for omitted variables or the presence of endogeneity. In addition to it, Driscoll-Kraay standard error was used as they are robust to heteroscedasticity. It ensures that the explanatory variables are not inflated by within-country auto-correlation or spillover effects between corridors. Prais-Winsten panel-corrected standard errors (PCSE) for (AR1) is a second robustness check which ensures variables remain stable even in the presence of heterogeneity. Between Estimator was also used to capture the long run relationships. The results of all these gives credibility to the effects of different variables on cost, without being compromised due to limited size of sample.

The analysis shows that the study though limited by the small number of panels but the results remained consistent in all the parameters which gives credibility to the paper under study. However, I cannot deny the fact that despite all the checks omitted variable bias and reverse causality can still be present.

Econometric Model

$$\ln(Cost_{it})=\alpha+\beta_1\ln(GDPpc_{it})+\beta_2\ln(Population_{it})+\beta_3\ln(Account_{it})+\beta_4 Speed_{it}+\varepsilon_{it}$$

The econometric model has been generated for USD500_Bank and USD200_MTO as well as USD500_MTO.

The model studies the impact of GDP per capita, digital literacy and population of recipient country as well as the speed of sending remittances on the cost of sending $200 and $500 through banks and MTOs

In addition to log-log equation, lin-log models were also used. Both these models have been used to study the impact of elasticities and the impact of elasticities on the proportion of cost. Log-log model shows the percentage change in dependent variable to percentage change in explanatory variable. This reduces the effect of

heteroscedasticity and brings in normality to equation. Lin-log model studies the percent change in explanatory variable on the unit change of cost. It is helpful for the policy-makers to deduce the cost

The economic development (Schumpeter, 1911; Levine, 1997, finance-growth nexus)[7] is expected to lower the cost of sending remittances. Financial Inclusion (Coase,1937 and Williamson, 1981, transaction cost theory)[8] and population (Katz & Shapiro,1985, network externalities theory)[9] are expected to decrease the cost while the speed (Williamson, 1985, transaction cost economics) is expected to increase the cost.

Model was constructed to find out the effects of different factors on the cost. South Asian countries are diverse culture. It becomes imperative that we study the diversity then only we can come to conclusion as to the factors which are affecting cost. Findings are robust and indicative of the underlying economic relationships, despite the limited sample size.

4. Literature Review

Determinants of Remittance Flow

Altruistic theory posits that heightened poverty in recipient country leads to increased migration facilitating remittance flow. Remittances are impacted by macroeconomic factors such as exchange rate, GDP, interest rate impact the flow of remittances. Freund and Spatafora (2007)[10] document the key determinants of remittance flow. Remittances are significant source of expenditure on health and education resulting in investment. It is an established fact that poverty, chronic inflation, and unemployment results in migration, pointed out by Gizem and Cifti (2022)[11] as the leading factor of increased remittances assisting in poverty reduction in the country. They pointed the relation between trade openness and reduction in transaction cost facilitating increased remittances flow. Complementing these findings, Ibrahim (2025)[12] made a correlation between heightened conflicts and exchange rate stability resulting in remittances.

Transaction Cost and Technology

Transaction cost economics (Ronald Coase and Oliver Williamson) focused on the cost charged by banks and MTOs to facilitate safe, secure, and faster transmission. Orozco (2006) studied the Latin American and Caribbean countries and concluded that increased competition has helped them in achieving economies of scale. The cost of transmission is reduced significantly and the outcome is larger remittance flow. Singh (2009) reiterated the fact that transaction cost is the key element behind long run remittance flow determinant. The infrastructure facilities play a decisive role in remittance cost. He suggested greater synergy between MTOs and banks to reduce the cost. Ruhmann et al. (2020) favoured the use of blockchain technology for reducing the transmission cost of remittances. It can streamline the transmission process and drastically reduce the time and cost. Though they cautioned against the digital backwardness of developing countries as a limiting factor. Orozco concept of increased competition was countered by Kpodar and Imam (2022)[13] who examined the elasticity concept and inferred that a 10% fall in transmission cost leads to 0.9% increase of remittances in the 1st quarter which interestingly fades in the other quarters. An analogy made by them that the reduction of cost of remittance to SDG level of 3% will generate additional $32 billion seems far-fetched as still most countries are at the level of 6-7% of remittance cost.

Choice of Channel

Risk and Security models have supported the choice of channel which is intact, protected, and swift. This mandates the use formal channels for sending remittances. The pitfall of using informal channels was brought to light by Kosse et al. (2014)[14] who reiterated that though the informal channels of sending remittances are faster, cheaper, and anonymous but it suffers from severe challenges of corruption, money laundering, and smuggling. Though formal channels are safe but Fagiolo and Rughi (2023) concluded that shared borders lead to decreased formal remittance flow highlighting informal channels presence when cross border transfers are easy.

Impact on Inequality/Poverty

Endogenous growth theory explores the impact of flow of remittances in reducing poverty and inequality. Remittances help in self-employment, raise investment in small business, generating money to bring prosperity and development. Kratou and Khlass (2023) brought about the relation between and remittances and inequality. They deduced that 1% increased remittances induce a decline in Gini Coefficient by 2%. It is the high transmission cost that is leading to reduction in flow of remittances.

Research Gap

The literature review explored innumerable studies on cost determinants and the technology to lessen the cost. Choice between formal and informal channels and the benefits of remittance flow was also encountered. But the investigation of cost determinants in South Asian corridors remained unexplored. The cost determinants remained heightened conflicts, exchange rate and trade openness. The ingenuity of this paper lies in the factors such as GDP per capita, digital literacy, population, speed influencing the cost. This corridor-specific investigation addresses the persistent cost asymmetries neglected in the broader remittance literature.

5. Result and Discussion

Table 1. Comparative Results of the different cost structure of banks and MTOs

Variable	$200 Bank	$500 Bank	$200 MT	$500 MT
lgdp_pc	0.4575*** (0.0861)	0.3469*** (0.0832)	0.3276 (0.2999)	0.3882 (0.2799)
lpopulation	-0.2910*** (0.0830)	0.0641 (0.0704)	0.0761 (0.1631)	0.1791 (0.1372)
lhaving_account	-0.9523*** (0.2054)	-0.2078 (0.1879)	0.0639 (0.4424)	0.1363 (0.3949)
speed_nextday	0.2026† (0.0660)	0.2019*** (0.0358)	0.5987*** (0.0857)	0.5517*** (0.0879)
_cons	7.1058*** (1.7826)	-1.7946 (1.4150)	-2.9901 (3.2910)	-5.7470 (2.5506)
Observations	24	24	24	24
R-squared	0.3943	0.3693	0.1965	0.2380
Root MSE	0.3031	0.2847	0.7411	0.6818

Standard errors in parentheses are clustered by country (id_num) to account for within-country correlation. Significance levels: *** $p < 0.05$; † $p < 0.10$.

Pooled OLS estimate was used to find out the cost of sending USD 200 across the 4 corridors from India. The corridors are repeated across time there was chance of within corridors heteroscedasticity and serial correlation. So, the standard error is clustered around corridors. The failure to make the adjustment would have resulted in understating standard errors and result in spurious regression.

The model explanatory power is 39 percent (R^2 =0.3943). All the explanatory variables remain significant except for speed. 1pc increase in GDP per-capita leads to 0.458 pc rise in cost of sending USD 200 through banks. This highlights the fact that the richer corridors command a premium price, might be due to higher compliance requirements, or less price sensitivity among the senders

A percentage increase in population lowers the cost by 0.29 pc, consistent with the economies of scale experienced by sending remittances to highly populated corridors. Financial inclusion also negatively impacts the cost, lower it by 0.952 pc. Higher literacy promotes competition and reduces reliance on cheaper alternatives. Speed of remitting increases the cost of sending through banks. However, the effect is marginal when clustering is applied.

The constant term is positive and significant showing unobserved variables which bring up the cost of sending through banks.

The analysis shows that the economic development of the corridors increases the cost, while the literacy and population decrease the cost of remitting. Speed is not a major factor when it comes to remitting through banks.

Cost of sending USD 200 through MTO

The model explanatory power is only 19pc (R^2= 0.1965). This shows that macro-economic variables explain a very small part of variation in remitting India- South Asian corridors.

For GDP per capita, the coefficient is positive but insignificant. The corridor economic prowess does not have much impact on the MTO powered remittances. Population too has a negligible impact (0.076) and it is insignificant. Larger population does not transmit to lower cost. This is contrary to theoretical framework. The impact of having an account on the cost was also miniscule (0.064) and was highly insignificant.

One variable which had a great impact on remittance cost was speed. Next day transmission came with a premium price, price increased by 60 pc (0.599, p=0.006). This is the only factor which remains highly significant confirming the theory that people are ready to pay higher price in exchange for speed and vitality.

The connection between speed and the cost of sending remittances and the insignificance of other factors underscores the importance of macroeconomic variables for MTOs. Regulatory oversight and infrastructure investments can help in cutting down the cost. If the low cost and fast transfers are provided by the government then it can lead to cutting down the premiums charged by the MTOs.

Cost of sending USD 500 through Bank

Clustered sampling has been used since it limits the inference to the limited number of corridors used rather than large number of time-period observations.

The sample explains 37pc of variation which is slightly less than (39pc) for the USD 200 through bank. The other parameters are also not the same showing that transaction cost differs in respect to the size of transaction.

The increase in GDP per-capita by 1pc leads to increase in cost by 0.35pc for USD 500 through bank. The value is significant and confirms the earlier disposition that wealthier countries continue to attract a cost premium even for high value transactions. Banks charge higher price where the services are demand driven and the customers are less sensitive to variations in price.

The positive sign and the significance no longer exist for USD 500 transfer through bank which was present for USD 200 transfer through bank. This can be attributed to that fact that at higher denomination economies of scale is no longer valid. Larger markets do not guarantee lesser cost because the fixed cost loses its significance at higher transfer value. Financial Inclusion though negative (-0.208) but becomes insignificant. This shows financial inclusion does not have much effect when it comes to transfers of higher value.

One thing that remains consistent is the variation of cost to speed. The value is positive (0.202) and highly significant. It demonstrates that people are induced to spend more money if they can get premium service, the size of transaction does not have much influence.

Macroeconomic development and speed of the transaction remained the significant factor while financial inclusion and size of the population lose out on factors affecting cost.

The government policies should aim at enhancing competitive and infrastructure effects. Banks should focus on bringing about transparency and low-cost and high-speed transfer. This will only help in bringing down the cost of remittances.

Cost of sending USD 500 through MTO

The explanatory power of the model continues to be weak for MTO transfer (R^2 =0.238) indicating the variables included in the study explain only a part of the variation.

GDP per-capita (0.388), population (0.179), financial inclusion (0.136) continue to be insignificant for USD 500 as was the case with USD 200 transfer through MTO. Higher growth economy, more digital literacy and the size of the country does not have much impact on the cost dynamics of MTO.

The one thing affecting cost in MTO is the service speed (0.552). It remains highly significant. It shows that MTOs are charging premium price for the services they are offering.

The analysis bring out the fact that rather than economic fundamentals, it is the service characteristics that is driving the cost. Government can increase the competition in the MTOs to reduce the cost. As seen as of now

there are few players in this field which is shooting u the price. People want performance and they are ready to pay high prices for that. This will disturb the SDG goal of 10c.target.

Robustness of the Determinants of USD 200 transfer through banks

Three complementary specifications of the cost of sending USD 200 across India-South Asia corridors has been done. The explanatory variables remain the same- GDP per-capita, population, financial literacy, and the speed of sending remittances. The dependent variables have been tested on the log and level methods and the structure of standard errors have been changed so as to avoid heteroscedasticity and the corridor-level dependence.

(a) Log-log model with robust standard errors

The log-log model has been created and reports heteroscedasticity-robust (Huber-White) standard errors.

The model explanatory power is good and is highly significant (R^2= 0.394, F (4,19) = 7.27, P =0.0010). GDP per-capita is positive and significant (0.457 and p =0.032). This has been in alignment with the earlier corridor -cluster analysis. The values lie true for population as well (-0.291) and is significant. Financial inclusion also shows a negative and significant effect (β= -0.952, P =0.015).

Speed of sending remittances has positive impact (0.203) but is only marginally significant showing that banks do not enjoy premium for next day transfers.

(b) Level Model with robust standard errors

The same model has been re-estimated with level-cost to find out if the consistencies hold across the models.

Model explanatory power remains stable (R^2 = 0.3825) and highly significant (p =0.0008). This shows that even if we change from to level-cost, there is not much difference in the values). Across all the variables the signs and significance remain the same. Increase in 1pc GDP per capita results in USD2.50 rise in cost. Population reduces the cost by USD 1.6373 and a percent rise in financial inclusion lower the cost by USD 5.33. Speed remains positive but insignificant (p=0.150)

The consistency of signs and significance levels across two functional forms improves the credibility of the estimates.

(c) Level model with corridor-clustered standard error

The next model specification is level model clustered at corridors (id_num). This is because clusters give multiple year values so clustering is done to avoid over precision when corridors are correlated with the errors.

Despite small number of N (=4) , in the level specification, the findings remain the same. GDP per capita is positive (2.50) and highly significant (0.009). Populations also affect the cost in the same manner (-1.64) and remains significant (0.038) and financial inclusion remains negative (-5.33, p =-0.016). Speed retains the positive sign but is marginally significant (p= 0.109)

The model consistency across robust and cluster-robust standard error shows that the model remains free from heteroscedasticity and intra-corridor dependence.

The model clearly specifies that corridors prosperity increases the cost. This signifies that richer corridors are ready to pay price for quality service and are not price sensitive. Negative signs of population and financial inclusion is consistent transaction cost-network externality theory. The theory signifies that economies of scale and financial depth help in cutting down the cost. Speed has a positive impact suggesting people are ready to pay for premium services.

Table 2. **Determinants of Remittance Cost: Regression Results**

Variables	Log Cost (Robust SE)	Level Cost (Robust SE)	Level Cost (Clustered SE)
GDP per capita (log)	0.457*** (0.198)	2.501** (1.064)	2.501*** (0.416)

Population (log)	-0.291** (0.121)	-1.637** (0.649)	-1.637** (0.459)
Having account (log)	-0.952** (0.356)	-5.332** (1.945)	-5.332*** (1.071)
Speed next day	0.203 (0.116)	1.036 (0.690)	1.036 (0.458)
Constant	7.106** (2.509)	35.698** (13.311)	35.698** (10.394)
Observations	24	24	24
R-squared	0.394	0.383	0.383

Notes: Robust standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. The dependent variable is remittance cost (either log-transformed or level) for sending $200 through bank transfer. Clustered standard errors are adjusted for four corridor clusters.

Driscoll -Kraay (DK) regression model

The Driscoll-Kraay regression model has been used to deduce the dependability of the 4 dependent variables (USD 200_Bank, USD 200_MTO, USD 500_Bank and USD 500_MTO).

The model is specifically suitable for small sample study as it helps correct heterogeneity, serial correlation, and cross-sectional dependence.

GDP continues to be positive and significant for bank transfer confirming that high income country will pay for premium services. This can be due to lower competitive forces from informal channels or due to higher regulatory fees. This needs to be brought to attention that economic growth is leading to higher fees, which mandates price transparency.

Population has a negative effect in USD 200 transfer but a positive effect in transfer of USD 500. This positivity can be explained by market segmentation where the higher denomination is made to pay higher charges.

Financial inclusion is negative and significant for smaller transaction through banks signifying the effects of economies due to large subscription.

Speed which was a significant factor for MTOs, now becomes insignificant. This brings to light that mobile transfers are not affected by the macroeconomic variables but are most probably affected by pricing strategies, agent-networks, or corridor specific regulatory fees.

Bank transfers population switches sign for low and high transaction signifying reflecting non-linear fee structure.

The model can suffer from reverse causality between GDP and remittance cost but due to small number of samples, it is not possible to do the test of endogeneity and make use of instrumental variables. Therefore, the results of the model should be treated as associative rather than casual.

Table 3. Combined Summary of Remittance Cost Regressions: Driscoll–Kraay vs Prais–Winsten PCSE

Variable	200 Bank (DK)	200 MT (DK)	500 Bank (DK)	500 MT (DK)	200 Bank (PCSE)	200 MT (PCSE)	500 Bank (PCSE)	500 MT (PCSE)
lgdp_pc	0.457* (0.182)	0.328 (0.171)	0.347** (0.122)	0.388 (0.199)	0.395** (0.116)	0.328 (0.213)	1.093** (0.372)	1.539* (0.813)
lpopulation	-0.291* (0.133)	0.076 (0.167)	0.064** (0.022)	0.179 (0.176)	-0.228* (0.122)	0.076 (0.198)	0.308* (0.176)	1.422 (1.281)
lhaving_account	-0.952* (0.392)	0.064 (0.454)	-0.208 (0.124)	0.136 (0.410)	-0.785** (0.327)	0.064 (0.612)	-0.490 (0.422)	1.593 (3.120)

speed_nextday	0.203 (0.238)	0.599 (0.434)	0.202 (0.216)	0.552 (0.423)	0.192 (0.153)	0.595 (0.509)	0.509 (0.563)	1.644 (1.265)
Intercept (_cons)	7.106* (2.752)	-2.990 (4.935)	-1.795** (0.299)	-5.747 (5.034)	5.763* (2.964)	-2.992 (4.984)	-9.542** (3.776)	-41.301 (31.917)
R-squared	0.394	0.197	0.369	0.238	—	0.190	—	0.228
Observations	24	24	24	24	24	24	24	24

Notes: - DK = Driscoll–Kraay robust SE - PCSE = Prais–Winsten panel-corrected SE - *p<0.10, **p<0.05

Prais–Winsten regression with panel-corrected standard errors (PCSE)

Prais Winsten regression helps in studying cross-sectional correlation, panel heteroscedasticity, and common 1st order Auto-correlation (AR-1) across panels. For a small sample study Prais-Winsten is appropriate as it produces efficient and unbiased estimates.

For bank transfer of USD 200, GDP per-capita gives positive and significant result confirming price rigidity or regulatory pricing in higher income economies.

Population is positive for lower bank transfer and negative for higher bank transfer showing that there is market segmentation and the banks are charging higher fee from the people transferring higher denomination.

Financial inclusion is negative and significant for lower transfer but not significant for higher transfer. At higher cost, the diminished competitive benefits are experienced.

Speed is not a significant factor for banks. The value of rho is 0.34 and 0.32 for USD 200 and 500 respectively. This shows moderate persistence in cost trends

For MTOs of lower value transfer, none of the values are significant and rho is 0.006 showing extreme flexibility and less persistence in MTO pricing. Additionally, the value for GDP is positive and marginally significant for higher value transfer but the rho remains 0.18 at a very flexible MTO pricing.

The findings imply that financial inclusion matters for small transfers and should be complied with. Higher income countries experience higher transaction cost can be attributed to consumer indifference and market power of the banks. The indifference of MTO pricing calls for corridor specific policies rather than uniform macro-intervention.

Between Effects Panel Regression

The between- estimator uses group means of each variable to study across country variation and discard within-country variation. BE estimator are used to calculate long run cross sectional relationships, to find out if GDP per capita affects the cost variations in remittances. However, the serious limitation is the small sample size (N=4, T=6, Observations = 24) so the output shows missing standard errors and p-value.

For USD 200 bank transfers, GDP per-capita is positive, population and financial inclusion is negative. All these values remain consistent to Driscoll Kraay and Prais Winsten regression model. Speed has been discarded due to perfect collinearity. In respect to USD 500, the value for GDP per capita remain positive, implying that banks keep higher rates even for high value transaction.

In context of MTOs all the variables remain positive, substantiating the point established so far that macroeconomic variables do not have much effect on the mobile transfers.

BE regression analysis suffers from limitation of only 4 cross-sectional units which is insufficient to generate meaningful standard errors which renders hypothesis testing impossible. Speed variable was omitted completely due to perfect collinearity. The problem of endogeneity remains unaddressed, that remains a larger issue. The associations should be taken as indicative rather than statistically validated relationships.

Table 4. Between Estimator (BE) Results: Robustness Check for Remittance Costs

Variable	200 Bank (BE)	200 MT (BE)	500 Bank (BE)	500 MT (BE)
lgdp_pc	0.557	0.165	0.369	0.254
lpopulation	-0.374	0.273	0.044	0.349
lhaving_account	-1.188	0.665	-0.253	0.656
speed_nextday	0 (omitted)	0 (omitted)	0 (omitted)	0 (omitted)
Intercept (_cons)	8.800	-7.507	-1.376	-9.681
R-squared	1.000	1.000	1.000	1.000
Observations	4	4	4	4

Notes: - BE = Between Estimator (group means, no standard errors) - Used only as a robustness check for coefficient signs. - Statistical inference (t-values, p-values) is not possible due to the very small number of groups.

Robust HC3 Standard Errors

Bank transfers of USD 200 have standard error (R^2 = 0.39) and of USD 500 has standard (R^2= 0.37), which is acceptable for small samples. In MTO transfers R^2 lies in the range of 0.20-0.24 for the 2 costs involve. We infer that the explanatory power of MTO is weak and is also not statistically significant.

Robust HC3 indicates that lower denomination transfer through banks is statistically significant, while speed is the factor for MTO transfers. The findings have been true to the findings stated above in other robustness checks. Macroeconomic variables have no effect on mobile transfer underscoring the importance of market structure and service features beyond country level development.

Table 5 : Combined HC3-Corrected Regression Results for Remittance Costs

Variable	200 Bank	200 MT	500 Bank	500 MT
lgdp_pc	0.457* (0.229)	0.328 (0.570)	0.347 (0.217)	0.388 (0.472)
lpopulation	-0.291** (0.138)	0.076 (0.431)	0.064 (0.156)	0.179 (0.399)
lhaving_account	-0.952** (0.406)	0.064 (1.111)	-0.208 (0.432)	0.136 (1.005)
speed_nextday	0.203 (0.132)	0.599* (0.318)	0.202* (0.113)	0.552* (0.305)
_cons	7.106* (2.823)	-2.990 (9.607)	-1.795 (3.430)	-5.747 (9.050)
R-squared	0.394	0.197	0.369	0.238
Observations	24	24	24	24

Notes: - Coefficients are shown with HC3 robust standard errors in parentheses. - *p<0.10, **p<0.05. - HC3 standard errors adjust for small-sample bias and heteroskedasticity.

The combined HC3 confirms the robustness of Population and financial inclusion for $200 Bank transfer cost. The transfer of USD 200 through banks remained statistically significant for all variables, other than speed. Transfer through MTO remains consistent with cluster regression analysis. Speed remained a significant factor for USD 200 and USD 500 while other

This proves that macroeconomic variables affect the transfer through banks while the efficiency and technology affect the mobile transfers.

6. Findings

The major findings of the paper are that the cost determinants differ by the channel of sending remittances. Banks are largely influenced by macroeconomic determinants while MTO pricing are mostly influenced by speed of sending remittances. Transaction size of US$200 are influenced by GDP per-capita, population and financial

inclusion while the transaction size of US$500 are marginally influenced by GDP per-capita and substantially by speed of sending remittances. Financial Inclusion plays a key role in bank-based small transfers. Contrary to the belief economic development does not automatically reduces the cost of sending remittances. The competition in the MTOs can be enhanced to reduce the cost of sending remittances. Corridor specific policies must be formulated. Policies on the similar line will not work for the Asian countries as w whole.

7. Limitations and Research Gaps

The study suffers from the limitation of small sample size (N=4, T=6). This made it difficult to apply Fixed Effect or Random Effect Model. They resulted in inconsistent results. System GMM could not be used due to inappropriate sample size. There is a possibility of presence of endogeneity in the analysis. Reverse causality can exist between GDP and the remittance cost. There are omitted variable bias due to omission of variables like market concentration, exchange rate volatility and competition intensity among MTOs. There are only 4 corridors which have been included. This does not truly represent the whole of Asian countries. The study lacks dynamism and can be stated as static in nature.

Policy and Research Implications

The study deduced that 1 percent rise in GDP per capita is associated with 0.458 percent increase in cost. High growth economies might be paying price for the services rendered to them. Government can standardize compliance procedures to reduce unnecessary administrative costs. Increased competition among the banks can also help to bring down the cost to SDG 10.c level. Increase in population reduces the cost, so bulk remittance channels should be encouraged for smaller corridors. Support to public-private partnership can also facilitate the expansion of infrastructure leading to reduction in cost to desirable 3percent. Providing financial literacy and expansion of banking services in rural areas can help in further reduction in cost. Process of digitalization should be promoted which will increase the base and efficiency and subsidize the cost. Regional cooperation among South Asian corridors should be encouraged to harmonize remittance regulations.

Further research on this should include regulatory compliances, market concentration, and currency volatility. Panel data regression analysis including GMM could help address potential endogeneity and capture temporal effects. Behavioural economics can be studied as to ascertain the reason why senders choose higher-cost corridors. This will help deduce if these findings are specific to India- South Asian corridors country or are general.

8. Conclusion

The study investigates the cost of sending remittances from India to South Asian Corridors. Cost of remittances occupies a prime position in SDG 10.c goals. It aims to bring down the cost of sending remittances to less than 3percent and to eliminate corridors with cost of more than 5percent by 2030. The cost of sending remittances is high in South Asian countries. The paper explores the factors responsible for the high cost of sending remittances. Cost of sending USD 200 and USD 500 through banks and Money Transfer Operators was studied. In consonance with Transaction Cost Economics, Coase & Williamson, GDP per capita has a positive impact on cost of remittances. Population, in alignment with Network externality, Katz & Shapiro has a negative impact. Transaction Cost Reduction, Gurley & Shaw, supports that financial inclusion has negative impact. Consistent with Time Value of Money, Fisher, speed has a positive impact on cost of sending remittances through Mobile Transfer Operators. The implications of the study are profound. It calls upon the government to focus on macroeconomic variables to cut down the cost of sending remittances through banks. The MTOs extract price premium for speed, government should foster greater competition so that prices are reduced substantially. The study is limited by small number of samples (N=4, Year= 4, Observations= 24). Panel data analysis of FE or RE was not possible due to unstable results. There is a semblance of potential endogeneity remains a concern but the small sample did not facilitate the use of Instrumental Variables. Though the study passed the robustness test through Driscoll-Kraay and Prais Winsten but the results remain largely exploratory due to sample constraints. The future study on this should include more samples and should include variables like exchange rate, fintech penetration, regulatory costs. They should also include the level of competition among operators. Significant price reductions are highly recommended for the growth of the countries. This study extends the literature on migration finance and provides actionable insights for policy makers seeking to promote financial inclusion and sustainable growth in South Asia.

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