



The Role of Mobile Money in Somalia's Remittance System

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Abstract. Mobile money is rapidly transforming various sectors and economies worldwide. Somalia is one country that has been transformed by the emergence of mobile money. In 2017, the World Bank estimated that 73% of the Somali population over the age of 16 use mobile money services. Additionally, mobile money is the primary access point to financial services in the country. At the same time, Somalia relies heavily on the remittances to pay for children's education, social services and provides an investment funds for small businesses. The United Nations estimates that close to 40% of families in the country are dependent on the \$1.4 billion remittances per year. Accordingly, remittances companies account for a large segment of the financial sector in Somalia. And yet, both the remittance and mobile money systems function in spite of a lack of a traditional financial system. Mobile money and the underlying technology is at the heart of the supports the daily existence of millions of Somalis. How this system functions and its role as the economic backbone of the country is little understood. Thus, the aim this paper is to analyze the crucial role served by mobile money in the delivery of the billions of remittance dollars into the country. This study is guided by the main question: What role does mobile money and the Somali diaspora in the Greater Toronto Area, through the remittance system, play in Somalia's remittance system?

Keywords: Electronic · Mobile and ubiquitous commerce · Mobile money · Remittances · Somalia

1 Introduction

Somalia has been without a functioning state apparatus since 1991, when President Siad Barre was ousted from office amid a civil war [1]. Ever since, the country has been mired in economic and social stagnation, in part due to the lack of a centralized government which has control over the recognized territory of the country [2]. Over this period, Somalia's social development indicators became some of the lowest in the world. Some of these indicators are attributed to the fact that parts of the country were still experiencing civil war conditions along with an insurgency inspired by the transnational ideology – Islamism of Al Qaida and the Islamic State [3–5]. As result of Somalia's economic and social stagnation, the country is very dependent on remittances from abroad to supplement any income they generated domestically. Remittance services play

an important role throughout the global economy. The World Bank estimates that over \$325 billion is transferred worldwide every year, with \$40 billion remitted from developed countries to Africa [6]. Consequently, international agencies such as the United Nations, the African Development Bank and other international NGOs have postulated that the billions from remittances can be harnessed to effectively help developing countries such as Somalia economically and socially develop. The large Somali diaspora community, one study conservatively estimated at 1 million, contributes more than \$1.4 billion in remittances into the country every year [7, 8]. Take for instance Somalis living in the United States alone remit around \$215 million annually [9]. It has been estimated that, on average, residents in Somalia receive \$3,000 per year [9], which is a large amount compared to the country's per capita GDP of \$499 [10].

Electronic (or mobile) money has thrived in the country since it was introduced in 2009 by Telesom [11, 12]. This form of currency is increasingly replacing the hard currency through-out the region. Additionally, more people in Somalia have access to mobile money accounts than accounts in financial institutions [13, 14]. Prior to this, Somalia was a cash-heavy society in which large amounts of American dollars and local Shillings were used. This older Hawala system relied on the physical transfer of cash or equivalent goods [15]. The move to a mostly electronic form of money has allowed many in the country to move money easier [16]. An example of the money away from cash to mobile money is that 70% of Telesom's costumers buy airtime through mobile money rather through scratch cards. It is estimated that almost seven million transactions have taken place in March 2013, the last publically available data [11].

This paper examines the role the Somali diaspora plays in the country through extensive analysis of the remittance system and how technology such as mobile money is utilized in the money transfer process. Somalia relies heavily on the remittances sent by Somalis in the diaspora to pay for children's education, social services and provides an investment funds for small businesses. For instance, it has been estimated that close to 40% of families in the country as a whole rely on the \$1.4 billion remittances per year [17]. Remittances are the second largest source of external funding in developing countries; however, in Somalia it is the largest source of foreign funding [18]. Oxfam [19] noted that the amount of money sent to Somalia in the form remittances exceeded the all the development aid, emergency assistance and FDI put together. Moreover, in 2017 remittances accounted for 26.7% of the national Gross Domestic Product (GDP), these figures increase during humanitarian emergencies serving as a financial cushion when needed most [7, 20]. Consequently, remittance enterprises account for a large segment of the financial sector in Somalia. And yet, the remittance system functions in spite of the lack of centralized, state-regulated financial system.

This study aims, through interviews and surveys, to better understand Hawala and how mobile money is utilized. By studying how they employ a modern tool such as the mobile banking, we also establish the role of ICT in the Somali money transfer sector. This study is guided by the main question: What role does technology and the diaspora, through the remittance system, play in the economic and social ecosystem of Somalia?

In order to answer this question, we begin this study by setting a baseline understanding of the Somali population in Canada and Greater Toronto Area (GTA). Once

that was established, we then created an inventory of the Hawala business gathered from secondary sources and online business listings along with the Somali remittance sector worldwide. Next, a survey of 143 Somalis who have remitted internationally in 2017 was conducted. The survey was divided into four sections: inclusion criteria, reasons for remittances, technology used and demographics. Finally, small-sample interviews were conducted with members of Somali Money Transfer Organizations (MTOs) in the GTA to understand the business climate. The aim of the interviews was to get specific inputs from people with direct knowledge about the remittance system more generally and the technology utilized.

2 Context

Hawala, an informal money transfer system, plays an important role in several economies around the world [21–23]. Hawala comes from the Arabic word “transfer” [22]. While in Hindi it means “trust” [24]. The money transfer system operates similarly around the world and has a few meanings; examples include, hundi in Pakistan or padala in Philippines [25]. Although it originated centuries ago, the modern version of the Somali Hawala system, is traced to the partition of India and Pakistan when the legal transfer of money between the countries ended [26]. The Hawala system has often operated in areas that did not have access to formalized banks and financial institutions [27]. Hawala operates differently from other informal money transfer networks. A differentiating factor of the Hawala system is that it is characterized by the transfer of money without the immediate movement of currency. Specifically, the money does not physically leave the agents accounts immediately instead relying on a network of trust [28]. In short, the Hawala system is an informal channel to transfer funds from one location to another [22].

The system is proliferated for a few reason, these include the trust, speed and the reliability of the approach [29]. One reason for its relative success and endurance is that the system cuts down on the amount of bureaucracy required for sender to meet. Another reason is that the system is often preferred due its convenience, with locations and agents being easily accessible. Although the money transfer system is used to send money to Somalia, it can be reversed to assist in investment or cover unexpected expenses [25].

However, the Hawala system has come under heavy scrutiny as source financing for illicit behavior and terrorism. The Hawala system can offer anonymity of both the sender and the receiver. The system's opaqueness, speed and lack of records have risen concerns for being a conduit for criminal and terrorist financing. For example, fears that the Hawala sector was being used to fund terrorism led the United States government to close down one of the largest Somali money remittance companies in the US. In 2001 Al Barakat¹, which was based in the Dubai, UAE handling more than \$140 million in remittances annually was suspended and had close to nine million dollars frozen [30, 31].

¹ In 2006, the U.S. government removed Al Barakat and all of its agents from terrorist financing list noting that there was no evidence in it involvement with terrorists.

Additionally, Western governments have placed heavy restrictions on banks that facilitate the Hawala brokers thus effectively driving them further underground [21]. For countries that rely on the Hawala system rather than the formal banks to transfer money, these restrictions have been criticized for hurting people dependent on the transfers [17].

Dubai, United Arab Emirates is home to a large number of the MTOs handling most money transfer transactions [24]. Dubai acts as a conduit for these funds to the Indian subcontinent and east Africa. The UAE is one of the Somalia's largest trading partners, most imports within Somalia pass through Dubai [31, 32]. In most cases, the United Arab Emirates (UAE) serves as the financial capital for Somali MTOs. After the September 11, 2001 attacks in New York, the UAE implemented regulations that ensured the all MTOs operating within the country were registered to curtail funds that might be used to finance terrorism. However, the UAE government stated "Regulations should be effective but not overly restrictive" [33]. The MTOs can send physical cash or wire a transfer to a bank account based in the UAE that act as clearing houses [7]. The money is then transferred as products that can then be exported to Somalia. The Hawala system serves to link the products that are consumed in the country with money from around the world.

In the case of Somalia and its diaspora, the Hawala system is the financial backbone of the country. In a country without a centralized postal system, formalized banking system or personal identification system the Hawala system has several advantages. First, individuals without a fixed address have the ability to use the system because all that is required is code or phrase from the sender to access the funds [19]. Another advantage is that the Hawala system works in places where large money transfer institutions do not serve. For example, there are no internationally recognized MTOs such as Western Union desks or Money Gram in Somalia. A third advantage is that it has a relatively low cost, the commission charged the sender is around five percent. Thus this low commission ensures the cost of transfer itself is reasonable for the senders. A fourth advantage is that the large Hawala systems is now web-based to facilitate the quick transfer of money. Once the money arrived the client is called, usually on mobile telephones which are widely available. If the amount is large a clan elder is called upon to verify the person's identity. In order to create a fast efficient system, technology has enabled this process to move at a greater speed.

The Hawala system is illustrated in the Fig. 1, the system could be summarised as a follows: The first step is that *Individual A* in Region A gives money to be sent to the *Broker A* along with a fee; the second step is that *Broker A* provides a confirmation code to *Individual A*; the third step, the *Individual A* in-turn shares the confirmation code with *Individual B*; the fourth step is that *Broker A* instructs *Broker B* to release funds to *Individual B*, the funds exchanged can sometimes be in the form of a loan between brokers; the fifth step is that *Individual B* presents the confirmation code from *Individual A* to *Broker B*; the sixth step is for *Broker B* to release funds for *Individual B*; the seventh and final step is for *Broker A* to reconcile the ledgers, primarily through a carrier system, to *Broker B*.

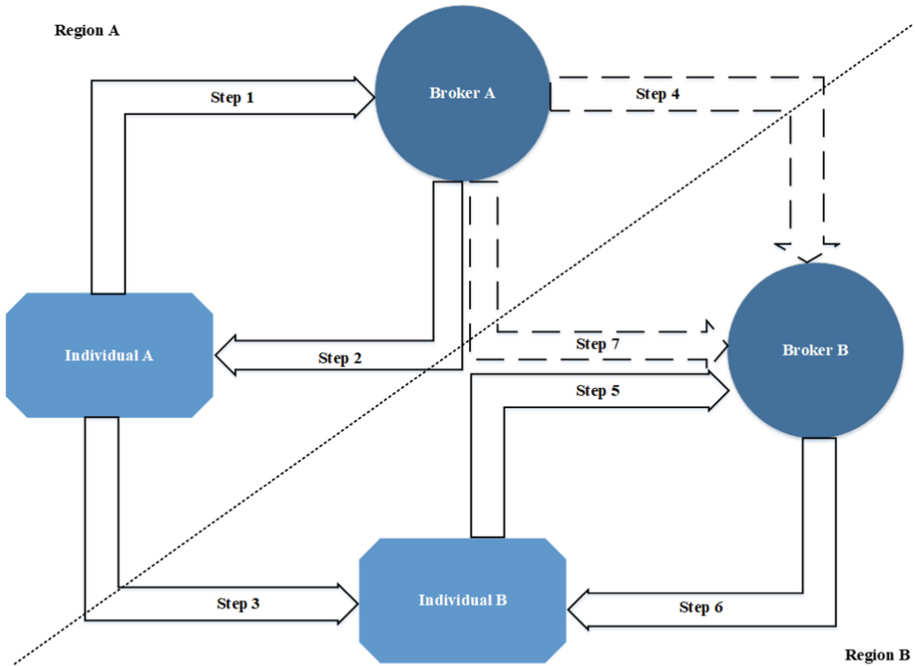


Fig. 1. The Hawala model. Adapted from: (El-Qorchi [22]; Oxfam [19]; Razavy [23]. Solid lines are interaction with individuals while broken lines are interactions between brokers. The diagonal line divides the two regions.

Adapting to new policies, regulations and to new consumer demands as they have emerged, the Hawala has survived. Recently, Information Communication Technologies (ICTs) have made the Hawala process faster and more efficient. The money transfer system has been greatly transformed by fax machines, telephones, emails and more recently, mobile phones. The World Bank (2017a) estimates that 90% of Somalis own at least one mobile phone, most (62.4%) own a basic mobile phone, some 30.8% own a smart phone and 13.1% own a feature phone. It is estimated that 73% of the Somali population over the age of 16 use mobile money services but when only people with mobile money are surveyed that number rises to 83.0%. The three main regions of the country have different mobile phone companies that dominate each of their respective regions. In South-Central, 99.5% of the local population owns a SIM card from Hormuud. In Puntland, 97.9% of the local population owns a SIM card serviced by Gollis. In the Somaliland, the 96.2% of the people own a Telesom SIM card. People in Somalia, like many in Africa, own multiple SIM cards and use networks and promotions to call each. In fact, Somalis own an average of 1.4 SIM card per person.

Within the region, 68.6% of the population use mobile money to transfer money domestically, and 24.9% have used it to send money internationally. According to the same World Bank study, 9.2% of international transfers originated from Canada,

although most came from the United States (32.5%) (World Bank, 2017a). Thus, the reach of the MTO networks have been expanded and are much faster and most funds are delivered almost instantaneously. Due to the utilization of ICTs, these types of transactions can now be completed in less than 24 h [23].

In the discussion surrounding the remittance network, one group that is essential are the diaspora is essential. Although the benefits to Somalis in the country are undeniable as Hammond [34] noted:

“While one can argue that improvements in governance might increase the positive impact of remittances on the country, the value that remittances already hold for thousands of Somalis living in and around Somalia—even in the absence of peace and well-established structures of governance—is impressive” (p. 130).

The amount of money is relatively small, on average Somalis remit around \$233 per month to family members in Somalia [35]. Oxfam estimated that Somalis in the United States sent the most amount of money comprising of 20% or \$213 millions of funds remitted to the country annually. However, the Somalis in Germany sent, on average, more money annually, \$4,383, to Somalia compared to other countries. Canadian Somalis remitted close to \$49 million to Somalia or an average of \$2,185 USD annually per person [19].

Since 2009, the World Bank has been tracking the cost of remittances worldwide. The World Bank Remittance Price Worldwide database makes data available in each quarter. The database was the result of the Group of 20 (G20) countries making a commitment to reduce the cost of sending remittance by five percent over five years. The database tracks 48 sending countries and 105 receiving countries [36]. For Somalia, the World Bank tracks remittance from five countries and ten Money Transfer Organisations. Among other variables, the database contains costs associated of sending 200 United States Dollars (USD), the fee charged in the local currency, the foreign exchange margin and the total cost. The average cost to send the money to Somalia from all countries tracked by the World Bank is 7.81%. The country with the lowest total cost to send \$200 is the United States at 5.71%, this can be partly explained by the fact that there is no cost associated with currency exchange. Australia had the highest total cost to send money to Somalia at 11.20%. Sweden had the highest cost associated with the foreign exchange, see Table 1 [37].

Table 1. The number of firms, fees and foreign exchange margin and total cost to remit to Somalia.

Country	Amount (USD)	Firms	Fee in local currency	Foreign exchange margin (%)	Total cost (%)
Australia	200	3	16.0	4.20	11.20
Netherlands	200	3	4.23	3.53	6.55
Sweden	200	8	57.38	5.64	9.02
United Kingdom*	200	7	6.36	2.05	7.35
United States	200	5	11.60	0	5.8
Average	200	5.2	-	3.44	7.81

As the largest Somali MTO Dahabshil has agents in all five countries tracked by the World Bank, World Remit is tracked in all countries except the U.S. Dahabshil has some of the highest total cost to send money in all five countries observed, ranging from 6% in the U.S. to 16.1% in Australia. On the other hand, World Remit has some of the lowest total cost to send money in all the countries it was tracked. Specifically, World Remit has a total cost of 4.54% to send money to Somalia during the first quarter of 2018 compared to 8.05% for all the other MTOs operating in the U.K. Since 2011, the average total cost to send money to Somalia has been between 6.37% and 9.16%. The World Bank had been tracking MTOs remitting to Somalia more consistently since the first quarter of 2013, during that year, had some of the lowest total cost to send money to Somalia. One reason for the lower total cost during that year is related to the lower foreign exchange margin charged by the MTOs.

3 Hawala in the GTA

The Somali population in Canada increasingly relied on an informal transfer networks to send money from Canada to Somalia. The Hawala system in Canada and Toronto generally works as described above. However, the system in Canada had some unique features that were different from other countries. At the time of this study, there were 13 Money Transfer organizations that operated within the Greater Toronto Area. The headquarters for these companies are based around the world, however, none of the MTOs have a headquarter within Canada.

The formalized MTOs often are agents with store fronts that deal in other businesses such as retail or transportation logistics [31]. Most MTOs had less than five agents or locations across the city [38]. World Remit is an online MTO that serves parts of Somalia based in the U.K. with no physical location in the GTA. World Remit accepts bank transfer and then sends the funds electronically to either a financial institution in Somalia or Mobile Money account [39].

The MTO with the most amount of listed agents is Tawakal Express, which has the 18 across the city. However, according to the most comprehensive study about the MTO sector done by Buri M. Hamza [38] for the 'Nathanson Centre for the Study of Organized Crime and Corruption' found that Dahabshil transferred the most amount of money on a monthly basis at around 3.5 to 4 million US dollars. The other MTOs averaged between 400,000 to 800,000 US dollars per month.

When examining the process of creating a Hawala network, Hamza [38] found that the Canadian based companies operate similar to other business and are required to gain a financial transactions licence as required by financial institutions that retain money such as banks. The MTOs have to retain records of any funds of over \$10,000 and must report any suspicious activities. In January 2015, the Canada Revenue Agency also required any company transferring funds electronically be reported to the tax agency [40]. Hamza [38] noted that most of the MTOs had policies that funds that are above USD \$2,000 would require two forms of identification.

4 Methodology

This study employed a multiple method approach to understand the Hawala system and how the diaspora in Canada utilize it. For this paper, a survey questionnaire of Somalis who have sent money internationally in 2017 was conducted. We supplemented the survey with a short questionnaire for MTO providers within the city. The objective of this paper is gather information about how GTA Somalis utilize the MTOs, the main reasons for sending the money, the socio-economic make-up of the individuals sending money. Additionally, we aimed to examine role of the diaspora in the remittance system. By examining, evidence of how the institutions such as the monetary system, social services, education system and justice are supported by the diaspora, this study will contribute to our understanding of Somalia.

Parallel to this, we analyze the crucial role served by ICTs in the delivery of the billions of dollars into the country. More specifically, this study focuses on the communication and social networks that are utilized by the Somalis currently living abroad in order to facilitate the money transfers and foster social relationships through a unique money transfer system.

To supplement the information from the survey questionnaire, a small sample four (4) of MTO agents were interviewed to better understand the Hawala system and the process that allows it to function in Canada. These agents were selected because they are some of the largest MTO and handle a large portion of the money that is transferred to Somalia. The survey of users allows us to understand the perspective of the customers however, the agents are best positioned to enlighten on issues that affect the Hawala business. According to Crouch, McKenzie [41], this type of small-sample interviews within social science research is appropriate in understanding the social condition. Nevertheless, they argue that researchers should be aware the pitfalls of this type of data and should not be geared towards “establishing ‘objective facts’” (485). Within IS field, small sample research has been employed in various studies [42, 43]. The concepts of chain interviews and snowball sampling were crucial to this study’s methodology. Semi-structured and conversational interviews were employed for gathering data. As a rule, this methodology is employed since “questions emerge from the immediate context and when asked in the natural course of things; there is no predetermination of question topics or wording” [44]. The interviews provided information that adds to our understanding of the Hawala process. For the survey questions and the interview questionnaire.

The survey was divided into four sections: the first section were the inclusion and exclusion questions that determined the individual’s eligibility for this study. Once the participants confirmed they are over the age of 18, were ethnically Somali and had sent money internationally in the 2017, we then asked then a series of 10 questions related to the how and why they sent these remittances. Next, we asked questions about the types of technology utilized to send the funds and how they normally communicate with the family members or friends receiving those funds. The final section of the survey included demographic questions related to participant’s income, education and age. It should be noted that some respondents chose not to answer certain questions and as such the frequency of some variables may not total to 143 for all questions.

Once collected, the data was then cleaned and analyzed. This study utilized descriptive and inferential statistics to gain an understanding the questions at-hand. The first step was to conduct a frequency counts, commonly called a univariate analysis, of the data. This then allowed for me to the conduct measurements of central tendency (mean, median and mode). The next level of analysis conducted was the bivariate analysis. The study also utilizes multivariate analysis.

5 Findings

The first level of analysis of the data was the demographic profile of the survey respondents. The gender make of the survey respondents was 60.6% of respondents were male, while 39.4% were female. Most of the respondents were between the ages

Table 2. Survey participants gender, age, income, and employment status (frequency and percent)

Gender	Frequency	Percent
Male	83	60.6
Female	54	39.4
Total	137	100.0
Age	Frequency	Percent
25–34 years old	33	24.1
35–44 years old	37	27.0
45–54 years old	33	24.1
55 years or older	34	24.8
Total	137	100.0
Income	Frequency	Percent
Less than \$20,000	27	19.4
\$20,000 to less than \$30,000	34	24.5
\$30,000 to less than \$50,000	63	45.3
\$50,000 and over	15	10.8
Total	139	100.0
Employment status	Frequency	Percent
Student	6	4.3
Housewife	13	9.4
Unemployed	12	8.6
Employed	92	66.2
Retired	13	9.4
Other	3	2.2
Total	139	100.0

of 35 to 44 (27.0%), followed by those over the age of 55 (24.8%), 25 to 34 (24.1%) and 45 to 54 (24.1%). While examining the respondents' personal income for the 2017 year, 19.4% earned personal incomes of \$20,000 or less, 24.5% earned between \$20,000 and \$30,000, nearly half of respondents, 45.3%, earned between \$30,000 and \$50,000 annually and finally, 10.8% declared their personal income to be \$50,000 or more. When asked about their current employment status, most of the respondents were employed (66.2%). Specifically, 35.0% were employed as a staff member, 14.0% were self-employed in professional capacity, 8.4% were self-employed as a non-retail business owner and 3.5% stated they were self-employed retail business owners. For the employment status, the next largest category of respondents were housewives at 9.4%, another 9.4% of the respondents were retired, 8.6% were currently unemployed and finally 4.3% were students. 2.2% chose 'other' category which included individuals who were on long-term disability (see Table 2).

When respondents were asked how long they have been remitting money, most people surveyed (59.2%) have been sending money for 5 years or more. 13.4% of participants have been sending money between 3 to 5 years, followed by people who have been sending money between 1 to 3 years. Whereas, people who have been sending for less than a year comprised of 9.8% of the survey participants. When we examined how long people have been sending money by their age ranges, it shows that respondents between the age of 25–34 were most likely to have sent money for less than a year (57.1%). Respondents between the ages 35 to 44 were more likely to have been remitting funds between 3 to 5 years (31.6%). The respondents between 45 and 54 years along with those 55 years and over were more likely to have been sending money more than five years at 30.0% respectively.

Most respondents sent money about once a month (55.4%), followed by people who sent every two to three months (18.7%). 59.3% of survey respondents sent \$500 or less. It should be noted this question was changed at the mid-point of the survey, to gain a better understanding of amounts smaller than \$500. Accordingly, of the 71 individuals who sent \$500 or less, more than half of the respondents (43) selected amounts below \$500 and the results showed that most people (11.4%) sent about \$100 to \$200. This relatively small amounts are consistent with other studies show that most people sent relatively small amounts that make a huge difference in the lives of people in the receiving countries. The other amounts sent that were more than \$500 include: 11.4% for people sending \$501 to \$750 dollars; 10.0% for \$751 to \$1000, 10.7% for \$1001 to \$1500 and 8.6% for people who sent more than \$1501.

The vast majority of Somali people in the Greater Toronto Area sent money using Somali money transfer agencies. 92.9% of the respondents used Somali Hawala services to send money. There were a small number of people who used money transfer agencies such as Western Union and Money Gram (4.3%). The survey respondents were asked to name one Hawala agency they use the most, Dahabshiil was most frequently used at 27.7%, this was followed Bakal Express at 13.9%. However other agencies were also used including Amaana Express and Amal both at 12.4% of the time. It should be noted that the part of the country the MTO operates influences the number of users. For example, people who send money to Puntland will often use Salama Express because they have a larger network in that part of the country. When people were asked about any other MTOs that they use regularly, most once again

noted they use Dahabshiil (32.9%), followed by Bakal (19.6%), Amaana (14.0%), and Amal (11.9%).

An important part of the survey asked participants if they utilize technology to send money as well as which services they use. A notable number of individuals have used online or mobile banking to send money to Somalia, 38.6% of participants have used mobile or online money transfer. When the survey respondents were asked to name the service they have used, 35.1% have used Dahabshiil's eDahab service to send money. 33.3% have used EVC Plus to send money to Somalia. 12.3% have utilized Sahal to send money. 8.8% have used Zaad and only 1.8% have used the online only World Remit.

The use of technology in communication is unparalleled and as discussed earlier, people sending money from the GTA to Somalia utilize technology in nearly all aspects. We surveyed people in the GTA to see how often they communicate with family members in Somalia and what type of technologies they use when they communicate with them. First, we asked how often they communicate with family members, and most people (49.3%) stated they communicate at least once a month with their family members. Nearly a quarter (23.6%) of respondents stated they communicate with their family about once a week.

The survey respondents were asked about the types of telecommunication services they use to communicate with family members in Somalia. The question allowed for multiple responses. Most individuals use mobile phones, 49.0%, to communicate with family members. This was followed by Mobile applications such as Viber, WhatsApp, and Facebook Messenger at 41.3%. 20.3% of Somalis in the GTA use internet application such as Skype, Google Talk or E-mail to communicate with family members. Finally, 12.6% of the respondents use telephone landlines to communicate with family members.

6 Mobile Money

In order to understand the role that technology plays in the remittance system we test a few hypotheses. We wanted to understand how mobile money technology is adapted. Moreover, we wanted to know the characteristics of the individual who send money using mobile money. Customer-facing technology such as mobile money has been increasingly been adapted by consumers.

The Canadian banking access closure to the Money Transfer Organizations (MTOs) has also closed access to Mobile Banking innovations that are changing remittance sector in Somalia. One MTO noted they accept online money transfers, for small amounts. They accept these payments in their personal banking accounts, its one way they try to assist customers who want to send money but cannot physically come into the office with cash. These types of customers are repeat customers and have an already established relationship with the MTO.

An example of mobile money is Zaad, which is one of the largest mobile money services in Somalia. In order to gain access to it, you need to use TeleSom mobile phone. In order to send and receive money, a potential customer needs to go a Zaad centre with some form of ID, and witness. Individuals to have a Zaad are then required

to provide their Somali four names, often an individual's first name along with the names of their three fathers. The three names are often used to determine an individual's family lineage in Somalia and as away to guarantee accountability extend to the more than the individual. Moreover, the individual is also required to provide the four names of their mother. A photo and figure print of the customer is then and taken retained. For an example of the registration form. Once the Zaad account, often your TeleSom telephone number, you can use it store, send or receive the money. The money in the account are held as U.S Dollars. To withdrawal physical cash at a Zaad counter or agents on the street. The agents in the street usually have access to Somali currency with official Zaad locations providing access to U.S. dollars.

Hence, to understand the adoption of mobile money, we employ the Diffusion of Innovation (DOI), which was elucidated by Everett M. Rogers [45]. The theory posits how new ideas, innovation, "spreads via certain communication channels over time among the members of a social system" [45]. The theory can be traced to French scholar Gabriel Tarde (1903), who tried to understand the 'S' curve that emerges when examining innovation, early adaptors and opinion leaders [46]. Others have contributed to the theory, for example Elihu Katz [47] added to the notion of opinion leaders and followers along with the role of the media [48]. DOI theory is a part of change model that tries to place the people who serve as the thought leaders that eventually leads to a saturation point for the theory. However, some have argued that this theory falls short in several areas. One area is that the theory makes the assumption that the diffusion is homogenous, discounts some environmental factors such as economic constraints [49]. Although, the DOI theory has some drawbacks, we employed it for this study to understand the characteristics of the of how the mobile money is being adopted by the Somali diaspora. Tan, Teo [50] operationalized aspects of DOI theory by developing a framework that offered insight into internet banking adoption in Singapore. This framework was also tested in South Africa by Brown et al. [51] with regards to cellphone banking adaptations. The resulting framework found three major factors influenced an individual's likelihood of adapting internet banking: attitude, subjective norms and perceived behavioral control. For this study, the dependent variable was the use of mobile money while the independent variable included gender, age, length of remittance and employment status. The following three prepositions will explore the adoption of the Mobile money employing Tan and Teo's framework.

Attitude is an individual's view of mobile money contains: Relative Advantage, Compatibility, Complexity, Trialabilit and Risk.

Proposition 1: When the remitter is employed then it is more likely that they use mobile money.

Employment status seems to be related to usage of mobile money services ($p < 0.05$). When respondents were asked if they had used mobile money, 39.1% individuals answered in the affirmative. Of these 75.9% were employed and have used mobile money, while those who were unemployed who had used mobile money were 24.1%. This might suggest that employment status of Somalis makes it easier to use mobile money because they are exposed to similar technology in their work.

Subjective norms are the social influences that affect the use of mobile money to remit funds to Somalia.

Preposition 2: When an individual has remitted for a longer period of time they are more likely to use mobile or online services to remit.

A chi-square test was performed and a relationship was found between individuals who remit using mobile or online services more frequently remit and also send more money, $X^2(1, N = 138) = 4.02, p < 0.05$. The convenience offered by online services might lead the senders to use mobile services rather than physically going to agent's offices.

Perceived behavioral control are the environmental conditions that allow for internet banking including: Self-efficacy and Facilitating conditions.

Preposition 3: When mobile money is used then it is likely that people will remit more.

To test this preposition, a chi-square test was conducted and we found that there is no difference in amounts sent between people who use mobile money and those who do not use it. A reason why this might be the case is that members of the diaspora are unsure about using mobile for security reasons. Another plausible reason for the lack of difference could be that family members of this survey participants do not have access to mobile phones and thus can not use mobile money. They are also inclined to support the MTO agents who they might have had a long standing relationship.

Preposition 4: When the gender of the remitter is female and they use mobile money then it is likely that they will remit more.

A chi-square test was performed and a relationship was there is a difference of the genders when using mobile money and the amount remitted. Women who have been remitting longer and use mobile money are more likely to send more money, $X^2(1, N = 138) = 4.02, p < 0.05$. The convenience and security offered by online services might lead the senders to use rather than physically going to agent's offices.

7 Conclusion

The aim of the paper was to understand the process behind the remittance system and the role played by the Somali diaspora in the social and economic system of Somalia. The remittance sector has served as an important segment of the Somali economy and has assisted in the stabilization of a 'failed state'. The remittances industry has served as an important link between those in the diaspora and family and friends left in the country. Since the 1990 collapse of the state in Somalia, the remittance sector has served as primary access to finance and the financial services. In fact, the remittance industry seems to work in spite of a lack of a state-regulated financial system.

Through a review of secondary sources such as Statistics Canada, UN Data, the World Bank along with a review of previous research, we established the Somali-Canadian population and the demographic profile of the community. As the number of refugees admitted into Canada increased drastically in the 1990s, and a large number chose to reside in the Greater Toronto Area (GTA). Next, we detailed the cost to send money from various countries to Somalia and along with the number of locations in the Money Transfer Organizations (MTOs) in the GTA. This type of information provides

an understanding of the reach and scale of the Hawala network. This allows us to then move to understand the users and business associated with the Somali MTOs.

In order to understand the role of both the diaspora and the remittance sector, this study employed a survey questionnaire of Somalis in the GTA along with interviewing members of Somali Money Transfer Organizations. The Somali Hawala system, although not new, has changed and adapted a unique approach within the context of Somalia. The Hawala system is fast, cheap and reliable. Even though, it has faced barriers around the world that have appeared over the years. For example, the U.S. has placed restrictions on Somali Money Transfer Organizations, in Canada the Canadian banks have closed down accounts associated with the Somali system. The British government and banking industry have attempted to curtail the Somali industry on several occasions.

The survey participants ranged in age, gender, income and education levels. The qualitative approach was utilized because it would allow the researcher to understand the process utilized by the Somali diaspora when sending funds to Somalia. This approach also allowed for us to understand the amounts sent by the diaspora, the methods they use the most and the motivations for sending the funds. The study confirmed that most Somalis, across the various demographic, socio-economic categories participate in the Hawala system.

Most survey respondents regularly send, with most sending at least once a month. A significant amount of the Somalis in the GTA send less than \$500, this confirms other research that most people send smaller amounts however this small amount makes a large difference in the daily lives of people in Somalia. This study also reiterated the fact that most Somalis rely on Somali based MTOs because they are often the only remittance providers to the country. The Somali MTOs are perceived as trustworthy by members of the diaspora. Interestingly, this study also found that a Somali use the Hawala system to send money within Canada itself.

The study observed that social ties is a strong motivator as to why individuals in Canada send money to people in Somalia. The more frequently people communicate they more likely they were to remit more frequently. Another finding was people who remit more frequently tended to send more money. Although, the findings indicate that these same people remitted smaller amounts too. Confirming that the connection to people in Somalia, as witnessed by how frequently they communicate, is a strong indicator to remittances. Based on social network theory, the opposite conditions also seemed to confirm that people who have been sending money for a lesser period and were less likely to send less money. This study confirmed some aspects of social ties as a strong basis for sending money.

Another theory that we utilized for this study was Altruism theory. The survey participants confirmed that they are primarily driven by altruistic reasons why they send money to Somalia. For example, people listed that they sent money for family expenses. Other reasons included that assisting in buying food and educating children. When it comes to people sending money, the theory seemed to show that people send money but one part of the theory could not be replicated. An example of this was the idea that as people's income levels rose, they would send more money. My analysis did not find this to be the case when it came to Somali remitters.

Next, we wanted to find out how technology is used in the remittance sector and how new innovations were being adopted. We found that a noticeable number of Somalis sending money were using online and mobile services. This seems to align with research from the World Bank that shows that people within Somalia had adopted mobile phones and banking at high rates. We found that the strongest connection to those individuals who used mobile money were more likely to be employed. Another finding that we found was that people who had remitted for longer periods of time were also more likely to use mobile service. Moreover, if the remitter is female and had been remitting for a longer period then they were likely to use mobile money. In both instances, we believe this could be to save on time that might be related with traveling to the MTO location.

The Somali individuals and businesses are aware of the security implications that arise from remitting money, especially to Somalia. This study confirms that the individuals and businesses adhere to Canadian rules and regulations when sending money. Somali individuals who remit more are often asked to provide identification. On the other hand, interviews with businesses confirmed that they ensure they track individuals who send large amounts, anything above \$1000. Some view that the Hawala business will likely lose business as the Somali governments create a banking system that is stable.

Thus, the aim of this paper will be to examine role of the diaspora in the remittance system. More specially, this paper will analyze the crucial role served by ICTs in the delivery of the billions of dollars into the country. In the case of Somalia and its diaspora, the Hawala system has evolved in spite these restrictions and the lack of the formal banking system. In country without centralized postal system or personal identification system the Hawala system has several advantages. First, individuals without a fixed address have the ability to use the system because they all that is required is code or phrase from the sender to access the funds. Another advantage is that the Hawala system works in places where large money transfer institutions do not serve. For example, there are no Western Union desks or internationally recognized MTOs in Somalia. A third advantage is that it has a relatively low cost, the commission charged the sender is of around five percent. Thus this low commission ensures the cost of transfer itself is reasonable for the senders. A fourth advantage is that the large Hawala systems is now web-based to facilitate the quick transfer of money. Once the money arrived the client is called, usually, on a mobile telephone which are widely available. If the amount large a clan elder is called upon to verify the person's identity. In order to create a fast efficient system, technology has enabled this process to move at the pace of the internet.

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