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What determines demand for digital community currencies? OurVillage in Cameroon

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What determines demand for digital community currencies? OurVillage in Cameroon

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Abstract: Community currency systems are now turning to digital methods to increase the social outreach of member households in remote areas, mitigate detrimental effects in times of crises, and promote community social cohesion. The resilience of digital community currency systems depends on a set of decisive factors including stability, sustainability, and technical functionality. OurVillage in Cameroon is a socio-economic project that aims to increase and promote economic activity through the introduction of a blockchain-based local community currency system. This paper explores the potential of electronic complimentary payment systems by examining the underlying motivations for consumer use based on their socio-economics characteristics. We develop a demand estimate for the community currency, concentrating on the underlying environmental conditions of the target population. A demand study is helpful in order to observe the optimal conditions for goods' consumption, in this case the community currency system. The resulting estimation provides fundamental insights into the quality of the project and the determinants for successful implementation. Our findings have important policy implications, particularly for communities intending to introduce their own digital community currency systems.

Keywords: demand estimates, community currency, socio-economic development projects

JEL codes: B4, C10, D02, E42, O12

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1. Introduction

Complementary currencies (CCs) exist within a regional context. They may be in a local neighborhood or in a designated region, and have an influence on the local environment, which is considered complementary to the national currency. As CCs have become more popular in the development cooperation arena and with the increase in the use of blockchain technology, new projects have emerged. There is much debate in the literature as to the viability and the successes of these CCs (Metzger et al, 2023).

Complementary community currencies, local currencies, or regional payment systems, manifest either physically or digitally, or sometimes as a hybrid of the two. Metzger et al (2023) discuss the naming conventions and characteristics of different payment systems. Digitalization can provide a powerful method to aid in the survival and dissemination of CC projects. Proponents of CCs argue that they contribute to building sustainable business environments and support regional development, harnessing social economic benefits such as social and financial inclusion. Hartford (2008) has argued that the real benefits are not necessarily economic, but more likely to be social in nature. Collom (2012, 2014) has written extensively to this effect. Larue (2022) in recent work has argued that while alternative currencies seem harmless, they may promise significant benefits, which never manifest themselves. If they stay small, then they do not have a major impact however, as they grow, they may risk social justice.

In 2019, the German Gesellschaft für Internationale Zusammenarbeit (GIZ) decided to introduce a blockchain-based community means of payment system in West Cameroon to help alleviate seasonality-caused liquidity issues. The means of payment acts as a digital payment in a project called OurVillage in Cameroon (GIZ 2022). The project is aimed at ameliorating a set of predefined socio-economic goals that include seasonal income smoothing and social inclusion.

This paper explores the potential of electronic complimentary payment systems by examining the underlying motivations for consumer use based on their socio-economics characteristics. We pose three questions 1) what is the expected demand for the CC? 2) What factors influence that demand? and 3) What policies should be employed to increase demand for the CC. We develop a demand estimate for the community currency, concentrating on the underlying environmental conditions of the target population. A demand study is helpful in order to observe the optimal conditions for goods' consumption, in this case the community currency system. We argue that the demand estimation is discontinuous and thus advocate a probit estimation method. We also allow for the possibility of non-parametric estimation. The resulting estimation provides fundamental insights into the quality of the project and the

determinants for successful implementation. Our findings have important policy implications, particularly for communities intending to introduce their own digital community currency systems.

2. Literature Review

2.1 Community currencies

Metzger et al (2023) and others (e.g. Chasin et al, 2020; Cassoni and Ramada, 2013; Blanc et Fare, 2018; Mqamelo, 2022) have reviewed the literature surrounding the development and difficulties of community currencies implementation. They identify a number of factors, which are important in the consideration of CCs. These are proposed as technological change; government regulation and intervention; lack of sustainable demand; network development, and trust.

The community currencies are identified as being major contributors toward reduction of inequalities and reducing social exclusion and reducing environmental degradation. Resilience¹, according to Chasin et al., (2020) is essential in that communities need to meet a large share of their demand through local production. Without this essential factor, the exchange between members using alternative currencies is unable to grow and the currency is unable to survive. Most of the economic theory is based on market driven competition, which has generally been considered the core of neoclassical economic activity. Production is considered to be organized using the market and economists analyze accordingly; the questions about what to produce, how to produce, and how the production is distributed are answered by the market interactions (Polanyi, 1944; Bowles & Halliday, 2022).

Through our review of the literature, we identify a number of important inputs for community currency demand and discuss each in turn below.

Trust

Academic literature identifies trust as essential to the success of community currency or means of payment systems (e.g., Metzger et al, 2023; Chasin et al., 2020). Lack of trust may manifest itself in many ways, for example through a lack of transparency or a lack of trust in the organizations involved in the distribution of the means of payment. Alia and Spiegelman (2020) examine trust in the context of a field experiment and CC. They find strong evidence

¹ Chasin et al (2020) define resilience as “the ability of a system to sustain itself through change via adaptation and occasional transformation”. They take their definition from Magis, K. (2010), “Community resilience: An indicator of social sustainability”, *Society and National Resources*.

of the preference based mechanism of CC in terms of trust while only weak evidence of belief-based trust. That is, CCs work because each person prefers to trust in the system (preference based) unless proven otherwise, and not because participants necessarily believe that others are trustworthy (belief-based).

A few systems, notably the *Chiemgauer Regiogeld* system (Chasin et al, 2020), explicitly introduce trust as an important operating principle, and these manifest themselves as explicit communication with the participants and periodic meetings with stakeholders. OurVillage indeed attempts to follow these social organizing principles in their development of the community means of payment distribution system. Trust is, of course, very difficult to quantify and we will attempt to provide a few possible variables when discussing the available data. Demand calculations will hold trust *ceteris paribus*, which may be difficult when it is a constantly updated information dependent variable. This issue is outside of the scope of this paper.

Membership fees

Some platforms of CC allow the exchange for the national currency without a fee. This provides an interesting problem to community organizers, as participants do not have an incentive to use the CC without hoarding becoming a factor. As a design principle, this is not recommended as the goal is to have an exchange of CC in the regional or local environment and the number of participants are limited so transactions need to be numerous to keep the market functioning well. If participants can use the CC as an indirect means of investment due to inflation, this would also hamper the CC achieve its goal of strengthening the socio-economic fabric of the community.

The solution here is to impose a membership fee such that there is a cost to holding community currencies i.e., the cost of NOT using the currency becomes something non-negative. There are many examples of such fees being imposed of which a well-known example is the Gesell tax (Svensson and Watermark, 2018). They show that the higher the tax, the higher the price increases. A pecuniary cost thus results and if it is not explicitly known to the consumers, the first problem of trust is again incurred.

Liquidity issues

The means of payment is not tied to labor income and as such, the income from them is not subject to government taxation. Therefore, they provide an increase in overall net income. Since the lower strata of households typically spend a larger portion of their incomes on food consumption, we have hypothesized that this increase in liquidity will benefit lower income households with a shift in consumption patterns. In addition, those who are producers of the stable agricultural products will also experience an increase in net income. We have attempted

to gather this data throughout the project and use income as a proxy for changing levels of liquidity.

Network effects

Network effects are related to scale effects (discussed in the next section) and have been argued by Nakazato and Hiramoto (2012) as essential elements for social and economic support. CCs function only in the context of their introduction and if local participants use them appropriately. If so, then social support transfers are enabled and the general function of the CC to build a network of interaction within the region or community is enabled. The development of a strong network of participants is essential to the success of the CC and we therefore consider the percentage of the pool of participants as an independent variable.

Gender

Mqamelo (2022) and Russo (2022) show that there are important differences in the consumption of CCs between men and women. Whether this is due to socio-cultural differences in the communities is not known. It is likely that men are more likely to be shop owners and therefore will experience a greater number of overall transactions. However, it is also the case that women are more likely to participate in the local agricultural commercial trade, and could thus be more likely to use CC for their daily transactions. For whatever reason, studies show that women benefit more than men from the introduction of CCs and are more likely participants in the transactions. We therefore include gender as a control variable.

2.2 Demand estimation

In this section, we turn toward a review of demand estimation techniques. Studying market dynamics and actors' interactions is fundamental to understanding how a product is produced and consumed. While government or other regulatory institutions may also have a role to play in the market interactions, it is generally considered to be the meeting place for consumers and producers and the price of a given product is the outcome of their interaction. For this reason, both private and public interests have to look at market dynamics to infer results from their implemented programs. For example, public actors would be interested in understanding the effects of state intervention in a market (e.g. a tax or a subsidy), while private actors might be interested in knowing the possibility of launching the sale of a new product.

Friedman (1949) addressed that the demand curve is commonly defined as “a functional relation between the quantity and the price of a particular commodity” (Friedman, 1949: p. 463). Therefore, it has become particularly important when it comes to understanding consumer behavior towards a given product or program. Many economists have proposed

methods to estimate the actual demand or supply curves. This is generally done in a theoretical manner and when translated to the actual interactions in a daily market, surveys of consumer or producer behavior are key inputs. The supply and demand model explains the internal tendencies in the market.

In this respect, the demand estimation reveals how much consumers want to consume based on a series of other variables that determine it, for example, income, expectations, the price of related goods, and, of course, the price of the product itself. In this way, the demand study is helpful in order to observe how and when a good can be consumed, and what conditions or situations have an effect on its demand. Hence, a demand function could be expressed as the following:

$$Q = \alpha P^\beta \cdot Y^\theta A^\gamma$$

Equation 1

where Q is the demand for the community currency, P is the price of this currency, measured as the opportunity cost of use, Y is a vector of other influential variables and A is a vector of known variables (constants). This formulation implies that there is some non-linearity in the demand for CC, which will be discussed further. We do not derive the demand curve in the traditional mathematical manner via consumer utility for the alternative means of payment in this paper. Moreover, we assume that while there is some substitutability between the national and the community currency, they are not perfect substitutes. Perfect substitutability would result in a linear equation. The above expression shows how the quantity demanded of a good depends on its price and a set of variables to be described in the next section.

As is expected, markets are composed of multiple agents in society. While it is possible to easily write a theoretical description (as above), in order to have an empirical approximation to interpret reality, it is necessary to collect data on individuals and their observable characteristics. Hence, the econometrics methodology is applied to generate an estimation of how multiple variables can determine the quantity demanded of a market product (Andrienko & Nemtsov, 2005), and for a nonmarket good as well (Sellar, Chavas, & Stoll, 1985).

Given the nature of the statistical interpretation and the lack of the data to capture the real tendencies (e.g. variables that are not quantifiable), it is important to interpret the econometrics results considering this fact to avoid possible bias in the analysis (Working, 1927). Berry and Hale (2021) outline some important challenges to demand estimation including the choice of functional form and invertibility of demand. The inversion of the demand system relies on identification and estimation challenges. We assume that in our specific CC, the demand system is not invertible, further lending to the argument that we should use a non-continuous, discrete choice estimation method.

Elasticity

The price elasticity of demand cannot be calculated with reasonable accuracy without a price of the CC. However, we can hypothesize as to the substitutability for the use of the CC and therefore infer some estimates of elasticity. For certain shop owners, the main stakeholders, there is a limit as to the amount of CC that purchases can be made in. Therefore, there is some inelasticity in the choice of using the CC in these instances. Furthermore, the implication is that CC does not have perfect substitutability with cash in these situations.

In other situations, there may not be the possibility of choosing to use the CC, i.e., for tax payments or school fees. Thus, in these situations, cash is preferred and the price elasticity of the CC is totally inelastic at zero. Likewise, there may be instances where the CC is preferred to cash such as in the market transaction with a vendor of staple produce. In this case, the CC will be preferred and cash is not a perfect substitute either. The third possibility of barter also exists although, the GIZ project assumption is that barter would take the form of CC use. We attempt to incorporate these aspects into the opportunity cost of use, or our price measure.

Instability of national currency

Elasticity of substitution between CC and the national currency is linked to the stability of the national currency. Some authors (see Gawthorpe, 2019, who finds that WIR is a substitute for Swiss national currency in contrast to US cases where the CC is complementary) have suggested a link between the demand for the CC and the price instability of the national currency. Ideally, we would have some measure of the price and output stability of the region where the CC is being used in order to measure economic prosperity as a demand input variable for the CC. There is no credit situation in our case study unlike other cases of alternative currencies. Thus, we do not use interest rates as an input to our estimation although we do include a measure of price stability, incorporating the food price index as a measure of overall price stability.

Scale effects

The scale effect refers to the idea that the size of the potential market is linked to the number of participants and the share of the regional population interested in having access to the community currency services. The size of the market is therefore of considerable interest and the goal of attracting both users and providers simultaneously helps to combat the critical mass of transactions' problem (Mas and Ng'weno, 2010; Blanc and Fare, 2018). We assume in this analysis that the size of the market is sufficient to insure functioning market transactions.

To show the importance of these scale effects, we include the number of participants as one of the variables essential to the demand for the alternative means of payment, or the CC.

Money versus social Currencies

The neoclassical view of money does not lend to an understanding of social currencies. Berio de Souza (2019) argues that because social currencies are created with a specific (social) purpose, we need to incorporate a specific framework to allow for the role of the community in the circulation of the CC. In this manner, we adapt the monetary framework toward the understanding of the CC functionality. The CC therefore fulfills a non-pecuniary role enhancing trust and the communal social fabric. This is also quite difficult to quantify for the purposes of demand estimation and we assume that we could have a bias downward from the unidentified social variable.

We now describe the project of our demand estimation case study.

3. OurVillage in Cameroon

The OurVillage in Cameroon project is a socio-economic project implemented by the GIZ in West Cameroon. The project aims to increase and promote economic activity in different towns through the introduction of a blockchain-based local means of payment system. The goal of the system is to minimize the seasonal liquidity issues and resulting debt levels. These issues occur when crop yields (naturally low in the dry season) result in lower income levels while local demand for consumption remains the same. The project has been applied in a setting described as ideal by Zeller (2020) who showed that CCs could be advantageous to implement in regions where money supply is seasonally inadequate.

A physical token was introduced in March 2022 and implemented digitally in Q4 2022. A name does not exist yet. The project should be handed over entirely to the communities long-term. A blockchain provides the basis for the digital CC and is accessible through USSD codes and mobile phones. As is typical in other CCs, the value of the means of payment is pegged at 1:1 to the local CFA franc (XAF), safeguarding the comprehensibility and intuitiveness of the CC.

Currently, every member who becomes a participant receives approximately 1200 XAF after completing the full onboarding process², which is approximately € 1.80 or half a month's

² There is actually a distinction between full onboarding and light participation. Only those who fully participate in the initial surveys receive the full amount of the means of payment. There is a second method, referred to as *light*, to join into the transaction CC participation without fully onboarding. This

income. There is no such thing as a mutual credit system, or a similar concept, at this time so new tokens can be issued to either selected or all users, as determined by GIZ and they are not backed by legal tender or any commodity. In practice, GIZ foresees that everyone should be entitled to use the CC, and only a working telephone and a unique telephone number are required. GIZ selected trusted businesses called “Backers” that currently function as purchasers of last resort and at these shops, the CC is always accepted.

GIZ pursues building trust in the CC throughout the participating communities through capacity-building workshops and training opportunities. In these town-hall meetings, GIZ announces and discusses upcoming changes, provides updates, clarifies upcoming questions, and assists in case of specific issues. Commitment-building mechanisms are thus at the core of the project and local committee members are responsible for the follow-up and animation in the communities. Additionally, local chiefs are at the forefront of each implementation and have an active say in the development process.

Project data

The data used to perform the current research comes from the OurVillage in Cameroon project. The data collection process involves the participation of, at this time, less than 300 participants who acceded to use the means of payment as a currency in their local economic activity in the towns of Bameka and Batoufam. The data comes from two sources, first, the registration survey process of the participants, and second, the transaction data.

The registration of the participants is the necessary condition for them to receive and start using the CC. This registration collected socioeconomic, labor, family and cultural characteristics of the participant, which allows to incorporate relevant information to consider who these characteristics could determine the demand for the CC. Table 1 describes the variables available from the registration process.

dichotomous onboarding process is based on the SIR experiences with an open network. At this time, there is no distinction between individual consumers and business.

Table 1: Socioeconomic information of the OurVillage participants

Group of information	Variables
Social and individual information	Age
	Sex
	Profession
	Marital status
	Religion
	Age composition of the household
Economic information	<i>Economic activity</i>
	<i>Income</i>
	Tontine participation
	Saving
	Expenditures
	Debt
	<i>Poverty indicators</i>
	House or land property
Economic Transaction information	purchase amount
	purchase type
	transaction date and time

Source: authors representation

After the registration, all the blockchain transactions will be recorded and connected through a unique identification to the previously gathered survey information. We are thus able to use survey gathered control variables to see which factors are important determinants of CC use. Finally, the CC use will be automatically collected as part of the blockchain transaction data.

This includes all the purchases that the registered individuals made after the registration allowing us to obtain information related to the variable of interest in this study: the quantity of CC use. For each transaction, the amount of the purchase, the date, time, and place where it was carried out will also be recorded. We now describe the exact method of estimation.

In order to further examine the viability of the project application, we develop an estimation of the demand for the CC use, or the propensity to use the CC in consumption transactions while taking into account additional relevant variables that affect quotidian purchases. The knowledge that could be obtained from the estimation will be fundamental in enhancing the quality of the project and to further the ability to fulfill the socio-economic goals of CCs generally. The specification of the estimation should consider the factors that are determinant in deciding the use of the CC.

The usage of the CC is generally determined by the price. In this case, the price is not a monetary value, since the nature of the CC differs from a market good: there is no price since the CC is a means of payment rather than a good. Even though there is no monetary price, there is an opportunity cost for the use of the CC that could be used as a price, which is the registration time that the user has to invest in order to use the means of payment as well as the potential membership fee to participate. We incorporate this principle into our methodology described in the next section.

4. Estimation Methodology

We begin with a definition of the market defining it as the products for which blockchain transaction using the OurVillage means of payment is possible. We revert to our three questions in the context of OurVillage. What is the expected demand for the community currency? What factors influence that demand? And what policies should be employed to increase demand for the complementary currency. Answering these questions requires us to determine the definite inputs for the quantity of CCs used.

A typical demand curve is estimated as the quantity demand dependent on a number of variables, generally holding all other variables *ceteris paribus* and therefore collapsed down to a relationship between the quantity demanded and the price. Properties of demand curves are well known and established through economic theory. A demand curve provides a representation of the quantity demanded for any good or service as a function of prices and in-come. If all prices and in-come change in the same direction and proportionally, there is no change in the purchase plan of a consumer, thus demand is homogeneous to degree zero in prices and income. We should consider the possibility of discontinuity in demand, which is discussed below.

We generally write the equation for the demand curve from Equation 1, as:

$$Q(x) = \alpha P(x)^\beta \sum Y(x)^\theta A^\gamma$$

Equation 2

which allows for an estimation of

$$\log Q(x) = \log \alpha + \beta \log P(x) + \theta \log Y(x) + \gamma \log A$$

Equation 3

where $Q(x)$ is the transactions of community currency or the quantity demanded, $P(x)$ is the price of this currency, measured as the opportunity cost of use, $Y(x)$ is a vector of other influential variables and A is a vector of known variables (constants). In the community currency case that we wish to estimate, that is the demand for CC use in blockchain transactions, we have several problematic issues.

First, in the case of OurVillage, the means of payment have **no specific price**. The CC is given out to the participants in exchange for their promise to use them for local purchases. In the case of several stakeholders, participants are guaranteed usage in these locales. In addition, there is a membership fee imposed in such a way that it is similar to a holding tax if the CC has not participated in a transaction within a set period of time. We therefore need to calculate the opportunity cost associated with use of the community means of payment. In the literature surrounding the use of community currencies, there is a debate about the necessity of a holding tax, and practitioners have argued that at least some form of holding tax should be applied (Svensson and Watermark, 2020; Chasin et al, 2021). In this sense, the price of the CC is then the face value minus the holding tax, or a positive use price on top of the exchange value of the means of payment.

As discussed above, we additionally identify a set of important variables which might influence demand for the means of payment system. These include trust, economies of scale or size of network, gender, and income. We have several methods of empirical estimation available. We discuss the use of a discrete choice method as fundamentally choices are discrete and not continuous. Consumers must buy a set of products in the market and these are by necessity discrete and non-continuous choices. The average consumer does not, for example, purchase n liters of milk, in infinitely divisible portions, rather they purchase 1 or 2 liters. If we therefore assume that consumers purchase 1 unit of a given good, using an estimation method that takes that into account would be more reasonable. We thus argue that a probit or a logit is the preferred estimation technique.

4.1 Discrete choice estimation

Rasmussen (2007) has shown that a generalized method of moments (GMM) estimation of demand can be useful even if the problem is nonlinear and the explanatory variables are not endogenous. We cannot be sure of linearity in our framework and we hypothesize that some of the variables are most likely endogenous in nature, especially something like trust. As the system grows, so does the institutional trust thus we will need to account for additional issues of endogeneity in the estimation method.

While we advocate estimation using a logit or probit discrete choice method. This is due to our preference for the probability distribution method since a normal distribution is indeterminate and we find it to be unlikely. Since the 1980's, industrial organization economists have been examining the discrete choice approach as a method to deal with the limitations of the traditional, organized least squares methods. Products are seen in these approaches as characteristics and consumers have preferences over these.

As a robustness check on the estimation, we would advocate use the BLP method named after Berry, Levinsohn, and Pakes (1995) expounded by Rasmussen (2007). This method is an extension of the discrete choice analysis developed for product areas. While it is developed around consumer utility functions and is therefore more realistic, we have a slightly different issue in the estimation of the CC use. The trade-off for our consumers is the use of CCs or cash and therefore the consumer utility has several independent inputs, which have to do with the characteristics of the means of payment itself as well as those of the consumer or the participant in the CC use.

Following Sellar et al (1986), we thus propose the use of a probit model to estimate non-market demand for CCs. We first assess economic theory to show the conditions that must be met by the probit functional form to have valid estimates of demand relationships. In this case, the dependent variable will be some kind of indicator of all the transactions made by each individual. At the moment, we have too few observations to be able to perform a valid estimation. Data is forthcoming and will be complete in the summer 2023. We do several estimations, taking into consideration the change in macro characteristics i.e., food price indices for West Cameroon and other seasonal variations as they are known i.e., weather proxied by rainfall (or week of the year for a time oriented dimension).

After the price calculation is defined, we must include other variables that potentially affect the CC demand. These include income related variables such as type of employment i.e., the participant's economic activity. We also consider income as well as other sources of income such as remittances. The intuition behind income could explain that people with higher incomes will have more resources to spend money in the market, so they will do a higher number of transactions. Besides income, poverty is considered a relevant variable for mobile

money demand and our means of payment are a form of mobile money. Balasubramanian, Drake, and Urrea (2020) establish the hypothesis that mobile money agents' demand is an inverted u-shaped in the poverty rate.

The setting as being rural or urban also could matter to demand for CCs as though living in the town may use CCs more frequently than those located more rurally. As discussed above, we consider gender as well as the overall percentage of participation. Furthermore, the economic activity performed and the profession's agent would be relevant to consider in determining the nature of the economic behavior. Balasubramanian, Drake, and Urrea (2020) addressed that what is relevant to determine the demand for mobile money is the conditions that the services offered, as the transparency (e.g. transparency in the cost) and the expertise of the institution that implements the program. Eijkman et al. (2010) show that agents rebalanced their accounts more frequently in urban areas, which means that the urban-rural residences are an important variable to be considered.

Finally, the econometrics application will define the coefficient and will explain the magnitude of the effect of each variable on CC demand. In addition, the quality of the estimation will depend on the availability and quality of the information, as variables that cannot be measured or are not available will produce a bias in the estimators found, and hence misleading interpretations.

4.2 The proposed estimate

We propose the following equation for estimation of a demand for CCs.

$$D_{CC} = \beta_1 Price_{CC} + \beta_2 Income + \beta_3 participant_economic_activity + \beta_4 Gender + \beta_5 Remittances + \beta_6 Urban + \beta_7 seasonal_food_price_index + \beta_8 rainfall + \beta_9 poverty + \beta_{10} \%population_participants + \beta_{11} trust + \varepsilon_i$$

Equation 4

Where D(CCs) is shown by the number of blockchain transactions. We can further separate the type of transaction and see if there is a demand for CC use given a particular type of product.

The price of the CC is a composite of opportunity costs of use. We further examine different manifestations of including a form of membership fee or a holding tax into the price calculation. The income is gathered from the initial and interim survey data as is the participant's main economic activity. Gender, urban or rural settings, poverty indicators are also taken from initial survey data, as is remittance information. This is a sub-question concerning income of the participant. Rainfall and seasonal food price indices are found from the Cameroonian government statistics. We calculate a network scale as being the percent of the population participating in using the CC. Trust provides some measurement issues and

could be envisioned to be the level of interaction with the community either in number of interventions or a scale of interventions based on depth of interaction.

This is then the proposed method of estimating the demand for CC use in the OurVillage project in Cameroon. When data becomes available, we will see if this is a viable method for forecasting upcoming demand and what policy measures might be important. We hypothesize that, as the literature summarizes, trust and network scale effects will be determinant.

Conclusions

This paper poses three questions as to the expected demand for a complementary community currency, in the case of OurVillage in Cameroon. We concentrate on the determinant factors for increasing demand for community currency and their use in blockchain transactions. Furthermore, we investigate what policies should be employed to increase demand for the CC.

We develop a proposal for demand estimation for the community currency, concentrating on the underlying environmental conditions of the target population. We argue that because the demand estimation is discontinuous, a probit estimation method makes the most sense as an estimation procedure. We further propose robustness checks using non-parametric estimation. Demand estimations of CCs have been lacking in the literature and our proposals have important policy implications, particularly for communities intending to introduce their own digital community currency systems. Further exploration of the underlying motivations for consumer use of digital complimentary payment systems based on their socio-economics characteristics is essential in the development of successful programs of community currency implementation.

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