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A Study on How to Operate or Upgrade a Mobile Community Currency System to Revitalize the Local Economy -Centering on Community Currencies in Seoul and Gyeong-gi Metropolitan Areas-

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Abstract

Small local businesses such as corner shops and street markets have been severely impacted by the COVID-19 pandemic and declining consumption. A community currency is a local currency that can be used to exchange for one of the local currencies within an online community. Community currencies can be effective not only in supporting small businesses, but also in helping the local economy more vibrant, benefiting consumers in the community. An important goal of Community Currency is to foster a vibrant local economy by building mutually beneficial relationships between local business owners and customers. The purpose of this study was to identify how the existing community currencies of participating SMEs and self-employed in Seoul and Gyeonggi-do metropolitan areas contributed to commercial revitalization by category and to suggest a new or better approach to community currency operation. It also focused on presenting the best solutions for the future direction of mobile community currencies, measures that are better than current currency operations, revitalize the community and develop the economy.

Keywords: Revitalizing a local community, Mobile community currency, Community currency operation system, Future direction for improvement

1. INTRODUCTION

Small local businesses such as corner stores and traditional markets have been badly affected by the COVID-19 pandemic and consumption drop. A community currency is a local currency that can be used for exchange within an online community as one of local currencies. It can be spent in a particular geographical locality. Such currency is not a legal tender which is widely exchanged on a daily basis, but a complementary currency supplementing the national currency. Korean local municipalities see very serious economic gaps between and among regional communities. They acknowledge that each community is different in economy, social atmosphere, and culture. As local economies are suffering more from the COVID-19-led economic downturn, the community currency has attracted more attention, especially in local districts not as well as in the metropolitan area. Community currencies can be effective not only to support small businesses, but also to help local economies more vibrant, thus bringing benefits to consumers in the community. Accordingly, the overall economy of the community is likely to be more lively and get better. The critical goal of a community currency is to build a mutually beneficial relationship between local business owners and customers, thus fostering a vibrant local economy.

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The aim of this study was to determine how existing community currencies at participating small businesses and self-employers in Seoul and the metropolitan area of Gyeong-gi contributed to commercial revitalization by categories and suggesting a new or better approach to operate community currencies. As part of the methodology, a prior research on the concept, type, and relevant theory related to community currencies and a case study on the use of mobile community currencies in Seoul and Gyeong-gi were conducted to see regional differences and characteristics. This study was also focused on suggesting future directions for a mobile community currency, better measures than those of the current currency operation, and the best solution to revitalize local communities and develop their economy.

2. EXPERIMENTS

2.1 The concept of local currency

Money is defined as 'generally acceptable means of payments' in relation to the sale of goods and bonds and debts, and has the functions of a medium of exchange, a unit of accounting, a means of storing value, and a transaction payment. Local currency is a means of exchange for goods and services related to specific transaction conditions in a limited area. Tokens, coins, and coins that can be traded based on trust in products such as gold, silver, water, oil, and food A mutual exchange of goods and labor within a local community that also includes digital proof can be called local currency [1]. It is an operating information system for transactions using currency, and the characteristics of alternative currencies such as local currency, supplementary currency, independent currency, free currency, membership currency, community currency, green dollar, eco-money, original money, etc. Electronic money, paper gift certificates, and card-type gift certificates are functionally local and alternative currencies [2].

Local currency has the negative effects of capital power due to limited locality, regional membership, issuance of money according to need, and some ownership, while a voluntary alternative community that tries to alleviate the instability of the business cycle such as boom or recession in capital power It is a currency that also includes the meaning of movement. Fiat currency is defined as a currency that has the functions of exchange, accounting, payment, and interest-seeking and growth with the currency (legal currency) granted compulsory currency by the law of the country. It is a currency that is limited to specific regions and small communities, and aims to prepare for the instability of globalization while pursuing regional economic stability and revitalization by exchanging goods and services through transactions.

The earliest local currency was the 'Labor Certificate' created by Robert Owen, who founded a cooperative in London, England in 1832. It was an alternative currency structure in which the value of labor was converted into average working hours to receive a labor certificate and exchanged with goods provided by other workers. Local Exchange & Trading System (LETS), local employment transactions Also called Local Exchange (Employment) & Trading System, it can be viewed as a structured system that allows labor and goods to be exchanged and traded through virtual local currency. As an alternative currency used within the region instead of legal currency, it is a third currency as a 'multilateral pom-sam system' that provides one's own labor, skills, and goods to others in need, and also allows them to receive what they need from others. [3]. It is a system that allows mutual exchange of goods and services, and its purpose is to enable everyone to live a mutually beneficial life by maximizing their abilities even without money [4]. Korea's local currency was introduced in 1997 for the purpose of revitalizing the local economy and relieving unemployment during the IMF economic crisis. It has spread nationwide such as Pumachi, Gwangmyeong Groo, Daegu Neulpum, etc. Since then, local currency has been continuously issued until now as it is created and destroyed in each region.

2.2 Types of local currency

Second, it is classified according to the existence of real money and the form of money. Let's use unit currency, but it is not issued in the form of coins or banknotes, and exists only in the members' accounts. On the other hand, Ithaca Hours and Bristol Pound issue paper money, and credit cards and electronic payments are also possible.

Third, it is classified by type of exchange with legal currency. In some cases, only affiliated stores allow currency exchange, and in some cases, a fee is charged for mutual exchange between legal currency and local currency. If currency exchange is allowed to consumers, the frequency of using local currency may decrease, and if currency exchange is not allowed, initial accessibility may be reduced.

Fourth, it is classified according to the direction of the local currency. There are various regional currencies such as Let's, Hours, and Time Bank for the purpose of promoting horizontal reciprocity and mutual aid, and Germany's Kim Kauer for the purpose of promoting independence and vitalization of the local economy, Bristol Pound from England, Sonantes from France, and Swiss beer. Their purpose is not easy to distinguish, so if the horizontal reciprocal relationship expands, it can lead to independence or revitalization of the local economy, and if the revitalization of the local economy is revived, it can affect the promotion of mutual aid [5].

2.3 Prior research on local currency

Studies related to local currency describe the concept and application method of local currency, analyze cases of local currency operation, study policy recommendations at the normative level related to the introduction of local currency, and include transaction volume found in local currency operation and related cases. This is a study on economic policy effect analysis based on empirical data.

Table 1. Current local currency precedent study table

researcher	Prior research title	type of study
Ryu Gi-hwan (2015) [5]	A plan to vitalize the local economy through local currency	It is argued that local currency can enhance a sense of belonging, happiness, and self-esteem as a tool to compensate for the weakness of social solidarity in the current society, and the use of the latest IT technology
Ho-Chang Yun (2018) [6]	Experience and direction of regional economy revitalization through local currency – Gwangjin, Nowon, Mapo, Eunpyeong, Seoul	It raises the problem that the vicious cycle of the local economy and the destruction of the community is rapidly progressing due to the outflow of income from Seoul and the metropolitan area, and raises the need for local currency. An important solution to the polarization in society, centralization in the metropolitan area, and the non-circular economy argue that it can appear as
Seong-Hoon Kim (2019) [7]	Social economy-led blockchain based reciprocal transaction system development strategy	Describe the private-led Daejeon-type local currency platform construction plan through the characteristics of local currency issued by local governments and the experience of local currency in Daejeon
Ga Yeon Baek (2020) [8]	A study on the introduction of local currency policy: On the introduction of the local government's love of hometown gift certificate policy	By reviewing overseas and domestic cases of local currency, by synthesizing previous studies and recent press releases from local governments, we structure the type of local currency from the existing alternative currencies, and present the current status by type of issuance.
Ducheon Jeong (2020) [9]	A Study on Perceived Usefulness and Intention to Use Blockchain Local Currency: Focusing on Technology Adoption Theory	An empirical study through a technology acceptance model on variables that affect the intention to use local currency based on blockchain technology

3. RESULTS

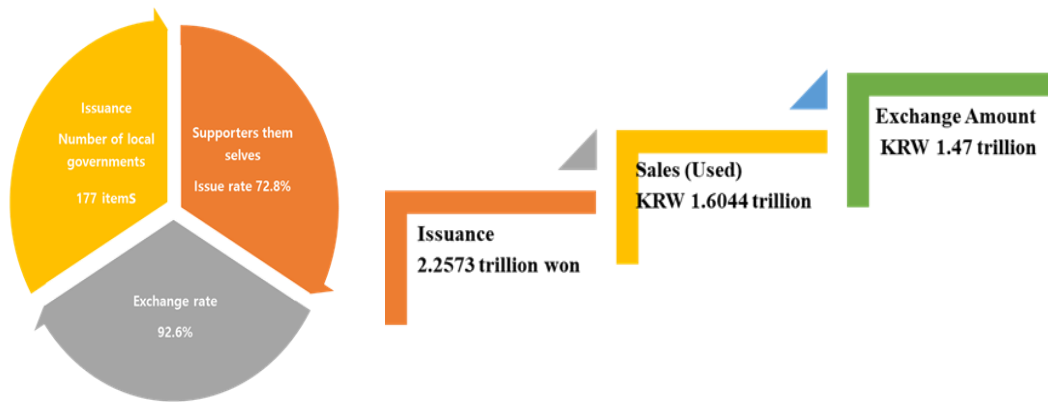
3.1 Current status and examples of local currency adoption

3.1.1 Status of introduction of local currency

In Korea, it was introduced in 1990 to revitalize the local private community. Local love gift certificates in Korea are scheduled to be issued by 199 local governments in 2020, and are judged to be a solution to “income-led growth” by activating the local economy. Local currency, which sold 300 billion won in 2017-2018, is expected to be issued by the end of this year, worth 2.257.3 trillion won. (Ministry of Public Administration and Security).

Status of local currency issuance in Korea

Current status of introduction of local currency
(As of August 2019, estimated size of issue at end of 2019)



Material: Ministry of Public Administration and Security

Figure 1. Examples of operating model for mobile community local currency in seoul

3.1.2 Examples of local currency

3.1.2.1 Use Cases of Seoul Local Currency

(1) Gwangjin-gu ‘Gwang’

Blockchain method. The pilot project is being promoted by providing incentives in local currency to residents, and the focus is on revitalizing the local economy rather than the community. Interested residents voluntarily participate in a new monetary concept that aims to create an economic structure in which local money circulates by activating mutual transactions between local residents and merchants.

(2) Nowon-gu ‘Nowon’

While other local currencies promote the local economy, local currency is used to realize social values through volunteer work and donations, thereby inducing the voluntary realization of social values by local residents. It shows the potential of local residents-led local currency with the first blockchain method in Korea and non-convertible method. Although many achievements have been achieved in a short period of time, it has a problem that it is difficult to maintain without continuous administrative support because there is no separate profit structure.

(3) Eunpyeong-gu ‘Peace’

It is being operated in the form of a private community network without administrative support from local

policies, but the pace is not fast. For active participation of residents, the key is to establish a stable online system, to promote participation, to educate, and to secure incentives to activate local currency.

(4) Mapo-gu ‘Moa’

Voucher-type sub-currency. The difference is that a private community organized voluntarily by citizens is a gift certificate issuing organization. Administrative support is not received, and user incentives are paid by the local Hope Solidarity Labor Union and the local community contribution fund. A polarization phenomenon in which community local currency is concentrated in some stores used by many residents has emerged as an obstacle to the formation of a circular economy in the region.






Mobile community currency (Seoul)					
Item	Hanbat rets	Nowon	Gwangjin	Eunpyeong	Mapo
Name	Duru	No-won	Kwang(light)	Pyunghwa(Peace)	Moa
Government/Private	Private/Community	Government/City hall, ward office	Private	Private	Private/Community
Purpose	Realization of community value	Realization of community value/Revitalization of local economy	Revitalization of local economy	Revitalization of local economy	Revitalization of local economy
Source	Fund (local residents and community)	Government subsidy(Central & local)	Fund (local residents and community)	Fund (local residents and community)	Fund (local residents and community)
Adoption of blockchain	No	Yes	Yes	Yes	Yes
Platform type		Glosfer			
Community currency					
Form	Paper money	Card/mobile	mobile	mobile	Paper money/mobile
Issues / Solutions	Transaction activation	Use of community currency/community reinforcement	Transaction activation/System stabilization	Community currency activation/continuous attention	Local polarization/Disorder in circular economy

Figure 2. Case of mobile local currency operation model in seoul

3.1.2.2 Cases of use of Gyeonggi-do local currency

(1) Siheung City (Siru)

The purpose is to prevent the outflow of local consumption to revitalize alleyways and local economy After its launch, it succeeded in achieving its distribution goal in a short period of time and is being introduced as an exemplary case of local currency, such as recruiting 4,500 affiliated stores. With the introduction of a new blockchain system, it was released as a mobile local currency by improving the problems of the existing tributary local currency and expanding additional services. Due to the rapid distribution expansion of Siru, the tax revenue of the alleys of the Siheung area increased significantly, and at the same time, the employment

promotion effect was also increased.

(2) Gimpo City Gimpo Pay (Good Pay)

The goal is to vitalize the local economy. Safe to use currency using a blockchain platform, convenient currency for smartphones, and card form for citizens who are not familiar with smart devices. After its launch, Gimpo Pay is being used as a one-time subsidy tool rather than a virtuous cycle of local currency distribution and local economy, and it has insufficient limitations in terms of creating a virtuous cycle for the local economy and ecosystem in Gimpo.

(3) Seongnam Pay (Seongnam Love Gift Certificate)

It is the largest municipality, and citizens can conveniently use local currency in various places, such as child allowance and youth allowance. The use of government-supported subsidies to promote the distribution of regional gift certificates can be seen as a practical compulsion to use local gift certificates.

Mobile community currency (Gyeonggi-do)			
Item	Siheung	Sungnam	Gimpo
Name	Siroo	Sungnampay	Gimpopay (Chakhanpay)
Government/Private	Government/City hall, ward office	Government/City hall, ward office	Government/City hall, ward office
Purpose	Revitalization of local economy	Revitalization of local economy	Revitalization of local economy/Support small business owners
Source	Government subsidy(Central & local)	Government subsidy(Central & local)	Government subsidy (Central & local)
Adoption of blockchain	Yes	Yes	Yes
Platform type	Korea Minting, Security Printing & ID Card Operating Corporation(Chak)		Chakhanpay (KT GIGA Chain)
Community currency			
Form	Paper money, Card, mobile QR code	Paper money, Card, mobile	Card, mobile
Issues / Solutions	Transaction activation	Revitalize and support small business owners	virtuous cycle of local economy, size of subsidy

Figure 3. Case of mobile local currency operation model in Gyeonggi-do

3.2 Problems and improvement plans for the operation of local currency (Operation Model)

3.2.1 Problems with local currency operation

Currently, local currency is operated through the government and local government budgets. Although it is true that local currency supports local small business owners and issued local currency is consumed only within the region and contributes to revitalization of the local economy, domestic local currency is not for solving the problems of local governments, which is a traditional concept, but rather for small business owners and self-employed people. It has the characteristics of a subsidy for support and revitalization of local commercial areas. In addition, it is said to be a virtuous cycle system circulated among local residents, but other local currencies except Nowon Pay are one-time use after charging with subsidy discounts or Cash Back, or when the central government's budget support is stopped, local currencies can be stopped at any time. There are limitations that can be.

Although it is advertised that the purpose of introducing the block chain of local currency is to overcome the limitations of paper currency, the problem of paper currency can be improved with mobile money or electronic money rather than block chain, and the justification of the purpose of blocking forgery and falsification of related data is not there is a lack of Blockchain is a technology that guarantees authenticity and cannot be tampered with through a verification process and distributed arrangement, but has limitations in reliability, tamper-proof and transparency in design. Blockchain linked to local currency is characterized by the disclosure of all information, and if personal or sensitive information is disclosed, problems with personal information and privacy may occur.

- (1) Local currency issuance and management costs are not small.
- (2) It cannot be used in large marts or online, and can only be used in local traditional markets and some affiliated stores. Now that electronic payments have become commonplace, consumers are shunned.
- (3) Most of the local currency is used as a reward for local officials or youth allowance.
- (4) It is inconvenient for franchisees to not be able to purchase external goods in local currency.
- (5) Local governments are subsidizing 10% of purchases to promote local currency purchases. Subsidies from local governments are easily flowing out of the area where they are used as gift vouchers instead of revitalizing the local economy.
- (6) Paper currency has difficulties in linking various additional services. It is difficult to establish data-based policies because it is difficult to collect data related to the use of paper currency.

3.2.2 Measures to improve local currency operation

- (1) It is necessary to analyze the situation of local currency affiliated stores and users, and to analyze and respond to small business owners' awareness of local currency and the results of users' use through monitoring of continuous change and development stages.
- (2) It is judged that a more systematic expansion and development plan can be suggested by identifying the amount of card usage by industry, sector, and hour of local currency. Despite the limitations of the initial data of introduction, improvement measures are needed according to the expansion.
- (3) The issuance of general new type regional gift certificates should be discouraged from the socio-economic point of view.
- (4) Efforts are needed to find a way to help everyone after an open debate in the local community by preventing the deepening of inequality between classes and damage to the soundness of local finances promoted by revitalizing the local economy.
- (5) Local currency in connection with social welfare funds such as youth employment hope cards, childbirth incentives, child allowances, and honorary allowances for veterans, environmental conservation (recycling), energy issues, social welfare projects, etc. System development should be promoted.

4. CONCLUSION

Local currency was issued to provide economic help to the self-employed and small business owners, the vital force of the local economy, and to serve as a foundation for local communities. However, it is true that there are difficulties in positive development without innovative policies or systems due to various social problems such as the dissolution of local communities and increased unemployment [10]. However, with the development of IT and information and communication technology, good environmental conditions have been created for local currency to revitalize economic development, raising the possibility. In Seoul and Gyeonggi-do, local currency is being promoted as a policy pledge, but the success of local currency can only be effectively enhanced when the local currency is carried out centered on the living area of the local government. Local currency can be an effective policy tool for revitalizing the local economy at the local government level through the case of Gyeonggi-do, which shows that the regional currency has had an economic effect on local franchisees by paying farmers' allowances and youth allowances in local currency.

In addition, one of the factors that local currency did not continuously settle is the instability and inconvenience

of using local currency. Bitcoin and virtual currency are online local currencies that circulate along with the real economy. Online local currency is difficult to expand without building an online system that lowers the entry threshold for local people's prejudice against local currency and doubles accessibility. Local governments must invest a lot of time, manpower, and budget to develop and maintain the local currency system. It is necessary to establish a coexistence and collaboration system between regions and users through one integrated system configuration. In addition, it is necessary to develop an online platform system that is standardized for system stability, hacking security, and user convenience in a method of public-private collaboration between regions. In order to revitalize local currency, it is necessary to establish public-private, private-private governance, and when the public leads and government administrative support is provided, it can be predicted that local currency is likely to be safely settled in the local community and activated.

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