**ORIGINAL ARTICLE**

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# Can discounts expand local and digital currency awareness of individuals depending on their characteristics?

**Abstract**

**Research background:** Because of enabling a greater amount of money circulation and addressing the needs of individuals in specific regions, local and digital currencies have become more important for local economic and sustainable development, especially in last decade. However, their awareness by potential users have become one of major constraints to their extensive usage. In this regard, discount have been used to increase the awareness of individuals.

**Purpose of the article:** As discount is used as an effective promotional tool. This study pays regard to this indicator and aims to investigate whether the discount rate is positively associated with local and digital currency awareness of potential users. Moreover, this research also includes job positions and age of the respondents into the analyses due to potential existence of differences in the awareness of people regarding their characteristics.
**Methods:** The research employs a questionnaire survey and acquires data from 407 workers of a local business in Cieszyn Silesia region of the Czech Republic. The researchers run Binary Logistic Regression analyses in IBM SPSS Software to examine the relationship between these specified variables.
**Findings & Value added:** The research substantiates the fact that potential users who demand more discount rates are more likely to be aware of local and digital currencies. Moreover, potential users who work in lower job positions and demand more discounts are more acquainted with these currencies. Although the existence of a relationship between age and local currency awareness is not proved, older people who demand discounts with higher percentages are more informed about digital currencies than younger individuals. Higher elasticity in discount demand, mutual interactions and relations, such as social media and internet usage of potential users, might be the reasons of these results. This study makes significant contributions to the literature by confirming the significance of individuals' ages and occupational statuses in the awareness of local and digital currencies and the positive relationship between their discount propensity and awareness.

## Introduction

Community currencies have appeared as a novel and unusual method to develop socio-economic and environmental values of restricted geographical regions by enabling exchange and trade activities with specific paper or virtual currencies that are different from national currencies. Community currency is also called transition currency, green money, regional currency (Kim *et al*., 2016, pp. 344–358), parallel currencies (Blanc, 2011, pp. 4–10; Michel & Hudon, 2015, pp. 160–171), local currencies (Michel & Hudon, 2015, pp. 160–171; De Carrillo *et al*., 2018, pp. 125–140), complementary currencies (Blanc, 2011, pp. 4–10; Kim *et al*., 2016, pp. 344–358; De Carrillo *et al*., 2018, pp. 125–140), alternative currencies (Kim *et al*., 2016, pp. 344–358; Michel & Hudon, 2015, pp. 160–171), social currencies (De Carrillo *et al*., 2018, pp. 125–140), monetary localism (Blanc, 2011, pp. 4–10) and local monetary networks (Gomez & Helmsing, 2008, pp. 2489–2511).

Many examples of these currencies have been generated worldwide mainly in Switzerland (Miszczuk, 2018, pp. 83–90), Germany (Friis & Glaser, 2018, pp. 71–84) and USA (Miszczuk, 2018, pp. 83–90; Gawthorpe, 2017, pp. 51–64) since the beginning of 1990s (Kim *et al*., 2016, pp. 344–358). Examples of these currencies also exist in the Netherlands (Michel & Hudon, 2015, pp. 160–171), Kenya (Ruddick *et al*., 2015, pp. 18–30), Canada (Wheatley *et al*., 2011, pp. 84–89), Argentina (Gomez & Helmsing, 2008, pp. 2489–2511), Hong Kong (Ying, 2004), the UK (Cato & Suarez, 2012, pp. 106–115), New Zealand (Ozanne, 2010, pp. 1–16),

Poland (Lopaciuk-Gonczaryk, 2019, pp. 75–87), Japan (Kichiji & Nishibe, 2008, pp. 267–300), Sweden (Molnar, 2011, pp. 13–22), Belgium (De Carrillo *et al*., 2018, pp. 125–140), Spain (Sanz, 2016, pp. 20–27), El Salvador (Groppa, 2013, pp. 45–57),  Costa Rica  (Brenes, 2011, pp. 32–38), Thailand (Walker, 2009, pp. 36–60), Slovenia, Russia (Valek, 2012, pp. 1–9), Bulgaria, Ukraine, and Croatia (Jelinek *et al*., 2012, pp. 116–123). Different from those countries, this research focuses on a local currency that might be implemented in Cieszyn Silesia region.

Besides, the circulation form of community currencies might differ. While some of them have been presented in a paper-based form (Brenes, 2011, pp. 32–38; Gomez & Helmsing, 2008, pp. 2489–2511; Gregory, 2009, pp. 19–32.; Cato & Suarez, 2012, pp. 106–115), as a voucher (Ruddick *et al*., 2015, pp. 18–30), or a coupon (Ying, 2004), others have processed via digital platform (Lopaciuk-Gonczaryk, 2019, pp. 75–87; Wheatley *et al*., 2011, pp. 84–89). Some studies compare paper-based and digital currencies (Sobeiecki, 2018, pp. 105–124; De Carrillo *et al*., 2018, pp. 125–140; Groppa, 2013, pp. 45–57) and some other pieces of research consider digital and paper-based currencies for their analyses (Marshall & O'Neill, 2018, pp. 273–281; Groppa, 2013, pp. 45–57).  This study also views and compares the awareness of local and digital currencies to have a widened scope.

Several advantages of these currencies have been experienced by their users. For instance, production of goods and services by local firms and income of these enterprises increase by usage of these currencies. Then, these businesses hire unemployed people who live in that region, thus the unemployment rate reduces and employed local citizens earn and spend money in specific regions (North, 2010). This fact also increases local consumption (North, 2010; Ryan-Collins, 2011, pp. 61–67). All these facts enable sustainable economic developments by including all potential local actors in that loop (North, 2010; Williams *et al*., 2001, pp. 119–134; Ryan-Collins, 2011, pp. 61–67). Local currencies also create people's awareness regarding environmental issues and change their propensity to consume (Graugaard, 2012, pp. 243–260). The positive impacts of local currencies on environmental, financial, human and social capital have also been expressed by some studies in the literature (Mauldin, 2015, pp. 462–476; Seyfang & Longhurst, 2013, pp. 65–77).

Apart from their benefits, lack of awareness about local currencies and their technologies have been specified in many pieces of research as one of major impediments to wide usage of these currencies (Warner, 2014; Shahzad *et al*., 2018, pp. 33–40; Sobeiecki, 2018, pp. 105–124). The reason for low awareness of local and digital currencies might stem from administra-

tive processes, system integration problems (Sobeiecki, 2018, pp. 105–124), local constraints (Collom, 2007, pp. 36–83), policies, financial supports and political impacts of the governments (Marshall & O'Neill, 2018, pp. 273–281). For instance, the usage of block chain technology is expensive (Friis & Glaser, 2018, pp. 71–84) and without support and financing from governments, practitioners also face difficulties to implement and make promotions for digital currencies.

Furthermore, lack of funding from other financial institutions, such as banks, also creates difficulties for practitioners of local currencies since they face with credit access problem (Ryan-Collins, 2011, pp. 61–67). For this reason, practitioners of these currencies require high costs for participating (Sobeiecki, 2018, pp. 105–124) and making transactions (Schroeder, 2015, pp. 106–113) in a currency system. For instance, Lewes Pounds in the UK, BerkShare and Toronto Dollars in US (Kim *et al.*, 2016, pp. 344–358) charge for redemption fee, while Stroud pound in England, Chiemgauer in Germany (Ryan-Collins, 2011, pp. 61–67), Sardex in Italy (Cannas, 2017, pp. 223–240) and Bangla-Pesa in Kenya (Ruddick *et al.*, 2015, pp. 18–30) ask for membership fees. On the other hand, Schwanenkirchen's Wara in Germany and The Wörgl, in Austria receive demurrage fee (Warner, 2014), when Stroud pound (Cato & Suarez, 2012, pp. 106–115) and Chiemgauer require fee for stamps (Warner, 2014) from their users.

To overcome these issues, the support of policy makers has become a much-needed factor of a successful implementation and awareness of these currencies. This is because gaining financial support and having efficient governmental administrations can make local currency practitioners attract potential users' attention and reduce the obstacles of local currencies' awareness (Shahzad *et al.*, 2018, pp. 33–40; Seyfang, 2005). In case of receiving support from governments and other institutions, practitioners might apply other strategies, such as making a discount, to increase the awareness of potential users instead of charging their users with these fees. This is because discounts are used for promotion, increase reputation (Li *et al.*, 2018, pp. 2194–2209) and demand of buyers by drawing their attentions especially during economic depressions (Lee *et al.*, 2012, pp. 569–588). Therefore, practitioners and retailers might expand potential users' and customers' awareness by making discounts (Mishra *et al.*, 2016, pp. 1–4). Within this context, this study aims to examine whether local and digital currency awareness of potential users increases by discounts.

Another important aspect is that practitioners of local and digital currencies might consider potential users' characteristics when making discounts because these characteristics can determine the choice of users to obtain

higher levels of discount. In this regard, this study includes age and job position of potential users into the analyses, to make a contributions to academic literature. Although differences in age, income, education, and gender of people regarding their discount propensity have been confirmed by some studies (Duman & Mattila, 2003, pp. 45–57; Lee *et al*., 2012, pp. 569–588), this study investigates discount propensity and digital and local currency awareness of potential users regarding their ages and occupational statuses. This fact makes this research add new values to the existing literature and enables this study to diverge from other bodies of research.

To accomplish these purposes, the researchers gained data from 407 respondents that were the participants of a questionnaire survey and workers of a local company in Cieszyn Silesia region. Binary logistic regression method was performed in SPSS Statistics to examine the associations among selected variables. The study also run Wald statistics, -2 Log likelihood, Cox-Snell $R^2$ and Nagelkerke $R^2$, Durbin Watson test, Variance inflation factors (VIF) and tolerance values to analyse whether the created models fit with the data or not and if criteria of logistic regression test are met by the research.

The rest of the paper is arranged in a following order. Literature review is presented in the next section. Section 3 will construe the methodology and data used in this study. The results of this research will be described and interpreted in Section 4, while Section 5 expounds discussions about results and their potential reasons. Lastly, Section 6 concludes and outlines this research.

## Literature review

Community currencies have been an influential instrument to stimulate productive, commercial and economic activities in a discrete geographical region by providing social and environmental benefits for dwellers of communities. It basically has four different types while time banks are the first and the most frequently used type of those kind of currencies (Michel & Hudon, 2015, pp. 160–171; Seyfang & Longhurst, 2013, pp. 65–77). Time Banks were established by Edgar Chan in 1980s to improve neighborhoods, social relations and social capital, especially for people who faced with social exclusion (Seyfang, 2005). The underlying thought behind Time Banks is that people devote some hours to some services for members to receive other services from other members for the time that they spend (Michel & Hudon, 2015, pp. 160–171; Seyfang, 2005; Seyfang & Longhurst, 2013, pp. 65–77). Thus, everyone can gain services on the

basis of each hour that they spend (Michel & Hudon, 2015, pp. 160–171). Other aims of the Time Banks are to create social networks, harmony between members (Michel & Hudon, 2015, pp. 160–171), mutual satisfaction among them to increase interrelations (Seyfang, 2005), social services, and support reciprocity (Blanc, 2011, pp. 4–10).

The second type of CCs is Mutual Exchange currencies such as Local Exchange Trading Schemes (LETS). The participants of those systems are supported to have dealings in their communities by goods and services (Seyfang & Longhurst, 2013, pp. 65–77; Bonanno, 2018, pp. 89–102). When two members make trade, the seller's account becomes payee and the buyer has debit account with the same sum of credit (Michel & Hudon, 2015, pp. 160–171; Bonanno, 2018, pp. 89–102). Thus, the total amount in both accounts become zero after the transaction and all this process is supported by mutual trust of both sides as they are aware of their responsibilities (Seyfang & Longhurst, 2013, pp. 65–77; Michel & Hudon, 2015, pp. 160–171). Moreover, every member of those schemes can see information about members (Caldwell, 2000, pp. 1–15) via an online and digital system (Seyfang & Longhurst, 2013, pp. 65–77; Bonanno, 2018, pp. 89–102). Those schemes are set without profit making purpose and do not charge their users with any interest or fee (Michel & Hudon, 2015, pp. 160–171; Caldwell, 2000, pp. 1–15). Except for exchanging goods and services, the transactions in those schemes might be based on time (Michel & Hudon, 2015, pp. 160–171) and all the values created by those systems might interchange with national currencies (Michel & Hudon, 2015, pp. 160–171; Caldwell, 2000, pp. 1–15).

Another kind of CCs is Barter markets, which are mix of a mutual exchange system with a local currency. Argentinean barter clubs might be an example of this type. Potential users become members of a club and gain currencies without paying extra fee for interest. The users cannot use these currencies to convert national currencies, because they are basically used to have goods or services (Seyfang & Longhurst, 2013, pp. 65–77; Michel & Hudon, 2015, pp. 160–171) by aiming to increase purchasing power of users (Blanc, 2011). Moreover, they purpose to encourage solidarity economy and sharing economy by increasing awareness of people to share same goods or services with other people to protect environments (Seyfang & Longhurst, 2013, pp. 65–77; Michel & Hudon, 2015, pp. 160–171). According to Blanc (2011, pp. 4–10), this type of currency can also be created by businesses to increase their revenues by motivating buying behavior of their clients

The last type of community currencies and the main focus of this research is local currency. Most of local currencies were founded or devel-

oped by non-governmental and non-profit civil organizations on a voluntary basis (Kim *et al.*, 2016, pp. 344–358; Gomez & Helmsing, 2008, pp. 2489–2511; Blanc, 2011, pp. 4–10). They are created by new innovative technologies, play an important role for sharing economy activities (Gimenez & Tamajon, 2019, pp. 1–19) by being an alternative payment method and a currency (Ali *et al.*, 2014, pp. 262–275). It is widely accepted by many companies as a payment method (Miszczuk, 2018, pp. 83–90; Shahzad *et al.*, 2018, pp. 33–40; Ali *et al.*, 2014, pp. 262–275).

Sales of commodities (Ruddick *et al.*, 2015, pp. 18–30) and services rise (Sobeiecki, 2018, pp. 105–124; Gawthorpe, 2017, pp. 51–64) and business operations increase by using local currencies (Bonanno, 2018, pp. 89–102; Groppa, 2013, pp. 45–57). Due to increasing local consumption, imports from external regions become reduced (Gomez & Helmsing, 2008, pp. 2489–2511) and the currency mostly circulates in a restricted area and does not flow out to other regions (Ryan-Collins, 2011, pp. 61–67; Kim *et al.*, 2016, pp. 344–358). It also decreases the number of pariahs by increasing social inclusion. Furthermore, it encourages old residents who are retired or do not work, provides courses about their usage (Miszczuk, 2018, pp. 83–90). These improvements in socio-economic factors also positively influence national economies and make them more competitive (Fyliuk *et al.*, 2019, pp. 53–69).

However, non-existence of policies, strategies, plans, rules, supports and regulations to control these currencies causes obstacles to putting these currencies into the practices, provide their continuity, their commonly usage and expand their awareness (De Carrillo *et al.*, 2018, pp. 125–140). Many potential users also face difficulties to find out how local and digital currencies work and to understand the meaning of these currencies (Gao *et al.*, 2016, pp. 1656–1668; Poyser, 2018; Walton & Johnston, 2018). Some studies also confirm the positive association between awareness of users and the usage of digital and local currencies (Shahzad *et al.*, 2018, pp. 33–40; Walton & Johnston, 2018).

Awareness not only improves potential users' tendencies to use local currencies, it also makes them easily adopted its new trends and technologies (Belas *et al*, 2014, pp. 219–234, Krishnaraju *et al.*, 2016, pp. 579–595; Shahzad *et al.*, 2018, pp. 33–40). Awareness regarding technological and innovative changes, new trends and their processes, systems and advantages also enable potential users to easily adopt to digital currencies (Shahzad *et al.*, 2018, pp. 33–40; Shareef *et al.*, 2011, pp. 17–35). Therefore, there should be some methods to increase awareness among potential users.

In this regard, discount rate can be used as a tool to draw potential users' attention and increase their awareness since they cause increases in sales and usage of products and services (Mityko & Teiu, 2012, pp. 343–349; Gu *et al*., 2015, pp. 1–4; Mishra *et al*., 2016, pp. 1–4). Discounts also influence people's buying behaviors (Gu *et al*., 2015, pp. 1–4; Mishra *et al*., 2016, pp. 1–4; Lee *et al*., 2015, pp. 109–143). This is because when a good or a service is sold with discounted prices, individuals become more interested with these products (Li *et al*., 2018, pp. 2194–2209) and are more likely to use services (Mishra *et al*., 2016, pp. 1–4). Furthermore, discounts increase the number and velocity of the transactions in local economies but also increase the number of consumers of businesses (Mura & Kajzar, 2019, pp. 24–39, Nagy, 2016, pp. 95–107).

To increase and support usage of local currencies, practitioners and member firms of currencies have also been proposed discounts (Warner, 2014). Since there is lack of information about local currency and its novelty, practitioners of a local currency in Hungary, namely Dukat, make discounts to increase its awareness among potential users (Szemeredi, 2018, pp. 144–159). Similarly, Lendítsekk in Hungary provides 10% discount for its users (Nagy, 2016, pp. 95–107). Some examples of local currencies are also in existence in Brazil and Poland and these currencies also offer discounts to increase the usage and awareness of these currencies (Miszczuk, 2018, pp. 83–90). When people are aware of discounts, their tendency to use services increases because the choices of individuals are affected by their awareness (Patel *et al*., 2012, pp. 205–212).

According to some studies (Rosa-Diaz, 2004, pp. 406–428; Matijová *et al*., 2019, pp. 1–23; Lee *et al*., 2015, pp. 109–143; Suchanek & Kralova, 2018, pp. 151–170) demographic factors are significant predictors of individuals' willingness to receive higher discounts and their satisfaction from services. In this regard, job position might be a significant factor to predict people's propensity for discounted services. According to Lee *et al.* (2012, pp. 569–588), individuals with lower income are more likely to search for discounts. Since people who work in lower level job positions earn lower salaries (Sellers *et al*., 2019, pp. 87–95; Kim & Kim, 2019, pp. 97–108; Gheasi *et al*., 2014, pp. 103–117) they might look for more discounts (Kim & Kim, 2019, pp. 97–108; Lee *et al*., 2012, pp. 569–588). For these reasons, the tendency of higher level positioned workers might be less likely to demand higher discounts, thus their awareness of some services might be less, comparing to potential users who work for lower occupational statuses. For this reason, negative association between awareness and job position of respondents can come into existence.

Another important factor that might influence people's awareness and tendencies to look for discounts is their age. For instance, Duman and Mattila (2003, pp. 45–57) and Lee *et al.* (2012, pp. 569–588) state that younger individuals look for more discounted products. This is because income increases by age due to being less experienced (Sellers *et al.*, 2019, pp. 87–95). Therefore, awareness of discounts among younger individuals might be higher than older people. As older people are not well informed about the usage and content of new technologies and trends, younger individuals are more prone to search for information by frequently using internet (Lee *et al.*, 2012, pp. 569–588). For this reason, younger people might be more likely to look for discounted products and their awareness might increase by making searches in internet. Moreover, Walton and Johnston (2018) find negative relationship between age of individuals and their usage and awareness of digital currencies. Some other studies also corroborate the fact that younger individuals' acceptance to new technologies and trends is higher comparing to older people (Teo *et al.*, 2015, pp. 311–331; Mishra *et al.*, 2016, pp. 1–4). Since local and digital currencies are new phenomenon and created by new technologies, younger people have lower incomes, they might be more aware of these currencies and demand higher discount rates to use local and digital currencies.

## Research methodology

This study is performed to uncover whether awareness of potential users regarding digital and local currencies is positively impacted by discount rates that encourage the usage of these currencies or not. Moreover, this research also investigates if the awareness of potential users differs regarding their age, job positions and the discount rate that they demand. A questionnaire survey was directed to 407 workers of a big company in Cieszyn Silesia region of the Czech Republic, and that data collection process was performed in 2019.

The following questions were selected from the questionnaire to hit the targets of this research: Do you know the term local (community) currency? (Yes, No); Do you know the term digital currency? (Yes, No). ). "How much discount for regional products and services would motivate you to actively use the local currency? (0%, 0.01% to 4.99%, 5 to 20%, more than 20%). Moreover, age is divided into two categories as older (potential users that are more than 50 years old) and younger (50 and less), while job positions are categorized as higher (managerial positions) and lower level occupational statuses (workers, operators, technicians and saleswoman). By

considering empirical results of some of the stated studies in literature re-view this research presumes the following hypotheses:

H1: *Awareness of potential users regarding local currency is positively associated with the discount rate that they demand to use a local currency.*

H2: *Awareness of potential users regarding digital currency is positively related with the discount rates that they demand to use a local currency.*

H3: *A negative association exists between the demanded discount rate by potential users who work for higher job positions and their local and digital currency awareness.*

H4: *A negative association exists between the demanded discount rate by older potential users and their local and digital currency awareness.*

Binary logistic regression test was used by the researchers to investigate the relationships between selected variables. This is because the dependent variable of the models, namely, awareness, is binary, and evaluated by a "Yes (aware)" and "No (unawareness)" question. The authors run Amos SPSS Statistical Software, Version 23 to perform the analyses. Moreover, 5% level of significance at Wald Statistics was taken into consideration to find out the significance of independent variables in the regression models, namely, age, job status and demanded discount rates. In case of having P values more than 5% confidence level, this study fails to reject the null hypotheses that assume the nonexistence of positive relationship between analyzed variables. On the other hand, p values that are less than 5% level of significance make the researcher support alternative hypotheses. One of independent variables, namely, discount rate is continuous, and ordinal data. The ranges of the values for this independent variable are between 0% and more than 20%. Other independent variables are ordered, categorical data that show age and job positions.

The researchers create the following Logistic regression models for H1 and H2 hypotheses, as these models have only one independent variable.
1st and 2nd Binary Logistic regression models:

$$Y_{1,2} = (\beta_0 + \beta_1 X_1) \tag{1}$$

where:
$X_1$ – Independent variable (discount rate);

$Y_{1,2}$ – Dependent variable (awareness of local ($Y_1$) and digital ($Y_2$) currencies by potential users);
$B_1$ – Regression coefficients;
$\beta_0$ – Constant or intercept term.

Regarding H3 and H4 hypotheses, other independent variables job position and age are included to the new models as follows: 3rd and 4th Binary Logistic Regression models:

$$Y_{1,2} = (\beta_0 + \beta_1 X_1 + \beta_2 X_2) \tag{2}$$

where:
$Y_{1,2}$ – Dependent variable (awareness of local ($Y_1$) and digital ($Y_2$) currencies by potential users);
$X_1$ – Independent variable (discount rate);
$X_2$ – Independent variable (job position);

5th and 6th Binary Logistic Regression Models:

$$Y_{1,2} = (\beta_0 + \beta_1 X_1 + \beta_2 X_2) \tag{3}$$

where:
$Y_{1,2}$ – Dependent variable (awareness of local ($Y_1$) and digital ($Y_2$) currencies by potential users);
$X_1$ – Independent variable (discount rate);
$X_2$ – Independent variable (age);
$B_{1,2}$ – Regression coefficients for 3rd, 4th, 5th and 6th regression models;
$\beta_0$ – Constant or intercept term for 3rd, 4th, 5th and 6th regression models.

The research takes observed and predicted values of the dependent variable into the consideration to determine overall fit of the logistic regression models by including -2 log likelihood statistic to the analyzes. Base model only consists of the constant term, while other models include several predictor variables. In case of having lower values from -2 log likelihood with predictors than the values of base model, better model fit comes into existence. This fact also confirms that the created models represent a majority of observations in the data. For instance, when the discount rate is included as a predictor variable in Model-1 and Model-2, -2 log likelihood statistics has decreased by 16.320 and 9.385, respectively.

On the other hand, as it can be seen from the Table-1, adding other predictor variables such as age and job position in other models, -2 Log likelihood statistics has decreased more than the declines in Model-1 and Model-2 (Chi square values differ from 16.618 to 21.627). Thus, existence of more predictor variables in Model-3, Model-4, Model-5 and Model-6 has improved the model fit and these results also prove that age and job positions are good predictors. The decreases in the value of Base model's -2 Log likelihood statistics might be observed under the column of Chi-Square and all these decreases are significant at 5% level of significance since they are lower than the selected confidence level (p values differ from 0.000 to 0.002 and they are all less than 0.05). These results make the researcher state the fact that all created models present better model fit since they have better predictive power for awareness of potential users' than the base model.

The dimension of pseudo $R^2$, namely Cox and Snell $R^2$ and the Nagelkerke $R^2$ are other indicators of model fit and they explain how many percent of the variability in dependent variable springs from the independent variables. Therefore, higher values from these indicators are evidence for better model fits. Considering to the value of Nagelkerke $R^2$ for Model-1, 5.2% variability in awareness of local currency is due to discount rate. But adding age and job position as predicting variables for Model-3 and Model-5 has increased this proportion and confirmed the existence of better model fits to 6.9% and 5.3% respectively. Similarly, when age and job position are included to Model-4 and Model-6, the ability of created models to predict variability in awareness of digital currency rise from 5.2% to 6.2% and 5.6%, respectively.

Table 1 also indicates one of assumptions of logistic regression test, namely independence of errors. The purpose of this assumption is to show if there is a relationship between the cases and the data, thus residual terms need to be independent and non-autocorrelated (Field, 2009, p. 220). To fulfill the requirements of this assumption, the researchers employ Durbin Watson Test. The range of the values of Durbin-Watson Statistic is between 0 to 4 but the values, which are close to 2 and 2, are the indicators of the fact that autocorrelation does not exist between residual terms. According to Table 1, Durbin-Watson statistics for the created models change from 1.833 to 1.883. These values are cogent evidences to confirm the non-existence of autocorrelation between residuals terms. Therefore, this research fulfills the requirement of the independence of errors assumption for the created logistic regression models.

Linearity is another assumption of logistic regression. The researchers focus on "interaction term between the predictor and its log transformation"

(Field, 2009, p. 273) to assess this assumption. In order to prevent violations and to meet the requirement of linearity assumption, interaction terms should be higher than 0.05% level of significance. Significance of interaction terms for each logistic regression model are depicted in Table 2. The significance of the discount rate, age and job positions are greater than the selected significance level and they are in between 0.109 and 0,390. These values substantiate the fact that linearity assumption for logistic regression models has ensured by this study.

The last assumption of logistic regression is multicollinearity. The research pays regard to Variance inflation factors (VIF) and tolerance values to evaluate multicollinearities between independent variables. All of the VIF scores and tolerance values of predictive variables were evaluated individually with awareness. VIF indicates if strong relationship exists between independent variables. As already stated, Model-1 and Model-2 have only an independent variable, thus, they are both excluded from analyses of this assumption. According to Field (2009) and Ho (2014), the values for tolerance should be higher than 0.10, while the upper limit of VIF score should be 10. The results of this assumption for the values of VIF scores differ from 1,010 to 1,017 and tolerance values are in between 0,983 to 0,990. All values from both measurements vindicate that multicollinearities do not exist between variables of this research. For these reasons, this research does not violate any assumptions of logistic regression.

The researchers applied random sampling method and distributed 500 questionnaire surveys to the respondents from 5000 workers of a large company. The sample represents all data and includes respondents that reflect all characteristics of other employees such as same occupational status, gender, age and marital statuses. Although 422 workers fulfilled the questionnaires, due to having missing values and misunderstandings of some of the respondents, 407 questionnaires were included for the analyses of this research.

According to Long (1997), 100 respondents should be evaluated for each independent variable for binary logistic regression models. Since the models of this study have maximum two independent variables, 200 respondents would be required for the analyses of this research. But the researchers investigate 407 non-repeated surveys and this sample size is more than enough to employ logistic regression statistics. Regarding the characteristics of survey participants, majority of respondents are men (353 respondents), less than 50 years old (243 survey participants), have more than 10 year work experience (313 workers), married (269 employees), work in lower occupational status (284 potential users), and reside in Třinec (203 survey attendees).

## Results

As indicated in methodology section, Binary logistic regression Model-1 and Model-2 include only an independent variable, namely discount rate, while the dependent variable is local currency (Model-1) and digital currency (Model-2) awareness. Table 3 presents the findings from Binary Logistic Regression tests for both of those models. The researchers consider Wald Statistics to specify whether discount rate is a significant predictor of local and digital currency awareness of potential users. In this regard, coefficients (β) for each model must not be 0, to confirm the fact that independent variables make significant contribution on local and digital currency awareness of potential users.

In Table 3, the results from Wald Statistics verify that discount rate is statistically significant variable to predict logistic regression equations (Model-1: β = 0.378, Wald $\chi^2$ = 15.653, p = 0.000 < 0.05, Model-2: β = 0.302, Wald $\chi^2$ = 9.007, p = 0.003 < 0.05). This is because both coefficients (β) are different from 0. These results infer that potential users who are unaware of local and digital currencies have lower tendencies to demand higher discount rates. In other words, higher values of discount rate are related with greater possibilities of being aware of local and digital currencies. If the discount rate that potential users demand increases by one unit, their odds of being aware of local and digital currencies will rise by 0.378 and 0.302 respectively. Thus, when demanded discount rate is high, awareness of potential user becomes more. For these reasons, the researchers support H1 and H2 hypotheses that assume positive association between local, digital currency awareness of potential users and discount rates that they demand.

Moreover, the odds ratios are indicated in Table 3 to estimate the strength of relationship between discount rate and awareness. The odds ratio also signalizes "how many times higher the odds of occurrence are for each one-unit increase in the independent variable" (Ho, 2014). When the discount rate increases by one unit, the odds of occurrence for local and digital currency awareness become greater by 1.459 and 1.353 times with 95% confidence interval (CI) between 1.210 and 1.760 and  1.111and 1.648, respectively. Awareness is 1.459 and 1.353 times more likely to occur for potential users who demand more discount rates than other individuals who ask for lower discount rates. Since these odds ratios are higher than 1, it can also be proposed that the awareness is more likely to occur as discount rate increases.

Binary logistic regression analyses were also performed by the researchers to test the hypothesis regarding job positions of potential users,

their demanded discount rate and awareness of local and digital currencies. Table 4 illustrates the results of the logistic regression analyses for Model-3 and Model-4 that have independent variables as discount rate and job position and have a dependent variable, namely, awareness.

As regards Table 4, discount rate and job position have statistically significant influences on the awareness of local and digital currencies at 5% level of significance. As presented in Table 4, β coefficients for discount rate in Model-3 and Model-4 are 0.352 and 0.264, respectively. These positive coefficients show that local and digital currency awareness becomes more likely as discount rate increases. This is because higher values in discount rates are related to higher probabilities of awareness. When it comes to significance of another independent variable of Model-3 and Model-4, namely, job position, it is also found to be statistically significant predictor for these Binary Logistic Regression Models (Model-3 : β = -0.502, Wald $\chi^2$ = 5.248, p = 0.022 < 0.05, Model-4: β = -0.711, Wald $\chi^2$ = 8.779, p = 0.003 < 0.05). However, the coefficients of job position for both models are negative and it clarifies that potential users who work for lower occupational statuses are more likely to be aware of local and digital currencies. If job position of respondents decreases by one unit, odds of occurrence for awareness of local and digital currencies would increase by 0.502, and 0.711 respectively, while discount rate is held constant in these models. These results make researchers fail in the rejection of H3 hypothesis that proposes the negative relationship between highly positioned workers' demanded discount rate and their awareness of local and digital currencies.

Corresponding with odds ratios, odds ratios for job position are 0.605 and 0.491 for local and digital currency awareness, respectively and they are both lower than 1. Therefore, as values from job position increase, the odds of awareness become less likely to occur. In other words, one unit decrease in occupational status, 0.605 and 0.491 times higher the odds of occurrence of local and digital currency awareness. For this reason, a respondent who work in higher job position 0.605 and 0.491 times less likely to be informed about local and digital currencies, respectively.

To test the 4th hypothesis, the study follows the same method that has used for the tests of other hypotheses. When Model-5 and Model-6 are considered, discount rate and age are independent variables and while awareness of local currency (Model-5) and awareness of digital currency (Model-6) are dependent variables. The findings from logistic regression analyses for these models are depicted below in Table 5.

As shown in Table 5, age is not statistically significant predictor in Model-5 since P value of this independent variable is more than the selected significance level (p = 0,585 > 0.05). This result propounds the fact that

age does not make significant contribution to local currency awareness of potential users. Thus, an association does not exist between the age of the respondents and their awareness of local currencies. On the other hand, p value of age is statistically significant for Model-6 (0.012 < 0.05). Although this independent variable is not significant predictor for local currency awareness, it has made statistically significant contributions on digital currency awareness of potential users. However, the coefficient of age is positive (β = 0.971) and it proves the fact that greater values from age are associated with higher possibilities to be aware of digital currencies. Therefore, older potential users who demand higher discounts are more likely to be informed about digital currencies compared to younger users.

Because of having non-significant results of age in Model-5 and positive relationship between age, discount rate and awareness, this research rejects H4 hypothesis, which proposes a negative relationship between selected variables. With reference to odds ratios for these variables, an older potential user who demand more discount rates is 2.640 times more likely to be aware of digital currencies than younger respondents. Because of having odds ratio that is higher than 1 for Model-6 (Odds ratio = 2.640), it can be stated that when age of potential users who demand higher discount rates increases, the odds of being informed about digital currency also rises. However, this fact is not valid for local currency awareness of potential users, because age does not provide significant contributions to awareness of local currencies by the respondents.


**Discussion**

Concerning the association between awareness and discount rate, this study finds results similar to Szemeredi (2018, pp. 144–159), Miszczuk (2018, pp. 83–90) and Patel *et al*. (2012, pp. 205–212) since these studies also highlight the positive relationship between discount rates that individuals are likely to gain and their awareness for goods and services. To investigate the reasons for a positive association between discount rate, local and digital currency awareness of potential users, this research has focused on the characteristics of the respondents in detail. Therefore, job position and age of users are taken into consideration to provide mounting evidences that explain why discount rate and awareness are positively related.

In this regard, this research vindicates the fact that potential users who are workers of lower occupational statuses, are more likely to be aware of local and digital currencies that provide higher discount rates to increase usage of these services. These research findings support the findings of

Sellers *et al*. (2019, pp. 87–95), Kim and Kim (2019, pp. 97–108) and Gheasi *et al*. (2014, pp. 103–117) because these studies also infer a negative relationship between job position and awareness of individuals regarding discounted products and services. The reason why potential users who work in lower job positions are more informed about local and digital currencies might be related to their social relations and activities such as their social media usage. This is because social media influences individuals' decisions and awareness about the usage of discounted products and services (Lee *et al*., 2012, pp. 569–588; Lee *et al*., 2015, pp. 109–143).

With regard to the age of individuals, their awareness of local currencies and their propensity of obtaining higher discount rates, this research does not find any significant relationship. For this reason, this research contradicts with the results of Duman and Mattila (2003, pp. 45–57) and Walton and Johnston (2018) that bear out negative relationship between awareness of older users and the discount rates that they demand. On the other hand, the researchers of this paper affirm the fact that older potential users who look for more discounts are more acquainted with digital currencies. This result is compatible with the finding of Lee *et al.* (2012, pp. 569–588). However, this study objects to the result of Walton and Johnston (2018), Teo *et al.* (2015, pp. 311–331) and Mishra *et al*. (2016, pp. 1–4) because these researchers emphasize the fact that younger individuals' awareness is higher than that of older people. The reason why older people are more informed about digital currencies might be related with higher elasticity in their discount demand and also their internet usage. This is because age and experience are positively related (Mallik *et al*., 2014, pp. 1706–1718) and they have more experience, higher income (Sellers *et al*., 2019, pp. 87–95; Paloniemi, 2006, pp. 439–450) thus, have more opportunities to access to internet (Lee *et al*., 2012, pp. 569–588). For this reason, they can be more informed about digital currencies and discount offers of the practitioners of these currencies.

As it is statistically verified by this empirical research, discount expands the awareness of digital and local currencies. Differently from this, the brand and image of service providers also carry importance in the price reductions, because consumers can be suspicious and not trust those providers who have a bad reputation (Lee *et al*., 2015, pp. 109–143). For those reasons, well known firms or service providers are more reliable from the perspective of service users (Li *et al*., 2018, pp. 2194–2209; Lee *et al*., 2015, pp. 109–143). Moreover, practitioners should look for funding options from governments and other financial institutions to promote these currencies. They also become more likely to provide higher discounts for their users to increase their awareness and participation to local and digital

currency schemes by having more amount of funding. For instance, Digipay4growth is a project that is funded by European Commission and has supported community currency activities in Spain, the UK and Italy by collaborating with governments, SMEs, private and public institutions (Cannas, 2017, pp. 223–240). Herewith, practitioners might apply to this project to receive funding and to accomplish their objectives related with expanding awareness among potential users.

With continuous developments in new technologies, options for people to access to information have increased. Those opportunities have also drawn people's attentions to look for more discounted products and services by using the internet (Choi & Mattila, 2009, pp. 37–47; Lee *et al*., 2012, pp. 569–588). Moreover, success of practitioners also depends on how they acquire and implement new technologies in their business operations (Glabiszewski & Zastempowski, 2016, pp. 61–71). For this reason, effective usage of these channels with discounted offers might carry high importance to increase awareness of local currencies among its potential users.

According to Warner (2014), paper currencies that are easily noticeable and remarkable might increase awareness and widely usage of these currencies. When forming paper currencies, practitioners should also consider some practical hints to draw potential users' attention and their propensity to circulate these currencies. Furthermore, time carries high importance to increase awareness. This is because longer time allows people to be more informed about new facts and their reactions to changes might be changed (Hanna *et al*., 2005, pp. 15–24). In this regard, practitioners should be patient and process other required strategies to increase awareness among its users. For instance, they can create workshops by inviting entrepreneurs, businessmen, academicians, politicians and potential users and so they can reduce obstacles that cause complexity, misunderstandings and unawareness of these currencies. By doing so, practitioners can also make local enterprises to approve the usage and circulation of local currencies in their business operations by improving familiarity of these currencies among local people and increasing their competitiveness in the market.

## Conclusions

Unstoppable developments in the advanced technologies, social networks and cryptocurrencies also a required stimulant tool that positively influences local economic, environmental and social indicators have caused local currencies to be in the spotlight. However, their awareness is still one

of major concerns for their implementation and extensive usage. To deal with this issue, this research offers the fact that higher discount rate can reduce unawareness of these currencies as it has been used for effective marketing strategies. In this regard, this study aims to assess and determine whether local and digital currency awareness of potential users is positively related with their demanded discount rates for the usage of these currencies. To find out the potential reasons of this relationship, the research also consider age and job positions of the respondents as these characteristics might influence their propensity of gaining more discounts.

To attain these goals, the researchers collected data from 407 employees of a big firm in Cieszyn Silesia region of the Czech Republic by performing a questionnaire survey. To investigate the relationship between awareness, discount rate, age and job position, the research applied Binary logistic regression analyses by using SPSS Statistical Software, Version 23. Moreover, to evaluate how fit the models of this study are and to fulfill the linearity, independence of errors and multicollinearity assumptions of binary logistic regression test, the researchers employed Wald statistic -2 Log likelihood, Cox-Snell $R^2$ and Nagelkerke $R^2$, Durbin Watson test, Variance inflation factors (VIF) and tolerance values, and significance of interaction terms. According to results of from these analyses, all created models show better model fit than the base model that consists of only constant term and all assumption of logistic regression method have also been fulfilled.

When it comes to the relationship between local and digital currency awareness and discount rate, this paper also substantiates the positive relationship among these variables. Thus, it can be stated that potential users who are more informed about local and digital currencies, demand higher discount rates than users who are unaware about the existence of these currencies. The results regarding occupational statuses of the respondents also make it clear that when job position of a potential user increases, local and digital currency awareness and demanded discount rate become lower for him. For this reason, existence of a negative relationship between occupational status and awareness is also validated. On the other hand, although, this study does not find any significant relationship between age of the potential users and awareness, age is positively related to the awareness of digital currencies. This finding vindicates the fact that older individuals who demand higher discounts are more aware of digital currencies than younger potential users.

The reasons why potential users who are older and work for lower job positions are more acquainted with digital currencies might stem from higher elasticity in their discount demand, their usage of internet and social media and also their social relations and activities. These factors might also

be strong arguments to explain why individuals who have lower occupational statuses are more aware of local currencies. To regulate these currencies efficiently and expand its awareness among users, practitioners not only need financial support of governments, financial institutions and national-international organizations, but also are in need of participation of local enterprises. Apart from these requirements, forming of paper currencies, image and reputation of practitioners, promotion of these currencies with workshops and effective usage of web by practitioners also loom large to expand awareness of potential users.

Although the results of this empirical paper make significant contributions for academic literature to draw academicians, politicians, individuals and firms' attention, it also has some limitations. For instance, although this study investigates age and occupational statuses of potential users, other characteristics of them can be included by other studies to examine the influences of these factors in the relationship between awareness and discount rate. This research is also limited only with awareness as it is one of the main concerns of the implementation of local currencies. Researchers can also count in other obstacles of widely usage of these currencies by focusing on issues related with security, trust, systematic and political problems of these currencies. Another limitation of this study is the respondents, because they only work for a regional company. More employees from different businesses and citizens of different regions can be analyzed by researchers to have a more comprehensive study. By doing so, individuals from various locations might be compared and this provides researchers with more details about processes of local and community currencies. Because of performing a questionnaire survey in a limited time to gain data from the respondents, the willingness of the respondents might have been another limitation. However, the researchers were careful to deal with this issue.

**References**

Ali, R., Barrdear, J., Clews, R., & Southgate, J. (2014). Innovations in payment technologies and the emergence of digital currencies. *Quarterly Bulletin*, *Q3*. Retrieved from https://www.bankofengland.co.uk/-/media/boe/files/quarterly-bulletin/2014/innovations-in-payment-technologies-and-the-emergence-of-digital-currencies.pdf (02.11.2019).

Belas, J., Cipovova, E., & Demjan, V. (2014). Current trends in area of satisfaction of bank clients in the Czech republic and Slovakia. *Tranformations in Business and Economics*, *13*(3).

Blanc, J. (2011). Classifying "CCs": community, complementary and local curren-cies´ types and generations. *International Journal of Community Currency Re-search, 15*(D). doi: 10.15133/j.ijccr.2011.013.

Bonanno, A. (2018). Assessing local mutual credit as a socio-economic tool for farmers in New York states Hudson Valley. *International Journal of Communi-ty currency Research*, *22*. doi: 10.15133/j.ijccr.2018.008.

Brenes, E. (2011). Complementary currencies for sustainable local economies in Central America. *International Journal of Community currency research*, *15*. doi: 10.15133/j.ijccr.2011.018.

Caldwell, C. (2000). Why do people join local exchange trading systems? *Interna-tional Journal of Community Currency Research*, *4*(1). doi: 10.15133/j.ijccr .2000.006.

Cannas, R. (2017). Embedding social values in tourism management: community currencies as laboratories of social entrepreneurship? In D. Dredge & S. Gyimóthy (Eds). *Collaborative economy and tourism. Tourism on the verge*. Springer, Cham. doi: 10.1007/978-3-319-51799-5_13.

Cato, M., & Suarez, A. M. (2012). Stroud pound: a local currency to map, measure and strengthen the local economy. *International Journal of Community Cur-rency Research*, *16*. doi: 10.15133/j.ijccr.2012.017.

Choi, S., & Mattila, A. (2009). Perceived fairness of price differences across chan-nels the moderating role of price frame and norm perceptions. *Journal of Mar-keting Theory and Practice, 17*(1). doi: 10.2753/MTP1069-6679170103.

Collom, E. (2007). The motivations, engagement, satisfaction, outcomes, and de-mographics of time bank participants: survey findings from a U.S. system. *In-ternational Journal of Community Currency Research, 11*. doi: 10.15133/j.ijccr .2007.004.

De Carrillo, C. I. P., Esteva, J. L. R., Pena, P. N. C., & Pharow, P. (2018). Identi-fication of barriers and solutions for adoption of social, complementary and/or virtual currencies. *International Journal of Community currency Research*, *22*. doi:10.15133/j.ijccr.2018.020.

Duman, T., & Mattila, A. (2003). A logistic regression analysis of discount receiv-ing behavior in the cruise industry: implications for cruise marketers. *Interna-tional Journal of Hospitality & Tourism Administration, 4*(4). doi:10.1300 /J149v04n04_03.

Fyliuk, H., Honchar, I., & Kolosha, V. (2019). The interrelation between economic growth and national economic competitiveness: the case of Ukraine. *Journal of Competitiveness, 11*(3). doi: 10.7441/joc.2019.03.04.

Friis, G., & Glaser, F. (2018). Extending blockchain technology to host customiza-ble and interoperable community currencies. *International Journal of Commu-nity currency Research, 22*. doi: 10.15133/j.ijccr.2018.017.

Gao, X., Clark, G. D., & Lindqvist, J. (2016). Of two minds, multiple addresses, and one ledger: characterizing opinions, knowledge, and perceptions of Bitcoin across users and non-users. In *Proceedings of the 2016 CHI conference on hu-man factors in computing systems*. ACM Digital Library. doi: 10.1145/28580 36.2858049.

Gawthorpe, K. (2017). Which characteristics of communities boost time-banking? Case study of the United States. *International Journal of Community currency Research*, *21*. doi: 10.15133/j.ijccr.2017.008.

Gheasi, M., Nijkamp, P., & Rietveld, P. (2014). A study on undocumented migrant workers in the Dutch household sector. *International Journal of Manpower, 35*(1-2). doi: 10.1108/IJM-08-2013-0196.

Gimenez, A. F. C., & Tamajon, L. G. (2019). An analysis of the process of adopting local digital currencies in support of sustainable development. *Sustainability, 11*(3). doi:10.3390/su11030849.

Glabiszewski, W., & Zastempowski, M. (2016). The ability to assimilate technology as a source of competitive advantage of financial companies in Poland. *Journal of Competitiveness, 8*(4). doi: 10.7441/joc.2016.04.04.

Gregory, L. (2009). Change takes time: exploring structural and developmental issues of time banking. *International Journal of Community Currency Research*, *13*. doi: 10.15133/j.ijccr.2009.003.

Groppa, O. (2013). Complementary currency and its impact on the economy. *International Journal of Community currency Research, 17*. doi: 10.15133/j.ijccr.2013.005.

Gomez, G., & Helmsing, A. (2008). Selective spatial closure and local economic development: what do we learn from the Argentine local currency systems? *World Development, 36*(11). doi: 10.1016/j.worlddev.2007.11.015.

Graugaard, J. D. (2012). A tool for building community resilience? A case study of the Lewes Pound. *Local Environment*, *17*(2). doi: 10.1080/13549839.2012.660908.

Gu, J., Hu, A., Xu, Y., & Huang, L. (2015). The effect of word-of-mouth in flash-sale promotion: from mechanism design perspective. In *2015 International conference on logistics, informatics and service sciences (LISS).* IEEE Explore. doi: 10.1109/LISS.2015.7369605.

Hanna, R. C., Berger, P. D., & Abendroth, L. J. (2005). Optimizing time limits in retail promotions: an email application. *Journal of the Operational Research Society, 56.* doi: 10.1057/palgrave.jors.2601804.

Ho, R. (2014). *Handbook of univariate and multivariate data analysis with IBM SPSSS.* Boca Raton: CRC Press, Taylor and Francis Group.

Jelinek, P., Szalay, Z., & Konecny, A. (2012). Local exchange trading systems in central European post-communist countries. *International Journal of Community Currency Research*, *16*. doi: 10.15133/j.ijccr.2012.018.

Kichiji, N., & Nishibe, M. (2008). Network analysis of the circulation flow of community currency. *Evolutionary and Institutional Economics Review, 4*(2). doi: 10.14441/eier.4.267.

Kim, H., & Kim, M. (2019). Analysis of online food purchase behavior and factors determining online purchases by adult consumers. *Journal of the Korean Society of Food Science and Nutrition*, *48*(1). doi: 10.3746/jkfn.2019.48.1.097.

Kim, S. M., Lough, B., & Wu, C.-F. (2016). The conditions and strategies for success of local currency movements. *Local Economy*, *31*(3). doi: 10.1177/0269094216637332.

Krishnaraju, V., Mathew, S. K., & Sugumaran, V. (2016). Web personalization for user acceptance of technology: an empirical investigation of e-government services. *Information Systems Frontiers*, *18*. doi: 10.1007/s10796-015-9550-9.

Lee, S. H., Bai, B., & Murphy, K. (2012). The role demographics have on customer involvement in obtaining a hotel discount and implications for hotel revenue. Management strategy. *Journal of Hospitality Marketing & Management*, *21*(5). doi: 10.1080/19368623.2012.682622.

Lee, K., Lee, B. & Oh, W. (2015). Thumbs up, sales up? The contingent effect of Facebook likes on sales performance in social commerce. *Journal of Management Information Systems*, *32*(4). doi: 10.1080/07421222.2015.1138372.

Li, L., Rhee, C., & Moon, J. (2018). Identifying the effect of product types in the relationships between product discounts and consumer distrust levels in China's online social commerce market at the era of big data. *KSII Transactions on Internet And Information Systems*, *12*(5). doi: 10.3837/tiis.2018.05.016.

Long, J. S. (1997). *Regression models for categorical and limited dependent variables.* Thousand Oaks: Sage Publications.

Lopaciuk-Gonczaryk, B. (2019). Social Capital formation through a Polish LETS: Challenging the presumed merits of local currencies. *Ecological Economics*, *158*(C). doi: 10.1016/j.ecolecon.2018.12.004.

Mallik, G., Basu, P. K., Hicks, J., & Sappey, R. (2014). Do the determinants of employability and earnings returns produce similar outcomes in metropolitan and regional labour markets? The case of New South Wales, Australia. *Regional Studies, 48*(10). doi: 10.1080/00343404.2013.812780.

Marshall, A. P., & O'Neill, D. W. (2018). The Bristol pound: a tool for localization? *Ecological Economics*, *146*. doi: 10.1016/j.ecoleon.2017.11.002.

Matijová, M., Onuferová, E., Rigelský, E., & Stanko, V. (2019). Impact of selected indicators of tourism capacity and performance in the context of the unemployment rate in Slovakia. *Journal of Tourism and Services*, *10*(19). doi: 10.29036/jots.v10i19.95.

Mauldin, R. L. (2015). Local currency for community development:policy barriers and support. *Journal of Community Practice*, *23*(3-4). doi: 10.1080/10705422 .2015.1091420.

Michel, A, & Hudon, M. (2015). Community currencies and sustainable development: a systematic review. *Ecological Economics*, *116*. doi: 10.1016/ j.ecole con.2015.04.023.

Mishra, A., Gunasekar, S., & Gupta, D. (2016). Influence of product perception and discounts on the preference of online payment. In *IEEE international conference on computational intelligence and computing research*. IEEE Explore. doi: 10.1109/ICCIC.2016.7919691.

Miszczuk, M. (2018). Local currencies as an instrument for implementing the concept of sustainable development. *Problems of Sustainable Development*, *13*(2).

Molnar, S. (2011). Time is of the essence: the challenges and the achievements of a Swedish time banking initiative. *International Journal of Community currency Research*, *15*. doi: 10.15133/j.ijccr.2011.002.

Mityko, D. S. V., & Teiu, C. (2012). Product perception in the case of frequent online buyers empirical evidence. *Procedia Economics and Finance*, *3*. doi: 10.1016/S2212-5671(12)00162-1.

Nagy, H. (2016). Local development initiatives in the spatial economy. *Studia Mundi – Economica, 3*(1). doi: 10.18531/Studia.Mundi.2016.03.01.95-107.

North, P. (2010). *Local money – how to make it happen in your community, transition books*. Totnes, Devon: UIT Cambridge Ltd.

Ozanne, L. (2010). Learning to exchange time: benefits and obstacle to time banking. *International Journal of Community Currency Research*, *14*. doi: 10.15133/j.ijccr.2010.002.

Paloniemi, S. (2006), Experience, competence and workplace learning. *Journal of Workplace Learning*, *18*(7/8). doi: 10.1108/13665620610693006.

Patel, H. K., Johnson, M. L., & Sansgiry, S. S. (2012). Consumers' intention to use generic-drug discount programmes. *Journal of Pharmaceutical Society*, *3*. doi: 10.1111/j.1759-8893.2012.00103.x.

Poyser, O. (2018). Exploring the dynamics of Bitcoin's price: a Bayesian structural time series approach. *Eurasian Economic Review, 9*. doi: 10.1007/s40822-018-0108-2.

Rosa-Diaz, I. M. (2004). Price knowledge: effects of consumers' attitudes towards prices, demographics, and socio-cultural characteristics. *Journal of Product & Brand Management, 13*(6). doi: 10.1108/10610420410560307.

Ruddick, W. O., Richards, M., & Bendell, J. (2015). Complementary currencies for sustainable development in Kenya: the case of the Bangla-Pesa. *International Journal of Community Currency Research*, *19*. doi: 10.15133/j.ijccr.2015.003.

Ryan-Collins, J. (2011). Building local resilience: the emergence of the UK transition currencies. *International Journal of Community Currency Research*, *15*. doi: 10.15133/j.ijccr.2011.023.

Sanz, E. O. (2016). Community currency (CCs) in Spain: an empirical study of their social effects. *Ecological Economics*, *121*. doi: 10.1016/j.ecolecon.2015.11.008.

Schroeder, R. F. (2015). The financing of complementary currencies: problems and perspectives. *International Journal of Community Currency Research*, *19*. doi: 10.15133/j.ijccr.2015.011.

Sellers, K., Leider, J. P., Bogaert, K., Allen, J. D., & Castrucci, B. C. (2019). Making a living in governmental public health: variation in earnings by employee characteristics and work setting. *Journal of Public Health Management Practice*, *25*(2). doi: 10.1097/PHH.0000000000000935.

Seyfang, G.(2005). Community currencies and social inclusion: a critical evaluation. *CSERGE Working Paper EDM, University of East Anglia, The Centre for Social and Economic Research on the Global Environment, 05-09*. Retrieved from https://www.econstor.eu/bitstream/10419/80271/1/506603431.pdf (18.08.2019).

Seyfang, G., & Longhurst, N. (2013). Growing green money? Mapping community currencies for sustainable development. *Ecological Economics, 86*. doi: 10.1016/j.ecolecon.2012.11.003.

Shahzad, F., Xiu, G., Wang, J., & Shahbaz, M. (2018). An empirical investigation on the adoption of cryptocurrencies among the people of mainland China. *Technology in Society*, *55*. doi: 10.1016/j.techsoc.2018.05.006.

Shareef, M. A., Kumar, V., Kumar, U., & Dwivedi, Y. K. (2011). E-government adoption model (GAM): differing service maturity levels. *Government Information Quarterly*, *28*. doi: 10.1016/j.giq.2010.05.006.

Sobeiecki, G. (2018). Sustainability of local complementary currencies: conclusions from an empirical study in Poland. *International Journal of Community currency Research, 22*. doi: 10.15133/j.ijccr.2018.019.

Suchanek, P., & Kralova, M. (2018). The influence of costumers' personal characteristics on their satisfaction with the food industry. *Journal of Competitiveness*, *10*(4). doi: 10.7441/joc.2018.04.10.

Szemeredi, E. (2018). An attempt to categorize Hungarian community currencies. Deturope. *Central European Journal of Regional Development and Tourism, 10*(1).

Teo, A. C., Tan, G. W. H., Ooi, K. B., Hew, T. S. & Yew, K .T. (2015). The effects of convenience and speed in m-payment. *Industrial Management & Data Systems, 115*(2). doi: 10.1108/IMDS-08-2014-0231.

Valek, L. (2012) Development of a complementary currency system: the Czech position in the international context. *Journal of Innovation Management in Small & Medium Enterprises, 9*. doi:10.5171/2012.555344.

Walker, D. (2009). The impact of community currency systems on gender relations in rural northeast Thailand: a hybrid social audit – gender analysis approach. *International Journal of Community Currency Research*, *13*. doi: 10.15133/j.ijccr.2009.005.

Warner, J. (2014). The future of community currencies: physical cash or solely electronic? Pre-Conference DRAFT. Retrieved from: https://www.bundesbank.de/resource/blob/635110/82037fb76367f51215e749eec95330d6/mL/2014-09-16-the-future-of-community-currencies-data.pdf (07.11.2019).

Wheatley, G., Younie, C., Alajlan, H., & McFarlane, E. (2011). Calgary dollars: economic and social capital benefits. *International Journal of Community Currency Research, 15*(A). doi: 10.15133/j.ijccr.2011.009.

Williams, C. C., Aldridge, T., Lee, R., Leyshon, A., Thrift, N., & Tooke, J. (2001). Bridges into work? An evaluation of local exchange and trading schemes (LETS). *Policy Studies, 22*(2). doi: 10.1080/01442870127252.

Ying, S. H. (2004). When poverty comes with globalization: how does community currency empower individuals? ISA Symposium. Hong Kong. Retrieved from https://www.appropriate-economics.org/materials/when_poverty_comes_with_globalization.pdf (21.09.2019).

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## Annex

**Table 1.** Assessing model fit and Independence of Errors Assumption of Logistic Regression Models

| Models | -2 Log likelihood | | | | | | Cox-Snell R² and Nagelkerke R² | | Independence of errors in regression models |
| | Base model's -2 LL statistics | -2 L likelihood with predictors | **Chi-Square** | df | Sig | | Cox-Snell | Nagel-kerke | Durbin Watson Test Statistics |
|---|---|---|---|---|---|---|---|---|---|
| Model 1 | 562.921 | 546.601 | 16.320 | 1 | **0.000** | | 0.039 | 0.052 | 1.837 |
| Model 2 | 525.204 | 515.819 | 9.385 | 1 | **0.002** | | 0.023 | 0.031 | 1.832 |
| Model 3 local.job position | 562.921 | 541.294 | 21.627 | 2 | **0.000** | | 0.052 | 0.069 | 1.862 |
| Model 4 digital. job position | 525.204 | 506.610 | 18.594 | 2 | **0.000** | | 0.045 | 0.062 | 1.883 |
| Model 5 local with age | 562.921 | 546.303 | 16.618 | 2 | **0.000** | | 0.040 | 0.053 | 1.833 |
| Model 6 digital with age | 525.204 | 508.456 | 16.748 | 2 | **0.000** | | 0.040 | 0.056 | 1.861 |

Source: own calculations based on Binary Logistic Regression and Durbin-Watson Tests.


**Table 2.** Linearity Assumption for the Logistic Regression Models

| Variable | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|
| LOGISTIC REGRESSION MODEL-1 | | | | | | |
| Lindis by discount | -0.167 | .104 | 2.565 | 1 | **.109** | .846 |
| LOGISTIC REGRESSION MODEL-2 | | | | | | |
| Lindis by discount | -0.143 | .113 | 1.612 | 1 | **.204** | .867 |
| LOGISTIC REGRESSION MODEL-3 | | | | | | |
| Lindis by discount | -.153 | .106 | 2.099 | 1 | **.147** | .858 |
| Linjob by jobpos | .080 | .092 | .752 | 1 | **.386** | 1.083 |
| LOGISTIC REGRESSION MODEL-4 | | | | | | |
| Lindis by discount | -.099 | .115 | .740 | 1 | **.390** | .906 |
| Linjob by joppos | .270 | .106 | 6.473 | 1 | **.111** | 1.310 |
| LOGISTIC REGRESSION MODEL-5 | | | | | | |
| Lindis by discount | -.160 | .105 | 2.340 | 1 | **.126** | .852 |
| Linage by age | .113 | .122 | .857 | 1 | **.355** | 1.120 |
| LOGISTIC REGRESSION MODEL-6 | | | | | | |
| Lindis bydiscount | -.161 | .115 | 1.964 | 1 | **.161** | .851 |
| Linage by age | -.250 | .159 | 2.490 | 1 | **.115** | .778 |

Source: own calculations based on results of Linearity assumption.

**Table 3.** Local and Digital Currency Awareness of Potential Users and The Discount Rates that They Demand

| Model-1: Local Currency Awareness = – 0.297+0.378*Discount rate | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Variable** | **β** | **SE** | **OR** | **95% CI** | | **Wald statistic** | **p** |
| Discount rate | 0.378 | 0.096 | 1.459 | [1.210 | 1.760] | 15.653 | **0.000** |
| Constant | -0.297 | 0.183 | 0.743 | | | 4.292 | **0.038** |
| Model-2: Digital Currency Awareness= 0.319 + 0.302*Discount rate | | | | | | | |
| **Variable** | **β** | **SE** | **OR** | **95% CI** | | **Wald statistic** | **p** |
| Discount rate | 0.302 | 0.101 | 1.353 | [1.111 | 1.648] | 9.007 | **0.003** |
| Constant | 0.319 | 0.145 | 1.375 | | | 4.840 | **0.028** |

Source: own calculations based on the results of Binary Logistic Regression Analyses.

**Table 4.** Local and Digital Currency Awareness of Potential Users. their job position and The Discount Rates that They Demand

| Model-3: Local Currency Awareness= 0.067 + 0.352*Discount rate -0.502*Job position | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Variable** | **β** | **SE** | **OR** | **95% CI** | | **Wald statistic** | **p** |
| Discount rate | 0.352 | 0.096 | 1.422 | [1.178 | 1.717] | 13.431 | **0.000** |
| Job position | -0.502 | 0.219 | 0.605 | [0.394 | 0.930] | 5.248 | **0.022** |
| Constant | 0.067 | 0.214 | 1.070 | | | 0.099 | 0.753 |
| Model-4: Digital Currency Awareness= 0.853 + 0.264*Discount rate -0.711*Job position | | | | | | | |
| **Variable** | **β** | **SE** | **OR** | **95% CI** | | **Wald statistic** | **p** |
| Discount rate | 0.264 | 0.101 | 1.302 | [1.068 | 1.587] | 6.826 | **0.009** |
| Job position | -0.711 | 0.240 | 0.491 | [0.307 | 0.786] | 8.779 | **0.003** |
| Constant | 0.853 | 0.235 | 2.346 | | | 13.135 | 0.000 |

Source: own calculations based on the results of Binary Logistic Regression Analyses.

**Table 5.** Local and Digital Currency Awareness of Potential Users. their age and The Discount Rates that They Demand

| Model-5: Local Currency Awareness= -0.281 + 0.283*Discount rate -0.167*Age | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Variable** | **β** | **SE** | **OR** | **95% CI** | | **Wald statistic** | **p** |
| Discount rate | 0.383 | 0.096 | 1.467 | [1.215 | 1.771] | 15.914 | **0.000** |
| Age | -0.167 | 0.306 | 0.846 | [0.464 | 1.541] | 0.298 | **0.585** |
| Constant | -0.281 | 0.235 | 0.755 | | | 3.705 | 0.054 |

**Table 5.** Continued

| Model-6: Digital Currency Awareness= 0.236 + 0.283*Discount rate +0.971*Age | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Variable** | **β** | **SE** | **OR** | **95% CI** | | **Wald statistic** | **p** |
| Discount rate | 0.283 | 0.102 | 1.328 | [1.087 | 1.621] | 7.726 | **0.005** |
| Age | 0.971 | 0.386 | 2.640 | [1.239 | 5.624] | 6.327 | **0.012** |
| Constant | 0.236 | 0.149 | 1.266 | | | 2.517 | 0.113 |

Source: own calculations based on the results of Binary Logistic Regression Analyses.