# CIVIL ECONOMY OF DIGITAL CITIZENS

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## Abstract

In addition to profit, a civil economy places a premium on well-being, virtue, and the common good (Bruni & Zamagni, 2016). As the rapid rise of digitalisation has increased the number of digital citizens (Muangtum, 2022) and connected the virtual and real worlds, digital citizens may contribute to the economic prosperity of a nation, particularly a civil economy of digital citizens. This study aims to determine if digital citizenship and demographic characteristics impact the civil economy of digital citizens as assessed by civil engagement and household income. The research investigated Thai people using multivariate analysis of covariance (MANCOVA). The findings reveal that age, occupation, and social media networks (Twitter and YouTube) have an impact on the civil economy of digital citizens. The recommendations based on the findings are as follows: 1) each community should encourage people from various age groups and professions to establish small and medium-sized enterprises (SMEs) that support social and economic activities in the community and 2) relevant sectors should enhance access to the Internet, particularly social media platforms so that people in a community can be connected, increasing community unity; hence, online channels can be used to benefit social and economic activities.

**Keywords:** Civil Economy, Digital Citizen, Digital Citizenship, Digitalisation

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## 1. INTRODUCTION

Global financial capitalism has undermined the moral economy, which is the foundation of all economic transactions. The ideals of reciprocity, accountability, and redistribution, which for millennia governed the marketplace, have been progressively marginalised by a growth model that prioritises profit maximisation (Bruni & Zamagni, 2016). Because the existing economic models are unable to address the issues of an economy that is changing quickly, the concepts of a civil economy are becoming more and more popular. The urgent need to explore a new model of development has come to the attention of the world due to the challenging economic situation, which has gotten worse as a result of the COVID-19 epidemic ("What is civil economy: Interview with Stefano Zamagni", 2020). The civil economy model was first proposed by the Italian economist and philosopher Antonio Genovesi in the 18th century (Dal Degan, 2018; Bergamo, 2020). A civil economy is a sort of economic market that prioritises well-being, virtue, and the common good in addition to traditional economic goals, which focus on profitability (Bruni & Zamagni, 2016). Today, "inclusive prosperity",

"dedication to the common good", and "people's wellness" are commonplace. These notions are developed from the civil economy paradigm. A happy employee, for example, is more efficient and productive. The civil economy does not put the state against the market, nor does it pit civil society against the market; rather, it encompasses all three sectors. Moreover, it is theorised that a company should run a business with care for reciprocity, respect for others, and compassion. As a result, a business is more than just a means of profit; it is also a force for change in the society in which it operates ("What is civil economy: Interview with Stefano Zamagni", 2020). A civil economy, unlike many post-growth or degrowth economies, does not strive to replace the market; rather, it attempts to find market-based solutions to social issues while emphasising moral rights and limiting government interference. It is a distinct and beneficial strategy that provides individuals, organisations, and governments with a framework for a humane and socially responsible market system while being productive and competitive (Bruni & Zamagni, 2016).

The development and application of digital technologies have expanded dramatically and globally. Obtaining information, communicating with friends and family, and discovering the city are just a few of the most popular digitally dependent tasks (Flyverbom, Deibert, & Matten, 2019). Due to the widespread adoption of smartphones, many citizens worldwide now enjoy ubiquitous and continuous connectivity. For example, they can access information, social networks, and entertainment (Economic Commission for Latin America and the Caribbean [ECLAC], 2021). Thus, digital technology has become a part of people's everyday lives. In the past few years, social media has played a significant role, triggering a revolution and necessitating a paradigm shift in the operational strategies of companies around the world (Limna, Siripipatthanakul, & Phayaphrom, 2021). As a medium via which individuals may swiftly receive information, social media facilitates a variety of activities, including information searches, news monitoring, and global connections (Kemp, 2022). Therefore, this technology creates new digital ecosystems offered by global companies like Facebook, Google, Snapchat, and Twitter (Flyverbom, 2016). Consequently, digital citizens exist. A digital citizen is a person who has developed a wide variety of digital skills and is able to participate actively, constructively, and responsibly in regional, nationwide, and international online and offline societies (Richardson & Milovidov, 2019). Many studies (Ribble, 2015; Wannaree & Kraiwanit, 2020; Detlertwarapat & Sonsuphap, 2021) describe a digital citizen as someone who is literate in digital technology and can thus engage in online activities or remain secure while doing so. Other academics (Hintz, Dencik, & Wahl-Jorgensen, 2019; Isin & Ruppert, 2020), on the other hand, define digital citizens as people who self-perform their role in society by using digital technologies. They emphasise the empowering and democratic aspects of the citizenship concept. Being a digital citizen can sometimes relate to the appropriate and accountable use of technology (Qi, Shen, & Dou, 2013). Since digital citizenship analyses the quality of an individual's reaction to membership in a digital community, it frequently demands the involvement of all community members, both public and less apparent ones (Ohler, 2010). Being a responsible digital citizen involves digital literacy, etiquette, online safety, and an understanding of private versus public information.

Due to the rapid growth of digitalisation in today's world, digital citizens have increased dramatically and globally. In 2021, the number of Thailand's Internet users accounted for 54.4 million users, indicating a 17.1% increase. This massive rise in the number of users was due to the COVID-19 pandemic. In the same year, the total amount spent on online purchases in the Thai consumer goods market totalled more than 614 billion baht, a 77.5% increase from the previous year (Muangtum, 2022). According to these statistics, online participation may be the factor that enhances the domestic economy. Numerous studies demonstrate that digital technology boosts economic growth in a number of nations. According to Haftu (2019), the surge in mobile phone adoption has contributed greatly to Sub-Saharan Africa's gross domestic product (GDP) per capita. Bilan (2019) demonstrates that persistent digital development is a characteristic of sustained socioeconomic growth. Myovella, Karacuka, and Haucap (2020) show that digitisation helps the economies of Sub-Saharan Africa and the Organisation for Economic Co-operation and Development (OECD) countries grow in a good way. However, there is no evidence that digitalisation, particularly being digital citizenship, affects a civil economy of a country. Since digitalisation makes the virtual world merge with the real world and digital citizens can boost a nation's economy, there is a sceptical whether people who must act as citizens of society and digital citizens can influence a nation's civil economy or not. Therefore, the aims of this study are to investigate if digital citizenship affects the civil economy and if the demographic characteristics of digital citizens impact the civil economy. The research evaluated Thai citizens, regardless of whether they are digital citizens as well as their demographic characteristics to determine whether or not they influence Thailand's civil economy. This research used the multivariate analysis of covariance (MANCOVA) for analysis. The basis for this study was derived from the modern civil economy theories (Becchetti & Cermelli, 2018; Bruni & Zamagni, 2016; Pabst, 2012), the circular flow model, which describes how money and economic resources cycle among the sectors of an economic system, and digital citizenship concepts. According to the findings, age and occupation affect the civic economy of digital citizens, as do using Twitter and YouTube. The findings of this research are anticipated to serve as a guide for government agencies, the business sector, and the public sector in developing economic and social policies and strategies that strengthen Thailand's healthy civil economy. Therefore, they may improve people's quality of life and expand their awareness of the civil economy and digital citizenship. Due to a robust civic economy and enhanced digital citizenship, Thailand's economy will thrive sustainably.

To outline the structure of the paper, the study is broken down into five sections. The introduction is the first section. Section 2 contains a literature

review. The methodology of the study is described and discussed in Section 3, while the findings of the study and discussions are summarised in Section 4. Section 5 is the conclusion, which summarises the main findings, provides implications of the results, indicates the limitations of the study, and provides recommendations for further study.

## 2. LITERATURE REVIEW

### 2.1. Being digital citizens

People who self-identify as digital citizens frequently engage in intensive information technologies (IT) use, such as creating blogs, accessing social networks, and creating online media ("Are you a digital citizen?", 2005). Although digital citizenship commences when a child, adolescent, or adult registers an email account, uploads photos on the Internet, and accesses e-commerce to purchase goods online, the process of becoming a digital citizen extends beyond just Internet use (Richardson & Milovidov, 2019). The concept of digital citizenship can be as simple as pertaining to technological aspects and digital competencies (Ribble & Bailey, 2007), or as complex as emphasising social justice and alternative technologies (Emejulu & McGregor, 2019). Burns and Gottschalk (2019) define digital citizenship as the following: competent and positive interactions with digital technology (access and skills); active and responsible participation (empowerment and etiquette); and lifelong learning in formal, non-formal, and informal settings (including risk management and resilience), which is a set of guidelines for using digital technology. Early concepts of digital citizenship were focused on the individual's right to access and engage online in order to bridge the digital gap (Pangrazio & Sefton-Green, 2021). Currently, the link between citizenship and the digital world has grown significantly more complex. This is especially true with regard to collective identities and social networks, which provide several alternatives.

Social inclusion is one of the most significant benefits of engaging in online debates through digital citizenship. In a study on civic engagement, it was found that citizen-powered democracy may be begun through web-based information sharing, direct state-to-public communication signals, and social media strategies from private and public organisations (Dubow, Devaux, Van Stolk, & Manville, 2017). In fact, it was discovered that the community-based feature of social networking sites enables users to feel more socially involved and aware of political problems that their friends in the network have been observed to interact with, a phenomenon known as a second-order effect (Voorveld, van Noort, Muntinga, & Bronner, 2018). As a result, two sorts of opportunities arise, the first of which is the possibility to reduce obstacles, which can facilitate exchanges. They also have the chance to take part in disruptive innovation, which makes it easier and more comfortable for people who were less interested in politics before to organize. The use of information and communication technologies (ICTs) by governments, whether in developed or developing countries (Adjei-Bamfo, Maloreh-Nyamekye, & Ahenkan, 2019), facilitates integrated policies and public services and promotes strong and transparent institutions, thereby contributing to the achievement of sustainable development (United Nations, 2016). Advances in ICT have enabled the transformation of the government-citizen relationship, which is essential for achieving sustainable development (Castro & Lopes, 2022). Having limited access to technology can be a significant barrier to becoming a digital citizen, as many fundamental processes, such as tax report filing, birth registration, and the use of websites to support candidates in political campaigns (e-democracy), are now exclusively accessible online. In addition, many cultural and commercial organisations exclusively publish information on their websites. This information will be inaccessible to non-digital citizens, which may result in social isolation or economic stagnation.

The distinction between digital and non-digital citizens is frequently referred to as the "digital divide" (van Dijk, 2020). In poorer nations, there are fewer digital citizens (United Nations, 2019). They are the individuals who employ technology to overcome native difficulties, such as underdevelopment, injustice, and even armed conflict (Anderson & Rainie, 2020). As the access to the Internet has increased in many developing countries, the digital divide is currently a topic of academic dispute. However, the location of access (work, home, public library, etc.) has a considerable impact on how much access will be used, if in any way related to the citizenry. Differences in the employment of everyday technology also contribute to an educational divide. According to research evaluated by the ACT Center for Equity in Learning, 85% of respondents have access to two to five devices at home. One percent of respondents indicated that they lacked access to any gadgets at home. The data indicates that affluent families have greater access to electronic devices. Also, 24% of those who said they only used one device at home lived in small, out-of-the-way towns, and more than half of them said that the device was a smartphone. This could make it harder to do homework (Moore, Vitale, & Stawinoga, 2018).

### 2.2. Civil economy: The definition in this study

Bruni and Zamagni introduced the notion of civil economics in 2007, with the intention of integrating economic market exchanges with classical virtue ethics normative norms. The historical tradition of the civil economy has viewed economic activity as a site of civilization, with the realisation of social well-being and the common good dependent on the development of civic virtues across the entire society. The term "civil virtue" was described as a person's capacity to both recognise the public interest and act in accordance with it, and these characteristics were to be fostered via education and work by various institutions. Public faith is another phrase associated with this concept. It was considered a prerequisite for economic growth. Public faith demanded truthfulness and was not a tool for advancing the public benefit. In the current social and economic system, modern civil economic concepts emphasise efficiency and redistribution, particularly in the form of reciprocity, while the relevance of individual ethics has been

neglected. According to this principle, the market must allocate all products and services efficiently. This concept's foundation, contractual trade, may lead to Pareto optimality, a market condition in which no individual or preference criterion can be made better off without making at least one individual or preference criterion worse off. When the market cannot produce social outcomes that are fair in terms of distributional justice, it will be up to the government to redistribute people's wealth and incomes (Bruni & Zamagni, 2007).

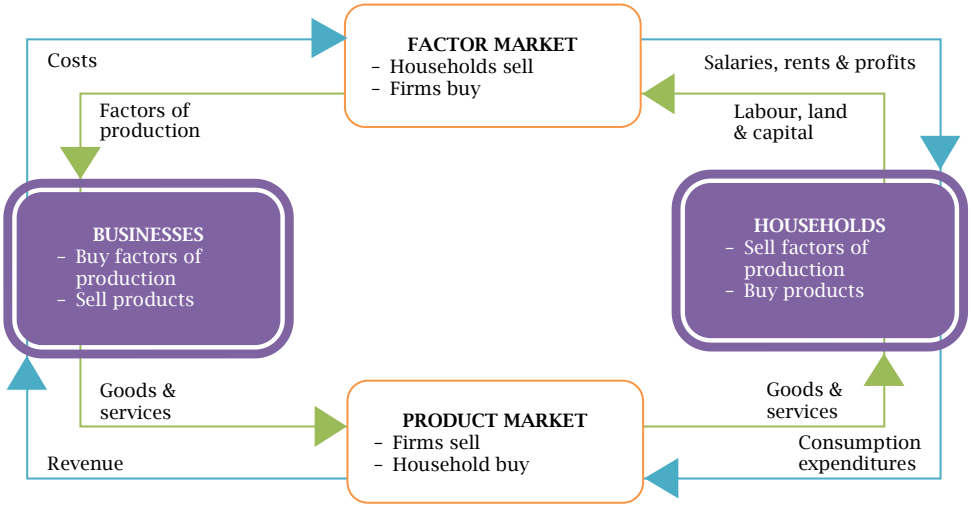
The current global capitalism crisis offers a once-in-a-lifetime chance to define an alternative to the complicit collaboration of central governments and free markets that characterises a liberal political economy. From this point of view, the suggested shift of focus from the self-interested pursuit of power or riches (or both at the same time) to the goal of the common good paves the way for modern economics to be transformed. A civil economy, where markets and states are part of the social ties and civic bonds that make up society, is another option. The civil economy paradigm can be an alternative to society if one of the three conditions given below is achieved. First, some individuals shift away from entirely self-centered preferences and develop other-centered and relational skills that enable them to manage social issues. Next, parts of the production system vary from the paradigm of profit maximisation in order to accommodate the interests of stakeholders other than shareholders. Lastly, in addition to GDP, well-being is the stock of society's cultural, natural, spiritual, and economic resources (Becchetti & Cermelli, 2018).

Pabst (2012) suggests some practical social policies that can contribute to a civil economy. Combining GDP-based measures with well-being indicators (such as the United Nations (UN) human development index and general well-being) is the initial step. The next phase must be to combine universal, objective purposes or goals with unique, customised methods or measures, putting worker autonomy, engagement, and cooperation ahead of both bureaucracy and managerial control. In an endeavour to eradicate absolute poverty and minimise income and wealth imbalances, welfare and social policies should also prioritise individual and community skills. Individual property and other rights must be supported by community ownership of shared resources such as land and real estate. The economy will improve if the minimum wage is replaced with a "living wage" that represents the real value of labour. Many workers and their families would benefit, and production would go up because people would be happier at work and come up with better ideas (Pabst, 2012).

### 2.3. Circular flow model

Circular flow models have aided in comprehending the economic connections between enterprises (businesses) and individuals (households or the general public) for over a century (McClure & Thomas, 2018). In the 18th century, economist Richard Cantillon established the concept of circular flow, which was then expanded by Quesnay, Marx, Keynes, and numerous other economists (Mendes, 2020). It is one of the most fundamental macroeconomic ideas. Figure 1 illustrates the two-sector model, which is the simplest model consisting of only two sectors: individuals or households and businesses. In this model, it is believed that households spend their entire incomes on goods and services generated by companies. As a result, no taxes, savings, or investments are linked to other sectors (CFI Team, 2021). According to Figure 1, how an economy runs can be simplified as two cycles flowing in opposite directions. The circles represent an economy system, which includes three main elements: businesses, consumers, and markets (product market and factor market). Households purchase goods and services to fulfil their needs through consumption (demand) in the product market through which business sectors provide their products (supply). These businesses, meanwhile, need resources in the production of outputs. Hence, they spend money, which is remuneration in the forms of salaries, rents, and profits to individuals, for acquired resources (such as labour, land, and capital) supplied by households through the factor market. In turn, businesses convert those resources into goods and services.

**Figure 1.** Two-sector circular flow model




*Source: Adapted from Panpon, Kraiwanit, and Kittipat (2020).*

Through its extensive use in research, the circular flow model has had a substantial influence on the knowledge of economics through its extensive use in numerous research. The circular flow model may be used to measure national income. The sectors in the circular flow model are the components of the national income calculation. The expenditure approach measures a nation's GDP as the total of household consumption, private domestic investment, government consumption and investment, and net exports. Next, the model may describe interdependent comprehension. The circular flow model underlines the understanding of interaction across economic system sectors. Activity and financial flows cannot exist apart from other sectors. Furthermore, the model can detect injections and leakages. The circular flow of an economy is balanced when the sum of its injections and leakages is equal. If injections exceed leakage, the national income will increase. If injections are less than leakage, national revenue will decline (CFI Team, 2021).

## 3. RESEARCH METHODOLOGY

### 3.1. Data collection

The population is employed Thai citizens residing in Thailand and over 18 years old. Samples were selected by a convenience sampling method across six regions of Thailand (northern, northeast, central, western, eastern, and southern Thailand) to represent the Thai population. In each region, 120 samples were selected, totaling 720 people. After screening the data, 104 surveys were eliminated due to uncompleted answers or other defects; hence, only 616 forms are remaining for data analysis. The data collection duration was between March 15, 2022, and May 15, 2022.

Independent variables include *demographic factors* (*gender, age*, *education*, *occupation*, and *social media platform*) and *digital citizenship*. The dependent variable is the *economy of digital citizens*, which can be measured by *civil participation contributing to a civil economy* (*donation*, *volunteerism*, *community cooperation*, and *environmental protection*) and *economic activity* (*income per household*).

### 3.2. Study tool

An online survey is a tool for this study. The questionnaires were divided into three parts: 1) checklist questions regarding the demographic characteristics of respondents; 2) ten (10) multiple choice questions of a digital citizen qualification test; 3) four (4) questions of civil participation which contribute to a civil economy.

In the first part, questions regarding the demographic characteristics of respondents were based on independent variables (*gender*, *age*, *education*, *occupation*, and *social media platform*), which were selected based on document analysis. *Digital citizenship* is another independent variable; hence, participants were tested to determine whether they were digital citizens or not. In the second part, ten questions of a digital citizen qualification test were divided into three aspects, based on the digital citizenship definition by Burns and Gottschalk (2019), which include 1) access and skills; 2) empowerment and etiquette; 3) risk management and resilience. If a respondent has a score of 5 or above, they will be classified as a digital citizen; otherwise, they would be classified as non-digital citizens. An *economy of digital citizens*, developed from the circular flow model (Mendes, 2020; Panpon et al., 2020), is a dependent variable. It can be defined by civil participation and economic activity. While economic activity is represented by household income, the participation is divided into four activities based on the concept of the modern civil economy (Becchetti & Cermelli, 2018; Bruni & Zamagni, 2016; Pabst, 2012) and they are 1) donation; 2) volunteerism; 3) community cooperation; 4) environmental protection. This *civil participation* is a dummy variable, which equals one (1) if a participant participates in at least one activity; otherwise, it becomes zero (0). For example, if a participant has ever joined any activities regarding donation, volunteerism, community cooperation, or environmental protection in at least one activity, this one will be scored 1. If a participant has participated in two or more activities, such as donation and environmental protection, this one will be unquestionably scored 1 as well. In contrast, if a participant has never participated in any previously mentioned activities, the score of this person will become 0.

### 3.3. Data analysis and alternative method

The data were analysed using descriptive analysis and variable correlation (multivariate analysis of covariance, MANCOVA), which examines the differences between groups of one or more independent variables and a group of dependent variables.

As any abstract variable may be quantified, quantitative approaches may be advantageous in terms of visible proof. However, analysing nation's macroeconomic characteristics with small-scale data may be erroneous. Consequently, a larger scale evaluation may help to increase the accuracy of the study, but it requires time. Using secondary data gathered from official national organisations may save time and contribute to large-scale research, for example, examining Thailand's GDP contribution such as private consumption, which contributes to the development of a nation's civil economy.

## 4. RESULTS AND DISCUSSION

First, the qualification of *digital citizenship* (independent variable) and *income per household* (dependent variable) were explored and the results are then revealed in Table 1. The average digital citizenship score accounts for 5.97, while the average income per household of Thais is 164153.003.

**Table 1.** Mean and standard deviation of digital citizenship and income per household

| *Variable* | *Samples* | *Mean* | *SD* |
|---|---|---|---|
| *Digital citizenship* | 616 | 5.97 | 2.071 |
| *Income per household* | 616 | 164153.003 | 503283.0856 |
| Total | 616 | | |

Then civil participation contributes to the *civil economy*, a dependent variable, including *donation*, *volunteerism*, *community cooperation*, and *environmental protection*, as explored and the results are shown in Table 2, Table 3, Table 4, and Table 5. This *civil participation* is a dummy variable, which equals one (1) if a participant participates in at least one activity; otherwise, it becomes zero (0). According to Table 2, 20.8% of participants have never participated in donation, whereas 79.2% of citizens have participated in this activity.

**Table 2.** The percentage of individuals who have participated in donation

| *Donation participation* | *n* | *Percentage (%)* |
|---|---|---|
| No | 128 | 20.8 |
| Yes | 488 | 79.2 |
| Total | 616 | 100.0 |

Table 3 indicates that 22.4% of respondents have never participated in volunteerism, whereas 77.6% of those have participated in volunteerism.

**Table 3.** The percentage of individuals who have participated in volunteerism

| *Volunteerism participation* | *n* | *Percentage (%)* |
|---|---|---|
| No | 138 | 22.4 |
| Yes | 478 | 77.6 |
| Total | 616 | 100.0 |

Table 4 reveals that the majority of participants, 75.0%, have participated in community cooperation, while a quarter, or 25.0%, have never engaged in such activity.

**Table 4.** The percentage of individuals who have participated in community cooperation

| *Community cooperation participation* | *n* | *Percentage (%)* |
|---|---|---|
| No | 154 | 25.0 |
| Yes | 462 | 75.0 |
| Total | 616 | 100.0 |

Table 5 indicates that just 14.1% of participants have never participated in environmental protection, while 85.9% of those have participated in environmental protection.

**Table 5.** The percentage of individuals who have participated in environmental protection

| *Environmental protection participation* | *n* | *Percentage (%)* |
|---|---|---|
| No | 87 | 14.1 |
| Yes | 529 | 85.9 |
| Total | 616 | 100.0 |

This section is the examination of MANCOVA analysis to test whether independent variables (*gender*, *age*, *education*, *occupation*, *social media platform*, and *digital citizenship*) have an impact on the dependent variable (*civil participation contributing to a civil economy* and *economic activity*). Typically, a MANCOVA statistical assumption test is designed to evaluate the existence of a link between two or more groups of variables and their degree of correlation. According to Table 6, dependent variables, *civil participation* and *economic activity* (*income per household*) show a correlation at a significance level of 0.05, towards the positive direction. Hence, MANCOVA is eligible for the data analysis as the two groups of dependent variables are correlated.

**Table 6.** The correlations of variables by Pearson correlation

| *Pearson correlations* | | *Civil participation* | *Income per household* |
|---|---|---|---|
| ***Civil participation*** | Pearson correlation | 1 | 0.083** |
| | Sig. (2-tailed) | | 0.039 |
| | N | 616 | 616 |
| ***Income per household*** | Pearson correlation | 0.083** | 1 |
| | Sig. (2-tailed) | 0.039 | |
| | N | 616 | 616 |

*Note: ** Correlation is significant at the 0.05 level (2-tailed).*

According to Table 7, the variance of the independent variables tested by the Box's test of equality of covariance matrices method reveals a difference in variance between groups of independent variables (*gender*, *age*, *education*, *occupation*, *social media platform*, and *digital citizenship*) at a significant level of 0.05, which is not in accordance with the MANCOVA assumption or there is a violation of assumption. This can lead to the test's robustness, causing the MANCOVA test that normally uses Wilk's lambda must be replaced with Pillai's trace (Tabachnick & Fidell, 2001) because it is more reliable. However, the test statistics usually show similar results.

**Table 7.** Box's test of equality of covariance matrices

| **Box's test** | **560.076** |
|---|---|
| F | 13.207 |
| df1 | 39 |
| df2 | 6688.102 |
| Sig. | < 0.001 |

The null hypothesis ($H_0$) that the observed covariance matrices of the dependent variables are equal across groups is tested.

$$Design: Intercept + Gender + Age + Twitter + \\ + YouTube + Digital\ citizen \quad (1)$$

The study of the correlation between the dependent variable and independent variables, according to Table 8, indicates that *age*, *occupation*, and *social media platform* (Twitter and YouTube) have an impact on the *economy of digital citizens* (*civil participation* and *income per household*) at a significant level of 0.05, as evidenced by Pillai's traces and other statistics. Therefore, these significant variables were used for the next analysis, while other insignificant ones were eliminated.

**Table 8.** Multivariate tests[a]

| Effect | | Value | F | Hypothesis df | Error df | Sig. |
|---|---|---|---|---|---|---|
| Intercept | Pillai's trace | 0.568 | 394.887[b] | 2.000 | 601.000 | < 0.001 |
| | Wilks' lambda | 0.432 | 394.887[b] | 2.000 | 601.000 | < 0.001 |
| | Hotelling's trace | 1.314 | 394.887[b] | 2.000 | 601.000 | < 0.001 |
| | Roy's largest root | 1.314 | 394.887[b] | 2.000 | 601.000 | < 0.001 |
| Age | Pillai's trace | 0.049 | 3.799 | 8.000 | 1204.000 | < 0.001 |
| | Wilks' lambda | 0.951 | 3.802[b] | 8.000 | 1202.000 | < 0.001 |
| | Hotelling's trace | 0.051 | 3.805 | 8.000 | 1200.000 | < 0.001 |
| | Roy's largest root | 0.037 | 5.549[c] | 4.000 | 602.000 | < 0.001 |
| Occupation | Pillai's trace | 0.061 | 3.806 | 10.000 | 1204.000 | < 0.001 |
| | Wilks' lambda | 0.940 | 3.808[b] | 10.000 | 1202.000 | < 0.001 |
| | Hotelling's trace | 0.063 | 3.809 | 10.000 | 1200.000 | < 0.001 |
| | Roy's largest root | 0.044 | 5.251[c] | 5.000 | 602.000 | < 0.001 |
| Twitter | Pillai's trace | 0.029 | 9.051[b] | 2.000 | 601.000 | < 0.001 |
| | Wilks' lambda | 0.971 | 9.051[b] | 2.000 | 601.000 | < 0.001 |
| | Hotelling's trace | 0.030 | 9.051[b] | 2.000 | 601.000 | < 0.001 |
| | Roy's largest root | 0.030 | 9.051[b] | 2.000 | 601.000 | < 0.001 |
| YouTube | Pillai's trace | 0.014 | 4.229[b] | 2.000 | 601.000 | 0.015 |
| | Wilks' lambda | 0.986 | 4.229[b] | 2.000 | 601.000 | 0.015 |
| | Hotelling's trace | 0.014 | 4.229[b] | 2.000 | 601.000 | 0.015 |
| | Roy's largest root | 0.014 | 4.229[b] | 2.000 | 601.000 | 0.015 |
| Digital citizenship | Pillai's trace | 0.001 | 0.174[b] | 2.000 | 601.000 | 0.841 |
| | Wilks' lambda | 0.999 | 0.174[b] | 2.000 | 601.000 | 0.841 |
| | Hotelling's trace | 0.001 | 0.174[b] | 2.000 | 601.000 | 0.841 |
| | Roy's largest root | 0.001 | 0.174[b] | 2.000 | 601.000 | 0.841 |

*Note: a. Design: Intercept + Gender + Age + Twitter + YouTube + Digital citizenship. b. Exact statistic. c. The statistic is an upper bound on F that yields a lower bound on the significance level.*

Table 9 indicates that at the 5% significant level, *age*, *occupation* and *social media platform* (Twitter and YouTube) show statistical significance for dependent variables, an *economy of digital citizens* (*civil participation* and *income per household*). These results are in line with the results in Table 8. Moreover, this model indicates that these significant independent variables can explain about 9.6% of the independent variable which is an *economy of digital citizens* ($R^2$ = 0.096 = 9.6%).

**Table 9.** Tests of between-subject effects

| Source | Dependent variable | Type III sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|---|
| Corrected model | *Civil participation* | 3.503[a] | 13 | 0.269 | 4.911 | < 0.001 |
| | *Income per household* | 68063521579864.250[b] | 13 | 5235655506143.404 | 3.106 | < 0.001 |
| Intercept | *Civil participation* | 43.335 | 1 | 43.335 | 789.855 | < 0.001 |
| | *Income per household* | 14731343648823.555 | 1 | 14731343648823.555 | 8.740 | 0.003 |
| Age | *Civil participation* | 0.804 | 4 | 0.201 | 3.663 | 0.006 |
| | *Income per household* | 28304803932839.383 | 4 | 7076200983209.846 | 4.198 | 0.002 |
| Occupation | *Civil participation* | 1.159 | 5 | 0.232 | 4.223 | < 0.001 |
| | *Income per household* | 27342965484565.480 | 5 | 5468593096913.096 | 3.244 | 0.007 |
| Twitter | *Civil participation* | 0.752 | 1 | 0.752 | 13.712 | < 0.001 |
| | *Income per household* | 9242337518440.932 | 1 | 9242337518440.932 | 5.483 | 0.020 |
| YouTube | *Civil participation* | 0.408 | 1 | 0.408 | 7.442 | 0.007 |
| | *Income per household* | 2394523934763.788 | 1 | 2394523934763.788 | 1.421 | 0.234 |
| Digital citizenship | *Civil participation* | 0.002 | 1 | 0.002 | 0.033 | 0.856 |
| | *Income per household* | 551106982550.558 | 1 | 551106982550.558 | 0.327 | 0.568 |
| Error | *Civil participation* | 33.028 | 602 | 0.055 | | |
| | *Income per household* | 1014706594124275.100 | 602 | 1685559126452.284 | | |
| Total | *Civil participation* | 577.000 | 616 | | | |
| | *Income per household* | 1193892786250000.000 | 616 | | | |
| Corrected total | *Civil participation* | 36.531 | 615 | | | |
| | *Income per household* | 1082770115704139.400 | 615 | | | |

*Note: a. $R^2$ = 0.096 (Adjusted $R^2$ = 0.076). b. $R^2$ = 0.063 (Adjusted $R^2$ = 0.043).*

When examining the relationship between independent variables (*demographic factors* and *digital citizenship*) and the dependent variable (an *economy of digital citizens*, as indicated by *civil participation* and *income per household*), only certain demographic factors (age, occupation, and use of Twitter and YouTube) are associated with an economy of digital citizens. This indicates that whether or not you are a digital citizen, you have an influence on the economy of digital citizens and may contribute to it. In Thailand, for instance, several communities promote social initiatives such as hospital contributions via public broadcasting. Therefore, the community's residents are able to receive information through speakers put on utility poles. Donors are capable of participating in social activities and contributing to the common good in society even though they may not be digitally literate. Consequently, regardless of digital citizenship, individuals can contribute to a civil economy. Age and occupation have a significant impact on the economy of digital citizens. This may be because age and career influence individual income. When individuals have an adequate and secure income, they will be able to effectively manage their income and time to participate in civic sector and social activities. Consequently, these individuals are likely to have more time for civic engagement and the ability to spend more money on social activities. In addition, engagement in some

social activities may be advantageous for certain jobs, such as company owners. For instance, corporate social responsibility (CSR) can be deducted from taxes (Sreesing, Zhang, & Huang, 2019).

## 5. CONCLUSION

Existing economic models have proven incapable of addressing the difficulties of a rapidly changing economy; thus, notions of a civil economy are gaining popularity. A civic economy is a type of economic market that promotes well-being, virtue, and the common good in addition to profit-driven economic aims. As the fast expansion of digitalisation has increased the number of digital citizens and connected the virtual and real worlds, digital citizens may contribute to the economic success of a nation and a digital citizens' civil economy. Age, occupation, and social media networks (Twitter and YouTube) affect the civil economy of digital citizens. Consequently, independent of digital citizenship, anyone may be able to support the civil economy of a nation. Based on the findings, suggestions are developed to improve the digital citizen's civic economy. First, each community should encourage members of varying ages and professions to establish small and medium-sized enterprises that support social and economic activity. Consequently, a community's economy will be revitalised as money and advantages from social involvement circulate throughout the community. In addition, diversity in age and proficiency can contribute to the development of a variety of social activities that attract a large number of individuals from various backgrounds. Next, relevant sectors such as government agencies, corporate sectors, and locals should boost access to digital technology, particularly social media platforms, so that individuals in a community may engage with one another, therefore increasing community cohesion. Consequently, social media platforms may be advantageous for social and commercial endeavours, such as publicising an event. This can increase social engagement in a community, strengthen the digital abilities of residents, and stimulate the local economy.

The study has the following drawbacks. The term "civil economy" has no clear meaning because there has only been a limited amount of study on it, both domestically and abroad. Therefore, researchers determined this word's meaning based on monthly household income and civic engagement. Setting an age limit of 18 or older for participants may be too strict because students in Thai schools are required to participate in at least one civic activity if they are between the ages of 17 and 20. This is not a voluntary involvement; it is a must. Moreover, although there is a correlation between household income and civil participation, it is quite weak. For future research, larger-scale examinations should be conducted to portray the macroeconomics of the Thai civil economy as a whole. Although abstract factors such as the civil economy of digital citizens may be quantified and quantitative methodologies may be useful in terms of observable evidence, it may be erroneous to analyse the macroeconomic aspects of a nation using small-scale data. Therefore, a larger-scale examination may assist in improving the study's accuracy, but it takes time. Using secondary data collected from official national organisations might save time and contribute to a large-scale study, for example, assessing Thailand's GDP contribution, such as private consumption, which adds to the growth of a nation's civil economy. In addition, the influence of community enterprises on the civil economy should be investigated in order to expand knowledge of the civic sector.

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## APPENDIX. DEFINITION OF VARIABLES

**Table A.1.** Definition of independent variables

| *Independent variables* | *Definition and description* |
|---|---|
| *Demographic factors:* | |
| – *Gender* | Male, female, and unidentified |
| – *Age* | Under 25 years old, 25–34 years old, 35–44 years old, 45–54 years old, 55 years old, and over |
| – *Occupation* | Private sector employees, government employees/state enterprise employees, business owners, freelance, agriculture, community enterprise |
| – *Social media platform* | Line, Facebook, Instagram, Twitter, Pinterest, WhatsApp, YouTube, WeChat, Blog, LinkedIn |
| *Digital citizenship* | Participants were required to complete a digital citizenship qualification test. The questions were created based on the digital citizenship definition by Burns and Gottschalk (2019), which include 1) access and skills; 2) empowerment and etiquette; 3) risk management and resilience.<br>Classified as a digital citizen *(obtained 5–10 scores);*<br>Classified as a non-digital citizen *(obtained 0–4.99 scores).* |

**Table A.2.** Definition of dependent variables

| *Dependent variables* | *Definition and description* |
|---|---|
| *A civil economy of digital citizens* | An economy that places a premium on well-being, virtue, and the common good in addition to making profits (Bruni & Zamagni, 2016). For the contribution of well-being, virtue, and the common good, this is represented by civil participation contributing to a civil economy, including four activities: donation, volunteerism, community cooperation, and environmental protection. For the contribution of profitability, this is measured by economic activity, and this study used income per household to represent economic activity. |
| *Civil participation contributing to a civil economy:* | This civil participation is a dummy variable, which equals one (1) if a participant participates in at least one activity once in their life; otherwise, it becomes zero (0). For example, if a participant has ever joined any activities regarding donation, volunteerism, community cooperation, or environmental protection in at least one activity once, this one will be scored 1. If a participant has participated in two or more activities, such as donation and environmental protection, this one will be also scored 1 as well. In contrast, if a participant has never participated in any previously mentioned activities, the score of this person will be 0. |
| – *Donation* | Participants have donated money, food, or other items to an individual, group, or official or informal organisation. |
| – *Volunteerism* | Participants have joined an official or informal organisation or volunteered on their own, they are considered volunteers. |
| – *Community cooperation* | Community cooperation is the allocation of resources and cooperative actions that will directly advance the interests of a larger community of interests of which a particular individual or organisation is a part. For example, participants have joined a school club to clean the footpath. |
| – *Environmental protection* | Participants have engaged in at least one environmental protection action, ranging from garbage separation at home to discussing e-waste management legislation. |
| *Economic activity* | |
| *Income per household* | This is the total income of all household members. The household size in this research ranges from 2 to 6 individuals. Members of a household may be linked by familial, platonic, romantic, or other ties. The members just reside in the same housing regularly. |