

The Influence of the Digital Economy and Women's Empowerment on the Family Economy

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Abstract: Women play an essential role in both the online and offline economies. As a result of digital era changes, women are more likely to innovate in the administration of small and medium-sized enterprises (SMEs). The purpose of this study is to determine how the growth of the digital economy and the empowerment of women have influenced the family economy. This investigation included SME communities in Tangerang, Banten. The sampling technique utilised is a hybrid of probability sampling and random sampling. They are compiling data through the use of a questionnaire. There is a 97-person on number of subjects whose data can be analyzed. This research uses Partial Least Squares (PLS) to analyze the data. The findings indicated that: 1) The digital economy construct has a positive and significant influence on women's empowerment ($t=2.990$); 2) Women's empowerment has a positive and significant influence on the family economy ($t=7.141$); and 3) The digital economy and women's empowerment has a positive and significant influence on the family economy ($F=242.61$). Therefore, digital-based women's economic empowerment is a means to increase the financial independence of a family and the economic growth of the community.

Keywords: digital economy; family economy; women's empowerment

Abstrak: Perempuan memiliki peran yang penting dalam bidang ekonomi baik secara online maupun offline. Perubahan di era digital mendorong perempuan untuk berinovasi dalam pengelolaan UKM. Penelitian ini bertujuan untuk mengetahui pengaruh ekonomi digital dan pemberdayaan perempuan terhadap ekonomi keluarga. Komunitas UKM di Kota Tangerang Provinsi Banten diikutsertakan dalam penelitian ini. Teknik pengambilan sampel yang digunakan adalah kombinasi dari probability sampling dan random sampling. Mereka mengumpulkan data melalui penggunaan kuesioner. Jumlah maksimal orang yang datanya dapat dianalisis adalah 97. Penelitian ini menggunakan Partial Least Squares untuk menganalisis data (PLS). Hasil penelitian menunjukkan bahwa 1) konstruk ekonomi digital berpengaruh positif dan signifikan terhadap pemberdayaan perempuan, dengan nilai t-statistik sebesar 2,990; 2) konstruk pemberdayaan perempuan berpengaruh positif dan signifikan terhadap ekonomi keluarga, dengan nilai t-statistik sebesar 7,141; dan 3) ekonomi digital dan pemberdayaan perempuan berpengaruh positif dan signifikan terhadap ekonomi keluarga, dengan nilai F-statistik sebesar 242,61. Dengan demikian, pemberdayaan perempuan berbasis ekonomi digital adalah solusi untuk meningkatkan kemandirian finansial keluarga dan pengembangan ekonomi masyarakat.

Kata Kunci: ekonomi digital; ekonomi keluarga; pemberdayaan perempuan

A. Introduction

The Industrial Revolution 4.0 has resulted in significant changes to various facets of human life; we can now see how these changes have developed into an unstoppable force; global companies and those in Indonesia are competing to innovate to win market share in the middle of the world. Competition is becoming extremely heated. The innovations included a digital transformation strategy involving extensive changes to all processes, competencies, and business models through digital technology, following the recommendations of various global research institutions that made digital transformation a mainstream strategy for organizations competing worldwide.¹ “Digital Economy” refers to an economic idea that needs information technology. The current fact is that there are more than 140 million active internet users. It is an exciting chance for the country’s digital ecosystem to grow. The Industrial Revolution 4.0, with its abundant job options, is viewed as a significant chance to enhance women’s income. According to the latest data from the Central Statistics Agency (BPS), just 30% of female workers are employed in the STEM.

Meanwhile, a 2018 UNESCO study found that female workers’ limited engagement in the industrial sector was primarily attributable to the notion that industry was the realm of male workers, requiring physical labor that was undesirable to female workers. Additionally, many female graduates with degrees in science, technology, engineering, and mathematics are less likely to pursue positions in the industry than men.² The industry has bright possibilities in the digital, scientific, technology, engineering, and mathematics (STEM) era. As a result, women should be involved more from the start. Women’s engagement in STEM-based education must continue to grow to enhance digital expertise and close the digital divide between women and men, possibly even exceeding them, similarly concerning finance access. Women’s success in the digital economy will enable them to overcome many other economic challenges. Inequality in the treatment of female workers, low earnings, and gender-based discrimination in various sectors can be addressed if women’s mindsets shift. From unfair

¹ Eddi Cahyono Sugiharto, “Ekonomi Digital: The New Face of Indonesia’s Economy,” January 29, 2019, https://www.setneg.go.id/baca/index/ekonomi_digital_the_new_face_of_indonesias_economy.

² Arum Harjanti, “Peran Perempuan di Era Digital, Bukan untuk Kapitalisasi,” *Muslimahnews.com*, June 1, 2019, <https://www.muslimahnews.com/2018/06/01/peran-perempuan-di-era-digital-bukan-untuk-kapitalisasi/>.

treatment of workers to entrepreneurs capable of contributing to the country's economy.³

Women's strategic importance in nation formation cannot be overstated. According to Hubeis,⁴ women have a strategic role as domestic workers (managing the home, raising and caring for children), transition workers (working in the family company), and career women. Indeed, women possess an enormous potential that may be leveraged for the nation's advancement. As the primary educator of their children, women must have a broad understanding and expertise in information and communication technology to perform their jobs optimally. It will affect the next generation of intelligent and conscientious individuals. Women in the digital era must be able to participate not only as housewives but also in family companies and the workforce. The involvement of information and communication technology in family duties can provide insight into how to educate and manage the home in a modern manner to identify solutions to education and household management challenges. Information and communication technology can be critical for women's economic empowerment in the social realm, as many economic activities can now be conducted online. Additionally, it may encourage the conduct of additional social activities.⁵

The Industrial Revolution 4.0's rapid transformations necessitate women's full participation. Women must enhance their competence to enter the labor market or the future business sector. Women now have a broader range of opportunities, including an increasing number of totally automated and digital employment. Jobs that demand physical exertion are gradually being phased out in favor of those that require more excellent brains, foresight, and the capacity to understand technology in the new work age. To be successful in the Industrial Revolution 4.0, women must have technical skills complemented by communication and leadership abilities, particularly in managing an independent career or business.⁶

³ Joice Triatman, "Menyiapkan Perempuan dalam Era Digital," *mediaindonesia.com*, August 23, 2018, <https://mediaindonesia.com/opini/180094/menyiapkan-perempuan-dalam-era-digital>.

⁴ Hubeis, "Pengembangan Metode Kepulenan Nasi," [Master Thesis] (Institut Pertanian Bogor, 1985).

⁵ Ni Wayan Suarmini, Siti Zahrok, and Dyah Satya Yoga Agustin, "Peluang dan Tantangan Peran Perempuan di Era Revolusi Industri 4.0," in *Seminar Nasional Teknologi dan Perubahan (SEMATEKSOS) 3 2018* (Surabaya: Institut Teknologi Sepuluh November, 2018).

⁶ Dina Martiany, "Tantangan dan Peluang Revolusi Industri 4.0 bagi Perempuan," 2019.

Digital Economy

Don Tapscott defined the digital economy as a sociopolitical condition and an economic system with features of an intellectual space, such as information, various access to instruments, capacity, and ordering information.⁷ At least four significant elements are associated with digital economy activities where geographical location is no longer relevant. These particular platforms are the fundamental keys to network development and the usage of big data. Meanwhile, Susantokun⁸ contends that the digital economy is an economic activity or activity that focuses more on digital facilities and impacts the economy, that is projected to boost earnings for those who participate. The development of the digital economy is inextricably linked to technological advancements. Technology can make it easier for individuals to acquire a service or imitate human intellect to streamline corporate processes, production, and decision-making. The presence of the digital economy has altered the existing system's hierarchy.

The existence of the digital economy is believed to promote economic growth and increase the competitiveness of products and services on both the micro and macro levels, promoting global economic development, increasing industrial productivity, and opening new industrial markets in the context of long-term growth. Various aspects can be considered when attempting to succeed in the digital economy era, the most important of which are individual creativity and information technology. Individual creativity is how an individual continuously and sustainably innovates in business practices; additionally, information technology acts as an enabler and facilitator in knowledge management and management, enhancing the effectiveness and efficiency of the processes involved in the creation, manipulation, and distribution of information.⁹

Women Empowerment

Empowerment is defined in the human resource empowerment concept as a business activity that further empowers human energy across events and human advancement, incompetence, trust, jurisdiction, and responsibility, to carry out organizational activities that result in expected performance improve-

⁷ Sugiharto, "Ekonomi Digital: The New Face of Indonesia's Economy."

⁸ Susantokun, "Definisi Digital Economy," susantokun.com, March 14, 2017, <https://susantokun.com/Definisi-Digital-Economy-Ekonomi-Digital-Indonesia/>.

⁹ Sheila Azizah, "Digital Ekonomi di Indonesia," n.d.

ments. The term “women’s empowerment” or “female empowerment” may mean several things, including elevating the status of women via education, awareness, literacy, and training. It can also mean accepting women’s opinions and trying to find them.¹⁰ In this context, the Ministry of Women’s Empowerment is undertaking to encourage women to attain control and access over resources, politics, economy, society, and culture for women to self-regulate and develop the confidence necessary to play a role and actively participate in problem-solving.

Family Economy

“family economic status” means the state or position (person and body) in dealing with the surrounding community. Economics means household financial affairs (organizations, state) in society. Economic terms are usually related to the problems of rich and poor; family implies mother and father and their children, the basic social kinship unit. In this context, Aristotle stated, “In every country, there are three elements, namely those who are very rich, poor, and poor is in the middle.” Such remarks more or less prove that, at that time, they had a stratified position from the bottom to the top. A prominent sociologist, Pitirim A. Sorokin, said that the stratum system is a constant and common feature of people who live regularly. Whoever has valuable items in substantial quantities is considered a superior class of society.¹¹

Soekanto and Sulistyowati¹² further explained that a system of layers of society could occur by itself in community growth. But some are arranged deliberately to pursue a common goal. Theoretically, all humans are considered equal. However, according to the reality of the life of social groups, this is not the case. Differences over layers are a universal symptom that is part of the social

¹⁰ Sarah Mosedale, “Assessing Women’s Empowerment: Towards a Conceptual Framework,” *Journal of International Development* 17, no. 2 (2005): 243–57, <https://doi.org/10.1002/jid.1212>; Endalcachew Bayeh, “The Role of Empowering Women and Achieving Gender Equality to the Sustainable Development of Ethiopia,” *Pacific Science Review B: Humanities and Social Sciences* 2, no. 1 (2016): 37–42, <https://doi.org/10.1016/j.psr.b.2016.09.013>; Naila Kabear, “Gender Equality and Women’s Empowerment: A Critical Analysis of the Third Millennium Development Goal,” *Gender & Development* 13, no. 1 (2005): 13–24, <https://doi.org/10.1080/13552070512331332273>.

¹¹ Soerjono Soekanto and Budi Sulistyowati, *Sosiologi Suatu Pengantar* (Jakarta: Rajawali Press, 2017).

¹² Soekanto and Sulistyowati.

system of every society. According to Rakhmat,¹³ one of the family functions is an economic function, namely a condition that the family is an independent social group in which family members consume the goods they produce. In this context, the family needs financial or financial support sufficient for the production needs of the family. It is because the family also functions as education for the whole family, providing education to children and youth.

Utilization of the Digital Economy on the Family Economy

Digital technology will help small businesses grow, according to Widyastuti et al.¹⁴ They say companies will use technology to get and manage information, integrate and analyze data, build new knowledge, and communicate with others. People who run digital-based MSME businesses will get better at their jobs (or, in other words, have a gender perspective). Women are never seen as a burden to development but as partners and even subjects of development that women can use to help them grow. Women are in a variety of strategic positions to help with development projects. As a result, efforts must be made to help women become more powerful in society, the country, and the state in overcoming the powerlessness that women have had so far.¹⁵

After poverty and violence against women, gender and technology are among the essential issues for women today.¹⁶ In the long run, Information Technology (IT) does not weaken women or make a big difference between men and women. Still, on the other hand, it can be an excellent way to help women, like in business. Based on the description above, we can write down the research hypothesis:

H1: The use of the digital economy affects the family economy

Women's Empowerment in the Family Economy

Yunus stated that economic empowerment by lending money to women would have a more significant cascading effect than men's. It is because men tend

¹³ Jalaluddin Rakhmat, *Islam Alternatif: Ceramah-ceramah di Kampus* (Bandung: Mizan, 1998).

¹⁴ Dhyah Ayu Retno Widyastuti, Ranggabumi Nuswantoro, and Thomas Adi Purnomo Sidhi, "Literasi Digital pada Perempuan Pelaku Usaha Produktif di Daerah Istimewa Yogyakarta," *Jurnal ASPIKOM* 3, no. 1 (2016): 1–15, <https://doi.org/10.24329/aspikom.v3i1.95>.

¹⁵ Remiswal, *Menggugah Partisipasi Gender di Lingkungan Komunitas Lokal* (Yogyakarta: Graha Ilmu, 2013).

¹⁶ Retno Budi Lestari, "Pemberdayaan Wanita melalui Teknologi Informasi (Sebuah Kajian Pustaka)," *Seminar Nasional Aplikasi Teknologi Informasi 2010 (SNATI 2010)*, 2010.

to use cash for their interests. On the other hand, women tend to use the money to invest to benefit the family.¹⁷ Mayoux, in one of his studies, also mentions that it is consistent that increasing financial access to women will have a positive impact that can open every link in the chain of women's empowerment because: 1) women will have control over assets and income; 2) increasing the role of women in decision-making; and 3) enhance women's status in the family and community. Increasing the role of women can be interpreted as access to resources so that women also contribute to society.¹⁸ Thus, economic empowerment that opens financial access to women can improve people's living standards.

On the other hand, Mayoux also stated that the provision of microcredit to women not only has a good effect, but can also have a negative effect if: 1) the business carried out only provides a small amount of income; 2) women only use as liaisons between husbands and the micro-credit program; 3) increasing women's independence is only temporary without the support of men, and 4) the increase in women's income raises concerns about the reduced contribution of men to income.¹⁹ According to him, these positive and negative impacts vary according to different activities, backgrounds, social, economic, and cultural. In harmony, granting credit to women will increase the burden on women who, on the other hand, have a domestic role called the triple burden of women (reproductive, production, and social). Based on the given description, the research hypothesis can be written as follows:

H2: Empowerment of women affects the family economy

Utilisation of the Digital Economy and Women's Empowerment in the Family Economy

The digital economy has a considerable economic influence. A positive transition in which the business world and social groups play a critical role in ensuring the nation's financial independence. Economic growth stimulates more remarkable growth to achieve economic growth.²⁰

¹⁷ M. Yunus, *Menciptakan Dunia tanpa Kemiskinan* (Jakarta: Gramedia Pustaka Utama, 2008).

¹⁸ Linda Mayoux, "Participatory Learning for Women's Empowerment in Micro-Finance Programmes: Negotiating Complexity, Conflict and Change," *IDS Bulletin* 29, no. 4 (1998): 39-50, <https://doi.org/10.1111/j.1759-5436.1998.mp29004005.x>.

¹⁹ Mayoux.

²⁰ H. Hamdan, "Industri 4.0: Pengaruh Revolusi Industri pada Kewirausahaan demi Kemandirian Ekonomi," *Jurnal Nusantara Aplikasi Manajemen Bisnis* 3, no. 2 (2018): 1-8, <https://doi.org/10.29407/nusamba.v3i2.12142>.

The digital economy is crucial for regional development because it has the potential to encourage growth, invention, and competitiveness through promoting entrepreneurship and MSMEs. The growth of entrepreneurship in the digital economy spawned new ideas in the form of Entrepreneurship to advance the digital economy. The digital economy's development should be consistent with the usage of information and communication technologies. The greater a country's use of information and communication technology, the more developed its digital economy²¹ can formulate the following research hypothesis based on the description above:

H3: The digital economy and women's empowerment affect the family economy

B. Methods

Approaches and Types of Research

In this study, the approach used by researchers is quantitative. The quantitative approach results from a combination of the Marburg school, which collaborates with the flow of positivism philosophy.²² The systematic scientific examination of the constituents and phenomena and the relationship between the constituents' details. The steps for quantitative research are formulating problems, looking for theoretical foundations, formulating hypotheses, formulating hypotheses, developing instruments, and testing instruments on the population and then samples, collecting data, analyzing data, making conclusions, and giving suggestions. In this study, researchers focus on the relationship between the digital economy that affects women's empowerment and the family economy. This study used associative research. Associative research is research conducted to know the relationship between two or more variables. Thus, it can build a theory that predicts and controls a phenomenon. In this study, researchers explain whether there is an influence between the digital economy and women's empowerment in the family economy. This study considers the digital economy and women's empowerment as independent variables, whereas the family economy is regarded as a dependent variable.

²¹ Ahmad Maghfuri, "Analisis Kekuatan E-Entrepreneurship terhadap Perkembangan Ekonomi Digital dalam Menyokong Pertumbuhan Ekonomi Nasional," 2017.

²² Usman Rianse and A. Abdi, *Metodologi Penelitian Sosial dan Ekonomi (Teori dan Aplikasi)* (Bandung: Alfabeta, 2012).

Population and Sample

The population is a category of objects or subjects chosen by the researcher to be researched and concluded. Each study must include population size and the research area covered. The population is made up of a finite number of individuals (finite) and an infinite number of individuals (infinite). However, a limited population is always an endless population in reality. Individuals can be homogeneous or heterogeneous based on their nature.

The sample is a subset of the population's size and features. After considering the challenges, objectives, hypotheses, methodologies, research instruments, time, effort, and financial constraints, the researcher chooses. When sampling, if the sample does not adhere to the required quality and characteristics, the study can become ordinary or unreliable, and errors can emerge when concluding. The sampling technique employed is based on simple random sampling, in which sample elements are chosen so that any aspect of the population has an equal chance of being selected as a sample member.²³ It is described as simple (uncomplicated) because members of the population are sampled randomly without respect for existing strata in the population²⁴ using the age, education level, status, and length of residence as a housewife as criteria.

The sample of this study itself is the population in the Sudimara Pinang Village, Pinang District, Tangerang City, totalling 12,859 people.²⁵ In this study, the authors narrowed the population, namely the total number of SMEs, as many as 100 people, by calculating the sample size using the Slovin technique, according to Sugiyono.²⁶ The Slovin formula is used in this study because the sample size must be representative for the research findings to be generalizable. The calculations do not require a table of sample sizes but can be performed using basic formulas and computations.

²³ Sugiyono, *Metode Penelitian Pendidikan (Kuantitatif, Kualitatif, Kombinasi, R&D dan Penelitian Pendidikan)* (Bandung: Alfabeta, 2019).

²⁴ Sugiyono.

²⁵ BPS Kota Tangerang, "Kecamatan Pinang dalam Angka 2020," [tangerangkota.bps.go.id](https://tangerangkota.bps.go.id/publication/2020/09/28/4dea61d19f611ec4dbff46de/kecamatan-pinang-dalam-angka-2020.html), 2020, <https://tangerangkota.bps.go.id/publication/2020/09/28/4dea61d19f611ec4dbff46de/kecamatan-pinang-dalam-angka-2020.html>.

²⁶ Sugiyono, *Metode Penelitian Pendidikan (Kuantitatif, Kualitatif, Kombinasi, R&D Dan Penelitian Pendidikan)*.

Operational Variable

The dependent variable is often the output variable, criteria, and consequential. The dependent variable is the affected variable, which becomes the result of the independent variable. The dependent variable is the variable that is influenced or the effect of the independent variable.²⁷ The dependent variable used in this study is Family Economy (Y). At the same time, the independent variables are often referred to as stimulus, predictor, and antecedent variables. The independent variable is a variable that affects or is the cause of the change or the emergence of the dependent variable.²⁸ There were 2 (two) independent variables studied in this study, namely the digital economy and women's empowerment. The measurement of each variable can be seen in Table 1.

C. Data Analysis and Finding

Respondents' Overview and Demographics

This research was conducted on business actors owned by women aged 18-45 years in Sudimara Pinang Village, Pinang District, Tangerang City, with 100 people. Respondents were selected using the purposive sampling method, namely sampling, where sample elements were selected using several considerations and specific criteria. The data processing in this study used the SmartPLS software version 3. The data processed were respondents' answers related to the digital economy, women's empowerment, and the family economy.

The questionnaire is distributed by sending a google form link through technological media such as email, WhatsApp and SMS. The period for filling out is one month from when submitted the questionnaire to the respondent. Subsequently, the researcher confirms to the recipient's contact to ensure the questionnaire has been completed. The number of questionnaires distributed and successfully collected is in Table 2. Table 2 explains that the number of questionnaires sent to respondents amounted to 100 questionnaires with details of the returned questionnaires amounting to 98 or 98%, questionnaires that did not return amounted to 2 or 2%, questionnaires that could be processed amounted to 97 or 97% and questionnaires that produced. It cannot be processed as much as 1 or 1%.

²⁷ Sugiyono.

²⁸ Sugiyono.

Table 1
Operational Research Variables

Variable	Indicator	Measurement
Digital Economy	1) Knowledge, 2) Digitalisation 3) Virtualisation, 4) Molecularisation, 5) Internetworking, 6) Disintermediation, 7) Convergence, 8) Innovation, 9) Presumption, 10) Immediacy, 11) Globalisation dan 12) Discordance	Tapscott ²⁹
Women's empowerment	1) Welfare 2) Critical State or Awareness 3) Access 4) Participation 5) Power/Control	Haryani and Zadyanti ³⁰
Family economy	1) Economic well being 2) Social well being 3) Physical well-being 4) Psychological	Puspitawati ³¹

The number of respondents aged less than 18-30 years was 66 people or 68.04%, 30-40 were 27 people or 27.84%, and 40-45 were four people or 4.12%. It shows that most respondents in this study were aged 18-30 years, which

²⁹ Don Tapscott, *The Digital Economy: Promise and Peril in the Age of Networked Intelligence* (New York: McGraw-Hill Book Co., 1996).

³⁰ Tiyas Nur Haryani and Raina Zadyanti, "Analisis Gender Model Longwe pada Program Industri Rumahan di Kota Pangkalpinang," *Buana Gender: Jurnal Studi Gender dan Anak* 6, no. 2 (2021): 137-49, <https://doi.org/10.22515/bg.v6i2.4037>.

³¹ Herien Puspitawati, "Ketahanan dan Kesejahteraan Keluarga," 2013; Herien Puspitawati, *Gender dan Keluarga: Konsep dan Realita di Indonesia* (Bogor: IPB Press, 2012).

amounted to 66 people of the number of questionnaires processed in this study, 11 respondents with master's degree education or 11.34%. Furthermore, respondents with S1 education were 26 people or 26.80%, D3 were five people or 5.15%, and finally, respondents with high school education were 55 people or 56.70% and the dominant respondents. Respondents with unmarried status are dominant with 67 people or 69.07%, compared to those with a married rate of 30 people or 30.93% (see Table 3).

Table 2
The Number of Questionnaires Distributed

No.	Description	Total	Percentage (%)
1	Questionnaire sent	100	100
2	Questionnaire that does not return	2	2
3	Returning Questionnaire	98	98
4	Questionnaire that cannot be processed	1	1
5	Processable questionnaire	97	97

Source: Processed primary data (2021)

Table 3
Respondents' Demographic

No.	Classification	Total	Percentage (%)
I	Respondents by age		
1)	18 - 30 years	66	68.04
2)	30 - 40 years	27	27.84
3)	40 - 45 years	4	4.12
II	Respondents by education		
1)	High School	55	56.70
2)	D3	5	5.5
3)	S1	26	26.80
4)	S2	11	11.34
III	Respondents by marital status		
1)	Not Married	67	69.07
2)	Married	30	30.93
Total		97	100.00

Source: Processed primary data (2021)

Table 4
Validity and reliability test

Variable	AVE	Description	CR	Description
Digital economy	0.770	valid	0.976	reliable
Women empowerment	0.784	valid	0.948	reliable
Family economy	0.811	valid	0.945	reliable

Data Quality Test

PLS is a technique for predicting components in a model with several elements and collinear interactions.³² The first stage in analysing the study's results is to assess the measurement model to ascertain the nature of the link between latent variables and their indicators or manifest variables. The outer model evaluation uses the convergent validity approach, as indicated by the correlation between the indicator scores and the construct scores (loading factor), following the criteria for valid indicators with a value larger than 0.5³³ A validity test performs to determine a questionnaire's validity or reliability. A questionnaire is valid if the questions can reveal information about the subject measure determined validity in this study by utilizing the Smart PLS application and the AVE value (see Table 4).

Based on Table 3, it can show that each construct (variable) has an AVE value above 0.5. Indicates that each of these constructs has good validity from each indicator. The questionnaire may be valid to establish the relationship between the digital economy, women's empowerment, and the family economy. In addition, each construct of the latent variable has a composite reliability score above 0.7 which implies that the internal consistency of the exogenous variable has good reliability. It may argue that the respondents' answers to the statements from the questionnaire on the variables resulted from inconsistent answers.

³² Imam Ghozali and Hengky Latan, *Partial Least Squares: Konsep, Teknik dan Aplikasi Menggunakan Program SmartPLS 3.0* (Semarang: Penerbit Universitas Diponegoro, 2014).

³³ Ghozali and Latan.

Outer Model Measurement

According to Ghozali and Latan: the outer model is evaluated using convergence validity, discriminant validity, and composite reliability.³⁴ The whole image of the structural equation model was used to assess the outer model with Smart PLS 3.0. (see Figure 1).

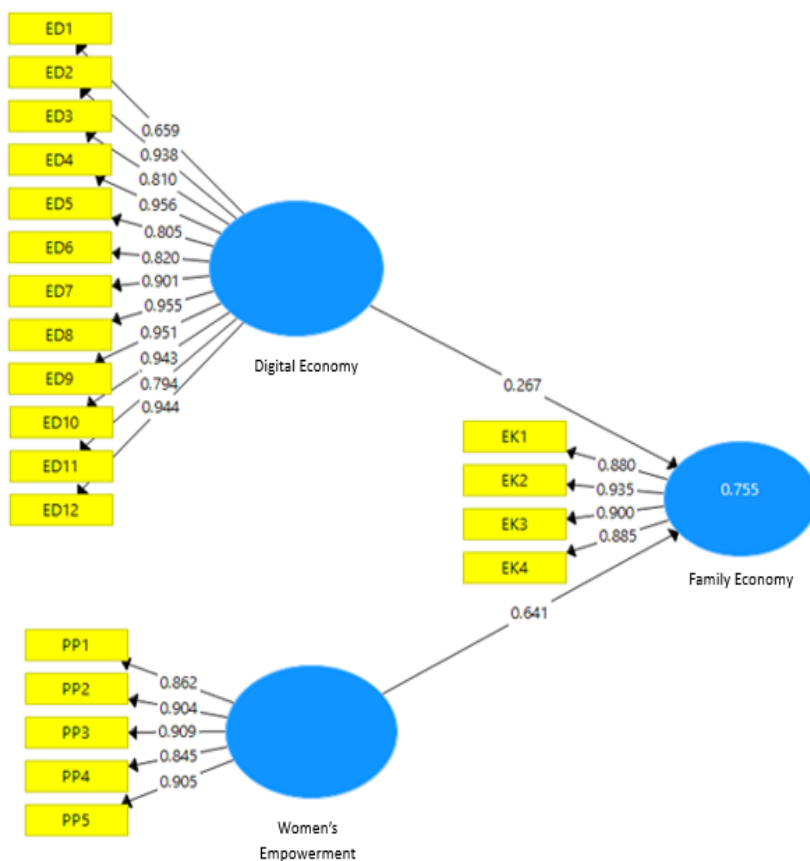


Figure 1
Full Model Structural

³⁴ Ghozali and Latan.

Figure 1 explains the overall correlation of each variable which states the influence of the digital economy. All indicators have a value of more than 0.5 and must eliminate these indicators if they do not meet the criteria for convergent validity. In the picture, all correlation values have a value above 0.5, so all variables have met convergent validity. Twelve indicators explain ED's variable: ED1, ED2, ED3, ED4, ED5, ED6, ED7, ED8, ED9, ED10, ED11, and ED12. The outer loading test determines the association between item or indicator scores and constructs scores. Suppose the correlation coefficient is more than 0.7. However, a correlation of 0.5 is acceptable during the developing period.³⁵

Table 5
Outer Loading Value

	Original Sample	Sample Mean	Standard Deviation	T statistics	P values
ED1 <- Digital Economy	0.659	0.660	0.059	11.136	0.000
ED2 <- Digital Economy	0.938	0.938	0.018	52.053	0.000
ED3 <- Digital Economy	0.810	0.804	0.048	16.985	0.000
ED4 <- Digital Economy	0.956	0.955	0.011	90.853	0.000
ED5 <- Digital Economy	0.805	0.799	0.049	16.537	0.000
ED6 <- Digital Economy	0.820	0.816	0.037	22.233	0.000
ED7 <- Digital Economy	0.901	0.902	0.024	37.651	0.000
ED8 <- Digital Economy	0.955	0.955	0.009	103.460	0.000
ED9 <- Digital Economy	0.951	0.950	0.011	83.545	0.000
ED10 <- Digital Economy	0.943	0.942	0.014	66.021	0.000
ED11 <- Digital Economy	0.794	0.788	0.049	16.182	0.000
ED12 <- Digital Economy	0.944	0.942	0.014	66.281	0.000
PP1 <- Women Empowerment	0.862	0.858	0.036	24.279	0.000
PP2 <- Women Empowerment	0.904	0.900	0.023	39.627	0.000
PP3 <- Women Empowerment	0.909	0.908	0.021	42.697	0.000
PP4 <- Women Empowerment	0.845	0.838	0.034	24.538	0.000
PP5 <- Women Empowerment	0.905	0.904	0.018	51.655	0.000
EE1 <- Family economy	0.880	0.878	0.023	37.587	0.000
EE2 <- Family economy	0.935	0.935	0.011	83.613	0.000
EE3 <- Family economy	0.900	0.897	0.027	33.808	0.000
EE4 <- Family economy	0.885	0.881	0.025	36.021	0.000

³⁵ Ghozali and Latan.

The data processing findings show in Table 5, where the outer loadings of the digital economy variable indicator are greater than 0.5, indicating that the outer model value or correlation with the overall variable is convergent. The t-statistic values for the indicators ED1–ED12 exceed the t_{table} with a significance threshold of 1.96 and n samples = 97. As a result, the digital economy variable satisfies the model adequacy or discriminant validity requirements. Five indicators explain women's empowerment: PP1, PP2, PP3, PP4, and PP5. As a result, the outer loadings of the indicator variable for women's empowerment are greater than 0.5, indicating that the outer model's value or correlation with the variables meets the criteria for convergent validity. The t-statistical value for each indicator of psychological capital is bigger than the t-table with a significance threshold of 1.96 and n samples = 97. Thus, the women empowerment variable satisfies the model adequacy or discriminant validity criterion. The family economic variable explains four indicators, EK1, EK2, EK3, and EK4. The outer loadings of the family economic variable indicator are greater than 0.5, indicating that the outer model or correlation with the variables already achieves convergent validity.

Inner Model Measurement

The inner model represents the relationship between latent variables based on a substantive theory. Inner model testing, also known as inner relation, structure model, and substantive theory, was used to ascertain the relationship between the research model's concept, significant value, and R-square. The structural model performs R-square tests on the dependent construct. The threshold for rejecting and accepting the proposed hypothesis is +1.96, which is acceptable if the t-statistic exceeds the t-table value (1.96). Table 6 contains this investigation's inner model (result for inner weight).

Table 6 shows that the relationship between the digital economy and the family economy is positive at 2.990, and the relationship between women's empowerment and the positive family economy is 7.141. On the other hand, Table 7 shows the family economic R-square value of 0.755, which means that the higher the R-square value, the greater the variable can explain other variables, so the better the structural equation.

Table 6
Inner Weight Value

Constructs	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Digital Economy -> Family Economy	0.267	0.277	0.089	2.990	0.003
Women Empowerment -> Family Economy	0.641	0.632	0.090	7.141	0.000

Table 7
R-Square

	R Square	R Square Adjusted
Family Economy	0.755	0.749

Testing Research Hypothesis

Hypothesis 1 states that the digital economy positively affects the family economy. Based on the research results, all indicators have a value above 0.5. The 12 indicators meet the criteria for convergent validity (AVE value). The calculation results in Table 6 show a significant positive effect between the Digital Economy on the Family Economy, shown with the original sample value of 0.267 and the t-statistic value of 2.990, which is greater than 1.96, which means that hypothesis 1 is accepted. So, it can interpret that the better the digital economy, the family economy will increase with the contribution of the parameter coefficient of 0.267.

Hypothesis 2 states that women's empowerment positively affects the family economy. Based on the research results, all indicators have a value above 0.5. Then the five indicators meet the criteria for Convergent validity (AVE value). The calculation results in Table 6 show a significant positive effect between women's empowerment on the family economy, shown with the original sample

value of 0.641 and the t-statistic value of 7.141, greater than 1.96 means that hypothesis 2 is accepted. The better women's empowerment, the family economy will increase with the contribution of the parameter coefficient of 0.641.

Based on the data obtained and processed by the author, the digital economy has a significant positive relationship with the family economy, as indicated by the original sample value of 0.267, the t-count value of 2.990, which is greater than the t-table (1.96) and women's empowerment has a significant positive relationship with the family economy as indicated by the original sample value of 0.641, the t-count value of 7.141 which is greater than the t-table (1.96). However, to test hypothesis 3, namely the effect of the digital economy and women's empowerment together (simultaneously) on the family economy, one must use another additional calculation, namely the calculated F formula below.

$$\begin{aligned}
 F_{count} &= \frac{R^2(n - k - 1)}{(1 - R^2)k} \\
 &= \frac{0.755^2(97 - 2 - 1)}{(1 - 0.755^2)2} \\
 &= \frac{366}{0.86} = 242.61
 \end{aligned}$$

F-count is 242.61 based on the results of the preceding calculation. When compared to the F-table at the 95 percent confidence level (=0.05), the F-count findings indicate that df 1 (number of variables - 1) or 3-1 = 2 and df 2 (n-k) or 97-2 = 367 of 3.87. As a result, because the estimated F-value is more than the F-table (242.61 > 3.87), Ho is rejected, and Ha is accepted. The finding demonstrates a statistically significant positive association between characteristics related to the digital economy and women's empowerment, as well as the family economy. As a result, it is possible to assert that Hypothesis 3 has a considerable positive influence on both the digital economy and women's empowerment while also positively affecting the family economy.

D. Discussion

The Effect of the Digital Economy on the Family Economy

According to the study's findings, the digital economy has a positive effect on the family economy. The study's findings are based on digital economy variables formed by 12 indicators, all of which are valid, namely ED1 to ED12. The t-statistic value for ED is 2.990. In addition, it shows that the family's economic indicators are thought to be better when the digital economy indicators, such as knowledge and digitization, are used. This is because these indicators are thought to positively affect the family's economic indicators.

The researcher asserts in Hypothesis 1 that the digital economy benefits the family economy. The study's findings indicate that the stronger the digital economy, the stronger the family economy will be. The largest of the 12 indicators is molecularisation (ED4), which has the same initial sample value of 0.956. This helps to explain why the digital economy takes on a molecular structure (molecularisation) that is easily adaptable to dynamic changes in the business environment. In other words, the digital economy can adapt to influence the family economy in several ways: improving social welfare (social well-being). This research is in line with Fadhilah, who shows the results that the e-commerce industry, as part of the digital economy, contributed USD 12 billion in 2014 to the Indonesian economy.³⁶ They think that this business will keep growing, which will make the Indonesian economy better. This business is very important to a stable and strong economy in Indonesia.

Due to technological innovation, the digital economy has significantly altered people's consumption habits.³⁷ More importantly, because of its financial accessibility, it has encouraged household entrepreneurship. We estimate the impact of the digital economy on the likelihood of household entrepreneurship. The empirical findings suggest that digital economy tools such as mobile payment, by changing people's attitudes toward risk, enriching households' social networks, and providing formal and informal lending support, can

³⁶ Fadhilah Fadhilah, "Ekonomi Digital dalam Rangka Peningkatan Perekonomian Indonesia," 2018.

³⁷ Zhichao Yin et al., "What Drives Entrepreneurship in Digital Economy? Evidence from China," *Economic Modelling* 82, (2019): 66–73, <https://doi.org/10.1016/j.econmod.2019.09.026>.

significantly increase the likelihood of household entrepreneurship and can improve the Gross Domestic Product.³⁸ According to the heterogeneity analysis, the Digital economy is now playing an increasingly important role in promoting household entrepreneurial activities in rural and western regions, where economic development is relatively slow due to the need for improved supporting facilities such as transportation, the financial network, and information communication. As beneficiaries and as end-users, digital platforms also initiated a unique competition and financial impact in different aspects of consumer welfare.³⁹ Moreover, the digital economy has created new avenues for economic practice. At their most basic, these forms provide economic benefits as gifts and rely on cooperation rather than authority.⁴⁰

The Effect of Women's Empowerment on the Family Economy

According to the study's findings, women's empowerment benefits the family economy. The study's findings are based on the variable of women's empowerment, which is composed of five reliable indicators, namely PP1 to PP5. PP has a t-statistic of 7.141. This demonstrates that indicators of women's empowerment have a beneficial effect on family economic indicators.

The researcher asserts in Hypothesis 2 that women's empowerment benefits the household economy. The study's findings indicate that the more empowered women are, the healthier the family economy will be. The greatest original sample value is 0.909 for the PP3 (Access) indicator. This explains why women's economic participation has an effect on the home economy and why boosting women's financial access has a beneficial effect on the chain of women's empowerment. This study is consistent with Widyastuti et al.⁴¹ who showed that

³⁸ Erik Brynjolfsson et al., "GDP-B: Accounting for the Value of New and Free Goods in the Digital Economy," *SSRN Electronic Journal*, March 2019, <https://doi.org/10.2139/ssrn.3356697>; Erik Brynjolfsson and Avinash Collis, "How Should We Measure the Digital Economy?," *Hutchins Center Working Paper #57* (2020): 1-8.

³⁹ Angayar Kanni Ramaiah, "Competition in Digital Economy: Fate of Consumer Welfare in Malaysia," *Malaysian Journal of Consumer and Family Economics* 22, no. Special Edition 1 (2019): 223-45.

⁴⁰ Dave Elder-Vass, "Lifeworld and Systems in the Digital Economy," *European Journal of Social Theory* 21, no. 2 (2018): 227-44, <https://doi.org/10.1177/1368431017709703>.

⁴¹ Widyastuti, Nuswantoro, and Sidhi, "Literasi Digital pada Perempuan Pelaku Usaha Produktif di Daerah Istimewa Yogyakarta."

business groups involving women were able to provide added value for all community members.

Women's empowerment to access the development components, including health, education, earning opportunities, rights, and political engagement, is a bidirectional relationship between economic development and women's empowerment. One way to reduce gender disparity is through development; however, persuasively demonstrated, progress can also be hampered by persistent prejudice against women. In other words, empowerment can hasten the development.⁴² The excellent growth effects involve diverse social groups, particularly women, in various positions and processes. Existing research has primarily focused on socio-economic aspects of empowerment, especially women's labor participation, and education access, as a means of promoting economic growth.⁴³ Therefore, economic growth and the gender gap in education Increased per capita income reduces gender inequality. Moving from a poor to a lower or middle-income country does little to reduce the education gender gap. At higher stages of development, rising incomes reduce this gap.⁴⁴

In countries with low female education levels, increasing girls' school attendance has no impact on per capita GDP growth. In countries with a high level of female education, improvements in female enrolment are associated with faster economic growth. This result suggests that gender inequality in education is minor at low levels of development (agricultural societies) but significant at higher levels (industrial societies).⁴⁵ The results of this study show positive results that women's empowerment has a significant effect on the family

⁴² Esther Duflo, "Women Empowerment and Economic Development," *Journal of Economic Literature* 50, no. 4 (2012): 1051–79, <https://doi.org/10.1257/jel.50.4.1051>.

⁴³ Sirianne Dahlum, Carl Henrik Knutsen, and Valeriya Mechkova, "Women's Political Empowerment and Economic Growth," *World Development* 156 (2022): 105822, <https://doi.org/10.1016/j.worlddev.2022.105822>; David Cuberes and Marc Teignier, "Gender Inequality and Economic Growth: A Critical Review," *Journal of International Development* 26, no. 2 (2014): 260–76, <https://doi.org/10.1002/jid.2983>.

⁴⁴ David Dollar and Roberta Gatti, "Gender Inequality, Income and Growth: Are Good Times Good for Women?," Policy Research Report on Gender and Development Working Paper Series #1 (Washington D.C, 1999); Cuberes and Teignier, "Gender Inequality and Economic Growth: A Critical Review."

⁴⁵ Cuberes and Teignier, "Gender Inequality and Economic Growth: A Critical Review."

economy. We estimate because this study was conducted in the city of Tangerang, an industrial area.

The Effect of the Digital Economy and Simultaneous Empowerment of Women on the Family Economy

According to the results of F-count $242.61 > F\text{-table } 3.87$, there is a substantial correlation between variables related to the digital economy and women's empowerment and the family economy. The digital economy contributes significantly to regional development. Among other things, it can boost growth, innovation, and economic competitiveness by fostering entrepreneurship and micro, small, and medium-sized enterprises (MSMEs), particularly among women. Women who actively manage the digital economy will help their enterprises expand and establish themselves as a critical component of the family economy. This study is consistent with the findings of research that conducted by Putri et al.,⁴⁶ Suwarni et al.,⁴⁷ and Sari⁴⁸ who all concluded that the digital economy had a significant impact on the economy. A positive transformation in which the business community and social groups play a substantial part in bolstering the country's economic independence so that economic growth results in an additional increase.

Women in emerging economies can use the digital platform to transform their social, political, and economic lives by changing and reshaping processes that lead to opportunities for growth and development, potentially closing many gaps in human socioeconomic development.⁴⁹ The digital economy is credited with assisting women's empowerment in emerging markets to identify new

⁴⁶ Arista Amanda Putri et al., "Perkembangan Ekonomi Digital di Indonesia: Peluang atau Ancaman?," in *Prosiding National Seminar on Accounting, Finance, and Economics (NSAFE)* (Malang: Universitas Negeri Malang, 2021).

⁴⁷ Emi Suwarni, Kristina Sedyastuti, and A. Haidar Mirza, "Peluang dan Hambatan Pengembangan Usaha Mikro pada Era Ekonomi Digital," *Ikraith Ekonomika* 2, no. 2 (2019): 29–34.

⁴⁸ Nurul Amalia Sari, "Pengaruh Perkembangan Ekonomi Digital terhadap Pendapatan Pelaku Usaha UMKM di Kota Makassar," [Unpublished Undergraduate Thesis] (Universitas Negeri Makassar, 2019).

⁴⁹ Victoria L. Crittenden, William F. Crittenden, and Haya Ajjan, "Empowering Women Micro-Entrepreneurs in Emerging Economies: The Role of Information Communications Technology," *Journal of Business Research* 98, no. May (2019): 191–203, <https://doi.org/10.1016/j.jbusres.2019.01.045>.

employment opportunities, engage in self-employment opportunities, and advance personal and social advancement in terms of increased self-efficacy and social capital.⁵⁰

The results of this study are consistent with previous research literatures that the digital economy is essential to comprehensive development, poverty eradication, and the empowerment of historically disadvantaged groups, such as women and minorities.⁵¹ The digital economy was described as a tool to empower women at the 2002 World Summit on the Information Society.⁵² Several studies support the claim that the digital economy empowers women, both individually and in groups, and the benefits of such empowerment are substantial.⁵³ Capel et al. showed how the digital economy could support and empower women in challenging circumstances (living conditions, social isolation, stigma).⁵⁴ Obayelu and Ogunlade⁵⁵ described how ICTs helped Nigerian women address poverty. Huyer and Mitter⁵⁶ and Huyer and Sikosa⁵⁷

⁵⁰ Syed Abidur Rahman et al., "Technology Acceptance among Micro-Entrepreneurs in Marginalized Social Strata: The Case of Social Innovation in Bangladesh," *Technological Forecasting and Social Change* 118 (2017): 236–45, <https://doi.org/10.1016/j.techfore.2017.01.027>; Antonio Díaz Andrade and Bill Doolin, "Information and Communication Technology and the Social Inclusion of Refugees," *MIS Quarterly* 40, no. 2 (2016): 405–16, <https://doi.org/10.25300/MISQ/2016/40.2.06>.

⁵¹ Sylvia Maier and Usha Nair-Reichert, "Empowering Women through ICT-Based Business Initiatives: An Overview of Best Practices in E-Commerce/E-Retailing Projects," *Information Technologies and International Development* 4, no. 2 (2008): 43–60, <https://doi.org/10.1162/itid.2008.00007>.

⁵² Abiodun Elijah Obayelu and I. Ogunlade, "Analysis of the Uses of Information Communication Technology (ICT) for Gender Empowerment and Sustainable Poverty Alleviation in Nigeria," *International Journal of Education and Development Using Information and Communication Technology* 2, no. 3 (2006): 45–69.

⁵³ Shopia Huyer and Swasti Mitter, "ICTs, Globalisation and Poverty Reduction: Gender Dimensions of the Knowledge Society" (New York, 2003).

⁵⁴ Tara Capel, Dhaval Vyas, and Margot Brereton, "Women in Crisis Situations: Empowering and Supporting Women Through ICTs," in *INTERACT 2017*, 2017, 64–84, https://doi.org/10.1007/978-3-319-67684-5_5.

⁵⁵ Obayelu and Ogunlade, "Analysis of the Uses of Information Communication Technology (ICT) for Gender Empowerment and Sustainable Poverty Alleviation in Nigeria."

⁵⁶ Huyer and Mitter, "ICTs, Globalisation and Poverty Reduction: Gender Dimensions of the Knowledge Society."

⁵⁷ Shopia Huyer and T. Sikosa, "Overcoming the Gender Digital Divide: Understanding ICTs and Their Potential for the Empowerment of Women" (Santo Domingo, 2003).

suggest that the digital economy empowerment results in new and self-employment opportunities, more formal and non-formal education, and improved health and gender information and services. Mobile apps and social media allow people to form new knowledge in the digital economy-mediated spaces, participate in social conversations, develop new content, and build socially relevant connections and networks.⁵⁸

D. Conclusion

Based on the findings of the previous chapter's analysis and discussion, it is possible to conclude that the following is correct: 1) The digital economy has a significant and positive impact on the family economy. The significance value of 0.000 and the t-count > t-table (2.990 > 1.96) demonstrate this. 2) Women's empowerment has a good and considerable impact on the family economy. The significance value of 0.000 and the t-count > t-table (7.141 > 1.96) demonstrate this.

According to the findings of F Count, the digital economy and women's empowerment both have a favorable and considerable impact on the family economy. The estimated F-value of 242.61 > F-table 3.87 demonstrates this. It made these suggestions based on what this study found. When viewed from the value of R Square, this study affects the family economy by 75.5%, while other factors influence the remaining 24.5%. So, it is suggested for further study to use different variables or add research variables, and they can also take a larger population or sample. As well as the alternatives already mentioned, new research should use different research objects and methods.[s]

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