

## **Digital Transformation of Financial Literacy and Inclusion as a Support for Convenience for MSMEs**

**Restu Millaningtyas<sup>1</sup>\*, Moh. Amin<sup>2</sup>, Agus Hermawan<sup>3</sup>, Puji Handayati<sup>4</sup>**  
<sup>1,2,3,4</sup> Faculty of Economics and Business, Universitas Negeri Malang, Indonesia

\*Corresponding Author

Email: [restumillaningtyas@unisma.ac.id](mailto:restumillaningtyas@unisma.ac.id) [restu.millaningtyas.2204139@students.um.ac.id](mailto:restu.millaningtyas.2204139@students.um.ac.id) ;  
[moh.amin2204139@students.um.ac.id](mailto:moh.amin2204139@students.um.ac.id) ; [mohamin\\_fe@unisma.ac.id](mailto:mohamin_fe@unisma.ac.id)

---

### **Abstract**

*Financial digital transformation provides easy access to financing in terms of financial literacy and inclusion. Digital financial literacy and inclusion is a means of education and ease of life and the future for both personal and business needs that are financially effective and efficient in various aspects including a wider range of transactions, easy to use, time-saving, affordable costs, easy-to-understand tools and maintained security. The purpose of this article is to explain the digital transformation of financial literacy and inclusion, explain the contribution of digital financial literacy to the convenience of MSMEs, explain the contribution of digital inclusion to MSMEs and discuss the advantages, disadvantages and solutions of digitalization of financial literacy and inclusion in its implementation. The method used in the study is RISMA 2020 (Preferred Reporting Items for Systematic review and Meta-Analyses) aimed at increasing the transparency and completeness of reporting systematic review results making it easier for readers to assess the trustworthiness and applicability of review findings. The result of digital transformation is financial access and financial literacy providing convenience through an easy-to-use and secure financial service platform for both the general public and business owners in conducting transactions, financing and investment. Digitalization of financial literacy will facilitate financial access, get financial education, and facilitate transactions, but in some countries financial inclusion does not have a significant effect on alleviating MSMEs, if these countries provide policies to financial institutions to increase lending with easy collateral it will enable the success of MSMEs.*

**Keywords:** *Digital Transformation, Digital Literacy, Financial Inclusion, Msmes*

---

## **INTRODUCTION**

The development of the digital revolution has brought significant changes in various sectors and industries as well as banking services that have penetrated the conveniences offered to customers, including MSMEs. (Ardianto dkk., 2024)states that explore the role of technology and digitalization in accelerating banking services, to improve operational efficiency, and create a better customer experience. The use of technologies such as artificial intelligence, data analytics, and cloud technology is also in the spotlight in shaping the modern banking landscape. One of the areas that has benefited greatly from this transformation is the micro, small and medium enterprises (MSMEs) sector. MSMEs play an important role in the country's economy, not only as a significant contributor to economic growth but also as a backbone to maintain stability and balance in the national economy (BI, 2020). Bank Indonesia's support in providing financial facilitation through MSME product development includes the development of volatile food production, regional economic development, and entrepreneurship (WUBI). (To Tarti; Asmuni, 2022) The rapid development of technology and the internet is a challenge and driver to continue to innovate and be creative in combining digital technology with customer interaction, providing a form of good service and attention to customers and various services that can facilitate customers, such as *Internet Banking, SMS Banking and mobile banking*. In this case the bank can cooperate with other cellular operators, so that a SIM card (Mobile Chip Card) has been installed and *Global for Mobile Communications (GSM)*. The aspect of accelerating access is supported by facilitating financial access, market access, knowledge networks, innovation, and

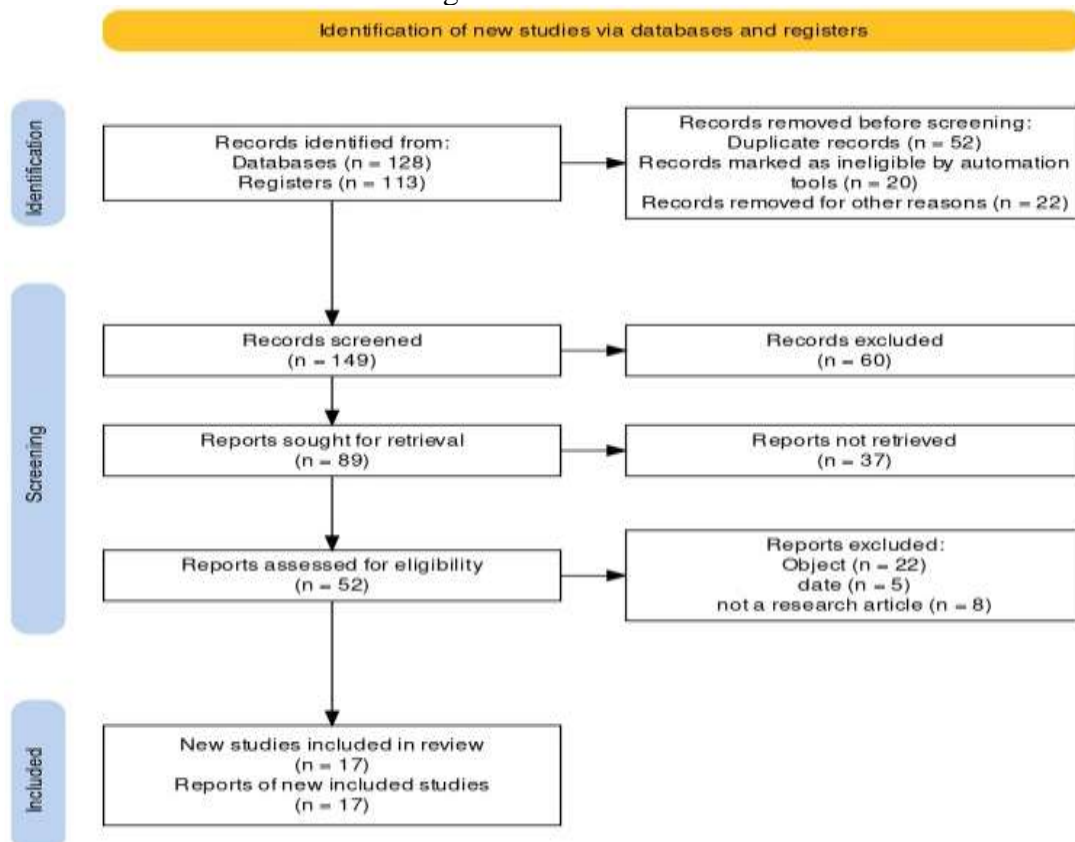
digitalization. Infrastructure support and institutional involvement contribute to the formation of an optimal MSME ecosystem through regulation, financial inclusion, consumer protection, literacy, working capital, monitoring, evaluation, and strengthening institutional systems. MSMEs have become a major focus, particularly in Indonesia and globally, building synergies in both laws and government policies by ensuring fairness, certainty, opportunity, protection, and comprehensive support (Law No. 20 of 2008 concerning Micro, Small and Medium Enterprises [JDIH BPK RI], 2008). To support the growth of MSMEs, the provision of access to facilities, guidance, mentoring, and strengthening assistance is very important to grow and improve their capabilities and competitiveness. Financial literacy and inclusion are fundamental aspects for successful business operations, which include understanding capital and transaction facilities. Global Partnership Indicators (GPFI, 2023) The data revealed a global increase, with 515 million adults opening accounts at financial institutions or through mobile money services between 2014 and 2017, showing an increase from 62% to 69% of the adult population with accounts. Despite this progress, 1.7 billion adults still lack bank accounts, highlighting existing disparities. In developing countries, women are 9 percentage points less likely to have a bank account than men. Digital transformation has facilitated financial literacy, using mobile technology to provide a user-friendly interface suitable for individuals with varying levels of literacy. The platform delivers engaging visual content, including videos, infographics, and interactive quizzes, making the learning process more engaging and effective (Kojo Oseifuah, 2010). Studies emphasize the importance of financial literacy in entrepreneurship skills, education, and training for the development of small, micro, and medium enterprises (Dewi et al., 2020). The importance of digital financial literacy in financial decision making to maintain financial and economic stability has also been underlined (Hussein et al., 2020).

Digital transformation has driven financial inclusion towards digitalization, improving service delivery to the public. Financial Inclusion, identified as supporting 7 of the 17 Sustainable Development Goals, has been committed to worldwide advancement by the G20 by 2020, emphasizing the application of the High-Level Principles for Digital Financial Inclusion (Bank word, 2022). The World Bank Group considers Financial Inclusion a key factor in reducing extreme poverty and improving collective well-being. The ability to access transaction accounts is the first step towards broader Financial Inclusion, allowing people to save money and send or receive payments. During the COVID-19 pandemic, digitally connected MSMEs showed greater resilience. The Indonesian government emphasizes digital financial inclusion in MSME financing to reduce the gap due to global uncertainty due to the pandemic and geopolitical conditions. Digital Financial Inclusion is defined as the availability and ease of access to basic formal financial services for the entire population (Ozili, 2021). Its impact on financial inclusion and stability affects financial service users, digital financial providers, governments, and the economy at large (Wang & Fu, 2022) and (Ahmad et al., 2022). In developing countries with low inclusion rates, governments can design policies to support Financial Inclusion in MSMEs, ensuring long-term financial stability. Digital Financial Inclusion can provide appropriate and effective financial services at affordable costs for those who need it (Annemalla, 2023) and (Li et al., 2023). Financial Inclusion as comprehensively outlined by Bank Indonesia (2020) includes the formulation of a national strategy covering service facilities, appropriate products, responsible finance through financial education, and consumer protection. Its implementation begins by setting clear targets and can initially involve recipients of government social programs or migrant workers (TKI) before it is gradually used by the general public. Financial Inclusion, as regulated in Indonesia by the Financial Services Authority of the Republic of Indonesia No. 76/POJK.07/2016 on "Increasing financial literacy and inclusion in the financial services sector for consumers and/or the public," emphasizes access to various financial institutions, products, and services tailored to the needs and capabilities of the community to improve welfare.

Understanding financial digitalization as a support for achieving MSME goals is critical for their survival and growth. This article attempts to answer and explain questions about key aspects of digital transformation, financial literacy, and inclusion, highlighting their contribution to ease the way for MSMEs. In addition, it also discusses the advantages, disadvantages, and solutions for digitizing financial literacy and inclusion in the implementation of MSMEs.

## RESEARCH METHODS

The method used in this study is RISMA 2020 (*Preferred Reporting Items for systematic review and meta-analysis*) (Page et al., 2021) aims to improve the transparency and completeness of systematic review reporting, observe the structure of the article that includes checklist items, and expand the article items by identifying and understanding the key terms used in the article to ensure a correct understanding of the material (eg: systematic review, statistical synthesis, meta-analysis, results, results, reports, notes) results can be concluded to improve the quality of systematic review Reporting makes it easier for readers to assess the trustworthiness and applicability of reviewing findings. In this article the article items obtained based on the Science Direct database, the use of the keywords "digital financial literacy in MSMEs," "digital financial inclusion in MSMEs," "digital transformation of financial access," "ease of MSMEs," combined with Boolean operators "and" and "or," aims to find published articles. The inclusion criteria are: 1) articles published between 2017 and 2023, 2) articles with research design, 3) articles in English, 4) articles published in full-text format, 5) open access. There are 17 articles that meet these criteria as the digitization of financial literacy and inclusion begins in 2020. The process of article identification is illustrated in Figure 1



## RESULT AND DISCUSSION

### **Describe digital transformation in financial literacy and inclusion.**

The digital transformation of financial literacy and inclusion, both in Indonesia and globally, began in the mid-2010s and witnessed a rapid increase in mobile-based account registration. This growth continued into 2020, coinciding with the onset of the COVID-19 pandemic. The pandemic caused limitations in face-to-face transactions for personal and business needs, forcing a rapid shift towards digital platforms. Digital transformation significantly reduces financial literacy by introducing advancements in mobile technology, offering user-friendly interfaces suitable for individuals with varying levels of literacy. The platform presents content in visually appealing formats such as infographics and interactive media, making the learning process engaging and effective. This digital transformation facilitates and accelerates access to financial services, markets, knowledge networks, innovations, and tools, making them user-friendly, effective, and efficient. The role of technology, consumer behavior, ecosystems, and regulation of the financial industry as a whole is very important in this digital revolution (Iman, 2020). The application of digital technology in finance covers various aspects such as banking, payments, loans, investment, insurance, and financial management. This transformation transforms consumer interaction with financial services through mobile applications and peer-to-peer lending to facilitate financial access (Yoga and Yoga, 2022). Digital financing positively mediates the relationship between financial inclusion and performance. Research findings show that digitalization contributes to developing and popularizing low-cost, secure, and low-risk digital financing services, adopting and adapting digital financing while increasing necessary financial literacy from a demand perspective (Nasiri et al., 2022). Intensity in digitalization is necessary to contribute to digital and financial orientation. To achieve financial success in digital transformation, companies need a strategic approach that considers digital orientation, intensity, and digital maturity simultaneously. Digital transformation impacts all activities, forcing a shift towards digitalization. Access to finance and education in line with these changes, provides convenience through platforms offered by banking and non-banking institutions, with easy and safe tools for the general public and MSME owners to transact, finance, and invest.

### **The contribution of financial digital literacy to the convenience of MSMEs.**

The contribution of digital literacy to the convenience of MSMEs has been established through government regulations and cooperation with banking and non-banking financial institutions to provide an easy, fast, cost-effective, and secure digital service platform. The tools provided on the banking platform facilitate understanding of each step of use, with help center services available to assist in understanding transactional tools and needs. In addition to usability, digital literacy makes it easy for MSMEs to produce business transaction reports or guides for investment (Okello Kandia Bangmin et al., 2017). Financial literacy and access have a positive and significant effect on the growth of SMEs in developing countries (Hamdana et al., 2022). SME owners with financial literacy, supported by technological literacy and supply chain practices, contribute significantly to the sustainable and sustainable sustainability of SMEs (At Sea, 2023). Financial literacy, acting as a mediator for financial access, contributes to the sustainability of small businesses by providing access to formal credit financing, maintaining the sustainability of small businesses in Ethiopia (Abukari et al., 2023). Digital adoption affects the performance and sustainability of MSMEs, influenced by financial literacy, financial access, performance expectations, business aspirations, and social influence. Previous research has shown that digitalization of financial literacy will facilitate MSME access to finance, financial education, transactional ease, and will encourage sustainable business growth with support from all parties, including the government, banking, and non-banking sectors.

### **Contribution of Digital Financial Inclusion for MSMEs**

The ease of financial access has soared along with the proliferation of account opening and digital transactions. The ability to access transaction accounts is the first step towards broader Financial Inclusion, as these accounts allow people to save money and send or receive payments. Transaction accounts act as gateways to other financial services, emphasizing the need to ensure global access to transaction accounts remains a focal point of digitizing financial inclusion. The government and banks collaborate to increase financial inclusion for MSMEs through direct literacy and digital literacy through training, socialization, and ensuring security in accessing finance, transactions, and investment. Digitalization and financial inclusion (Ozili, 2018) generally benefits users of financial services, providers, governments, and economies. However, there are still some issues that need to be addressed to better function digital finance for individuals, businesses, and governments. Discussion on national-level projects aimed at achieving financial inclusion through digital finance is needed (Hussain et al., 2018). In the Midlands, UK, financial literacy is provided to MSMEs and schools to address information asymmetry, reduce collateral requirements, optimize capital structure, and improve financial access (Yang & Zhang, 2020). In China, digital financial inclusion provides appropriate and effective financial services in financing and increases the efficiency of MSMEs (Annemalla, 2023). It should be noted that loans to MSMEs reduce Non-Performing Loans (NPLs) and maintain the financial stability of countries with high per capita income (Hu & Wang, 2023). Research findings show that digital financial inclusion significantly reduces SME financing constraints (Okoduwa et al., 2023). In Nigeria, digital financial inclusion reduces MSME financial mismatch. However, poverty reduction through financial inclusion depends on measures such as increasing loan volumes and developing financial instruments such as MSME Bonds in the stock market. The research findings explain that digital financial inclusion plays an important role in the growth and sustainability of MSMEs in a country and can maintain national financial stability. However, in some countries, financial inclusion does not have a significant impact on MSME alleviation unless financial institutions are given policies to ease loan terms, ensuring the success of MSMEs.

### **Discussion of Advantages, Disadvantages, and Solutions of Digitalization in the Implementation of Financial Literacy and Inclusion for MSMEs**

MSMEs benefit from the digital transformation of financial literacy and inclusion by providing easier, faster, and safer access to online platforms, banking applications, and financial information portals for knowledge acquisition and services. It becomes more effective and efficient as administrative processes and transactions can be automated through digitization, saving time and enabling operations from anywhere. MSMEs can choose preferences in financial management, investment, and financial reporting using financial application software. In addition, they can easily determine the source of capital through crowdfunding platforms, peer-to-peer lending, or other digital financing options.

Apart from several advantages, there are also disadvantages in the digitization of financial literacy and inclusion. Not all MSMEs have or are proficient in technology, limiting their access to financial convenience. There is a need to understand data security, technology adaptation processes, and requirements for mentoring to improve the learning curve and skills. Externally, relying on technology requires MSMEs to have an understanding of risk management to choose solutions if there are barriers to the use of technology, ensuring business stability.

To overcome these challenges, getting guidance and education on utilizing financial digitalization, having alternative financing, improving human resource skills, choosing affordable and suitable digital solutions for MSMEs, and seeking government support, such as grants offered, are essential (Hamdana et al., 2022). Understanding the implementation of financial literacy, technological literacy, and supply chain strategies helps MSMEs make the

right financial decisions (Lontchi et al., 2023). Digital finance has a positive impact on MSMEs in Cameroon, where financial literacy acts as a mediator variable in financial technology that significantly affects the performance of MSMEs. MSMEs can increase efficiency, reduce costs, improve business processes, and drive innovation. Understanding financial literacy helps SMEs make informed financial decisions.

## CONCLUSION

Digital transformation facilitates financial literacy through advances in mobile technology that offer easy-to-use interfaces suitable for individuals with varying levels of literacy. The platform delivers visually engaging content, such as infographics and interactive materials, making the learning process more engaging and effective. Digital transformation in financial literacy and inclusion accelerates access by supporting ease of financial access, market access, knowledge networks, innovation, and digitalization through user-friendly, effective, and efficient tools. It serves as a significant measure of digitalization of financial inclusion. Collaboration between the government and banks is essential to increase financial inclusion for MSMEs through direct and digital literacy through training and ensuring security of financial access, transactions, and investment for MSME stakeholders. Digital financial inclusion plays an important role in the growth and sustainability of MSMEs in a country and contributes to maintaining national financial stability. However, in some countries, financial inclusion does not have a significant impact on the increase in MSMEs unless the government provides policies to financial institutions, facilitating loans with ease of collateral, thus enabling the success of MSMEs

## REFERENCES

- Abukari, K., Musah, A., & Assaidi, A. (2023). The Role of Corporate Sustainability and Its Consistency on Corporate Financial Performance: Canadian Evidence\*. *Accounting Perspectives*, 22(1), 55–86. <https://doi.org/10.1111/1911-3838.12309>
- Ahmad, M., Ahmed, Z., Bai, Y., Qiao, G., & Popp, J. (2022). *Financial Inclusion, Technological Innovation, and Environmental Quality: Analyzing the Role of Green Openness*. 10(February), 1–12. <https://doi.org/10.3389/fenvs.2022.851263>
- Annemalla, R. (2023). *Does financial inclusion lead to financial stability? Evidence from South Asian countries – the case of SMEs*. 25(2), 132–141.
- Ardianto, R., Ramdhani, R. F., Octavia, L., Dewi, A., Saputri, Y. W., Lestari, A. S., & Hadi, N. (2024). Digital Transformation and Anticipation of Global Economic Changes in the Banking World. *MARAS: Journal of Multidisciplinary Research*, 2, 80–88. Digital Transformation; Banking; Global Economy; Financial Technology; Anticipate change; Business Strategy
- BI. (2020). *MSME Development*. Bank Indonesia. <https://www.bi.go.id/id/fungsi-utama/stabilitas-sistem-keuangan/pengembangan-umkm/Default.aspx>
- Dewi, V. I., Febrian, E., Effendi, N., Anwar, M., & Nidar, S. R. (2020). Financial literacy and its variables: Evidence from Indonesia. *Economics and Sociology*, 13(3), 133–154. <https://doi.org/10.14254/2071-789X.2020/13-3/9>
- GPFI. (2023). *G20 Financial Inclusion Indicators*. GPFI. <https://datatopics.worldbank.org/g20fidata/>
- Hamdana, Murwani, F. D., Sudarmiatin, & Hermawan, A. (2022). Effects of financial literacy and technology on the sustainability of Indonesian SMEs: The mediating role of supply chain

- practices. *Uncertain Supply Chain Management*, 10(4), 1449–1456.  
<https://doi.org/10.5267/j.uscm.2022.6.011>
- Hossain, M. M., Ibrahim, Y., & Uddin, M. M. (2020). Finance, financial literacy and financial growth of small companies in Bangladesh: the effectiveness of government support. *Journal of Small Business and Entrepreneurship*, 0(0), 1–26.  
<https://doi.org/10.1080/08276331.2020.1793097>
- Hu, G., & Wang, S. (2023). *Digital financial inclusion, financial mismatch and Small and medium enterprises Financing Constraints*. 01011.
- Hussain, J., Salia, S., & Karim, A. (2018). Is knowledge powerful? Financial literacy and access to finance: Analysis of companies in the UK. *Journal of Small Business and Enterprise Development*, 25(6), 985–1003. <https://doi.org/10.1108/JSBED-01-2018-0021>
- Kojo Oseifuah, E. (2010). Financial literacy and youth entrepreneurship in South Africa. *African Journal of Economic and Management Studies*, 1(2), 164–182.  
<https://doi.org/10.1108/20400701011073473>
- Li, Y., Sun, G., Gao, Q., & Cheng, C. (2023). *Digital Financial Inclusion, Financial Efficiency and Green Innovation*. 1–14.
- Lontchi, CB, Yang, B., & Shuaib, KM (2023). The Effect of Financial Technology on SME Performance in Cameroon Amid COVID-19 Recovery: The Mediating Effects of Financial Literacy. *Sustainability (Switzerland)*, 15(3). <https://doi.org/10.3390/su15032171>
- Meressa, H.A. (2023). Entrepreneurial financial literacy – the nexus of small business sustainability in Ethiopia. *Convincing Business and Management*, 10(2), 1–18.  
<https://doi.org/10.1080/23311975.2023.2218193>
- Nasiri, M., Saunila, M., & Ukko, J. (2022). Digital orientation, digital maturity, and digital intensity: critical factors for financial success in digital transformation settings. *International Journal of Production Operations and Management*, 42(13), 274–298.  
<https://doi.org/10.1108/IJOPM-09-2021-0616>
- Okello Candiya Bongomin, G., Mpeera Ntayi, J., Munene, JC, & Akol Malinga, C. (2017). The relationship between financial access and SME growth in developing countries: Financial literacy as moderator. *International Business and Strategy Overview*, 27(4), 520–538.  
<https://doi.org/10.1108/RIBS-04-2017-0037>
- Okoduwa, D. I., Kwanashie, M., & Ogbonna, CAC-. (2023). *The Effects of Financial Development and Financial Inclusion on Poverty Reduction in Nigeria*. 19(3), 183–199.
- Ozili, P. K. (2018). The impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329–340. <https://doi.org/10.1016/j.bir.2017.12.003>
- Page, MJ, Moher, D., Bossuyt, PM, Boutron, I., Hoffmann, TC, Mulrow, CD, Shamseer, L., Tetzlaff, JM, Akl, EA, Brennan, SE, Chou, R., Glanville, J., Grimshaw, JM, Hróbjartsson, A., Then, MM, Li, T., Loder, E. W., Mayo-Wilson, E., Mcdonald, S., ... Prism, M. (2021). *Research Methods And Reporting Prisma 2020 Explanation And Elaboration: Updated Guidelines And Examples For Reporting A Systematic Review Reviewing Findings. Which is preferred*. <https://doi.org/10.1136/bmj.n160>
- Law No. 20 of 2008 concerning Micro, Small and Medium Enterprises [JDIH BPK RI], 2 (2008). <https://peraturan.bpk.go.id/Home/Details/39653/uu-no-20-tahun-2008>
- Tartila; Asmuni, M. (2022). Sharia Banking Industry Strategy in Facing the Digital Era. *Scientific Journal of Islamic Economics*, 8(03), 3310–3316.
- Thathsarani, A.S., & Jianguo, W. (2022). Do Digital Finance and Technology Acceptance Models Strengthen SME Financial Inclusion and Performance? *Information (Switzerland)*, 13(8). <https://doi.org/10.3390/info13080390>
- The bank said. (2022). *FINANCIAL INCLUSION*. World Bank. <https://www.worldbank.org/en/topic/financialinclusion/overview>

- Wang, X., & Fu, Y. (2022). Digital financial inclusion and vulnerability to poverty: evidence from Chinese rural households. *Chinese Agricultural Economics Review*, 14(1), 64–83. <https://doi.org/10.1108/CAER-08-2020-0189>
- Yang, L., & Zhang, Y. (2020). *Digital financial inclusion and sustainable growth of small and micro enterprises – proof based on new third-board companies listed in the Chinese market.*