AI Literacy Level in MSMEs Assisted by PLUT South Sulawesi

Bahrul ulum Ilham*[1], Ahyar Muawwal[2]
[1]Institut Teknologi dan Bisnis Nobel, Indonesia
[2]STIMIK Kharisma Makassar, Indonesia
Corresponding author: bahrul@nobel.ac.id

Abstract: This research aims to evaluate the level of artificial intelligence (AI) literacy among Micro, Small, and Medium Enterprises (MSMEs) assisted by the South Sulawesi Integrated Business Service Center or Pusat Layanan Usaha Terpadu (PLUT). AI literacy refers to the UN definition as the ability to "understand, use, monitor and critically reflect on artificial intelligence applications without having to be able to develop AI models," precisely the level of understanding, interaction, and utilization of MSME artificial intelligence technology in supporting business. The research method used was a survey and structured interviews with owners and managers of MSMEs in Makassar City. The collected data was analyzed using quantitative and qualitative approaches. The research results show that the level of AI literacy among MSMEs in Makassar City varies, with most respondents needing a more conceptual understanding of AI. Meanwhile, the level of operational expertise and strategic insight into using AI in a business context still needs improvement. This research implies the importance of increasing AI literacy among MSMEs to enable them to utilize this technology effectively in improving their business performance and competitiveness.

Keywords: literacy, artificial intelligence, business, technology, MSMEs

A. Introduction

Micro, small, and medium-sized enterprises (MSMEs) are essential in local, national, and global economic development and growth. Globally, MSMEs cover 90% of the business sector, contribute 40% to GDP in developing countries, and create two-thirds of the world's jobs. In OECD countries, MSMEs account for 70% of employment. MSMEs also support the achievement of the Sustainable Development Goals (SDGs) by driving inclusive and sustainable economic growth, providing decent jobs, supporting sustainable industrialization and innovation, and reducing income inequality (OECD, 2022).

In Indonesia, MSMEs are the central pillar of the national economy. The role of MSMEs in Indonesia's economic history is undoubtedly proven to be able to survive and boost the people's economy during the monetary crisis and the COVID-19 pandemic. There are around 65 million MSME players in Indonesia, which contribute around 61% of GDP and absorb around 117 million workers or 97% of the total workforce in this sector. The

employment rate in the MSME sector in Indonesia is among the highest in the world (Revo M, 2024).

Digitalization is not just a trend but a transformative force for developing MSMEs. It offers a beacon of hope, enabling MSMEs to survive and thrive in an increasingly competitive market. By embracing digitalization, MSMEs can enhance business efficiency, broaden market reach, and optimize resources. Moreover, digitalization can bolster the brand image and foster customer loyalty, painting a promising future for MSMEs in Indonesia (Barus et al., 2023).

The Indonesian government continues encouraging the digitization of Micro, Small, and Medium Enterprises (MSMEs). As of December 2023, 27 million MSMEs have been integrated into the digital ecosystem, with a target of reaching 30 million digital MSMEs by 2024 (Suhayati, 2023). While digitalization brings many benefits, it also faces challenges. The Ministry of Information and Communication released that of the four pillars of the Indonesian Digital Society Index (IMDI), the empowerment pillar, which measures the literacy and capacity of MSMEs in utilizing digital technology, received the lowest score of 22.06 out of 100 (Ameliah et al., 2022). The lack of digital literacy makes MSMEs vulnerable to data breaches, phishing, and other cyber threats.

Currently, digital literacy in Makassar City is recorded at 3.5%. In South Sulawesi, the platforms most frequently used by the public are WhatsApp and Facebook, with most users accessing the internet between 7:01 am - 10:00 am and 10:01 am - 12:00 pm. In addition, around 40.59% of South Sulawesi people use social media due to the influence of close people, such as friends and family, who are also active on these platforms. Therefore, government and stakeholder support to strengthen the MSME sector as the backbone of the

Indonesian economy is very important (Pujianto, 2023).

South Sulawesi, one of the provinces in Indonesia, has many MSMEs that contribute significantly to the local and national economies. MSMEs in South Sulawesi are engaged in various sectors, such as handicrafts, food, and services, with a total of 1.5 million business units. Of these, around 525,000 MSMEs, or 35 percent, have utilized digital technology in running their businesses.

The Ministry of Cooperatives and SMEs organizes mentoring programs through PLUT, in collaboration with the South Sulawesi Provincial Government, to rapidly improve the competitiveness, productivity, added value, and work quality of cooperatives and MSMEs. Since its establishment in 2014, PLUT South Sulawesi has become a technical unit that provides inclusive business assistance and empowerment for cooperatives and MSMEs, including digitalization.

The underutilization of AI by MSMEs is a shared responsibility of various key stakeholders. The government, through its policies, plays a crucial role. Universities, with their pool of AI experts, are responsible for disseminating this knowledge to the community, especially MSMEs. State-owned enterprises (SOEs) and the private sector also have a social responsibility to support the development of MSMEs, which will enhance their reputation and contribute to the growth of the MSME sector (adminfem, 2024).

Therefore, it is imperative to conduct a comprehensive study to determine and evaluate the level of artificial intelligence (AI) literacy among Micro, Small, and Medium Enterprises (MSMEs) assisted by the South Sulawesi Integrated Business Service Center (PLUT). This institution has a crucial role in improving the competitiveness of MSMEs, mainly through digitalization. The findings of this study will provide valuable insights

and guide future initiatives to enhance AI literacy among MSMEs.

B.   Materials and Methods

The shift in consumer behavior from offline to online shopping is inevitable for MSMEs. This necessitates a rapid enhancement of digital skills, including adaptability to business digitalization and AI, which affects various sectors such as manufacturing, education, finance, transportation, health, and other sectors (Indef, 2023).

Artificial Intelligence (AI), a field of computer science that aims to develop systems that can complete tasks that usually require human intelligence, can help meet the various needs of MSMEs. The urgent goal of AI is to create machines or computer programs that can understand, learn, plan, and adapt like humans (Matoati et al., 2024).

Meanwhile, MSMEs are seen as needing to be more optimal in keeping up with the times, especially in the digital era. This is due to the need for more independent initiative in developing businesses, low interest in entrepreneurship in the digital 4.0 era, and difficulties in developing effective product marketing strategies (Ismah et al., 2020). Thus, implementing the most appropriate MSME digitization strategy may vary depending on each region's specific conditions and context (Laziva et al., 2024).

Digital Skills can be categorized into three levels: basic, intermediate, and advanced. Essential skills include basic hardware and software usage and information and media literacy. Digital literacy competency areas include communication, collaboration, critical thinking, data literacy, familiarity with ICT, and device and personal security. (UNESCO, 2018) (Nancy, 2018)

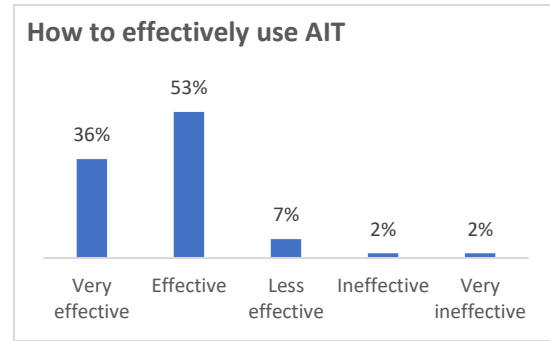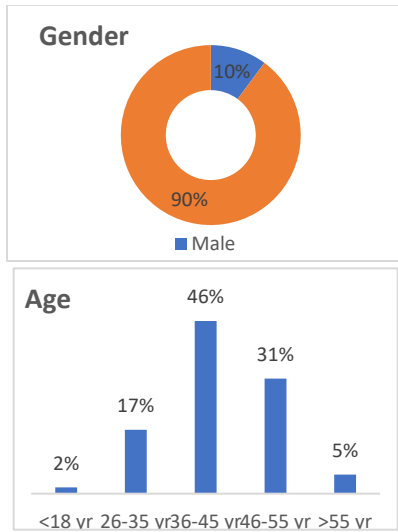In the context of SMEs, AI literacy includes understanding, interacting with, and utilizing AI technologies to achieve professional and organizational goals. AI literacy for professionals consists of three key components: conceptual understanding of AI and machine learning principles; operational proficiency to work effectively with AI tools and systems to solve real business problems; and strategic insight to understand the potential impact of AI on the organization, risk management, ethical considerations, and change management, as well as the ability to identify opportunities that can increase value and drive AI initiatives in the organization. (Bizzari, 2023)

AI literacy holds immense potential to empower SMEs in a dynamic business landscape. By grasping AI applications, SMEs can unlock new opportunities for growth and efficiency, including sales optimization, consumer trend prediction, and operational simplification (Aggarwal, 2024).

This study aims to determine and evaluate the level of artificial intelligence (AI) literacy among Micro, Small, and Medium Enterprises (MSMEs) assisted by the South Sulawesi Integrated Business Service Center (PLUT). The research method used is descriptive qualitative. Primary and secondary data were the sources of information in this research. Data collection was done through observation, interviews, and documentation. Data analysis includes data reduction, data presentation, and conclusion drawing.
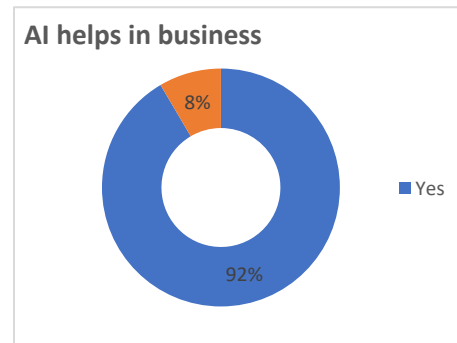
C.   Result and Discussion

The majority of respondents were aged between 36 and 45 (46%) and 46 and 55 (31%), with the majority being female (90%). This demographic information influences AI literacy and openness to adopting new technologies.

Gender

90% Male
10%

Age

2%   17%   46%   31%   5%

<18 yr   26-35 yr 36-45 yr 46-55 yr >55 yr

How to effectively use AIT

36%   53%   7%   2%   2%

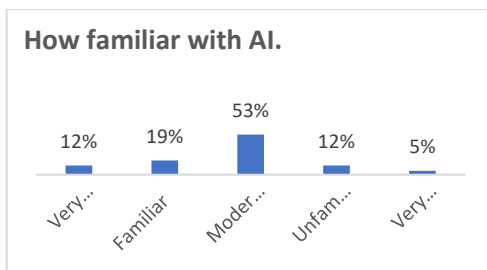Very effective   Effective   Less effective   Ineffective   Very ineffective

Notably, 89% of respondents believe that AI effectively increases sales for their micro-businesses. This positive perception aligns with the theory that AI can enhance business performance through increased

AI helps in business

8%
92%
Yes

efficiency and decision-making.

Most respondents (53%) are somewhat familiar with AI concepts or applications, 19% are familiar, and 12% are very familiar with AI. This indicates moderate AI literacy, which is essential for effectively integrating AI into business operations. Most respondents (64%) have used AI applications or tools, such as virtual assistants or online product recommendations. This indicates practical engagement with AI technology and is a positive indicator of AI literacy.

It's reassuring that most respondents (92%) felt that AI helped them identify the right market for their micro-business. This supports the theory that AI can provide valuable insights into consumer behavior and preferences, which can help in more targeted marketing strategies.
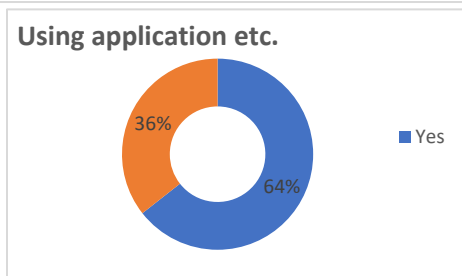
The study showed varying levels of understanding of AI among respondents. Around 27% of respondents could explain AI, while 47% could explain some, 25% said they could not. This shows that while there is a basic understanding of AI, there is room for improvement in AI literacy to ensure more people can fully understand the concept of AI. Confidence in personal data security when using AI applications was mixed. Only 8% of respondents felt very confident, and 27% were somewhat

How familiar with AI.

12%   19%   53%   12%   5%

Very..   Familiar   Moder..   Unfam..   Very..

Using application etc.

36%
64%
Yes

confident. A large majority, 51%, remained neutral, and 14% were somewhat confident. This highlights the need for better communication and assurance regarding AI data security to build user trust.

Explain AI works

Confidence in security of personal data
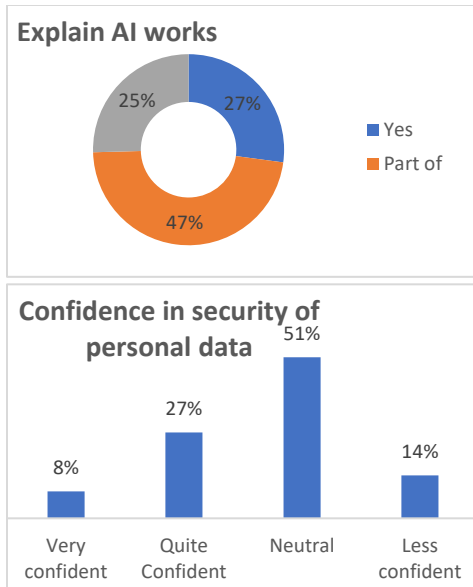
The anticipated impact of AI on the operational processes of Micro, Small, and Medium Enterprises (MSMEs) is significant. Most respondents, 51%, believe AI will significantly impact MSMEs, and 36% think it will have a significant impact. This underscores the importance of AI adoption and literacy in business to leverage AI for operational improvement and competitive advantage. Concerns and Challenges: There are concerns about the use of AI technologies, such as over-reliance on the technology and difficulties in gaining access and resources to adopt AI. These concerns highlight the need for balanced AI literacy that addresses AI technologies' benefits and potential risks.

Biggest concern on AIT
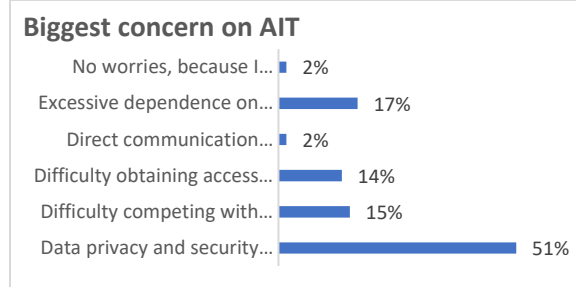
In short, while there is recognition of the importance of understanding AI and its potential impact on business, there are also significant concerns about data security and challenges in AI adoption. Addressing these issues through increased AI literacy and security measures can help maximize the benefits of AI technology.

D. Conclusion

The conclusion of this study shows that micro and small business owners have a moderate level of AI literacy and a positive view of AI's benefits. However, increasing AI literacy must address challenges like data privacy and competition. Recommendations include developing a comprehensive AI literacy program, promoting success stories of AI adoption, addressing data privacy issues, facilitating access to affordable AI resources, and encouraging research collaboration between academia, industry, and government to create innovative solutions for MSMEs.

References

adminfem. (2024, April 23). *Model Bisnis Berbasis AI untuk UMKM Berkelanjutan.* Https://Fem.Ipb.Ac.Id/Index.Php/2024/04/23/Model-Bisnis-Berbasis-Ai-Untuk-Umkm-Berkelanjutan/.

Aggarwal, T. (2024, April 3). Empowering MSMEs: The role of AI literacy. *Https://Www.Orfonline.Org/Research/Empowering-Msmes-the-Role-of-Ai-Literacy*.

Ameliah, R., Rangga, Negara, A., Minarto, B., Tonggo, Manurung, M., & Akbar, M. (2022). *Survei Status Literasi Digital Indonesia 2022.*

Barus, D. R., Simamora, H. N., Sihombing, M. G. S., Panjaitan, J., & Saragih, L. S. (2023). Tantangan dan Strategi Pemasaran UMKM di Era Teknologi dan Digitalisasi. *Journal of Creative Student Research (JCSR), 1*(6), 357–365. https://doi.org/10.55606/jcsrpolitama.v1i6.2958

Bizzari, F. (2023, August 9). *AI Literacy, A Key Competency for SMEs in the New Era.* Https://Www.Adsmehub.Ae/En/Explore/Post-Details/Ai-Literacy-a-Key-Competency-for-Smes-in-the-New-Era.

Indef. (2023, March 9). *Diskusi Publik "Artificial Intelligence: Disrupsi Bagi Ekonomi?"* Https://Indef.or.Id/En/Diskusi-Publik-Artificial-Intelligence-Disrupsi-Bagi-Ekonomi/.

Ismah, Suhendri, & Kusyardani, W. (2020). Digital Literacy Training in The Era of 4.0 for Small Businesses to Increase Entrepreneurship Intention. *ALTRUIS Journal of Community Services, 1*(4).

Laziva, N., Atieq, M. Q., Program, M., Manajemen, S., Ekonomi, F., & Bisnis, D. (2024). Studi Literatur Digitalisasi UMKM (Usaha Mikro, Kecil, dan Menengah) di Era Masyarakat 5.0: Strategi dan Faktor. *Manajemen Business Innovation Conference-MBIC, 4,* 1050–1079. https://jurnal.untan.ac.id/index.php/MBIC/index

Matoati, R., Eryogia, K. N. E., & Zahra, N. (2024, April 18). Model Bisnis Berbasis AI untuk UMKM Berkelanjutan. Https://Republika.Id/Posts/52105/Model-Bisnis-Berbasis-Ai-Untuk-Umkm-Berkelanjutan.

Nancy, L. (2018). A Global Framework of Reference on Digital Literacy Skills for Indicator. *UNESCO Institute for Statistics: Quebec, 4*(2).

OECD. (2022). *Malaysia : Key facts on SME financing.*

Pujianto, E. (2023, June 21). *Literasi Digital Rendah, Warga Sulsel Paling Banyak Pakai WhatsApp dan Facebook.* Https://Indonesiainside.Id/Tekno/2023/06/21/Literasi-Digital-Rendah-Warga-Sulsel-Paling-Banyak-Pakai-Whatsapp-Dan-Facebook.

Revo M. (2024, March 7). UMKM Indonesia Jadi Raja di Dunia, 97% Serap Tenaga Kerja. Https://Www.Cnbcindonesia.Com/Research/20240307154500-128-520473/Umkm-Indonesia-Jadi-Raja-Di-Dunia-97-Serap-Tenaga-Kerja.

Suhayati, M. (2023). *Digitalisasi Usaha Mikro, Kecil dan Menengah* (24; XV).