

Digital Technology Adoption in Entrepreneurs: Are Ex-Migrant Workers More Adaptive?

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Abstract

Research Originality: Migrant workers should have improved their skills and be more adaptive to applying digital technology. This research contribution focuses on ex-migrant workers with current careers as business owners.

Research Objectives: This research reviewed the determinant factor of technological adoption on entrepreneurs with the experience of ex-migrants based on some factors, such as migrant, demographic, and business.

Research Methods: The applied method of this study is - logit regression analysis. This study examined 329 business owners of 1.518 workers as surveyed by the National Workforce Survey, SAKERNAS, in Mataram, in the period 2022.

Empirical Results: The research result was the lower digital technology adoption of ex-migrant business owners than the non-ex-migrant workers. The causal factor was the poor educational level of ex-migrant workers in Indonesia.

Implications: The empirical implication of this study is - to determine the empowerment program of ex-migrant workers regarding the digital technology utility within the scope of entrepreneurship activities and technological transfer through the ex-migrant workers of Indonesia.

Keywords:

digital technology adoption; ex-migrant workers; migrant workers; entrepreneurs; logistic regression

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INTRODUCTION

Many phenomena of ex-migrant workers, such as in Beijing, have become the focus of attention. Many ex-migrant workers have specific employment, especially in the agriculture sector. The agriculture sector or farmer market is a vital accelerator of socio-economic activities. However, the hindrances to penetrating this market for businessmen are dominant factors. Ex-migrant workers or businessmen with adequate facilities, such as market renovation for better market management, business prospects, stable turnover, and a green business environment, could make the agriculture market an excellent entrepreneurship sector for ex-migrant workers (Chen & Liu, 2019).

In overseas countries, such as Japan, the success of ex-migrant workers in Japan is inseparable from the social, economic, and cultural networks or association with the targeted migrant countries. The establishment of this network occurs due to association, partnership, and equal ethnicity. Many assumptions perceive that capitalist countries are countries with hard work so that the workers ignore the social relationship with local citizens. However, the reality shows that successful migrant workers establish socio-capital networks excellently with local citizens (Suppatkul et al., 2021). Individuals with working experience from advanced countries, in this case, the targeted countries, will have the potential to run personal businesses from the targeted countries with the obtained skills and knowledge. This matter positively influences native or original countries because these workers could transfer their knowledge and technology from the targeted countries (Zhang et al., 2021).

The penetration of technology and digitalization into entrepreneurship positively influences competitive power, financial performance, and sustainable market performance. The successful penetration also occurs due to high internet connection that improves entrepreneurship connectivity and integration (Chatzistamoulou, 2023; Dabbous et al., 2023; Ojha et al., 2023; Prasanna et al., 2019; Radicic & Petković, 2023; Skare et al., 2023; Wang & Esperança, 2023). Small and Medium Entrepreneurship in Southeast countries has grown significantly due to digital technology adoptions, such as Financial Technology (Fintech) (Karim et al., 2022; Nugraha et al., 2022). Digitalization improves business turnovers and facilitates business doers in managing their business permission (Afriyani et al., 2022). The implementation of digital technology in the era of technological advancements, such as social media, accelerates the This digital technology could simultaneously accelerate the processes of promotion and sale. The technology could also save cost and time (Fraccastoro et al., 2021; Kossai & Piget, 2014).

Studies about digital technology for businesses and small-medium enterprises found that businesses without digital-based sales and payment would suffer from lower turnover than those implementing digital technology for promotions and sales. Younger business owners of different ages could adopt digital technology. Another finding showed that small-medium enterprises with digital technology implementation had higher turnovers during the COVID-19 pandemic than those without (Kossai & Piget, 2014; Trinugroho et al., 2022). Almaududi Ausat et al. (2022) explain that corporate organization is important for small-medium enterprises to adopt digital technology. This adoption influences corporate performance. Perdana et al. (2022) found that policy or government support

also influenced businesses or small-medium enterprises by adopting digital technology and data analysis. These supports could be regulation and adequate infrastructure adjustments, such as a stable internet connection. Business factors also influence the decision of small-medium enterprises to adopt technology (Ghobakhloo & Ching, 2019; Rahayu & Day, 2015). The social aspect also becomes the determinant factor of digital technology adoption by entrepreneurs (Tajuddin et al., 2023).

The business behavior of individuals with ex-migrant experience would be more adaptive to applying technology (Khurana et al., 2022; Suppatkul et al., 2021; Zhang et al., 2021). The experience obtained while working in the target countries, such as in the advanced countries, correlates with adopting sophisticated digital technology. The businessmen with experience as ex-migrant workers in Indonesia must reflect the ideal conditions they obtain from advanced countries. The workers should have had excellent technology implementation from the target countries and excellent technology transfer in the homeland. However, the researchers did not find these matters reflected in the ex-migrant businessmen. Most migrants had low education levels, such as primary school, JHS, and SHS (Haer & Yuniarti, 2023; Aeni, 2019; Aisyah & Rahman, 2022; Cindiana et al., 2022). A study confirms that highly educated communities prefer working in a city to working in other regions because the preference provides many earnings (Sari & Yudhistira, 2023). The government has promoted training to empower ex-migrant workers. The evidence was observable in the research about ex-migrant workers' empowerment (Lusi et al., 2022; Wahyono et al., 2019). The researchers found that ex-migrant worker empowerment was essential to improve the economy by improving technology utility literacy, especially for business owners. This action also positively influenced the productivity and turnover of businessmen from ex-migrant worker backgrounds.

The empowerment of ex-migrant workers after their employment in Indonesia included training, business incentives, small-business credit, business insurance proposals, and business mentorship. These actions received positive responses from all stakeholders because the objectives have excellent empowerment potency for ex-migrants of Indonesia (Mafruhah et al., 2019). Some empowerments, such as cooperation, productive business, information and database system establishment, and child care, still need to bet at maximum, especially in the productive business. Assistance from the government, such as the tools, needs to be fully utilized due to a lack of knowledge of ex-migrant workers (Muslihudin et al., 2021). Some influential factors of entrepreneurship digital technology adoption are business or corporate factors, banking factors, COVID-19, and ownership (Trinugroho et al., 2022).

Many previous studies only focused on micro-small and medium enterprises with a general background of business owners. Thus, the studies ignored the migrant aspect of business owners, such as the working experience of migrant workers. This research studied the behavior of business doers with the background of ex-migrant workers regarding adopting digital technology for managed businesses based on three factors: migrant, demographic, and business factors. In this research, the novelty deals with the migrant worker experience. The researchers expect the results to be a future reference for stakeholders and policymakers in determining the empowerment program of ex-migrant

workers about digital technology within entrepreneurship activity. The researchers expect the results to provide contributions and implications for future regulation and policy related to knowledge and technology transfer from advanced countries into developing countries through ex-migrant workers. In this case, ex-migrant workers earn turnovers from the targeted countries and knowledge and skills for future application in Indonesia.

METHODS

This research reviewed the determinant factor of technological adoption on entrepreneurs with ex-migrants experience based on some factors, such as migrant, demographic, and business. The obtained data were secondary. In this research, the researchers investigated 329 business owners of 1.518 workers as surveyed by the National Workforce Survey, SAKERNAS, in Mataram in 2022. The researchers applied logit regression to determine the influence of various factors, such as migrant, demography, and business factors, on the digital technology adoption by entrepreneurs with ex-migrant backgrounds.

Table 1. Variable Definitions

	Variable	Definition
Dependent	Digital Technology Adoption	The dummy variable of this research was digital technology, DT, to promote and sell. The value of 1 indicates the implementation of digital technology. The value of 0 indicated no digital technology implementation.
	Migrant factor Migration status	The dummy variable of migration status for the business owners is 1 for business owners with migrant worker experience and 0 for business owners without ex-migrant experience.
Independent	The demographic factor Age	The ages of business owners
	Education	The dummy variables are 1 for those who did not graduate from primary school level; 2 for those graduated from primary school level; 3 for those graduated from JHS; 4 for those graduated from SHS/ISHS; 5 for VHS graduates; 6 for IVHS graduates; 7 for DI/II/II graduates; 8 for DIV graduates; 9 for S1 graduates; 10 for S2 graduates; 11 for applied magisterial graduates; and 12 for S3 graduates.
	Sex Types	The dummy variables of the business owners' sex types: 1 for male and 0 for female.
	Business factor Years of business	Years of enterprise or entity
	Turnover	Monthly turnover
	Business License	The variable of 2 indicates the micro-small and medium enterprises are enlisted in the license, and 1 the enterprises are not enlisted.

Source: Author's Calculation Results (2023).

In this research, the researchers analyzed the data with Stata 17 program assistance. Here is the logistic regression estimation.

$$digitek_i = \alpha_0 + \alpha_1migranfactor_i + \alpha_2demografisfactors_i + \alpha_3businessfactors_i + \mu_i$$

Remarks: *Digitek* digital technology adoption; *migranfactor* migrant status with the business owner; *demografisfactors* demographic factors, such as the ages, educational background, and sex types; *usinessfactors* and business factors, such as years of business, turnovers, and business license. Table 1 presents the definition of each variable.

The dependent variable was digital technology adoption. The dummy variables were 1 for entrepreneurs with digital adoption and 0 for entrepreneurs without digital adoption. The applied independent variables were three factors of digital technology adoption. Firstly, the proxy of the migrant factor to the migrant status of the business owners. This variable has two dummy variables: 2 for business owners with migrant worker experience and 1 for business owners without migrant worker experience. Secondly, the proxy of demographic factors and three variables: age, education, and sex type. Thirdly, the proxy of business factor and the three variables: year of business, turnover, and business license.

RESULT AND DISCUSSION

Table 2 shows the statistical descriptions of each variable. The researchers examined some determinant factors of digital technology adoption in a business. Then, the researchers grouped the factors into migrant, demographic, and business factors. Table 3 shows the migrant factor of business owners. The statistical result from the migrant factor is insignificantly correlated to digital technology adoption. The demographic factor shows that age, education, and sex type significantly influence digital technology adoption. The business factor shows that the year of business, turnover, and business license significantly influence digital technology adoption.

Table 2. The Descriptive Statistics

Variables	Obs	Min	Mean	Max
Digital Technology Adoption	329	0	0,4589666	1
Migration status	329	1	1,133739	2
Age	329	16	45,31611	86
Education	329	1	10,90274	10
Sex Types	329	1	1,492401	2
Years of business	329	0	10,83874	54
Turnover	329	2601356	3560901	45000000
Business License	329	1	1,118541	2

Source: Author's Calculation Results From Stata (2023).

Table 3 shows the logit regression estimation result. In the table, business owners are insignificant and consistent with adopting digital technology. The result indicates that non-ex-migrant workers have an 83% probability of adopting digital technology, higher than those ex-migrant workers. The interpretation of the result is that businesses owned by non-ex-migrant workers more adaptively adopt digital technology than those owned by ex-migrant workers. The finding indicates no digital technology transfer from the targeted countries through the ex-migrant workers of Indonesia. The lack of education

of the ex-migrant workers became the causal factor. The other factor was the need for more supporting regulations for technology transfer through ex-migrant workers in Indonesia. This matter caused the problem to occur. Current regulation only focuses on ex-migrant worker empowerment in their original regions. This program does not guarantee technological transfer from the targeted countries. Suppatkul et al. (2021) and Zhang et al. (2021) found that businessmen with experience as ex-migrant workers were more adaptive to applying technologies.

Table 3. The Logistic Regression

Variables	Odds Ratio	Prob.
Migration status	0.83	0.632
Age	0.97	0.024**
Education	1.25	0.000***
Sex Types	0.49	0.005***
Years of business	0.97	0.069*
Turnover	1	0.092*
Business License	2.63	0.030**
Cons	1.58	0.673
N	329	
Pseudo-R ²	0.1561	

*p<0.1, **p<0.05, ***p<0.01

Source: Author's Calculation Results From Stata (2023).

In the research, the applied samples were 329 respondents, which is 44 respondents, 13.37%, as business owners had the background of ex-migrant workers. Education is the other influential factor in adopting digital technology (Trinugroho et al., 2022). Most Indonesian migrant workers are primary school, junior high school, and senior high school graduates. Aeni (2019), Aisyah & Rahman (2022), Cindiana et al. (2022), Haer & Yuniarti (2023) found that no minimum education level should be the minimum requirement for Indonesia Workforce to depart. The researchers found that the requirement was having the capabilities of reading and writing to facilitate workforce preparation.

In this research, demographic factors, such as age, were significantly contradicted by the adoption of digital technology. The probability of young business owners adopting digital technology was 97% higher than old business owners. The finding indicates that old business owners need more adaptive skills in digital technology. Kossai & Piget (2014), Lestari et al. (2019), and Trinugroho et al. (2022) also found that business owners at younger ages tend to have a high probability of adopting digital technology because young business owners could immediately follow digital technology trend.

The variable of demographic factor was also significant and correlated positively to digital technology adoption. The probability of business owners with high education adopting digital technology was 1.25 higher than those with lower education. The findings described that high education of business owners could improve the cognitive and psychomotor levels of the owners to apply digital technology. Kossai & Piget (2014)

and Trinugroho et al. (2022) also found that individuals with higher education would have better digital technology adoption than those with lower education. Lestari et al. (2019) explain that a lack of education hinders the owners of micro-small-and-medium enterprises from adopting technology, especially social media features such as Instagram.

The finding indicates that the determinant factor of business owners adopting digital technology is education. The variable of sex type was also significant and contradicted the adoption of digital technology. As the primary category based on the statistics, males did not have a high probability compared to females regarding digital technology adoption. Kossai & Piget (2014) and Trinugroho et al. (2022) also found that female business owners had a higher probability of adopting digital literacy than male business owners. The result indicates that female business owners, 51%, mostly dominate the characteristics of entrepreneurship in this research. On the other hand, Kusuma et al. (2020) and Riswandi et al. (2021) found that sex types were relatively similar regarding digital technology adoption. Male or female individuals, during COVID-19, were aware of digital interaction to interact indirectly. The results of the previous research strongly correlated with the business type: the business employed family members or non-paid workers from females.

This business factor indicates that age is contradicted by digital technology adoption. The probability of the younger years of business was higher than that of the old. The finding indicates that business turnover is correlated to corporate capability to apply technology. Thus, higher business turnover requires high business capital. Thus, more business capital could facilitate digital technology adoption. Kossai & Piget (2014), Lestari et al. (2019), and Trinugroho et al. (2022) also found that business owners at younger ages tend to have a high probability of adopting digital technology because young business owners could immediately follow digital technology trend.

The variable of turnover positively correlated with digital technology adoption. The probability of businesses with high turnover for digital technology adoption was one step higher than those with low turnover. A business with a high profit requires high business capital. These matters improve the capability of entrepreneurs to adopt digital technology. Trinugroho et al. (2022) also found that the increased trend of business turnover significantly influenced entrepreneurs' adoption of digital technology. Khurana et al. (2022) also found that the increased turnover of businesses could make micro-small and medium enterprises survive during critical periods by adopting digital technology.

The variable of business license positively correlated to digital technology adoption. The probability of a business with a registered license was 2.63 times higher than those without enlisted licenses. An individual capable of managing the business license has excellent cognition and education. Thus, the individual could apply the obtained knowledge to facilitate the procedural understanding and the procedure of publishing a business license. Many institutions in this digitalization era apply for business licenses with online platforms Afriyani et al. (2022). Thus, the registered business license would be highly likely to adopt digital technology. Lestari et al. (2019) also explained that business doers with licenses would have excellent knowledge and literacy. Entrepreneurs with business licenses had a higher probability of adopting digital technology than those without business licenses.

CONCLUSION

This research found the proxy of the migrant factor with the migrant status of business owners was not significant and contradicted the digital technology implementation. Secondly, the demographic factor showed the variable of age significantly and contradicted the digital technology adoption. The variable of education, turnover, and business license was positively correlated to digital technology adoption. The variable of sex type was significant and contradicted the technology adoption based on the male sex type as the basic category. Thirdly, the business factor influenced the year of business contradicted with the technology adoption.

This research implication deals with the revising regulation of the Indonesian Labor Ministry Number 2 in the Year 2019 about migrant worker community empowerment in Indonesia and productive migrant village. The empowerment does not only focus on Indonesia but also on the regulation of transferring the knowledge and technology of digital matters, especially in the targeted countries. The low educational background of the migrant workers in Indonesia became a serious factor to improve. The empowerment of the migrants should be initiated before and after the migrant by providing a short-digital literacy program for older ex-migrants with low educational backgrounds. However, empowerment should also include mentoring for at least three months to improve the capability of the ex-migrant workers in Indonesia. The scope of Internet infrastructure should be broadened to facilitate business owners accessing digital technology.

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