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GEOGRAPHICAL LOCATION AS A MODERATOR IN THE RELATIONSHIP BETWEEN ICT ADOPTION AND MICRO- ENTREPRENEURS' PERFORMANCE IN MALAYSIA

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Abstract:

Micro-entrepreneurs play a pivotal role in the socio-economic development of low-income households, significantly contributing to sustainable economic growth. Acknowledging their financial constraints, Islamic microfinance institutions, such as Amanah Ikhtiar Malaysia (AIM), are essential in providing the financial resources needed for their success. Research indicates that beyond financial support, other resources like the integration of ICT into business processes can accelerate growth. Therefore, this study aimed to examine the impact of ICT adoption on the performance of micro-entrepreneurs, considering the moderating effect of geographical location. The research involved 416 AIM clients from Selangor and Pahang, encompassing both urban and rural areas. Using partial least squares – structural equation modeling (PLS-SEM), the analysis revealed that ICT utilization significantly boosts the performance of micro-entrepreneurs, with geographical location influencing the outcomes differently in urban and rural contexts. These findings offer valuable insights for Islamic microfinance institutions to develop more targeted strategies, such as enhancing infrastructure, increasing ICT awareness, and adapting business models to the digital economy. Furthermore, the study can guide both the government and microfinance institutions in formulating effective support measures for micro-entrepreneurs, tailored to their performance across various locations especially in rural areas.

Keywords:

Geographical Location, ICT Usage, Micro-Entrepreneurs Performance, Islamic Microfinance Institutions, Amanah Ikhtiar Malaysia

Introduction

The critical role of micro, small, and medium-sized enterprises (MSMEs) in driving national economies and their global presence is widely acknowledged. These enterprises dominate the global business landscape in terms of sheer numbers (ICSB Annual Global Micro Small and Medium-Sized Enterprises Report, 2020). In many countries, MSMEs especially micro-enterprises constitute the majority of business establishments. For instance, in 2019, micro-enterprises represented 99.4% of all businesses in India, 98% in Indonesia, and 99.54% in Thailand (OECD, 2020). Given their prevalence, micro-enterprises significantly contribute to economic growth, job creation, and poverty alleviation in these nations.

In Malaysia, micro, small, and medium enterprises (MSMEs) recorded an 11.6 % growth in Gross Domestic Product (GDP) in 2022 (Department of Statistic Malaysia, 2023). Figure 1 illustrates that MSMEs' value added reaching RM580.4 billion in 2022, a significant rise from RM520 billion in the previous year. The services and manufacturing sectors remained the leading contributors to MSME GDP, making up 84.6 % of the total share.

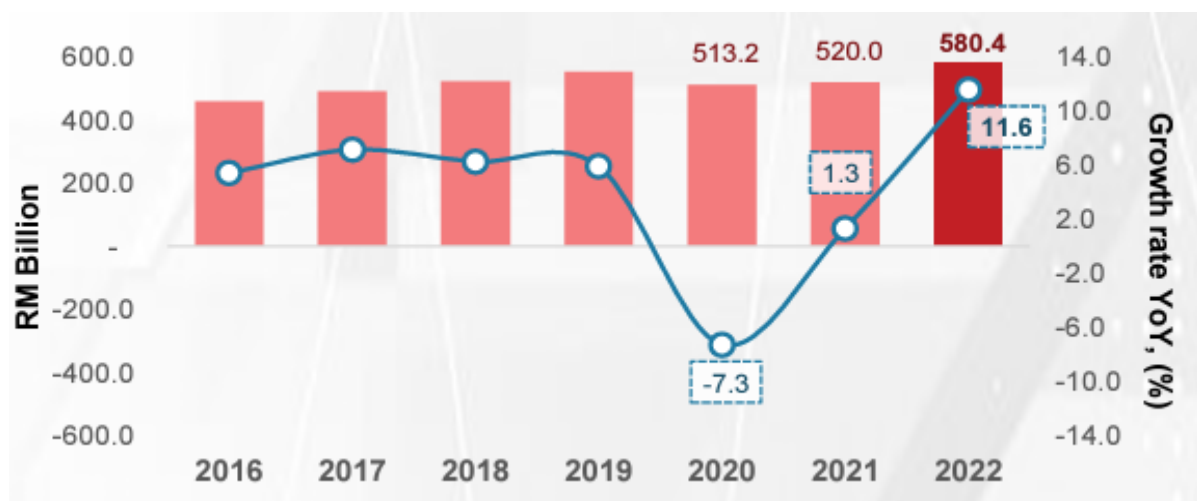


Figure 1: Value and Growth Rate of Malaysia's MSMEs' GDP at Constant 2015 Prices

Source: Department of Statistic Malaysia (DOSM)

Despite essential contributions to Malaysia's economy, micro-enterprises in particular face numerous challenges that hinder their competitiveness and growth (AlBar & Hoque, 2017; Mata & Ibrahim, 2020). For example, according to the Global Entrepreneurship Monitor (GEM) report on women's entrepreneurship (2022/2023), women micro entrepreneurs play a crucial role in driving economic growth, creating jobs, and promoting social development in their communities. However, some obstacles such as limited access to financing, sectoral limitations, digitalization barriers, cultural expectations, and lack of awareness about support programs hinder their success (GEM Report, 2023). This is also highlighted by other studies such as AlBar and Hoque (2017) and Kamarudin et al., (2024), that micro entrepreneurs often encounter barriers such as limited business management skills, inadequate use of information technology, cultural challenges, and a lack of networking opportunities. Understanding these obstacles is crucial for supporting the sustainability and expansion of micro-entrepreneurs.

Research on ICT application within SMEs has gained considerable attention across both developed and developing economies (Islam et al., 2018; Jaganathan et al., 2018; Shen & Sun, 2023). The rise of the internet, mobile technology, and social media has transformed the ways SMEs integrate ICT into their operations. Nevertheless, the study of ICT adoption by micro-entrepreneurs, especially in developing countries like Malaysia, remains relatively underdeveloped (Islam et al., 2018; Jaganathan et al., 2018; Hamdan et al., 2024). While previous research has demonstrated that ICT adoption significantly enhances business performance (Ong et al., 2020), there is a shortage of empirical data examining the factors influencing ICT usage among micro-entrepreneurs in diverse geographical and socio-economic contexts.

Additionally, earlier studies indicate that micro-entrepreneurial performance varies between urban and rural locations (Golding et al., 2008; Mohiuddin et al., 2020; Sharma et al., 2012). Findings have been inconsistent, with some research highlighting significant differences in revenue generation between these areas. Urban regions typically exhibit higher entrepreneurship rates due to factors such as greater population density and growth, whereas rural areas often struggle with limited resources and lower technological adoption rates (Freire-Gibb & Nielsen, 2014). The disparity in ICT adoption can be attributed to factors like inadequate technological infrastructure, limited internet access, and the prohibitive cost of technology (Mohd Hashim, 2018). Rural entrepreneurs, therefore, often lag behind their urban counterparts in embracing digital advancements (AlBar & Hoque, 2017).

Most existing studies have focused predominantly on urban micro-entrepreneurs, perpetuating the notion that entrepreneurship is primarily an urban phenomenon (Freire-Gibb & Nielsen, 2014; Zainuddin et al., 2020). This focus overlooks the unique challenges faced by rural entrepreneurs, resulting in a knowledge gap regarding the distinct dynamics of entrepreneurship across different geographical areas. Moreover, the existing literature frequently reports lower entrepreneurship rates in rural regions compared to urban settings (Acs, 2017; Stenberg, 2015). Addressing this gap by comprehensively understanding the entrepreneurial landscape in both urban and rural contexts could provide policymakers with critical insights for fostering balanced economic growth.

This study aims to fill these gaps by examining the moderating effect of geographical location on the relationship between ICT usage and micro-entrepreneurs' performance. Focusing on an Islamic microfinance institution in Malaysia, it investigates how ICT adoption differs across urban and rural areas and its impact on business outcomes. The study will also explore the potential for ICT to empower rural entrepreneurs by overcoming barriers such as limited access to technology and financial resources, thereby promoting a more inclusive digital economy.

Literature Review

Micro-Entrepreneurs' Performance

When referring to performance, the words 'formation', 'growth', and 'success' are interchangeably used in the literature to refer to the result of "intentional action" or "the completion of certain actions" (Payer-Langthaler & Hiebl, 2013). Nevertheless, from a business perspective, value creation may be defined as the intentional creation of money for a firm's stakeholders, most notably its owners (Cordery & Sinclair, 2013). For analysing the factors that influence performance, comprehending the meaning and measurements is critical for all firms, especially start-ups and small entrepreneurs. It assists them in determining the

success of their business (Murphy, Trailer, & Hill, 1996). Corporate performance seems to be simpler to analyse, as data from their financial reports were made public. Additionally, the reports followed conventional accounting format, and all data were well documented.

Furthermore, Thapa (2015) identified the factors affecting the performance of micro-enterprises in three districts in Nepal, namely Parbat, Nawalparasi, and Sindhupalchok, which corresponded to three ecological belts - mountain, hill, and terai, respectively. The micro-enterprise performance was determined using four dimensions of self-report: profit, sales, asset, and employment. Dess and Robinson (1984) evaluated company success using financial and non-financial indicators. They asserted that non-financial performance accurately reflected the genuine state of a firm's performance due to its high validity and reliability, as well as its objective performance. Similarly, Esubalew and Raghurama (2020) adopted financial and non-financial measures to assess the performance of micro, small, and medium-sized enterprises (MSMEs) in their research. They argued that financial measures are necessary but not sufficient to capture total organizational performance. This is also pointed out by Lekovic and Maric (2015) that financial performance measures of small entrepreneur are not sufficient for authentic and objective expression of business results. Thus, need also for non-financial measurement.

ICT Usage and Micro-Entrepreneurs' Performance

The use of information and communication technology (ICT) has increased worldwide. There is no doubt that entrepreneurs benefit from using ICT to expand their businesses (Islam et al., 2018; Jaganathan et al., 2018; Hamdan et al., 2023). Franco and Garcia (2017) asserted that the digital platform was becoming essential as a source of new technology for businesses' sustainable growth. In other words, digital transformation is essential for long-term business success. Additionally, as an ICT element, the usage of digital platforms is vital to ensure the correct functioning of both business-to-business (B2B) and business-to-consumer (B2C) models (Cirera, Sousa, & Sabetti, 2016).

Shahzad et al. (2020) conducted another research on the performance of Malaysian SMEs and their usage of E-Commerce adopters. The research classified adopters as click-and-mortar (CnM) businesses that do offline and online commerces. While pure player (PP) e-commerce adopters generally expand their operations by adding electronics businesses to their existing conventional industries. According to prior research, using technology as a resource increase business performance. As in this research, emphasis has been placed on using ICT and mobile device technologies for micro-entrepreneurs' business management to sustain their businesses in the market. Thus, the following hypothesis was established for this study:

H₁: ICT usage has positive effects on the micro-entrepreneurs' performance in an Islamic microfinance institution in Malaysia

Moderating Effect of Geographical Location

Numerous previous studies, including Golding et al. (2008), Hamdan et al. (2023), Joo (2011), Mohiuddin et al. (2020), and Sharma et al. (2012), suggested the geographical areas in which micro-entrepreneurs operated affected their performance. Additionally, empirical evidence indicated that the urban regions' population density, growth, and size all contributed to higher entrepreneurship rates than rural areas (Acs et al., 2017; Stenberg, 2015). Rural entrepreneurs lacked certain advantages as a result of their low population density, which resulted in a low

density of most markets and a greater distance to those markets, as well as to the information, labour, and the majority of other resources (Malecki, 2016).

According to Mohd Hashim (2018), the difference of company development between urban and rural regions is influenced by the availability of amenities such as an internet connection and banking services. Golding et al. (2008) found that ICT usage patterns differed significantly across urban and rural areas. In rural Jamaica, micro, small, and medium-sized enterprises (MSMEs) embraced ICT at a slower pace. The study's results showed that the Jamaican government has the capacity to create programmes and policies that encourage ICT adoption and dissemination in rural areas, thus promoting rural business development. In addition, Mwantimwa (2019) found that, ICTs' usage determinants such as knowledge and expertise, and ICT infrastructure investments improve business processes in Tanzania. Based on previous research indicating that geographical location has a moderating effect between ICT usage and micro-entrepreneurs' performance. Thus, the following hypotheses was developed for this study:

H₂: Geographical location moderates the relationship between ICT usage and micro-entrepreneurs' performance in an Islamic microfinance institution in Malaysia

Conceptual Framework

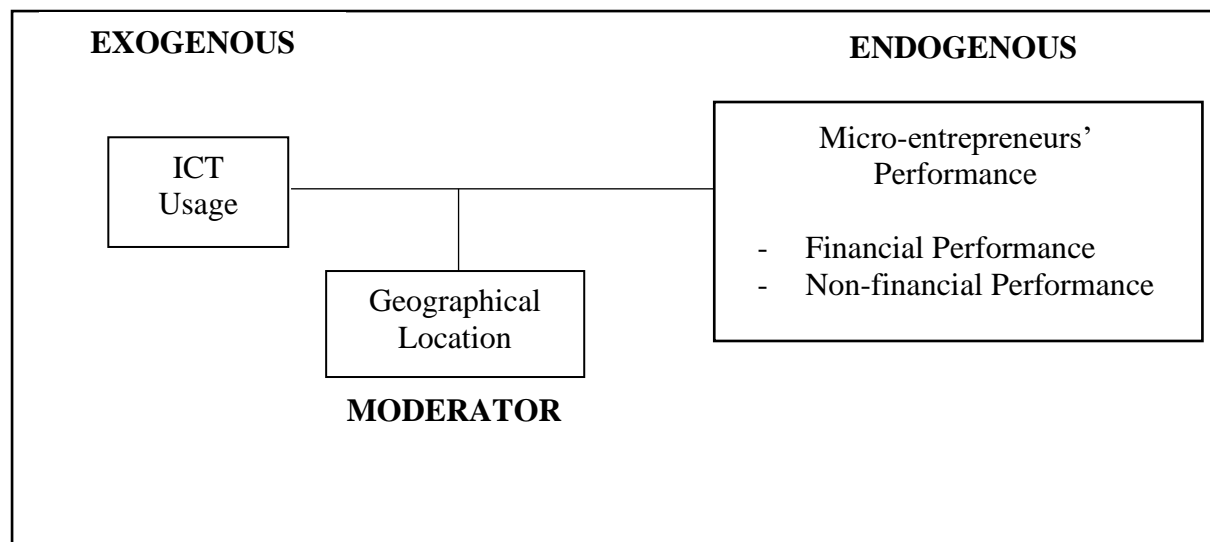


Figure 2: Conceptual Framework

Source: Authors developed for the study

Figure 2 shows the conceptual framework for this study. The exogenous variables known as independent variables in this study is ICT usage. For endogenous or dependent variables, micro-entrepreneurs' performance has two dimensions, namely financial performance and non-financial performance. In this study, geographical location is tested as a moderating variable. It examines if the factors of independent variables differentiate the performance of entrepreneurs when broken down into rural and urban areas.

Research Methodology

This study employs a quantitative research design using a structured survey to investigate the relationship between ICT usage and micro-entrepreneurs' performance with moderating effect of geographical location. This study was primarily conducted on Amanah Ikhtiar Malaysia (AIM) as largest Islamic Microfinance Institution in Malaysia with 322,772 clients who involve in micro business as of December 2023. A purposive sampling was method used in two states, namely Selangor and Pahang. These two states were chosen to represent a geographical location factor that classified Selangor as an urban region while Pahang was classified as a rural area. According to DOSM (2019), Selangor has the most significant level of urbanisation (94.5 %), while Pahang has the lowest degree (62.7 %). From 500 questionnaire distribute, 420 questionnaires were return throughout 8 branches in Selangor and Pahang. However, after filter the questionnaire, only 416 questionnaires were utilized for data analysis. Data were analyzed using SPSS and Partial Least Squares (PLS) structural equation modeling using SMARTPLS4.0 to determine relationships between ICT usage and micro-entrepreneurs' performance with moderating effect of geographical location.

Result and Findings

Demographic Profiles Of The Respondents

The current study explored the demographic characteristics of the respondents, which included: (i) gender; (ii) age; (iii) AIM Center location; (iv) state; (v) educational background; (vi) marital status; (vii) number of dependents; (viii) type of business; and (ix) business duration. Table 2 provides a detailed demographic breakdown. As indicated in the table, 99.8% of the respondents were female, and 0.2% were male. The majority (10.1%) were aged between 20 and 30. Most respondents were from Raub (104 respondents, 25.0%), followed by Bentong (97 respondents, 23.3%). In terms of education, the majority had completed secondary school (304 respondents, 73.1%), while others had attended college (49 respondents, 11.8%), university (40 respondents, 9.6%), primary school (13 respondents, 3.1%), or other forms of education (10 respondents, 2.4%). Regarding marital status, 86.1% (358 respondents) were married, 8.2% (34 respondents) were divorced, and 5.8% (24 respondents) were single. Most respondents had 3-4 dependents (170 respondents, 40.9%), followed by those with 1-2 dependents (96 respondents, 23.1%), 5-6 dependents (81 respondents, 19.5%), no dependents (50 respondents, 12.0%), and those with 7-8 (15 respondents, 3.6%) or more than eight dependents (4 respondents, 1.0%). Regarding business types, the majority were involved in food-related businesses (222 respondents, 53.4%), followed by services (86 respondents, 20.7%), other businesses (50 respondents, 12.0%), groceries (40 respondents, 9.6%), agriculture (36 respondents, 8.7%), manufacturing (33 respondents, 7.9%), crafts (31 respondents, 7.5%), and fisheries (5 respondents, 1.2%).

Table 1: Demographic Profiles of Respondents

Categories	Frequency	Percentage (%)
Gender		
<i>Male</i>	1	0.2
<i>Female</i>	415	99.8
Age		
<i>20-30 years</i>	42	10.1
<i>31-40 years</i>	121	29.1
<i>41-50 years</i>	150	36.1
<i>51-60 years</i>	87	20.9

Categories	Frequency	Percentage (%)
<i>61 years and above</i>	16	3.8
Location Center of AIM		
<i>Raub</i>	104	25.0
<i>Bentong</i>	97	23.3
<i>Puchong</i>	41	9.9
<i>Gombak</i>	32	7.7
<i>Ampang</i>	49	11.8
<i>Cheras</i>	45	10.8
<i>Kepong</i>	33	7.9
<i>Others</i>	15	3.6
State		
<i>Pahang</i>	201	48.3
<i>Selangor</i>	215	51.7
Education		
<i>No Formal Education</i>	0	0
<i>Primary School</i>	13	3.1
<i>Secondary School</i>	304	73.1
<i>College</i>	49	11.8
<i>University</i>	40	9.6
<i>Other</i>	10	2.4
Marital Status		
<i>Single</i>	24	5.8
<i>Married</i>	358	86.1
<i>Divorced</i>	34	8.2
No of Dependents		
<i>None</i>	50	12.0
<i>1-2</i>	96	23.1
<i>3-4</i>	170	40.9
<i>5-6</i>	81	19.5
<i>7-8</i>	15	3.6
<i>More than 8</i>	4	1.0
Type of Business		
<i>Food</i>	222	53.4
<i>Groceries</i>	40	9.6
<i>Agriculture</i>	36	8.7
<i>Fisheries</i>	5	1.2
<i>Craft</i>	31	7.5
<i>Services</i>	86	20.7
<i>Manufacturing</i>	33	7.9
<i>Others</i>	50	12.0
Business Period (Year)		
<i>1-2 years</i>	24	5.8
<i>3-5 years</i>	127	30.5
<i>6-10 years</i>	166	39.9
<i>11-15 years</i>	47	11.3
<i>16-20 years</i>	39	9.4
<i>More than 20 years</i>	13	3.1

Measurement Model

The outer loading was measured to determine the indicator's reliability. This study followed the threshold value by Byrne (2016) that loading values equal to or greater than 0.5 are acceptable, contributing to AVE scores greater than 0.5. As shown in Table 2, all items have satisfactory indicator reliability (ranging from 0.628 to 0.901). Therefore, none of the items were dropped. For composite reliability the values for ICT usage and micro-entrepreneurs' performance were 0.885 and 0.912 respectively. Meanwhile, for the AVE value for ICT usage and micro-entrepreneurs' performance were 0.563 and 0.819. As a result, AVE for both constructs showed sufficient convergent validity, as it surpassed the 0.5 value set by Hair et al. (2017).

Table 2: Measurement Model

Construct	Items	Indicator Reliability	Convergent Validity	Internal Consistency Reliability
		Outer Loading	AVE	CR
ICT Usage	ICTU1	0.706	0.563	0.885
	ICTU2	0.821		
	ICTU3	0.815		
	ICTU4	0.743		
	ICTU5	0.771		
	ICTU6	0.628		
Micro-Performance	FP	0.890	0.819	0.912
	NFP	0.901		

Discriminant Analysis

Finally, the discriminant validity of the measurement model is determined. As in response to criticisms about cross-loading and Fornell and Larcker's criterion, Henseler et al. (2015) proposed that for the HTMT criterion, a Monte Carlo simulation study be used to demonstrate the method's superior efficiency. HTMT can achieve higher accuracy and sensitivity values (97 to 99 %) when compared to the cross-loading criterion (0.00%) and the Fornell-Larcker (1981) criterion (20.82 %). Henseler et al. (2015) suggested measuring discriminant validity using the HTMT technique. Kline (2011) recommended that if the HTMT value is greater than the HTMT.85 value of 0.85, it indicates that there are issues with discriminant validity. As shown in Table 3, none of the construct violates HTMT.85, indicating that construct validity is established in this study's measurement model.

Table 3: Discriminant Validity HTMT

Variable	MEP
ICTU	0.542

From the four aspects of reliability and validity tested for the measurement model (internal consistency reliability, indicator reliability, convergent reliability, and discriminant validity), it can be concluded that the study's reliability and validity requirements are met. Following that, the data can be further analysed for the purpose of assessing the structural model.

Assessment of the Collinearity Issues

It is critical to assess collinearity issues as the first step in evaluating a structural model. Addressing collinearity issues avoid predictor-criterion collinearity, which may occasionally mislead the findings covertly by masking the model's strong causal effect (Kock & Lynn, 2012). Specifically, using a VIF value with a threshold value of 5 or greater, as recommended by Hair et al. (2011), or a VIF value of 3.3 or greater, as suggested by Diamantopoulos and Siguaw (2006), indicates a potential collinearity issue. As shown in Table 4, the VIF value is 1.644, less than 5 (Hair et al., 2011) and 3.3 (Diamantopoulos & Siguaw, 2006), indicating that there is no issue of collinearity in this study.

Table 4: Lateral Collinearity Assessment

Construct	Micro-entrepreneurs' Performance (VIF)
ICT Usage	1.644

Assessment Of The Structural Model Relationship (Path Coefficient)

Following that, Hair et al. (2017) suggested reporting the path coefficient, standard errors, t-value, and p-values of the structural model to test the hypotheses developed in this study. Additionally, this study included the confidence interval in response to Hahn and Ang (2017) criticism that p-values are insufficient as a criterion for determining the significance of a hypothesis. The path relationship was determined in this study using a bootstrapping function with 1000 resamples, a 0.05 significance level, and a one-tailed test, as Ramayah et al. (2018) suggested. As shown in Table 5, the path coefficients or beta (β) values was positive, 0.292. According to Hair et al. (2017), estimated path coefficients or beta (β) values closer to +1 indicate strong positive relationships, whereas values closer to 0 indicate weaker relationships.

Next, Hair et al. (2014) suggested that the acceptable t-values for determining the significance level for a one-tailed test were 1.28 (10% significance level at $p < 0.10$), 1.645 (5% significance level at $p < 0.05$) and 2.33 (1% significance level at $p < 0.01$). The ICT usage ($t = 13.391$, $p < 0.01$) was statistically significant at the 0.01 level of significance. Thus, the findings indicated that H_1 was supported in this study.

Table 5: Hypotheses Testing Results

Relationship		Path Coefficient β	Std Dev	BCI LL	BCI UL	T- Value	P-Value	Result
H1	ICTU \rightarrow MEP	0.517	0.038	0.428	0.577	13.391	$P < 0.01$	S

Assessment of the Level of R^2 (Coefficient of Determination)

The following assessment is to determine the level of R^2 (Coefficient of Determination). Field (2013) defined R^2 as the variable's variance quantity shared by another variable. R^2 assesses squared values of the correlations between the predicted and dependent constructs (Field, 2013). The value of R^2 ranges from 0 to 1, with a higher value indicating a higher level of predictive accuracy (Hair et al., 2017). Sandin et al. (2015) stated that R^2 value above 0.6 indicated high, between the range of 0.30 to 0.60 indicated moderate, and less 0.3 indicated low. Table 6 presents that the R^2 values for ICT usage explained 30% of the variance in micro-entrepreneurs' performance, indicating a moderate level of predictive accuracy as a guideline by Hair et al. (2017) and Sandin et al. (2015).

Table 6: R² (Coefficient of Determination)

Endogenous Construct	R ²	Relationship
Micro-entrepreneurs' Performance	0.30	Moderate

Moderation Analysis

After testing the direct effect, the moderation hypothesis is examined. A moderator possesses characteristics that can alter the path of a relationship between two constructs and alter the relationship's magnitude (Hair et al., 2016). The moderating effect of geographical location was incorporated into the model, and categorical data types were used in the current study. Garba et al. (2019) suggested that the geographical location between two groups of urban and rural areas had a moderating effect on the performance of micro-entrepreneurs. Mohd Hashim (2018) and Al Bar and Hoque (2017) argued that such ICT facilities were inadequate in rural areas and impeded micro-entrepreneurs' ability to expand their businesses. Thus, this study filled a gap by demonstrating that geographical location in urban and rural areas influences the relationship between ICT usage concerning the performance of micro-entrepreneurs. The findings indicated significant ($\beta = 0.195$, $t = 3.832$, $P < 0.00$), which proposed that geographical location moderated the relationship between ICT usage and micro-entrepreneurs' performance. Therefore, Hypothesis 2 was supported.

Table 7: Result of the Moderating Effect of Geographical Location

Relationship	Path Coefficient (β)	Std Error	T-value	P-value	Result
Location \rightarrow MEP	0.162	0.051	3.820	$P < 0.01$	-
H ₂ ICT Usage \rightarrow MEP * Location	0.195	0.052	3.832	$P < 0.01$	S

Note: One-tailed: $p < 0.05$ ($t > 1.645$)

Dawson (2014) proposed that in order to elucidate the moderating phenomenon further, the interaction effect pattern should be plotted to see how the moderator changes the relationship. The geographical location significantly affected the relationship between ICT usage and micro-entrepreneurs' performance in this study. As illustrated in Figure 3, the line denoting urban areas has a higher gradient than the line denoting rural areas. Thus, based on the hypothesis, it can be concluded that micro-entrepreneurs in urban areas will benefit from increased ICT usage.

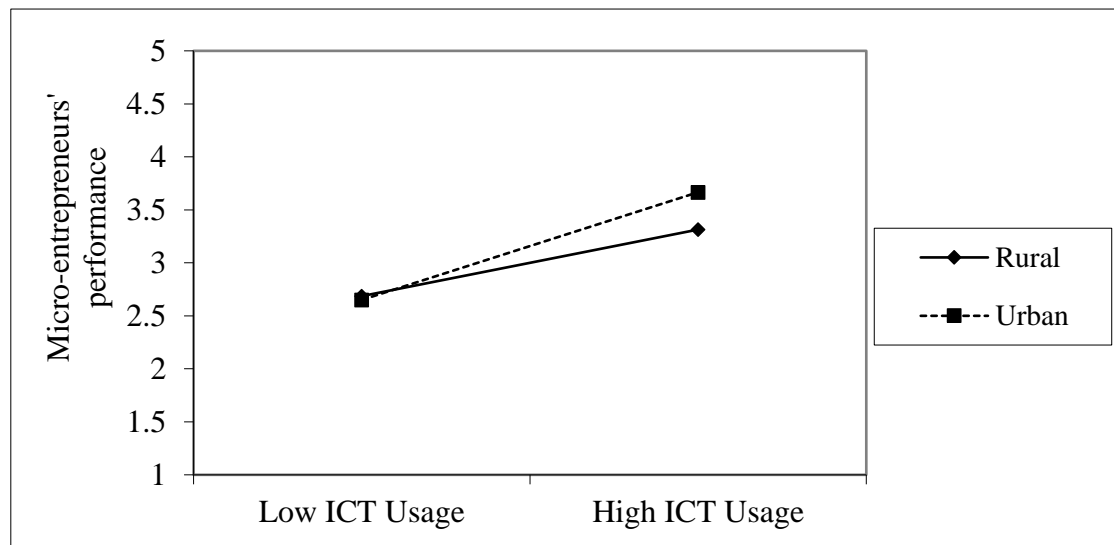


Figure 3: Interaction Plot

Discussion and Conclusion

The integration of Information and Communication Technology (ICT) is recognized as a crucial component of business strategy, driving competitive advantage and offering unique value that enhances overall business performance. The analysis confirmed the research framework, showing a strong positive correlation between ICT usage and the performance of micro-entrepreneurs (H1). Specifically, the study revealed that leveraging ICT plays a significant role in aiding micro-entrepreneurs supported by Amanah Ikhtiar Malaysia (AIM) funds to grow their businesses. The findings highlighted that entrepreneurs who effectively incorporate technology into their business processes experience accelerated growth, aligning with previous research that supports the link between ICT usage and improved business outcomes (Hamdan et al., 2023; Mohamad Radzi et al., 2017; Sansul Bahri et al., 2016; Budiarto & Pramudiati, 2018).

Mohamad Radzi et al. (2017) noted that small-scale entrepreneurs often encounter financial barriers that limit their participation in economic activities. However, integrating ICT can help them overcome these challenges by facilitating more cost-effective business operations. The current study further suggests that organizations leveraging ICT can benefit from e-marketplaces to penetrate new markets and identify suppliers offering competitive yet reasonable prices for products and services. In addition, AIM supports digital transformation efforts by providing a digital platform and actively educating clients on digital marketing strategies to enhance their business reach. Respondents in the study acknowledged that even basic ICT usage, such as through mobile devices, positively impacts company performance, enabling them to attract more customers compared to traditional marketing techniques.

The study also investigated the moderating effect of geographical location, as indicated by Hypothesis 2 (H2), which showed a significant and positive relationship. This implies that location influences the impact of ICT usage on micro-entrepreneurs' performance, with those in urban areas benefiting more from ICT due to factors like better coverage, stable internet connectivity, and easier access to digital resources. This finding aligns with earlier research (Mohiuddin et al., 2020; Mwantimwa, 2019; Mohd Hashim, 2018; Golding et al., 2008; AlBar

& Hoque, 2008), which suggests that urban entrepreneurs have greater opportunities to use ICT for business development due to the availability of essential amenities such as internet and banking services. In contrast, Golding et al. (2008) found that rural Jamaican MSMEs adopt ICT at a slower pace, while AlBar and Hoque (2017) observed that rural businesses in Saudi Arabia lag behind urban counterparts in terms of digital transformation.

Based on these findings, the study emphasizes the need for Islamic microfinance institutions and policymakers to invest in ICT infrastructure to boost business performance in rural areas. It is equally important to raise awareness of the benefits of ICT adoption, particularly in today's digital economy where technology drives business growth. The value of ICT becomes even more evident during crises like the COVID-19 pandemic, when businesses need to operate remotely to maintain continuity. By improving access to ICT resources and educating entrepreneurs on digital practices, the economic gap between urban and rural areas can be narrowed, enabling more equitable growth across different regions.

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