

# Cyberpreneurship Resistance in Advocating Digital Inclusion Towards Socio-Cultural Sustainability

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**Abstract.** Cyberpreneurship has been recognized as a key driver for inclusive digital ecosystems worldwide. However, various factors can hinder its effectiveness in promoting digital inclusion and socio-cultural sustainability. This quantitative research aims to examine the factors of cyberpreneurship resistance underpinned by Innovation Resistance Theory (IRT) for advocating digital inclusion towards socio-cultural sustainability. The study seeks to further investigate the functional and psychological barriers that cyberpreneurs encounter in their efforts to foster digital inclusion, ultimately contributing to socio-cultural sustainability. This research utilizes a sample of 384 respondents, including cyberpreneurs, business owners, and business managers involved in various types of business operations. Data was collected through surveys, and statistical techniques such as descriptive statistics and multiple linear regression analysis were employed to analyze the collected data. These analyses aimed to identify key resistance factors hindering cyberpreneurs' endeavours and understand their impact on digital inclusion and socio-cultural sustainability goals. The findings not only shed light on a deeper understanding of cyberpreneurship resistance in the context of advocating digital inclusion and socio-cultural sustainability but also inspire policymakers, entrepreneurs, and stakeholders to formulate evidence-based strategies for fostering inclusive digital ecosystems and promoting sustainable socio-cultural development.

## 1 Introduction

Since decades ago, entrepreneurs shifted away from static offline business premises and conventional practices to embrace online virtual business spaces. Subsequently, terms like "cyberpreneurs" and "netpreneurs" have been coined to describe entrepreneurs who operate businesses in the online environment [1]. This technological advancement triggered the emergence of various entrepreneurial models, innovations, and new ecosystems within the realm of entrepreneurship. This phenomenon has given rise to several related terms such as online business, internet business, and digital business [2].

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Cyberpreneurship has emerged as a crucial priority for nations worldwide [3, 4]. This innovative form of entrepreneurship can be effectively conducted through websites and social media platforms [3]. Cyberpreneurship or known as digital entrepreneurship, is an encouraging strategy that fosters the application of innovative and creative concepts in the business realm [5]. It offers cost-effectiveness and diminished entry barriers for startups, which have led to its widespread acceptance as a viable and achievable entrepreneurial model [6].

Nevertheless, as emphasized in the Malaysia Digital SME Study of 2018, businesses in Malaysia encounter significant challenges in the realm of digitalization. Approximately 48% of businesses faced difficulties primarily due to a lack of digital skills, which surpassed financial or technological constraints. Despite the rise in e-commerce adoption from 27.8% in 2019 to 37.9% in 2021, certain entrepreneurs still preferred physical stores. Based on a collaborative survey by Adobe and Econsultancy, encompassing 13,000 professionals in marketing, creative, e-commerce, advertising, and IT worldwide, revealed that 43% of businesses in Asia, including Malaysia faced various factors that can hinder its effectiveness in promoting digital inclusion and socio-cultural sustainability including those related to digital skills and capabilities [7]. The integration of this model in this study seems most appropriate to provide understanding regarding the resistance factors towards new innovations. Thus, it is essential to further investigate the functional barriers comprising of usage barriers, value barriers, risk barriers, and psychological barriers comprising of tradition barrier and image barriers that cyberpreneurs encounter in their efforts to foster digital inclusion, ultimately contributing to sociocultural sustainability to accelerate economic growth and move towards the Fourth Industrial Revolution (4IR).

## 2 Literature Review

### 2.1 Innovation Resistance Theory (IRT)

The Innovation Resistance Theory (IRT) aims to explore the reasons behind users' acceptance or rejection of innovations [8]. The strategies to address this resistance may vary depending on the specific obstacles or conflicts related to the innovation [9]. The IRT was later modified to provide insight into consumers' resistance to new innovations [10]. Moreover, the use of innovation can eliminate resistance if it disrupts consumers' lifestyles and status. The modified version of the IRT classifies barriers into two main categories: functional and psychological barriers which will be explained in the next subsection.

### 2.2 Functional barrier

Functional barriers are further subdivided into value, risk, and usage barriers. The usage barriers exist because of the challenges of innovation that affect consumers' status quo and usage patterns lead to resistance to new products and innovation [11]. Numerous studies have explored the impact of usage barriers on users' intentions to adopt and use digital innovations. For instance, prior studies found that usage barriers negatively influence the intention to adopt online shopping [12, 13]. Similarly, Moorthy [14] discovered a negative association between usage barriers and innovation in entrepreneurship and Rahman [15] highlighted that usage barriers can lead to the discontinuation of digital innovations. Hence, the hypothesis can be formulated as follows.

*H1a: The usage barriers have a negative effect on cyberpreneurship intention in advocating digital inclusion.*

Value barriers refer to the perceived value of new innovations and products in comparison to consumers' expectations [11]. Some companies might find it irrelevant to adopt cyberpreneurship platforms due to their reliance on word-of-mouth in their business culture [16]. Existing literature suggests that value barriers are often associated with negative effects on user intentions in different contexts of study, such as online shopping [12, 13] and mobile commerce [17]. In other words, when consumers perceive lower value in new innovations compared to their expectations or alternatives, it tends to hinder their intention to use those innovations. Hence, the following formulation of the hypothesis is possible:

*H1b: The value barriers have a negative effect on cyberpreneurship intention in advocating digital inclusion.*

Risk barriers encompass the resistance that arises due to the uncertainties inherent in any innovation. Risk barriers such as ambiguity and impulsiveness were associated with innovation [16], and cyber entrepreneurship seems to be one of the new entrepreneurship innovations. The reluctance can be attributed to the uncertainties and risks they perceive, including the possibility of encountering fraud, financial losses, privacy and product performance risk, and technological limitations like poor internet connectivity and battery performance on their smartphones which seems as one of the potential losses in pursuing the desired results [17]. The performance of a product will be an important consideration regarding purchasing decisions via the Internet [18]. While lowering the risk barrier, there were an increasing intention to adopt [19]. Hence, the hypothesis can be written as follows:

*H1c: The risk barriers have a negative effect on cyberpreneurship intention in advocating digital inclusion.*

### 2.3 Psychological barrier

Psychological barriers are divided into image and tradition-related obstacles. The success of any product or service is significantly influenced by the prevailing traditions. While tradition barriers pertaining to the challenges innovation faces when it introduces changes to a user's existing routines, culture, and behavior [11]. These barriers were associated with a negative impact on users' intentions to adopt any innovation [21]. Moreover, culture barriers represent the hesitant to embrace innovation due to the contradictions of the traditional way doing business. This shift can be challenging, as it involves catering to the preferences of customers who value human contact, physical interaction, and the ability to physically touch products [17]. Studies on digitalization have indicated that traditional barriers negatively impact various digital innovations, for instance, online shopping [9, 12, 13], mobile shopping [11], and mobile commerce [14]. Hence, the hypothesis can be formulated as follows:

*H2a: The traditional barriers have a negative effect on cyberpreneurship intention in advocating digital inclusion.*

Image barriers refer to the negative perception of an innovation that arises from the perceived complexity associated with its usage or origin [12]. For instance, online businesses are often viewed as lacking security by consumers, leading to a negative image. Previous research has consistently reported that image barriers have a negative influence on users' behavior and attitude, toward various digitization initiatives [11,14]. It implies that one of the rejection factors towards technology or innovation adoption. In fact, an individual tends to use and adopt technology that is easier for them to understand and employ which is less complicated technology as compared to the complex one [24]. Hence, the following hypothesis can be formulated:

*H2b: The image barriers have a negative effect on cyberpreneurship intention in advocating digital inclusion.*

### 3 Research Methods

This study employs a quantitative research design allows for the collection of numerical data and statistical analysis to identify and understand the barriers faced by cyberpreneurs in fostering digital inclusion. This current study involves a sample size of 384 respondents, where the unit of analysis includes cyberpreneurs, business owners, and business managers involved in various types of business operations. The sample size is sufficient based on the maximum total population of the study [22]. The participants were selected to ensure diversity in terms of industry sectors, business sizes, and geographic locations. Data was collected through surveys administered to the participants. Besides that, this research utilizes a purposive sampling technique since the sampling frame is unknown. This technique aims to select participants who possess relevant knowledge and experience in cyberpreneurship and digital inclusion efforts. Purposive sampling ensures that the sample includes individuals who can provide valuable insights into the research topic.

The survey instrument was designed to capture information related to cyberpreneurship resistance, functional and psychological barriers, digital inclusion efforts, and socio-cultural sustainability indicators. The survey was conducted face-to-face by all researchers and three appointed enumerators, allowing respondents to respond at their convenience within a sufficient given period.

## 4 Research Findings and Discussion

### 4.1 Respondents' demographic profile

The composition of respondents in a research study refers to the characteristics and demographics of the individuals included in the sample. The general demographic details are shown in Table 1.

**Table 1.** Respondents' characteristics.

Characteristics	Items	Frequency (n=384)	Percentage (100.0%)
<i>Gender</i>	Male	204	53.1
	Female	180	46.9
<i>Age (years old)</i>	< 21	1	0.3
	21 – 30	3	0.8
	31 – 40	7	1.8
	41 – 50	69	18.0
	51 – 60	150	39.0
	> 60	154	40.1
<i>Education Level</i>	Secondary	47	12.2
	Post-secondary education	98	25.5
	Tertiary	221	57.6
	No formal education	18	4.7
<i>Business Experience (years)</i>	1 – 3	4	1.0
	4 – 6	16	4.2
	7 – 9	69	18.0
	≥ 10	295	76.8
<i>Types of Business</i>	Services	227	59.1
	Manufacturing	98	25.5
	Construction	14	3.6
	Agriculture	45	11.7
	Sole proprietorships	224	58.3

<i>Ownership Types</i>	Partnership	35	9.1
	Private Limited Company	98	25.5
	Limited company	27	7.0
<i>Average Monthly Sales (USD)</i>	≤ 3,300	34	8.9
	3,301 – 5,500	71	18.5
	5,501 – 7,690	68	17.7
	> 7,690	211	54.9

Note: Exchange rate USD 1 = MYR 4.55 on July 20, 2023.

Based on the data presented in Table 1, over half of the respondents in this study were male (53.1%), while 46.9 percent were female. Moreover, more than 97 percent of the participants were identified as middle-aged adults and older adults who were business owners. Possibly, most of the respondents came from the same age category, 76.8 percent of them stated having more than 10 years of business experience. Further, the respondents had completed at least secondary education, and a significant proportion of them had graduated from tertiary education (57.6%).

Moreover, it is evident that nearly 60 percent of the participants in this research were offering services, with 25 percent working in the manufacturing industry and 15 percent running companies in the construction and agriculture industries. Interestingly, even majority of these businesses were characterized by sole-proprietorship ownership rather than partnership or private limited enterprises, almost 55 percent of them can generate an average sale of more than USD7,690 per month. Consequently, the next sub-section describes the descriptive analysis findings.

## 4.2 Descriptive analysis

According to Table 2, mean values for all variables exceeded 3.0 (ranging from 3.32 to 3.62) with standard deviations between 0.78 and 1.19. Respondents generally agreed with the questionnaire statements (scale 1-5). Reliability, validity, and normality analysis are covered in subsequent sections.

**Table 2.** Descriptive statistics on the variable.

<b>Variables</b>	<b>Mean</b>	<b>Standard Deviations (SD)</b>
Cyberpreneurship intention (CI)	3.39	1.19
Usage barriers (UB)	3.32	1.07
Value barriers (VB)	3.40	1.07
Risk barriers (RB)	3.62	0.78
Traditional barriers (TB)	3.55	1.01
Image barriers (IB)	3.40	1.05

Source: Developed by this research based on data of 384 respondents.

### 4.3 Reliability, validity, and normality analysis

The Cronbach's Alpha values for all variables ranged from 0.815 to 0.978, indicating that the framework used in this study met the reliability and validity requirements for the set of scales and items of each variable as in Table 3. Furthermore, it is noteworthy that all variables in this research met the criteria for skewness values between -1.0 and +1.0 and their kurtosis values were less than 7.0 [22]. As a result, the data was deemed to exhibit a normal distribution, demonstrating its acceptability for regression analysis as discussed in the next subsection.

**Table 3.** Reliability, validity, and normality analysis of the research framework.

Variables	Cronbach's Alpha ( $\alpha$ )	Skewness	Kurtosis
Cyberpreneurship intention (CI)	0.978	-0.380	-1.432
Usage barriers (UB)	0.960	-0.248	-1.264
Value barriers (VB)	0.952	-0.206	-1.082
Risk barriers (RB)	0.815	-0.815	-0.316
Traditional barriers (TB)	0.933	-0.563	-1.154
Image barriers (IB)	0.966	-0.280	-1.274

Source: Developed by this research based on data of 384 respondents.

### 4.4 Multiple Linear Regression Analysis

Multiple Linear Regression (MLR) analysis was employed to identify the resistance factors hindering cyberpreneurs' endeavors. The findings summary of the MLR test was depicted in Table 4.

**Table 4.** Multiple linear regression results summary.

Model Summary	Barrier	Hypothesis	Standardised Beta ( $\beta$ )	t-value	Result
$R = 0.841$ $R^2 = 0.707$ $F = 182.151^{***}$	<b>Functional</b>	<b>H1a</b>	0.132	2.092*	Significance
		<b>H1b</b>	0.225	2.036*	Significance
		<b>H1c</b>	0.166	3.707***	Significance
	<b>Psychological</b>	<b>H2a</b>	0.188	2.878*	Significance
		<b>H2b</b>	1.011	4.415***	Significance

Note: Statistically highly significant as  $***p < 0.001$  and statistically significant as  $*p < 0.05$ .

Source: Developed by this research based on data of 384 respondents.

Table 4 shows a strong predictive relationship ( $R = 0.841$ ). Moreover, the independent variables of the study, namely functional and psychological barriers, collectively accounted for 70.7% of the variability in cyberpreneurship intention adoption ( $R^2 = 0.707$ ). Specifically, variables UB, VB, RB, TB, and IB explained 70.7% of the variance, and the model significantly predicted cyberpreneurship intention adoption ( $F = 182.151, p = 0.001$ ).

Furthermore, in term of hypothesis testing, Table 4 concluded that H1a, H1b, H1c, H2a, and H2b were related negatively and significantly to cyberpreneurship intention in promoting digital inclusion. In specific, usage barriers ( $\beta= 0.132, p< 0.05$ ), value barriers ( $\beta= 0.225, p< 0.05$ ), risk barriers ( $\beta= 0.166, p< 0.001$ ), traditional barriers ( $\beta= 0.188, p< 0.05$ ) and image barriers ( $\beta= 1.011, p< 0.001$ ) had negatively significant relationship with cyberpreneurship intention in advocating digital inclusion. In summary, the regression weights for functional and psychological barriers in predicting Cyberpreneurship adoption intention for digital inclusion were significantly different from zero at the 0.001 and 0.05 levels (one-tailed).

The findings of this study shed light on the Innovation Resistance Theory (IRT) of functional barriers: usage barriers, value barriers, risk barriers, and psychological barriers: traditional barriers, and image barriers influencing cyberpreneurship intention adoption which impact digital inclusion and finally socio-cultural sustainability goals. Consequently, overcoming usage barriers was crucial for enhancing cyberpreneurship intention adoption, as they directly influence entrepreneurs' ability to integrate digital solutions into their business operations. Addressing these barriers through targeted training programs and technology support initiatives can foster digital inclusion, enabling more entrepreneurs to harness the benefits of digital technologies for their business growth.

Moreover, the study found that demonstrating the value and positive impact of digital tools on business efficiency, customer reach, and revenue generation was crucial for encouraging cyberpreneurship intention adoption. Further to this, policymakers and stakeholders can foster a culture of innovation and drive higher digital inclusion rates among entrepreneurs via the stimulation of digital benefits comprehension. Besides that, the issue of security, privacy, financial investments, or operational disruptions that may arise from digital implementation were also critical issues that worry entrepreneurs, especially from micro and small enterprises. So, the importance of them is to mitigate risk perceptions through robust cybersecurity measures, financial incentives, and guidance on managing digital transitions. In conclusion, understanding and addressing usage barriers, value barriers, risk barriers, tradition barriers, and image barriers are crucial steps toward promoting cyberpreneurship intention adoption, enhancing digital inclusion, and advancing socio-cultural sustainability goals. Hence, policymakers and stakeholders can empower entrepreneurs by overcoming these barriers and fostering a supportive ecosystem to harness the full potential of digital technologies, thereby contributing to a more inclusive and sustainable digital economy.

## 5 Conclusion and Future Research

The study provides valuable insights into the challenges and opportunities in promoting inclusive digital ecosystems. The findings highlight the significance of understanding and addressing functional and psychological barriers that hinder cyberpreneurs' efforts. By identifying key resistance factors, such as perceived risks, cultural and societal norms, and lack of support infrastructure, this study contributes to a deeper understanding of the dynamics surrounding cyberpreneurship and digital inclusion. The research underscores the importance of promoting digital inclusion to achieve socio-cultural sustainability. It emphasizes the role of cyberpreneurs in driving positive change by fostering inclusivity, cultural diversity, and equitable access to digital technologies and opportunities.

In the future, research can be expanded in several ways to enhance the current study. The researchers could use qualitative methods like interviews or focus groups to understand cyberpreneurs' experiences and their challenges more deeply. Moreover, comparative studies across regions or countries can explore how local factors affect cyberpreneurship resistance and the success of digital inclusion strategies for socio-cultural sustainability. These approaches can contribute additional findings to focus on cyberpreneurship resistance and promote socio-cultural sustainability in various contexts.

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