

Digital Technology Use and Local Entrepreneurship Development in the Gig Economy of Pematang Serai

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Abstract

This study investigates the influence of User Experience (UX) on Digital Entrepreneurship Intention (DEI) through the mediating role of Perceived Value among gig-economy actors in Pematang Serai Village, Tanjung Pura District, Langkat Regency. The rapid expansion of digital platforms in rural ecosystems has reshaped entrepreneurial behavior, making UX and value perception central determinants of digital business adoption. A quantitative crosssectional survey was conducted in 2025 involving 200 respondents consisting of gig-economy workers and micro-entrepreneurs who actively utilize digital platforms. Data were collected using a structured questionnaire and analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM). The findings indicate that User Experience significantly enhances Perceived Value, which in turn positively affects Digital Entrepreneurship Intention. Moreover, Perceived Value partially mediates the relationship between UX and DEI, demonstrating its psychological role as a value-based cognitive mechanism that strengthens entrepreneurial motivation in digital contexts. The structural model exhibits strong predictive accuracy, with substantial explanatory power for DEI. These results highlight the importance of improving digital platform usability, responsiveness, and perceived benefits to stimulate digital entrepreneurial participation in rural gig-economy communities. The study contributes to digital marketing, gig-economy empowerment, and rural digitalization literature by clarifying how experiential and value-driven factors shape entrepreneurial intentions.

Keywords: User Experience; Perceived Value; Digital Entrepreneurship Intention; Gig Economy; Rural Digitalization

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Introduction

The rapid advancement of digital technology has profoundly transformed economic and social activities across the world. One of the most visible outcomes of this transformation is the integration of digital tools into everyday economic practices, particularly within informal sectors and micro-entrepreneurial communities. This evolution is increasingly evident in rural settings such as Pematang Serai Village, Tanjung Pura District, Langkat Regency, where digital adoption serves as a catalyst for strengthening local entrepreneurship, expanding market access, and enhancing service delivery within the growing gig economy. Digital platforms enable rural communities to diversify income sources, promote local products, and improve business efficiency, thereby contributing to broader rural economic development.

Existing research underscores the crucial role of digital platforms in shaping behavioral patterns and satisfaction among informal workers in rural areas. Ario, Harianto, and Harahap found that interactions with digital platforms significantly influence online service effectiveness and user satisfaction, demonstrating how digital ecosystems enhance responsiveness to community needs [1]. This indicates that as digital adoption grows, rural communities are better equipped to engage in gig-based economic activities such as delivery services, online selling, and digital freelancing, reshaping economic participation at the grassroots level.

In addition, marketing performance and product innovation play an equally essential role in improving rural business competitiveness. Harianto, Saragih, and Ario emphasize that strong marketing performance and product innovation drive the sustainability of rural MSMEs, enabling them to compete beyond traditional markets through digital channels [2]. This aligns closely with the conditions in Pematang Serai Village, where entrepreneurs must adopt digital approaches to sustain competitiveness in a rapidly evolving economic landscape.

The importance of innovation is further strengthened by insights from Nasution et al., who note that organizational culture and ambidexterity determine the extent to which small enterprises can absorb and adapt to digital technologies [3]. Their work highlights the need for rural communities to cultivate a culture of openness, learning, and experimentation to maximize the benefits of digital tools. Without this readiness, digital transformation may not yield meaningful results even in areas with improving technological access.

Digital marketing particularly through social media also plays a significant role in shaping brand engagement and customer interaction. Rossanty et al. demonstrated that strategic social media marketing enhances brand engagement and strengthens market competitiveness [4]. While their study focuses on competitive product markets, its implications extend to rural enterprises, which can leverage social media to promote local products, build community-based brands, and stimulate youth participation in entrepreneurship. Human resource aspects further affect the success of digital adoption. Sebayang, Ario, and Taufik revealed that work environment, commitment, and personality traits significantly influence the performance and loyalty of MSME actors [5]. This highlights that digital transformation in rural areas depends not only on technology availability but also on human readiness, motivation, and engagement in digital platforms.

In the context of rural development, village branding initiatives grounded in local wisdom also strengthen community identity and economic resilience. Surya, Mesra, and Abd Kadir demonstrated that local-wisdom-based branding supports sustainable tourism and stimulates local economic empowerment [6]. For Pematang Serai, such strategies offer opportunities to

highlight its cultural, agricultural, and entrepreneurial potential, especially when integrated with digital media.

Despite these advancements, the success of digital transformation ultimately depends on user experience (UX). UX includes users' perceptions, emotions, and satisfaction when interacting with digital platforms, encompassing ease of use, reliability, trust, and usefulness. UX strongly influences sustained digital platform use, adoption behavior, and long-term entrepreneurial engagement. Studies indicate that intuitive interfaces, accessible features, and reliable systems encourage digital participation, while poor user experience discourages platform use and limits digital economic opportunities [1,4].

In Pematang Serai Village, where digital literacy levels vary and technological adaptation remains uneven, understanding user experience is essential to identifying challenges such as limited skills, connectivity issues, platform distrust, or difficulty adapting to changes. Conversely, strong user experience can promote entrepreneurial creativity, strengthen participation in the gig economy, and accelerate digital-driven economic growth. Given these considerations, this study examines the utilization of digital technology for local entrepreneurship development in Pematang Serai Village, focusing specifically on the role of user experience among gig-economy actors. By integrating insights from existing literature [1–6] and analyzing real conditions in the village, the research aims to contribute to a deeper understanding of how digital transformation supports rural empowerment, entrepreneurial resilience, and sustainable economic development in the gig economy era.

Literature Review 2.1 User Experience (UX)

User Experience (UX) encompasses users' holistic perception, emotional response, and satisfaction when interacting with a digital platform covering usability, interface design, system responsiveness, and overall convenience [11]. Recent research suggests that a positive UX significantly enhances user engagement and increases the likelihood of adopting digital tools for entrepreneurial or economic purposes [1], [2]. In the context of Indonesia's gig economy and rural digital platforms, the study by Ario, Harianto & Harahap found that intuitive, reliable, and user-friendly digital platforms shape informal workers' satisfaction and usage behavior [1]. Meanwhile, research on marketing performance and product innovation at the rural MSME level underscores that UX contributes to perceived service quality, facilitating value creation through digital interactions [2].

These findings underline that UX is a crucial antecedent influencing how individuals evaluate digital platforms making UX a fundamental predictor before users decide to adopt digital-based entrepreneurial activities.

Hypothesis 1 (H1): User Experience positively affects Perceived Value among gig economy actors.

2.2 Perceived Value

Perceived Value (PV) refers to the user's overall evaluation of benefits received relative to incurred costs or sacrifices when using a digital service including functional, emotional, economic, and experiential value dimensions [12]. Between 2020 and 2025, empirical studies in digital marketing and commerce increasingly highlight Perceived Value as a major determinant of adoption intention for digital tools and online business models [14], [16].

For example, Rossanty et al. showed that social media marketing that generates perceived value leads to enhanced consumer engagement and stronger brand outcomes [4]. In rural MSME

contexts, perceived value has been identified as a driver of loyalty and performance improvements, particularly when digital tools offer tangible benefits such as increased reach, efficiency, and revenue potential [5]. Additionally, organizational culture studies note that perceived value functions as a mediating mechanism linking quality of experience (or service) to technology absorption and favorable organizational outcomes [3].

This suggests that PV serves as a psychological bridge through which UX influences digital entrepreneurship intention. A positive user experience enhances perceived value, which in turn fosters stronger entrepreneurial motivation.

Hypothesis 2 (H2): Perceived Value positively affects Digital Entrepreneurship Intention.

Hypothesis 3 (H3): Perceived Value mediates the effect of User Experience on Digital Entrepreneurship Intention.

2.3 Digital Entrepreneurship Intention (DEI)

Digital Entrepreneurship Intention (DEI) refers to an individual's willingness or plan to use digital technologies to start, run, or expand a business especially within micro, small, or informal enterprise settings [13].

Recent trends show that digital entrepreneurship is becoming an increasingly strategic mechanism enabling gig workers and rural micro-entrepreneurs to access broader markets, enhance competitiveness, and overcome traditional economic barriers [13], [6]. Empirical findings indicate that when users experience high usability and derive perceived value from digital platforms, they are more likely to commit to digital ventures. Harianto et al. assert that digital marketing performance and innovation contribute to enhanced competitive advantage for rural MSMEs, which indirectly reflects increased entrepreneurial intention [2]. Research in rural tourism and local-wisdom branding additionally highlight how digital platforms can support sustainable community-based business activities when adoption and engagement are high [6].

Therefore, DEI is logically positioned as the dependent variable, reflecting the outcome of positive UX and value perception in a rural, digital-enabled entrepreneurship setting.

Hypothesis 4 (H4): User Experience positively affects Digital Entrepreneurship Intention.

Research Methodology

This study employs a quantitative research approach using a cross-sectional design, conducted in 2025 in Pematang Serai Village, Tanjung Pura District, Langkat Regency. The quantitative method was selected because it enables systematic measurement and testing of relationships among variables, particularly the influence of User Experience on Digital Entrepreneurship Intention mediated by Perceived Value. Quantitative approaches are widely used to evaluate causal relationships within social and digital behavior research models, following contemporary methodological recommendations [15].

The cross-sectional design was applied because data were collected at one point in time. This design is commonly adopted for studies examining theoretical structural models related to user behavior in digital environments, especially when the goal is to simultaneously assess perceptions of gig-economy actors [16]. Furthermore, survey-based field research is highly suitable for rural settings, enabling direct measurement of residents' perceptions related to digital platforms.

The study population consists of gig economy workers and micro-entrepreneurs (MSMEs) using digital platforms in Pematang Serai Village. A purposive sampling technique was employed, selecting respondents who met specific criteria, such as having used digital platforms for a minimum of three months and actively conducting business operations. Purposive sampling is frequently used in technology adoption and digital marketing research because it ensures that respondents have adequate familiarity with the examined phenomena [17]. To strengthen respondent reach, snowball sampling was incorporated, acknowledging that gig workers often operate within informal and interconnected community networks that are not captured through formal population listings [18]. The minimum sample size was set at 200 respondents, referring to recommendations for Structural Equation Modeling (SEM), which suggest a minimum of 5–10 times the total number of indicators to ensure stable estimation and reliable structural prediction [19]. The research instrument consisted of a structured questionnaire using a 5-point Likert scale. The measurement instruments include:

- (1) User Experience, adapted from dimensions of usability, visual design, responsiveness, and satisfaction established in recent UX frameworks [20];
- (2) Perceived Value, comprising functional, emotional, and economic components [21]; and
- (3) Digital Entrepreneurship Intention, derived from contemporary models assessing entrepreneurial motivations in digital environments [22].

Instrument testing included validity and reliability analyses using Confirmatory Factor Analysis (CFA). Reliability was evaluated through Composite Reliability ($CR > 0.70$), convergent validity was assessed through Average Variance Extracted ($AVE > 0.50$), and discriminant validity was tested using the Fornell–Larcker criterion, aligning with the latest standardized SEM methodological recommendations [16][19]. A preliminary pilot test involving 30 respondents was conducted to refine item clarity and reliability prior to full-scale data collection.

Data analysis was performed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS software. PLS-SEM is recommended for prediction-oriented models, non-normal data distributions, and moderate sample sizes typical of rural and community-based studies [19]. Hypothesis testing was conducted using the bootstrapping technique with 5,000 subsamples to estimate significance levels for direct and mediation effects. Model evaluation employed R^2 , f^2 , and Q^2 values, following current structural model assessment guidelines [23].

Results 4.1 Outer Model Evaluation (Measurement Model)

The outer model was assessed through tests of indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. The results indicate that all indicators meet the recommended thresholds for PLS-SEM evaluation. Table 1 presents the full outer model results.

Table 1. Outer Model Evaluation (Loadings, CR, AVE)

Construct	Item	Loading	Cronbach's Alpha	Composite Reliability (CR)	AVE
<u>User Experience (UX)</u>	<u>UX1</u>	<u>0.812</u>	<u>0.892</u>	<u>0.921</u>	<u>0.661</u>
	UX2	0.846			

	UX3	0.871			
	UX4	0.776			
Perceived Value (PV)	PV1	0.834	0.887	0.916	0.644
	PV2	0.801			
	PV3	0.812			
	PV4	0.770			
Digital Entrepreneurship Intention (DEI)	DEI1	0.861	0.903	0.933	0.736
	DEI2	0.883			
	DEI3	0.867			
	DEI4	0.823			

Source: Processed by Researcher (2025)

The results show that all items from User Experience, Perceived Value, and Digital Entrepreneurship Intention have loading values greater than 0.70, indicating adequate indicator reliability. Composite reliability (CR) values range from 0.916 to 0.933, exceeding the recommended minimum threshold of 0.70, confirming strong internal consistency reliability [16]. Additionally, all Average Variance Extracted (AVE) values exceed the minimum criterion of 0.50, demonstrating that each construct meets the requirements for convergent validity. These results indicate that the measurement model is appropriate for evaluating the structural relationships among the variables.

4.2 Discriminant Validity

Discriminant validity was assessed using the Fornell–Larcker criterion, which compares the square root of AVE with inter-construct correlations. Table 2 shows that the square root of AVE for each construct is higher than the correlations with other constructs, confirming satisfactory discriminant validity.

Table 2. Fornell–Larcker Discriminant Validity

Construct	UX	PV	DEI
UX	0.813		
PV	0.612	0.803	
DEI	0.588	0.641	0.858

(Diagonal values represent $\sqrt{AVE}$)

Source: Processed by Researcher (2025)

The discriminant validity results indicate that each construct is empirically distinct. The square roots of the AVE values (in bold) are higher than their correlations with other constructs, demonstrating that the constructs measure different conceptual domains. This ensures the appropriateness of the structural model evaluation.

4.3 Inner Model Evaluation (Structural Model)

The structural model was evaluated through the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and significance of the path coefficients.

Table 3. Inner Model Results (R^2 , f^2 , Q^2)

Endogenous Variable	R^2	Interpretation
Perceived Value (PV)	0.374	Moderate
Digital Entrepreneurship Intention (DEI)	0.512	Moderate–Strong
Path	f^2	Effect Size
<u>UX → PV</u>	0.356	Medium–Large
<u>PV → DEI</u>	0.291	Medium
<u>UX → DEI</u>	0.118	Small
Construct	Q^2	Predictive Relevance
PV	0.241	Moderate
DEI	0.338	Moderate

Source: Processed by Researcher (2025)

The endogenous construct Perceived Value shows an R^2 value of 0.374, which indicates a moderate level of explanatory power. Meanwhile, Digital Entrepreneurship Intention has an R^2 of 0.512, indicating that more than half of the variance is explained by User Experience and Perceived Value. Effect size analysis (f^2) shows that User Experience has a substantial effect on Perceived Value (0.356), while Perceived Value exerts a meaningful medium effect on Digital Entrepreneurship Intention (0.291). Predictive relevance (Q^2) values for both endogenous constructs exceed zero, confirming that the model has adequate predictive validity.

4.4 Hypothesis Testing

Significance testing was conducted through a bootstrapping procedure with 5,000 subsamples.

Table 4. Hypothesis Testing (Bootstrapping Results)

	Hypothesis Path	β	t-value	p-value
H1	UX → PV	0.612	12.883	0.000
H2	PV → DEI	0.541	12.883	0.000
H3	UX → DEI	0.241	3.844	0.000
H4	UX → PV → DEI (Mediation)	0.331	6.127	0.000

Source: Processed by Researcher (2025)

The results show that User Experience significantly influences Perceived Value ($\beta = 0.612$, $p < 0.001$), supporting H1. Perceived Value also demonstrates a strong and significant effect on Digital Entrepreneurship Intention ($\beta = 0.541$, $p < 0.001$), supporting H2. Furthermore, User Experience exerts a positive direct effect on Digital Entrepreneurship Intention ($\beta = 0.241$, $p < 0.001$), confirming H3. Finally, mediation testing reveals that Perceived Value significantly mediates the relationship between User Experience and Digital Entrepreneurship Intention ($\beta = 0.331$, $p < 0.001$), supporting H4 and indicating a partial mediation effect. This suggests that User Experience not only directly influences entrepreneurial intention but also indirectly strengthens it through the enhancement of perceived value.

4.5 Discussion

The results of this study reinforce the central role of User Experience (UX) in shaping digital entrepreneurial behavior in rural economies. The strong and significant path coefficients obtained in the structural model demonstrate that a positive UX enhances perceptions of value and ultimately encourages entrepreneurial intentions among gig workers in Desa Pematang Serai. This finding aligns with recent digital behavior research emphasizing that intuitive, efficient, and satisfying platform experiences serve as psychological triggers that motivate users to adopt digital-based business activities [1]. In the context of rural gig economy ecosystems, where familiarity with technology may vary, high-quality UX appears to function as a catalyst that reduces perceived effort and increases confidence in using digital tools.

The mediating role of Perceived Value is also strongly supported by the results, confirming that UX does not directly influence entrepreneurship intention alone; rather, the perceived benefits derived from digital platforms such as convenience, economic gain, and emotional satisfaction play a critical mechanism linking UX to entrepreneurial motivation. This supports the conceptualization of value as a multi-dimensional cognitive evaluation that determines behavioral choices in digital environments, consistent with prior findings in digital commerce and service adoption research [10]. The strong mediation effect also demonstrates that users in rural settings evaluate digital systems not merely based on usability, but based on the value they believe the platforms bring to their livelihood strategies.

Furthermore, the significant effect of Perceived Value → Digital Entrepreneurship Intention aligns with contemporary entrepreneurship literature, which highlights that value cognition strongly predicts an individual's willingness to engage in digital ventures, particularly in emerging economies where digital tools lower entry barriers for micro-entrepreneurship [22]. In this study's context, gig workers perceive digital platforms as an opportunity to improve income stability, access broader markets, and enhance visibility of their services factors that elevate their entrepreneurial orientation.

The findings also contribute to ongoing discussions regarding digital inclusion. The results suggest that improving rural digital entrepreneurship is not solely dependent on infrastructural expansion but also on enhancing experiential quality and value perceptions to encourage sustainable participation. This echoes recent studies emphasizing that digital transformation in rural communities must integrate user-centered design and localized value propositions. Thus, policies focusing only on connectivity may be insufficient without accompanying strategies that elevate the experiential and value-based aspects of platform usage.

Lastly, the empirical evidence situates this study within broader gig economy debates. As gig work increasingly becomes a viable livelihood strategy, especially in rural Indonesia, digital platforms must ensure that UX and value creation are optimized to facilitate entrepreneurship rather than merely consumption. Similar observations have been noted in global gig economy analyses, where platform usability and perceived value significantly drive long-term engagement and entrepreneurial expansion [14]. Therefore, this study underscores that the sustainability of rural gig ecosystems depends on continuous improvement of platform experience and value delivery.

In summary, the discussion highlights that UX contributes to entrepreneurial intention primarily through value perceptions, reinforcing the theoretical and practical role of experiential quality in fostering rural digital entrepreneurship.

Conclusion

This study concludes that User Experience significantly enhances Digital Entrepreneurship Intention, and this effect becomes stronger when mediated by Perceived Value. The findings validate the structural model, showing that users who perceive digital platforms as easy, intuitive, and pleasant are more likely to view them as valuable tools for entrepreneurship, ultimately increasing their intention to engage in digital business activities. These results align with recent evidence emphasizing the role of UX and perceived value in digital adoption and entrepreneurial behavior. For rural contexts such as Desa Pematang Serai, improving UX quality and strengthening the perceived benefits of digital tools may accelerate digital entrepreneurship growth. Overall, the study provides empirical support for the importance of platform design, user-centered innovation, and value creation as strategic levers for encouraging entrepreneurial participation in the gig economy.

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