The 2CTE Model: A New Approach to AI Skill Training for Local Enterprises

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Abstract

Thai local entrepreneurs suffer from a digital skills gap standing in the way of their online competitiveness, which is exacerbated by generative AI. This research has attempted to confront this problem with the following objectives: 1) Create the 2CTE model, a new workshop mode for technology training of skills for local entrepreneurs, aimed at resolving Basic digital illiteracy limitations to compete adequately. 2) to conduct a hands-on workshop, integrate the 2CTE Model as training entrepreneurs in Ubon Ratchathani province on the use of AI, present new ideas, and generate digital content with product advertising images. The workshop used the curated generative AI tools, and results were judged through an entrepreneur satisfaction survey. The results were highly positive. The mannose model was well validated by experts. The workshop attendees reported being delighted with the AI-generated images, stating that they were especially appealing in terms of quality ($\bar{x}$= 4.80) and speed of content development ($\bar{x}$=4.73). The latter led to high positive contentment ($\bar{x}$=4.60) and empowering that minimized dependence on the professional designers. In summary, the 2CTE Model has proven to be a successful model for addressing the AI knowledge and skills gap. Similarly, it efficiently applies the adoption model and the TAM in the practical marketing of local products. It can also be effectively applied to community development projects. The most notable contribution of this study is the innovative merging of two theories, the Technology Acceptance Model (TAM) and the Elaboration Likelihood Model (ELM), to practical teaching. This specialized knowledge enables community developers to address the digital divide by promoting psychological adoption of technology and empowering them to build persuasive branding. This is a sustainable approach to upgrading local organizations into digital organizations. In summary, the 2CTE Model is a verified effective framework for filling the AI skills gap. It effectively adopts technology acceptance and training modes for local enterprises about practical marketing, and should be further utilised in community development projects.

Keywords: 2CTE Model, Generative Ai, Technology Adoption, Local Entrepreneurs

Introduction

The digital marketplace has transformed the way things are bought and sold in today's world, and product sales on the Internet have exploded. The acceleration and growth of social commerce is most evident in Thailand, where gross merchandise value from the social commerce market will be valued at a sizeable 49 billion USD by 2025 (Statista, 2023). This digital renaissance is not only providing entrepreneurs and brand owners with unprecedented opportunities, but also challenges that keep changing so rapidly and require continual adjustments. This represents a significant hurdle for Thai businesses which, especially the local SMEs who are mostly business owners and entrepreneurs in the older grouping and lacking IT skills, means they find it challenging to produce engaging advertising that can generate brand awareness. They can't make the sorts of imagery and text necessary for web sites, so they lose out on the chance to compete and claim a piece of that rich pie some quality local products made right here end up underrepresented in digital space.

This digital divide in skills is well reported as a constraint for SMEs in Thailand. Studies consistently show that most entrepreneurs in the region do not have basic digital literacy skills to compete effectively (Rattanasiripong & Thongdee, 2022). And, this shortfall is usually worsened by the lack of understanding in digital marketing (Promsaka & Pengnate, 2022) and technical skills to develop attraction on the internet content (Panyasorn & Sirichote, 2023). The skills gap is far from a trivial matter; it significantly affects firm survival and competitiveness and hampers the performance of online sales in an overcrowded social commerce market (Techawasin & Jaroen, 2024). This lack of skills is consistent with national-level findings on the major challenges in implementing e-commerce among Thai SMEs (Digital Economy Promotion Agency, 2023). This issue is substantially supported by the researcher's initial research in Ubon Ratchathani Province from a local academic service project. The field survey verified that local entrepreneurs in general do not possess the technology skills, as they are being solely for production and do not have the idea of branding and also marketing communications. This challenge is often demographic: some organizations have a population consisting almost entirely of seniors, and others with children and grandchildren building online channels for them but despite best intentions they simply do not have the capacity to house consistent content (nor the skills to do so strategically) on their own. But the rapid development of new tools, particularly generative AI, offers both a difficult problem and an exciting opportunity to address. Most of the traditional training methods cannot efficiently solve the issues of technology fear and the strategic mindset for successful brand building, nor cultivate a good attitude for willing to learn new technical tools. This in turn demands a new, fit-for-purpose form of training to walk the enlightened entrepreneur from fearfitful to empowering.

So, to address this issue, this study created and evaluated a new 2CTE model. This new workshop format is designed to raise awareness of the benefits and value of technologies that are easily accessible and usable by local entrepreneurs, and make the use of AI tangible for them. The main goal of the model is to increase the skills and abilities of these key participants for digital success – developing, designing & writing a successful local product brand, data analysis on effective business and promotional plans ability, attracting high quality professional-looking commercial promotional content mentality. The contribution of this study is that the model developed in the research process was confirmed to be functional and replicable, as it serves as a tool to enable entrepreneurs (who are local people) for sustainable economic improvement and preserve traditional craftsmanship for the future under Thailand's lively digital economy.

Literature Review

1. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is an established model for explaining how users accept new technology. "A fundamental assumption behind TAM is that perceived usefulness (PU)-how much a person believes that using a particular system will help him/her to attain gains in job performance-and perceived ease-of-use (PEOU)-the degree to which they believe that using it would be free of effort-are the main determinants of his or her Attitude Toward Using. In their turn, this attitude influences their Behavioural Intention (BI) to use the technology, which is a direct predictor of Actual Use (AU) (Prabowo et al., 2020).

Although the model has been invented and proposed for a long time, it remains a practical tool in today's marketing environment. A systematic review in the recently published bibliometric analysis by Musa et al. (2024) of over a thousand publications from 2002 to 2022 confirms this, revealing an upward trend in marketing research employing TAM, particularly in emerging areas like mobile and online marketing. This continued application underscores TAM's status as a robust and essential framework for analysing technology adoption behaviours in both academic research and practical settings.

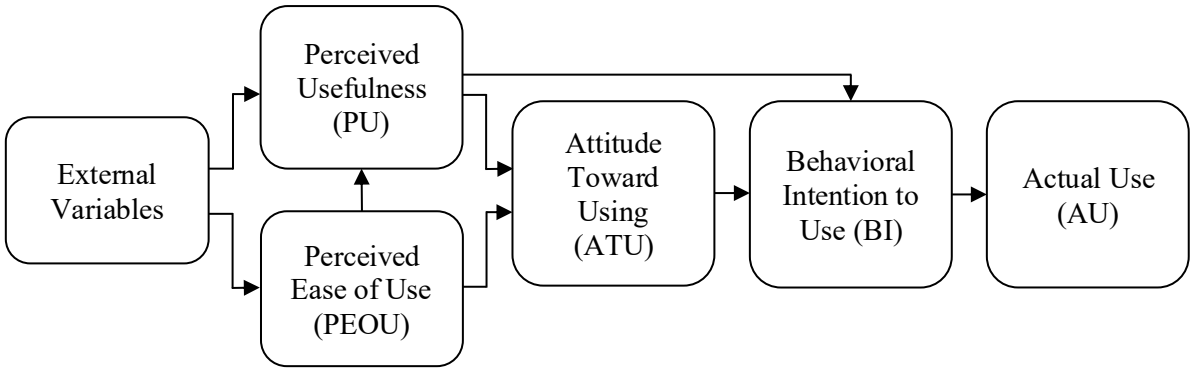

Figure 1: The TAM model. (Musa et al., 2024)

From the Figure 1, the Technology Acceptance Model (TAM) consists of four core constructs: Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Toward Using (ATU), Behavioral Intention (BI), and Actual Use (AU). These factors are interconnected and together establish the model framework.

1) Usefulness is the extent to which a user believes that a specific technology will enhance their performance or effectiveness. This construct is an integral factor that influences adopter acceptance – users tend to use a technology if they perceive 45 it as useful (Prabowo et al.,2020).

2) Perceived Ease of Use (PEOU) is the extent of a user's belief that using a technology would be relatively easy. Usability is a prime determinant of user acceptance, especially during the early stages of technology diffusion.

3) PU and PEOU influence ATU. A user's intention to use a technology is determined by the user's positive perception of that technology. It has been shown in empirical research that attitude mediates the relationship between PU/PEOU and BI.

4) BI and AU: These constructs are a user's intention to use the technology, but in contrast, AU is an actual use of the technology. According to the TAM, BI precedes directly AU.

2. Elaboration Likelihood Model (ELM)

The Elaboration likelihood model (ELM) proposed by Petty and Cacioppo offers a useful theoretical construct for testing the impact of persuasive messages on consumers. The ELM describes two routes to persuasion, one that is higher in effort and leads through careful thinking (central route processing), and the other that is lower in effort but still effective, a heuristic-based mental shortcut relying on superficial cues like source attractiveness or font size of an advertisement; this process could be analogously extended to number of "likes" for a social media post (Chen et al., 2022). In this fast and convenience-oriented era of social commerce, the peripheral route is a dominant way to affect consumers because short attention spans are more apt to accept information based on visual images that are perceived unconsciously or even subconsciously. Hence, the peripheral route has become the dominant way of persuasion on platform such as Instagram and TikTok (Kim & Lee, 2023). Generative AI is especially applicable in such scenario, because its capacity to generate realistic imagery represents an effective visual peripheral cue which enables shaping the consumer mindset and involvement. According to research, the persuasiveness of AI-produced advertising is in fact often thought to be due to its use of such strong peripheral cues which help it grab attention and modify consumer attitudes (Rogers & Evans, 2024). The conceptual potential is obvious, but how much practical use does ABM have for Thai local entrepreneurs – a group with its own set of digital understanding and resource challenges? Thus, this study fills a significant lacuna by examining the on-ground usability and efficacy of these advanced tools among community-based enterprises.

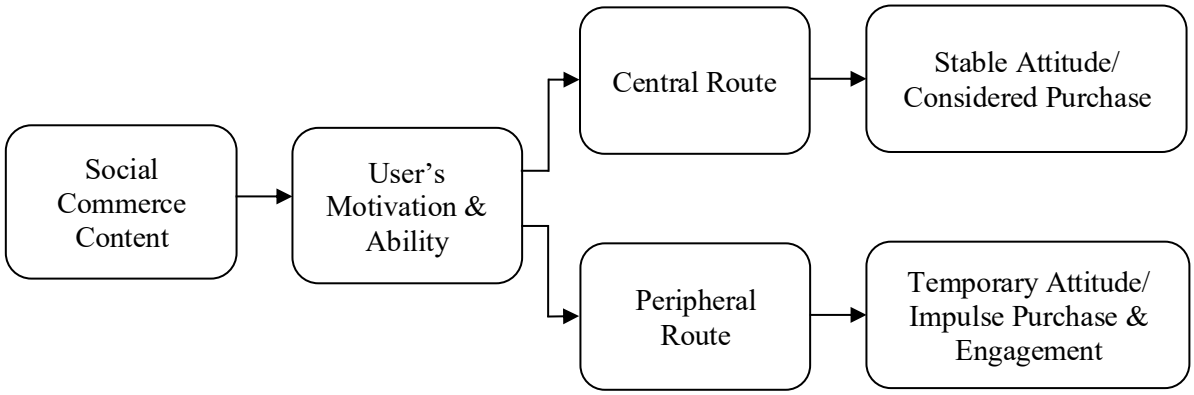

Figure 2: The ELM in the Age of Social Commerce. (Chen, Lu, & Wang, 2022)

As shown in Figure 2, the ELM depicts how users are influenced by Social Commerce Content. It is the mechanism that started it all. It's any type of content an entrepreneur puts up on a social media platform, such as A picture of the product, A short video about it, an ad for the product, Testimonials from customers, or even just the caption written to sell that specific product. And then User's Motivation & Ability (The Critical Filter) is where the brain of the user has to decide what they're going to do. The motivation and capability of a user are typically low in social media. User sees content, their Motivation & Ability are going to act as a filter, it's going to pass them down one of two pathways.

1) Central Route: When the users are highly motivated and able, they proceed through the Central Route. They analyze the content logically and come to a Rational Attitude and an Intelligent Buy.

2) Peripheral Route: If the user is low motivated and/or able to think (common on social media), they follow this route. They are steered by straightforward, shallow signals such as an image's level of appeal. This creates a sense of Temporary Attitude, which translates into instant Engagement (likes, shares) or an Impulse Purchase.

Therefore, the model suggests that in a fast-moving social commerce environment, influencing users based on the quick and visually rich Peripheral Route can be more effective than it is through the logical Central Route.

3. The Social Commerce and Local Entrepreneurs in Thailand

Social commerce is a significant component of the Thai digital economy, shaped by a cultural preference for conversational and relationship-based transactions. In Thailand, online stores often resemble market stalls, where informal dialogue replaces aggressive sales tactics. Social commerce is expanding rapidly, supported by cultural factors that foster a highly interactive e-commerce environment. Consumers increasingly seek direct engagement with manufacturers through digital platforms such as Facebook, Instagram, and Line prior to making purchases (Wongsiri & Jaroen, 2023). This approach, which integrates boutique retail, social networking, and e-commerce, presents a valuable business opportunity for local and community entrepreneurs, particularly those participating in the One Tambon One Product (OTOP) initiative. The low entry barriers and the capacity to communicate the narrative behind handmade products enhance social commerce as a platform for economic empowerment, especially in contexts where infrastructure-focused policies have limited impact.

But there remains a wide gulf between that potential and the lived experiences of many entrepreneurs, who are blocked at every turn by what has become a well-documented digital skills gap. This difference corresponds to reports at the national level that Thai SMEs face many challenges in e-commerce adoption (Digital Economy Promotion Agency, 2023). These problems are both the problem in terms of not creating content online and a lack of digital marketing knowledge and mismanagement, which is driven by such demographics as age and little experience technology-related (Panyasorn & Sirichote, 2023). The gap between jobs in demand and skills needed for those jobs presents as an urgent issue that requires both a scalable and practical solution. Generative AI can be one of the "leapfrogging" technologies to overcome this skills gap, making it possible for entrepreneurs to make premium content faster than it was ever before, enabling equal opportunities within Thailand's diverse digital ecosystem by making them more accessible.

4. The Emergence of Generative AI in Digital Marketing

Generative artificial intelligence (generative AI) has redefined the way people design. Generative AI is different from normal AI, which analyses or classifies data; generative AI creates new original content. It is based on complex models, for example, text Large Language Models (LLMs), an image diffusion model, which are trained on a large-scale dataset in order to understand patterns, forms, and structures. With this training, Generative AI can produce uncanny new outputs (text, images, video, and audio), which are increasingly becoming difficult to differentiate from those produced by humans (Dwivedi et al. 2023). This work highlights the potential for AI to create visual and textual content key to the advertisement of social commerce.

4.1 Current AI Applications in Marketing

Generative AI isn't just a point of discussion any longer: it is a game-changing tool that has been quickly integrated into the modern marketing workflow. It has diverse and impactful applications:

1) Product Image and Ad Visual Generation: Generative AI technology allows the production of synthetic media for ad purposes, creating good-quality, professional-looking visuals without a product photoshoot (Gupta & Sharma, 2023). But consumer reactions are mixed, as novel, hyper-creative imagery could be a sign of innovation and increase involvement (Schneider & Reiter, 2024), but visuals that appear inauthentic may evoke scepticism and negatively impact consumer trust.

2) Advertising and Content Writing: Large Language Models (LLMs) are already often used to produce diverse ad copy (Marr 2023). The best approach is typically a human-AI co-creation model, in which AI lends a helping hand to write and draft while the human makes sure that it aligns with brand voice (Kim & Lee, 2023). While AI-generated copy can match human performance in direct-response advertising, the best-written writing styles requiring subtle storytelling or strong emotional bonding are usually still kept down to a human writer (Thompson and Hughes 2024).

3) Video Creation: The evolution of AI to text-based video generation has increased the cost of video creation, enabling small and medium-sized enterprises (SMEs) to create and compete in a video-first world. The quality of prompts is the critical factor that affects the performance of such AI-based videos. They are great at creating content for call-to-actions, but they can't do the vibrant ambience as much as when such (viral) engagement is via human-created content (Peterson & Singh, 2024).

4) Hyper-Personalization:AI makes hyper-personalization possible by altering ad elements on the fly in real-time according to users' browsing behavior. This technique is referred to as Dynamic Creative Optimization (DCO) and helps in a big way to improve the relevance of an ad and ultimately conversion rates (Verma & Joshi, 2023). However, such capabilities need to be refined to account for the trade-off between personalisation and privacy, whereby too much personalization is regarded as intrusive and may drive ad avoidance and reduced brand trust (Garcia & Williams, 2024).

4.2 Benefits of Generative AI

1) Speed and Efficiency: The first advantage that comes to mind is simply spending less time generating content. What would take a marketing creative team days creating variations of ads, or writing blog posts can now be accomplished in minutes, speeding time-to-launch for campaigns and content schedules (Marr, 2023).

2) Cost Reduction: AI reduces the amount spent on hiring photographers, copywriters, and design agencies through automation of content creation. Such an equalization of high-quality content development is something worthwhile for the SMEs and local entrepreneurs who are working with constrained resources at their disposal.

3) Creativity boost: AI has the potential to create a large number of different creative approaches for variations for any given campaign. This feature enables marketers to perform A/B tests at a large scale, which is not possible manually, and optimize ad performance based on data and find the best combination of visuals and a piece of text (Gupta & Sharma, 2023).

4.3 Risk and ethical considerations

1) Authenticity and Brand Voice The primary problem is that a lot of content generated by AI risks being perceived as generic or soulless, losing the unique brand voice and authenticity that builds trust in customers. This concern is more pronounced for community products, where storytelling and human touch are important (Wilson & Martinez, 2023).

2) Accuracy and Reliability: LLMs often "hallucinate" or produce incorrect information, and so they may promote false descriptions of products or lie in product advertisements, leading to unhealthy brand beliefs.

3) Ethical Issues: Many ethical concerns arise from generative AI, such as a risk of displacement of human creators, potential algorithmic bias that can lead to stereotypical creations, and questionable copyright-related issues on model training data and the ownership of the resulting creations (Dwivedi et al., 2023).

Research Methodology

This research started from first-hand fieldwork in Ubon Ratchathani that was part of grassroots service and community education projects presented by a university. An ongoing obstacle that we found was that small business operators (mainly producers who could diversify with local branding and are responsible for marketing content creation) are almost all but entirely ignorant about the technology needed for such work. Our study has also shown that this skills shortage, reinforced by demographic factors and other forces both inside and outside of academia, is a key obstacle to many of these businesses' place in cyberspace. As a practical problem, purely observational methods are unable to verify the essence of this issue. Thus, this study uses a Mixed-Methods Participatory Action Research (PAR) method. This method was chosen because it is a process of action research, collaborative and directly supportive of our goal to help the community solve this down-to-earth problem in its own right.

Therefore, this research aims to fill the gap in our programs. We propose a 2CTE Model. This Community-Centered Technology Empowerment Model for AI Industry Operation Capacity to Enhance Local Enterprises (in Ubon Ratchathani) is rooted deeply in our research. This research program, therefore, follows strict scientific procedures in order to ensure that the model we have formulated is not only theoretically sound but also practical and relevant to local circumstances, which differ, moreover, from those previously perceived by us.

1. Development of the 2CTE Model

The 2CTE model is a novel workshop framework. It was synthesised by putting together established theories and certain insights that emerged from preliminary fieldwork conducted with members of the community. Two theoretical constructs stand behind the model's design, and these are grounded in adopted: the Technology Acceptance Model (TAM), which offers a structure for understanding how new AI tools can be taken up by people wanting them to do work; and the Elaboration Likelihood Model (ELM), underpinning this way of training entrepreneurs with a particular twist for Persuasive marketing material making. Overall, by means of the 2CTE Model, this project aims to promote AI acceptance and create certain tangible marketing products.

2. Methodological Phases for Validation and Implementation

We have 3 phases in this research for 2CTE accurate and applicable is the foundation for research.

Phase 1: Model Validation by Experts

Before implementation, the conceptual 2CTE Model was presented to a panel of five experts to assess its logical coherence, suitability, and potential effectiveness. The panel was composed of specialists with diverse, relevant backgrounds, including:

1) A Technology Applications Expert
2) A Community Development and Social Enterprise Consultant
3) A Digital Marketing and Branding Strategist
4) An Educational Technology and Instructional Design Expert
5) A Senior Researcher in Entrepreneurship and SME Development

These experts used a specially tailored form to assess the suitability of the model on four main axes: Part 1: Clarity & Comprehensiveness of the Model, Part 2: Relevance &

Appropriateness to the Context, Part 3: Practicality & Effectiveness, Part 4: Originality & Contribution. This evaluation tool will be used to generate an Index of Item-Objectivity Congruence (IOC), which was found to be 1.00. The remainder of the report examines the feedback received from these experts and its impact upon refinement before communal application in the workshop at the local level.

For evaluating the model's suitability, experts scored using a 5-point scale. This scale ranges from 1 = "least suitable" to 5 = "most suitable," with the mean scores interpreted as follows:

4.51 – 5.00: Most suitable
3.51 – 4.50: Very suitable
2.51 – 3.50: Moderately suitable
1.51 – 2.50: Less suitable
1.00 – 1.50: Least suitable

Phase 2: Foundational Local-Brand Baseline

This method adopted purposive sampling during the execution of community-academic service and social-service projects, including field visits. In Ubon Ratchathani Province, the researchers' assessment was based on the availability of basic technology and the interest of local entrepreneurs. In the selection criteria: enterprise facilities ready for technology, basic members possessing an Internet-connected smartphone or tablet, desire to learn and use new digital tools

The researchers selected from a wide cross section of products and common entrepreneurial challenges to improve the 2CTE model assessment's reliability and natural validity with regard to the community-enterprise context. The selected groups are as follows:

1) Grandma Pen's Dried Pork Group (Processed Food Products): Trakan Phuet Phon District. This group's products (sun-dried pork, sausages, etc.) are based on a unique traditional recipe that is carried out in a distinct manner. At present, sales are mostly through a local storefront. The group does have a Facebook page, although it is hardly ever updated. There is pressure within the group to take in another generation, and production of material fluctuates with time, an observation made repeatedly during fieldwork.

2) Somkid Cotton Group (Textiles and Clothing): Det Udom District. This group has an integrated production of their own cotton clothes made by hand in the ancient tradition. Their products are seen as indigenous wisdom that is able to "retain colors and feel soft on the skin. "With still a generation to go in this case, their biggest challenge is that they have no concrete distinguishing brand. They do not currently have a brand identity, a plan for selling to prospective buyers, or regular online marketing communications that preserve meaning.

3) Patumthip Herbal Hair Group (Herbal Products): Muang Sam Sip District. This group makes natural hair products free from chemicals and health certified. It is led by a new-generation entrepreneur who is active online. Their problem is not that they are offline, but actually blocking the development of content. Having run up exorbitant expenses in the past using professional designers, they now find it hard to answer the question of what new materials to put out, and producing ads is time-consuming. In addition, the images they once made no longer find an audience.

Phase 3: Implementation of the 2CTE and Action Evaluation

The applied aspect of this research focuses on a practical workshop that introduced 15 participants from the identified community enterprises to the 2CTE Model. This stage was created as an active learning cycle in which participants transferred theory to practice from the 4 mission follows:

1) Mission of "Visual Transformation" (Targeting the PEOU and PU)

2) Mission of "Authentic Narrative" (Targeting the Central Route: CR)
3) Missions of "Engagement & Aesthetic" Module (Aimed at Peripheral Route: PR)
4) Mission of "Creative Empowerment" (Targeting the BI, AU and BI)

The researchers then surveyed by post-training satisfaction survey to measure learning outcomes. The questionnaire was developed based on five topics: usability, engagement, design quality (perceived aesthetic), perceived relevance, and overall satisfaction. For evaluating the satisfaction of entrepreneurs who attended the training, a 5-point scale was used. This scale ranges from 1 = "least satisfied " to 5 = "most satisfied," with the average scores interpreted as follows:

4.51 – 5.00: Most satisfied
3.51 – 4.50: Very satisfied
2.51 – 3.50: Moderately satisfied
1.51 – 2.50: Less satisfied
1.00 – 1.50: Least satisfied

This questionnaire has been evaluated the reliability of the instrument was confirmed with an IoC of 1.00, and analysis of the result was performed through descriptive statistics (frequency, percentage, mean, and standard deviation). The study successfully connects the individual learning activities of entrepreneurs' digital competency development by integrating these findings with quantitative data.

Research Finding

1. Propose and evaluation of the 2CTE Model

In this study, a new 2CTE model was proposed as an innovative conceptual framework policymakers or acedemicians could use to act as a simple guideline for improving the technological capability of local entrepreneurs. Importantly, the newly formed conceptual framework is not just a collection of theoretical concepts; it has been designed and formed through a collection of relevant documents as well as published research that were systematically linked with field surveys, which were meticulously conducted to analyze the current situation and the various challenges facing the local entrepreneurs in Ubon Ratchathani Province. Furthermore, the new conceptual framework has been developed in association with the researchers substantial field experience, which was gather during the process of practicing annual community academic services along with arrays of social service activities. The carefully crafted model that fuses technology acceptance concepts with novel facets of content creation to develop this model is illustrated concretely in Figure 3. Following the proposal of the developed model, a thorough test was conducted in several stages to determine its effectiveness. This test was predominantly conducted in two major stages. One test was the validation of the model of the workshop used in the testing phase, while the second phases involved an evaluation of the results achieved by testing the developed model through actual implementation of the new technology among local entrepreneurs.

From Figure 3, the 2CTE Model is a structured, two-stage framework designed to guide local entrepreneurs through the entire process of technology adoption and application. Its primary value lies in its holistic approach, which strategically combines the psychological principles of technology acceptance with the practical application of marketing communication theory. The model is logically divided into two sequential phases: the Training and Workshops phase, which fosters adoption, and the Results from Using AI Tools phase, which focuses on practical application and evaluation.

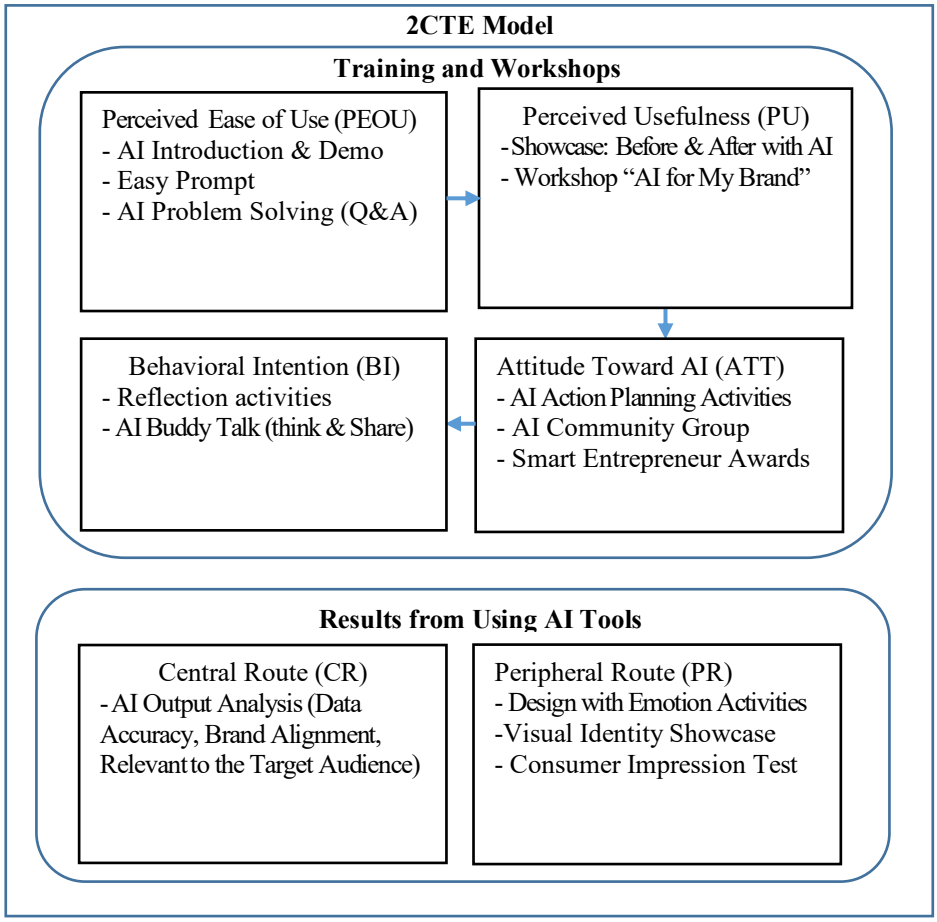

Figure 3: Comunity-Centered Technology Empowerment Model (2CTE Model).

1) Training and Workshops

The workshop sequence of the first phase aligns with TAM's core principles and describes what needs to happen at each moment to defuse fear and build a confident, positive predisposition toward generative AI methodically. The workshop drives a nested causal chain, including:

- Perceived Ease of Use (PEOU): is determined by the pattern of hands-on training and guided practice, which will enable entrepreneurs to develop familiarity with the AI tools' interfaces and operations in a relatively supportive atmosphere.

- Perceived Usefulness (PU) : On account of their session with the system, entrepreneurs are directed to create outputs using their own brands' names. They observe that AI technology contributes to the production of remarkably good results, such as brand assets and strategically organized plans. Entrepreneurs realize that the technology is beneficial to them in that it can enable them to improve their performance.

- Attitude Toward Using (ATU) : The positive reward and constant reinforcement of learning through easy achievement of useful actions and results form an attitude towards working with an AI from an unfriendly, daunting machine to an accessible and useful assistant.

- Behavioral Intention (BI) : After developing a positive attitude towards the tools, the employees start grasping their intention to further use Ai tools and include them in their

normal business routine. Thus, the whole process of developing the technology has been completed.

2) Results from Using AI Tools

In terms of adoption transitioning to the application, the model's second phase builds on the Elaboration Likelihood Model. The distinction is that ELM is used not for the consumer of the end product but for the entrepreneur's assessment of the AI-generated content.

- Central Route (CR): The driving route from central processing takes the form of the entrepreneur's logical, critical evaluation of the quality of AI-generated output. This process involves the substantive evaluation of the coherence of brand story, marketing plan, etc., which allows the consumer to affirm the strategic relevancy of the generic content to the empirical need. This stage assures the entrepreneur's empowerment because they are no longer the passive end-user but a strategist.

- Peripheral Route (PR): The third factor under the peripheral route is perception, which refers to the assessment of the aesthetic and superficial values of AI output. Both the entrepreneur and the customers notice the beauty, professionalism, and style of the content of the product, such as a captivating logo or a well-visualized advertisement.

Importance and Value of the 2CTE Model

In summary, the 2CTE Model's importance is the new vision and approach it presents. The 2CTE Model is an integrated empowerment framework that:

1) Links Psychology and Practice: It brilliantly connects the psychology of technology acceptance theory on why people use technology with the practical learning approach of how they use it as a communication channel, an effective learning model.

2) Provides Empowerment through Evaluation: By implementing a Central Route evaluation, the model ensures that entrepreneurs will not only develop content but also evaluate it, which will help develop a strategic marketing mindset.

Before its actual implementation in the community workshop, the model was demonstrated to five experts, including representatives of marketing, graphic design, and community development, to evaluate its suitability and logical consistency. The results of the quantitative evaluation of the expert evaluation, which demonstrated that the model was indeed suitable for its intended use, are summarised in Table 1.

Table 1 Results of the 2CTE Model Suitability Evaluation

Evaluation Criteria	$\bar{X}$	S.D.	Qualitative Level
Part 1: Clarity & Comprehensiveness of the Model			
1.1 The model has a clear and understandable structure and components.	4.60	0.548	Most suitable
1.2 The definitions and descriptions of each component in the model are accurate and clearly convey their meaning.	4.20	0.447	Very suitable
1.3 The components within the model have a logical and coherent relationship.	4.40	0.548	Very suitable
1.4 The model is comprehensive, covering the key aspects of entrepreneurial empowerment (branding, business planning, content).	4.20	0.447	Very suitable
Part 2: Relevance & Appropriateness to the Context			
2.1 The model aligns with the research objective of empowering local entrepreneurs.	4.60	0.548	Most suitable

Evaluation Criteria	$\bar{X}$	S.D.	Qualitative Level
2.2 The model is built on a solid and credible theoretical foundation (e.g., TAM, ELM).	4.40	0.548	Very suitable
2.3 The model is appropriate for the context and characteristics of local entrepreneurs in Thailand.	4.20	0.447	Very suitable
Part 3: Practicality & Effectiveness			
3.1 The process proposed in the model (e.g., practical workshops, knowledge sharing) is practically implementable.	4.20	0.447	Very suitable
3.2 The model has the potential to genuinely lead to an enhancement of entrepreneurs' capabilities.	4.20	0.447	Very suitable
3.3 This model can serve as a prototype or guideline for developing entrepreneurs in other regions.	4.80	0.447	Most suitable
Part 4: Originality & Contribution			
4.1 The model presents a novel concept or perspective that is beneficial to academia or community development.	4.60	0.548	Most suitable
4.2 Overall, the model is complete and valuable, both academically and practically.	4.80	0.447	Most suitable
Overall	**4.43**	**0.489**	**Very suitable**

Table 1 shows that the evaluation of the model's potential as a model for entrepreneurship development in other regions, as well as the overall value and completeness of the model, both academically and practically, yielded the highest scores, with $\bar{x}$=4.80 and S.D. = 0.447, rated as “Most suitable”.

The second highest score was for the model's clear and understandable structure, its consistency with research objectives in entrepreneurship empowerment, and the model's contribution as a new concept for community development. All three received the same scores, with $\bar{x}$=4.60 and S.D. = 0.548, rated as “Most suitable”.

And the third highest score was for the model's logical and consistent relationship with its components, and its foundation in a solid and reliable theory, such as the TAM and ELM, with the same scores, with $\bar{x}$= 4.40 and S.D. = 0.548, rated as “Very suitable”.

Key evaluation results include:

The expert evaluation of the 2CTE Model revealed a positive assessment, which confirmed the potential and value of this model. The criteria with the highest mean scores were the potential to use the model as a prototype for the development of entrepreneurs in other regions and the overall completeness and value of the model both academically and practically. Ratings of the model “Very suitable” were also assigned to the submission of the model and appearance of it, suitability, relevance of innovation, and possibility to implement the model. The consistently low standard deviation across the criteria also indicates the unanimity of the expert opinion, which confirms the soundness of the model. This suggests that the 2CTE Model is a strong and well-developed framework that incorporates all the important considerations.

2. The 2CTE Model Implementation and Entrepreneur Satisfaction.

Following the successful 2CTE Model validation, a workshop based on the our model was conducted with 15 local entrepreneurs. The training was designed to build tangible skills using a curated selection of free and accessible AI tools. We used the 2CTE Model into practice, the workshop was organised into four basic missions that sought to stimulate various psychological transitions and persuasive content strategies:

1. The mission of "Visual Transformation" (Targeting PEOU and PU)

Activity Detail: The instructor showed how the photo of a community product taken to be used in low light with any smartphone can be edited professionally through AI right away. In the background removal and "generative fill," participants used Adobe Express AI and Google AI Studio to enhance their product's images. Observing this instant high quality leap made the Perceived Usefulness (PU). Providing a simple, touch-based AI interface (mediating tool) instead of a complex design software and even computing an app through that interface, the Perceived Ease of Use (PEOU) was developed to convince entrepneurs that they too could easily reach the professional design.

2. The mission of "Authentic Narrative" (Towards the Central Route: CR)

Activity Detail: Members of the Noet team leveraged ChatGPT and Gemini to turn boring product facts into interesting "Brand Stories". Somkid Cotton, for instance, filled out information about their multi-generational weaving process to create captions highlighting the tradition and excellence of their textile. This behavior corresponds to the Central Route of the ELM. When artificial intelligence- is used to maximize rational and high-quality information delivery of craftsmanship and heritage, the output text attempts to form a Stable Attitude that involves authenticity-discerning cobuyers and traditional wisdom-minded buyers, which then helps in their consideration for purchases.

3. The mission of "Engagement & Aesthetic" Module (Aimed at Peripheral Route: PR)

Activity Details: AI to Create "Social Media Slides" and eye-popping visuals for Entrepreneurs They were trained in content creation using "aesthetic cues" like lush color palettes and professional lighting, optimized for platforms like TikTok and Instagram. This was to emphasize the Peripheral Route of the ELM. The object was to utilize aesthetic appeals in order to hold the attention span of those customers with a short attention time. The successful formation of "attractive" images led to the development of a positive Attitude Toward Using (ATU) the AI, as entrepreneurs gained the confidence that with this system their content looks just as good as those found in national premium brand.

4. Mission of "Creative Empowerment" (Aimed at BI, AU and BI)

Activity Follow-Up: The workshop wrap-up was followed by an "On-Line Launch Simulation." They also encouraged participants to really publish or share their newly minted content through HCI community to get feedback. This social pressure cemented the Behavioral Intention to Use (BI). The qualitative "aha! moments". As one participant put it, the AI's Actual Use (AU) during this phase took a life of its own, never tiring of standing as a permanent bridge over the digital divide and participants were left empowered to steer their brand on line by themselves.

The satisfaction of the entrepreneurs with the AI tool was carefully evaluated. The Training course centred on creating professional-looking promotional images. Entrepreneurs learned to use AI to design and generate product image content for eye-catching social media posts. The detailed satisfaction scores is presented in Table 2.

Figure 4: Example Of AI Workshop for Local Entrepreneurs Based on the 2CTE Model.

Figure 4. Practical Training Workshop on the 2CTE Model. The authors scheduled and conducted a practical training workshop on the 2CTE Model. This session aimed to show entrepreneurs the appropriate use of AI tools for content ideas and content promotion. Text-based AI platforms included ChatGPT, Gemini, and Claude AI as the suggested example with simple, effective prompts. Entrepreneurs actively engaged in the training process and were able to work together using text-based AI platforms with samples of their community brands. To reveal the real value of the intervention, the researcher suggested a "before-and-after intervention", comparing the original entrepreneurs' marketing text and the new AI-based text before use. Also, the researcher selected certain AI tools for the visual design part of the training. These tools are ChatGPT, Google AI Studio, and Adobe Express AI, which helped the local entrepreneurs to create pics for product advertisement professionally.

To reinforce the positive psychological journey outlined in the 2CTE Model, entrepreneurs were encouraged to share their successful experiences, and prizes were awarded to foster motivation and pride. The hands-on application during this workshop resulted in the tangible outputs and enhanced branding assets, the results of which are shown in Figures 5-7.

Figure 5: Example Product Images from the workshop of Grandma Pen's Dried Pork Group:
(a) is the original product image taken by the entrepreneur.
(b) is product images enhanced with AI tools

Figure 6: Example Product Images from the workshop of Somkid Cotton Group:
(a) is the original product image taken by the entrepreneur.
(b) is product images enhanced with AI tools

Figure 7: Example Product Images from the workshop of Patumthip Herbal Hair Group:
(a) is the original product image taken by the entrepreneur.
(b) is product images enhanced with AI tools

Table 2 Satisfaction Assessment of AI Tools by Local Entrepreneurs

Evaluation Criteria	$\bar{X}$	S.D.	Qualitative Level
Part 1: Usability			
1.1 Understanding how to use the AI tool is easy.	4.60	0.507	Most satisfied
1.2 The AI tool's interface is not complicated.	4.13	0.640	Very satisfied
1.3 It does not take a long time to create outputs.	4.73	0.458	Most satisfied
Part 2: Engagement			
2.1 I feel amused and excited while using the AI tool.	4.53	0.516	Most satisfied
2.2 The AI tool helps stimulate creative thinking.	4.00	0.655	Very satisfied
2.3 I feel like I want to experiment with the AI tool again.	4.60	0.507	Most satisfied
Part 3: Design Quality			
3.1 The images generated by the AI tool are beautiful and satisfactory.	4.80	0.414	Most satisfied
3.2 The outputs from the AI tool are professional and suitable for product promotion.	4.53	0.516	Most satisfied
3.3 The AI tool allows for customization and editing as needed.	4.27	0.458	Very satisfied
Part 4: Relevance for Local Entrepreneurs			
4.1 The AI tool provides outputs that are suitable for community products.	4.67	0.488	Most satisfied
4.2 The generated content and images are practical for real-world use.	4.20	0.561	Very satisfied
4.3 The AI tool empowers entrepreneurs, making them feel less reliant on hiring professional designers.	4.20	0.561	Very satisfied
Part 5: Overall Satisfaction			
5.1 Overall, I have a positive attitude toward using the AI tool.	4.60	0.507	Most satisfied
5.2 I am likely to recommend this AI tool to others for creating promotional content.	4.53	0.640	Most satisfied
Overall	**4.46**	**0.531**	**Very satisfied**

The assessment for Table 2 demonstrates that the AI tools for visual content creation were met with strong approval and high satisfaction from the local entrepreneurs. The top three criteria with the highest satisfaction scores are as follows:

First place was that entrepreneurs agreed that the images generated by the AI tool were beautiful and pleasing, with $\bar{x}$=4.80, S.D.=0.414, rated "Most satisfied" in the design quality category.

Second place was that entrepreneurs found it took little time to produce products, with $\bar{x}$=4.73, S.D.=0.458, rated "Most satisfied" in the usability category.

And the third place was that entrepreneurs felt that the AI tool produced results appropriate for community products, with $\bar{x}$=4.67, S.D.=0.488, rated "Most satisfied" in the relevance for local entrepreneurs category.

The key findings are as follows:

The results in Table 2 confirm that the AI tools were highly satisfying for local entrepreneurs in terms of content creation. The most striking was the Design Quality of the outputs, the assessment of which was exceptionally high in all aspects. These outputs were rated as beautiful and professional by the entrepreneurs. The same goes for the Usability of the AI, as both fast to create and understand scored very high. This type of user experience was conducive to using the tools, suggesting a positive attitude and a high level of recommending the tools to others. It appears that the AI was viewed as empowering, and the only aspect that could be improved was its ability to stimulate creative thinking. Therefore, the tools were considered a fast, quick, and efficient option to produce quality visual material for the local brand.

From the practical training, the researchers found that, the great advantage of the 2CTE Model is its total mental-technical integration. Unlike typical training that focuses solely on practical procedures, 2CTE addresses the "tech anxiety" experienced by local entrepreneurs. By comparing various activities to the TAM model, the four steps of the sequential application pattern are systematically constructed, accumulating experience before introducing more complex tools. Additionally, by leveraging the ELM (Peripheral Route), the model delivers an early “victory” for entrepreneurs by seeing a professional-looking picture of their product which serves as a strong motivator for future learning. While successful, the model is currently limited in its long-term sustainability and dependence on devices. The model assumes participants have access to high-performance smartphones. During the workshop, older devices struggled with heavy AI processing. Since it depends on cloud-based AIs (Gemini, ChatGPT), its effectiveness is limited in rural areas with unstable internet infrastructure. Causing Language Barriers: Many AI tools are programmed for English. While tools like ChatGPT do now support Thai, the “nuance” of regional Ubon Ratchathani dialects or particular herbal terms could get lost in translation at times, meaning the researcher had to step in to help with conveying meaning. Another problem encountered was that for older adults who have to switch between multiple applications simultaneously. (e.g., from ChatGPT for text to Adobe Express for imagery), We elicited momentary confusion; they required more one-on-one “scaffolding” than originally envisioned. Another interesting finding is the early belief that artificial intelligence (AI) was a miracle. Some participants assumed the AI would have knowledge already of their family recipes or weaving history. In the training had to switch up to guide “AI is an apprentice, not the master.” The participants found that a high fidelity depends on the “Local Wisdom” (prompt) you give it. Another misconception is about copyright they worry about not owning their brand story if AI is used. That's why we suggest there needs to be a discussion about digital ownership.

Discussion

The findings of this study provide strong empirical support for the effectiveness of the 2CTE Model as a transformative framework for AI skill training among local entrepreneurs. The model's success is not merely in introducing new tools, but in its structured ability to guide participants through a complete practical journey from initial apprehension to confident adoption and, ultimately, to tangible empowerment. These results are highly consistent with recent literature on technology adoption and skill development. Research by Ahmad and

Nasurdin (2022), which investigated digital tool adoption among rural-focused entrepreneurs, similarly found that training interventions on Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) were the most critical factors. Their study confirmed that when training successfully demystifies technology (improving PEOU) and demonstrates clear benefits (improving PU), it directly leads to higher adoption rates and a stronger sense of empowerment. Furthermore, the 2CTE Model's structured process aligns with findings from Sun and Cheng (2021), who demonstrated that the initial training phase is the single most important factor in establishing PEOU. Their research showed this initial, positive experience creates a feedback loop, boosting PU and fostering a positive attitude, which is precisely what the 2CTE Model is designed to achieve. Finally, while TAM explains the adoption, the content creation aspect of the 2CTE Model is supported by work like that of Kumar and Roy (2023), who found that training individuals in the principles of the Elaboration Likelihood Model (ELM) demonstrably improved their ability to create more persuasive and effective marketing content. Our proposed model is unique and different from other proposed models in that it uses this combination of TAM and ELM to enhance the capabilities of local entrepreneurs in using AI tools. We also validate the results of AI tools for practical application in the context of community products, including the effective use of promotional images generated by AI tools on online channels.

The consistently high satisfaction scores in this study, therefore, validate the theoretical underpinnings of the 2CTE framework. The model successfully fostered a positive feedback loop: by curating tools with high Perceived Ease of Use, it allowed entrepreneurs to quickly see their Perceived Usefulness, which in turn cultivated a positive attitude and a strong Behavioral Intention to continue using the technology. The 2CTE Model acts as a powerful catalyst for technology acceptance, effectively demystifying AI and transforming it from an intimidating concept into an accessible and valuable partner. This research does more than simply evaluate AI tools; it presents and validates a much-needed pedagogical solution. The 2CTE Model proves to be a robust, replicable, and highly effective framework that addresses the core challenges faced by local enterprises. It provides a clear pathway to bridge the digital skills gap, making a significant contribution to both the academic field of technology adoption and the practical pursuit of community development in Thailand.

Conclusion

This research successfully bridged the critical digital skills gap in Thai local entrepreneurs through developing and validating the 2CTE Model. The novelty of the study resides in its robust, replicable, and human-centered pedagogical framework, which goes beyond mere technology training to achieve true empowerment. The data gathered in the double-validation study indicated that the 2CTE Model has a strong structure, and the targeted users are highly satisfied with its real-world application. The reason for the model's success lies in its unique combination of the Technology Acceptance Model, which helps systematically creates a positive attitude towards the adoption, and the Elaboration Likelihood Model that enables producing effective marketing content. Such a comprehensive approach ensures that the local entrepreneurs learn how to use the AI tools, why they should do it, and are confident in their abilities to use such tools.

In conclusion, the 2CTE Model presents a concrete path towards empowerment. It provides local enterprises with the knowledge and courage essential to tackle the digital arena, constituting a breakthrough achievement in the knowledge field of technology adoption and a practical endeavour towards sustainable community development. It shows that the future of local craftsmanship in the dynamic environment of Thailand's digital future is ensured.

Suggestion

The 2CTE Model should be tested in other provinces and with different types of community enterprises (e.g., tourism, services, agriculture) to assess its scalability and generalizability. This would further strengthen its standing as a universally applicable model.

References

Ahmad, N. H., & Nasurdin, A. M. (2022). The role of digital training in fostering technology adoption and entrepreneurial empowerment among rural communities. *Journal of Community Development and Society, 18*(3), 204-221.

Chen, A., Lu, Y., & Wang, B. (2022). *The influence of social commerce features on trust and purchase intention: An elaboration likelihood model perspective.* Computers in Human Behavior, 129, 107156.

Digital Economy Promotion Agency (DEPA). (2023). *The state of Thai SMEs in the digital economy: A report on e-commerce adoption and challenges.* DEPA. https://www.depa.or.th/th/reports/sme-digital-economy-2023

Dwivedi, Y. K., et al. (2023). "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. *International Journal of Information Management, 71,* 02642.

Garcia, M., & Williams, D. (2024). The personalization-privacy paradox in the era of generative AI: An examination of consumer backlash. *Journal of Business Ethics, 189,* 45–60.

Gupta, S., & Sharma, A. (2023). Generative AI in marketing: A framework for A/B testing and content personalization. *Journal of Marketing Analytics, 11*(2), 145-160.

Kim, J., & Lee, S. (2023). Human-AI co-creation in content marketing: An analysis of the role of LLMs as creative assistants. *Public Relations Review, 49*(5), 102258.

Kumar, T. K. S., & Roy, R. R. L. R. (2023). Training in persuasive communication: An ELM-based approach to enhancing digital marketing content creation. *Marketing Education Review, 33*(1), 45-59.

Li, H., & Chen, Y. (2024). The role of generative AI in creating hyper-personalized customer experiences. *Journal of Consumer Marketing, 41*(1), 23-35.

Marr, B. (2023). *Generative AI in Practice: 100+ Amazing Ways to Use ChatGPT and Other LLMs.* Wiley.

Musa, H. G., Fatmawati, I., Nuryakin, N., & Suyanto, M. (2024). Marketing research trends using technology acceptance model (TAM): A comprehensive review of researches (2002–2022). *Cogent Business & Management, 11*(1), 2329375. https://doi.org/10.1080/23311975.2024.2329375

Panyasorn, K., & Sirichote, J. (2023). Barriers to digital marketing adoption among OTOP entrepreneurs in rural Thailand. *International Journal of Entrepreneurship and Small Business, 48*(2), 170-188.

Peterson, J., & Singh, R. (2024). From prompt to play: The efficacy of AI-generated short-form video on TikTok engagement. *Journal of Marketing Communications, 30*(2), 158-175.

Prabowo, T., Winarno, W. W., & Sudarmawan, S. (2020). Analysis of Technology Acceptance Model Method To Predict A Person's Interest In The Acceptance of A Technology: A Literature Review. *Journal of Information Technology Education.* https://doi.org/10.31289/JITE.V4I1.3986

Promsaka, N., & Pengnate, S. (2022). Digital transformation challenges for OTOP product entrepreneurs in the e-commerce era. *Journal of Community Development and Life Quality, 10*(2), 115-128.

Rattanasiripong, P., & Thongdee, S. (2022). The impact of digital literacy on the competitive advantage of community enterprises in Thailand. *Journal of Small Business & Entrepreneurship, 34*(5), 451-469.

Rogers, D., & Evans, K. (2024). The new persuaders: A conceptual model of AI-generated advertising and its reliance on peripheral processing. *Journal of Business Research, 155,* 113457.

Schneider, T., & Reiter, M. (2024). Beyond reality: The impact of hyper-creative generative imagery on brand novelty and consumer engagement. *Marketing Letters, 35,* 112-128.

Statista. (2023). Social commerce gross merchandise value (GMV) in Thailand from 2022 to 2025. Statista. *Retrieved September 18,* 2025, from https://www.statista.com/statistics/325325/thailand-social-commerce-gmv/

Sun, P. C., & Cheng, H. K. (2021). The crucial role of initial training in technology acceptance: A study on e-learning systems. *Computers & Education, 168,* 104205.

Techawasin, M., & Jaroen, P. (2024). Content is king: The effect of content marketing skills on the online sales performance of Thai SMEs. *Journal of Digital Commerce Research, 25*(1), 45-62.

Thompson, R., & Hughes, B. (2024). Man vs. machine: A comparative analysis of click-through rates for human-written vs. LLM-generated ad copy. *Journal of Advertising Research, 64*(1), 89-104.

Thongdee, S., & Ratanasiripong, P. (2022). Digital transformation strategies for Thailand's OTOP program: A community development perspective. *Community Development Journal, 57*(3), 452-469.

Verma, S., & Joshi, P. (2023). Dynamic creative optimization with generative AI: The impact on ad relevance and conversion rates. *Journal of Retailing and Consumer Services, 75,* 103489.

Wilson, A., & Martinez, C. (2023). The authenticity dilemma: Consumer perceptions of AI-generated vs. human-generated brand content. *Journal of Advertising Research, 63*(4), 345-359.

Wongsiri, M., & Jaroen, P. (2023). The rise of conversational commerce: An analysis of consumer behavior in Thailand's social commerce market. *Journal of Southeast Asian Business, 9*(1), 25-41.